Acceptance of Optimal ARTs for Children and Adolescents Living with HIV in Tanzania, Uganda, and Zambia through Data-Driven Quality Improvement Interventions

Lauren Simao1, Stephanie Dwelling1, Joy Kaima1, Leah Mutua1, Fiston Mwobela1, Veronica Nabukwasi1, Stephanie Hackett2, Deborah Carpenter3, Jessica Gross3, Maria Hats1, Kwakwe Papi3, Clement Adepgbaj4, Michelle Aden1, Carolyn Amode1, Ivan Arribales1, Uzoma Ane1, Lillian Bwambok1, Estella Bravado1, Adalee Currie1, Uzoma Ene1, Omadeke Johnson-Fapohunda1, Simran Hatte1, Prudence Hamidie1, Akubu Ijeape1, Magus1, and Mbonea2

1Clinton Health Access Initiative, Boston, MA, U.S.A. 2Clinton Health Access Initiative, Abuja, Nigeria. 3Clinton Health Access Initiative, Kampala, Uganda. 4U.S. Centers for Disease Control and Prevention, Atlanta, Georgia, USA. 5Department of Health, Government of Tanzania. 6Department of Health, Government of Zambia

Background

- Globally, the proportion of children living with HIV (CLHIV) identified, initiated on antiretroviral therapy (ART), and virally suppressed is unacceptably low compared to adults (Figure 1).

- Access to optimal ARTs is critical to improving viral load suppression (VLS), yet barriers prohibit progress for children and adolescents, including: delayed national guidelines revisions; suboptimal/limited health care worker (HCW) training; inconsistent adherence to guidelines among HCWs; lack of standardized quality of care (QoC) packages; limited engagement with communities on patient literacy and demand generation.

- The while the World Health Organization (WHO) recommends optimizing children and adolescents living with HIV (CALHIV) to first-line (1L) ART using weight-based dosing, strict adherence to weight-based dosing and monitoring is often limited - historically, pediatric ART has focused on age and procurement, rather than being disaggregated by weight band and formulation.

The FASTER (Driven Quality Improvement Interventions) initiative was implemented in Tanzania, Uganda, and Zambia to accelerate optimal ART uptake for CALHIV through standardizing weight-based ART monitoring and utilizing data to inform facility-level QoC improvement interventions, including: HCW capacity building via training; mentorships; rolling out QSC standard packages; and operationalizing pediatric and adolescent Community Advisory Boards (CABs).

Methods

- Analyzed monthly ART uptake for CALHIV 0-19 years on preferred 1L ART for the seven WHO-defined weight bands (3-5.9 kg, 6-9.9 kg, 10-14.9 kg, 15-19.9 kg, 20-29.9 kg, 25-29.9 kg, and ≥30 kg) across 245 FASTER-supported facilities, where possible, using FASTER performance indicator data from October 2019 – March 2022.

- Aggregated weight bands into three categories (3-19.9 kg, 20-29.9 kg, and ≥30 kg) to simplify reporting.

- Calculated the percent change in optimal ART uptake overall and by country using baseline and end line indicator data.

-Varied treatment optimization interventions by country based on ongoing data collection. Strategies for establishing improved, standardized data systems also varied by country:

Nigeria

- developed ART dashboard to capture patients per regime (PPI) by weight integrated within national electronic Nigeria Medical Record System (NMRS); collected monthly PPI reports from facilities.

Tanzania

- enhanced the National and Treatment Clinic macro database (CTCDs) to include pediatric ART data by weight band through a QSC dashboard; rolled out revised facility data forms; analyzed monthly PPI data.

Uganda

- conducted analyses in Excel using data from the Dimagi CommCare data collection platform to monitor quarterly ART optimization by weight band and identify low performing sites.

Zambia

- developed script to aggregate pediatric ART data by weight band and formulation from the national SmartCare EHR system; incorporated weight-based ART data collection into quarterly Pediatric HIV Service Quality Assessments (SQAs).

Results

Optimal ART uptake increased across FASTER-supported sites in all countries and all weight bands.

- To show the granularity of data collection, results from one weight band (20-29.9 kg) in Tanzania is shown in Figure 2. Additional data will be available in a forthcoming manuscript.

Table 1. Summary of % of CLHIV on Optimal ART by Aggregated Weight Bands in 245 FASTER Priority Sites Disaggregated by Country at Baseline and Endline

<table>
<thead>
<tr>
<th>Weight Group</th>
<th>Baseline</th>
<th>Endline</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-19.9 kg: ABC/3TC/pdtg OR ABC/3TC LPV/r</td>
<td>Nigeria 61%</td>
<td>Tanzania 38%</td>
<td>Uganda 68%</td>
</tr>
<tr>
<td>20-29.9 kg: ABC/3TC/pdtg OR ABC/3TC LPV/r</td>
<td>Nigeria 10%</td>
<td>Tanzania 33%</td>
<td>Uganda 22%</td>
</tr>
</tbody>
</table>

- Across all countries combined, abacavir/lamivudine + lopinavir/ritonavir (ABC/3TC+LPV/r) and/or ABC/3TC+pdtg uptake among CLHIV weighing 3-19.9 kg increased from 56% to 94%, representing a 67% change.

- ABC/3TC+DTG 50mg and/or tenofovir alafenamide/emtricitabine/dolutegravir (TAFED) regimen uptake among CLHIV weighing 20-29.9 kg increased from 28% to 71% representing a 156% change.

- Tenofovir/lamivudine/dolutegravir (TLD) and/or TAFED uptake among CALHIV ≥30 kg increased from 63% to 85%, representing a 35% change.

Conclusions

- Routine monitoring of pediatric ART data by weight band allows HIV programs to accurately assess treatment optimization progress for CALHIV. Further, it allows facilities and national HIV programs to address any issues quickly and effectively, contributing to improved optimal ART use and better health outcomes for CALHIV.

- FASTER’s interventions to strengthen the visibility and monitoring of optimal ART uptake by weight band at facility and, in some countries, national levels, and implementing targeted quality improvement activities contributed to rapid improvements in optimal ART uptake among CALHIV. Training HCWs on timely guideline updates that relate to treatment optimization was essential to accelerating uptake, as was working alongside community members to foster demand generation and improve the capacity of caregivers and ALHV to advocate for the best possible treatment available.

- Lessons learned from FASTER can guide rapid uptake of recently introduced pDTG and pediatric pipeline products for improving and sustaining optimal health outcomes. As optimal ART access for CALHIV moves closer to scale globally, we expect to see VLS rates follow given the benefits that better, more effective ARTs offer in suppressing the virus.

References


Acknowledgements

Ministries of Health in Nigeria, Tanzania, Uganda, and Zambia; PEPPAR/CDC; National Institute for Collaborating Centres for Health; Clinton Health Access Initiative (CHAI); global partners.

Contact | Lsimao@clintonhealthaccess.org