

# New study offers insights and recommendations for **improving viral suppression** among children with HIV



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Tremendous progress has been made towards reducing new HIV infections and AIDS-related deaths, but critical gaps remain as children lag behind adults in HIV care and treatment. The situation is particularly alarming in Eastern and Southern Africa (ESA) where, as of 2019:<sup>1</sup>

- it is estimated that **1.2 million children (0-14)** were **living with HIV**.
- More than **504,000 children** with HIV were **not receiving lifesaving treatment**.
- **74,000 new infections** occurred **in children**.
- **46,000 children died** from AIDS-related causes.

Without treatment, one out of every two babies with HIV will die before their second birthday. Once

on anti-retroviral therapy (ART), children with HIV must adhere to life-long medication<sup>2</sup> and maintain viral load suppression (VLS) if they are to lead long and healthy lives.<sup>3</sup> To better ensure treatment success in children, UNICEF commissioned a multipronged review of relevant studies and data from Malawi, Uganda and Zimbabwe, all countries with high HIV prevalence and low VLS among children.<sup>4</sup>

### Population-based HIV Impact Assessments confirm low viral load suppression among children (0-14) with HIV<sup>4</sup>

**Malawi:** Children at 42% vs adults at 67%  
**Uganda:** Children at 39% vs adults at 84%  
**Zimbabwe:** Children at 47% vs adults at 86%

## Methodology

The study used cross-sectional mixed-methods, including a literature review; secondary analysis of Laboratory Information Management System (LIMS) data from Malawi, Uganda and Zimbabwe for the period 2016, 2017 and 2018; a review of 275 children's medical records; and in-depth interviews with 16 health workers and 36 caregivers from 8 selected facilities in Malawi. After data cleaning, approximately 260,000 LIMS records from the period 2016 to 2018 were eligible for analysis. A substantial amount of data missing in the LIMS and extracted clinical data limited the level and extent of analysis.

1 <https://www.unicef.org/hiv>

2 Non-adherence allows HIV to multiply and attack the immune system and increases the risk of drug resistance and HIV treatment failure.

3 Viral load suppression is defined as an HIV viral load of less than 1,000 copies/ml of blood.

4 Population-based HIV Impact Assessments, Malawi, Uganda and Zimbabwe. <https://phia.icap.columbia.edu/>

## Key findings

**Across the three countries, VLS among children with HIV did not improve over the three years, declining from 69% in 2016 to 64% and 65% in 2017 and 2018 respectively.**

### **Children are more likely to achieve VLS when they and their caregivers have support.**

Family, community and health care worker support for caregivers and children positively influenced VLS among children. Supportive care networks, including professional and peer counseling for caregivers and children, was associated with stronger confidence in disclosing HIV status to others, better treatment adherence for the child, less stigma in community and school environments, and greater access to household and community resources.

VLS across the three countries was lowest among children aged 1-4 years, suggesting that this is a particularly vulnerable age group. Being on ART for a longer period of time, especially for 10 or more years, was associated with VLS. As caregivers and children became treatment experienced, they were more likely to understand the benefits of ART and the importance of adherence which, in turn, contributed to VLS.

Participation in peer support groups was cited as contributing to improved adherence for children with HIV. As one caregiver noted, *“Clubs provide a forum where young children get to realize they are not alone, they are not any different from others and they can live a happy fruitful life.”*

### **Drug regimens continue to challenge pediatric VLS.**

Caregivers reported that children struggled with high pill burdens, frequent daily intake of drugs, and the bitter taste and complexities of administering Lopinavir-ritonavir, often leading to children's poor adherence.

### **The quality, efficiency and accessibility of health services directly affect adherence and VLS.**

Distance to facilities, lack of funds for transport, clinic schedules, staff shortages, waiting times, inadequate space, and unfriendly attitudes by service providers contributed to whether children received timely, comprehensive and supportive care.

Most children with high viral load did not receive post-intensive adherence counseling following a high viral load test. Also, children with good adherence but treatment failure were not targeted with viral load tests to identify HIV drug resistance.

### **Multi-sectoral challenges affect treatment success.**

Malnutrition was associated with morbidity and unsuppressed viral load. However, nutrition screening was not routinely performed, despite national guidelines. Unavailability of food was linked to ART adherence and willingness by children to take their antiretroviral medicines (ARVs). Other poverty-related factors, such as the ability to pay for transport to health facilities, also influenced adherence to clinic appointments.

### **Data management systems play a critical role in clinical care and in understanding challenges to VLS.**

Sub-optimal documentation, storage and use of data in both the LIMS and patient records were common in all three countries, impeding clinical and programmatic decision-making. For example, in Malawi, records were missing data for key variables at ART initiation, such as CD4 count, mid-upper arm circumference, body mass index, and exposure to ARVs for prevention of mother-to-child transmission of HIV (PMTCT).

### **Greater policy, programmatic and financial commitments need to be made to achieve optimal treatment outcomes, improve the lives of children with HIV and achieve global goals for ending AIDS among children.**

A first step to taking action is for governments and their partners to examine existing data on pediatric ART coverage and outcomes, identify the gaps in evidence and programming, and set country-specific priorities. The following table offers recommendations and approaches which have shown promise in delivering results for improved VLS and treatment outcomes in children with HIV.

# Taking Action

## Recommendations

Support caregivers and children with HIV



## Approaches

Community-facility linkages should be strengthened to provide caregivers with on-going support and information on available resources.

Trained community workers and peers, linked to facilities, have proven to be effective in providing on-going support to caregivers and children and improving their knowledge, skills and psychosocial wellbeing. Existing support platforms, such as those for PMTCT, should be extended to include multi-year support for the mother and child(ren) beyond the cessation of breastfeeding.

Promote paediatric viral load testing and child-friendly drug regimens



Age-appropriate interventions for children with HIV should be scaled up and may include adherence reminders, information material, adherence counseling, disclosure support and peer support.

Health systems need to systematically offer routine and targeted pediatric viral load testing, both at ART initiation and throughout the child's treatment.

Governments and their partners need to accelerate the transition to more efficacious Lopinavir and Ritonavir-based or Dolutegravir-based paediatric regimens in line with current WHO guidelines. Global and national efforts to reduce pill burden among children, including promoting the use of fixed dose combination of ARVs, should continue to be prioritized.

Improve service delivery coverage and quality with child-centered HIV care and treatment



Health workers should provide every child with an HIV treatment plan that includes routine viral load testing per national guidelines, and educates caregivers and children on administering drugs, managing potential side effects, and developing adherence strategies. Separate age-appropriate counselling sessions for children, without the presence of a caregiver, will allow children to freely express their concerns and actively participate in their own health care.

Decentralization to primary health care centers will expand coverage, and should be accompanied by investments in training and quality improvement systems. Clinical mentorship, case studies and job aids are some of the tools available to assist service providers in providing quality pediatric HIV care and treatment.

Reduced waiting times, expanded clinic hours and multiple month prescriptions will help caregivers and children with HIV adhere to ART appointments and improve VLS.

Home visits and community-based refills of ARVs for stable children on ART will help to address transport constraints and assure regular clinical assessments and drug refills.

## Recommendations

Improve case management with multi-sectoral linkages and referrals



Strengthen laboratory data management



Generate useful evidence



## Approaches

▶ Nutrition, food security and HIV must be addressed to improve health outcomes for children, including VLS. Protocols on nutrition screening and support for children on ART must be followed and linkages made to social protection programmes for food insecure households. Similarly, screening for other co-morbidities, such as tuberculosis, must be conducted to ensure children are receiving optimal treatment.

Establishing allies in residential school settings is important for children who require support with taking ARVs and attending clinic appointments. Sensitizing teachers and student leaders are examples of successful strategies to make school settings more supportive.

▶ Countries need to strengthen and build capacity in laboratory data entry, storage, analysis and use so that health workers and programme managers can make informed clinical and programmatic decisions. At minimum, patient records should include prior exposure to ARVs for PMTCT, ARV regimen and formulation, adherence status, viral load results, CD4 count and tuberculosis and nutritional status. Electronic medical record systems should prompt health workers to collect data with alerts on missing essential data.

Linkages/interfaces between different data sources will help ensure that the results of viral load tests are promptly used for clinical care.

▶ Country-specific studies on the factors related to VLS and associated health outcomes will assist policy makers, service providers and programme implementors to ensure that children with HIV receive the support and services they need for their optimal health and wellbeing. Proposed implementation research includes what works to increase VLS at scale; family-centered approaches to care and treatment, including the relationship between caregiver's and children's adherence; scaling up support to caregivers; tailoring support for children in different age groups; and the potential impact of social protection initiatives.

Please find the full study, "*Understanding and Improving Viral Load Suppression in Children Living with HIV in Eastern and Southern Africa*," here <insert link>

For more guidance on strengthening paediatric HIV treatment programmes, please see *Improving HIV service delivery for infants, children and adolescents: A framework for country programming* at <http://www.childrenandaids.org/Paediatric-Service-Delivery-Framework>

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