Accelerating Uptake of Optimal ARVs for Children and Adolescents Living with HIV in Nigeria, Tanzania, Uganda, and Zambia through Data-Driven Quality Improvement Interventions

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

Figure 1. Adult vs Pediatric HIV Cascade Statistics Globally

95-95-95 HIV Treatment Cascade (≥15)



Methods

- Analyzed monthly ART uptake for CALHIV 0-19 years on preferred 1L ART for the seven WHOdefined weight bands (3-5.9kg, 6-9.9kg, 10-14.9kg, 15-19.9kg, 20-24.9kg, 25-29.9kg, and \geq 30kg) across 245 FASTER-supported facilities, where possible, using FASTER performance indicator data from October 2019 – March 2022.
- Aggregated weight bands into three categories $(3-19.9kg, 20-29.9kg, and \geq 30kg)$ to simplify results 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:



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

• 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 data has focused on age and procurement, **rather** than being disaggregated by weight band and formulation.

The Faith-based Action for Scaling up Testing and Treatment for Epidemic Response (FASTER) initiative supported Ministries of Health (MOH) in Nigeria, Tanzania, Uganda, and **Zambia to accelerate optimal** ARV uptake for CALHIV through standardizing weight-based ART monitoring and utilizing data to inform targeted quality improvement interventions, including: HCW capacity building via trainings and mentorships, rolling out QoC standard packages, and operationalizing pediatric and adolescent Community Advisory Boards (CABs).

enhanced the national Care and Treatment Clinic macro database (CTC3) to Tanzania include pediatric ART data by weight band through a QoC dashboard; rolled out revised facility data forms; analyzed monthly PPR data.

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

Zambia

developed script to aggregate pediatric ART data by weight band and formulation from the national SmartCare EMR 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.



• Across all countries combined, abacavir/lamuvidine + lopinavir/ritonavir (ABC/3TC+LPV/r) and/or ABC/3TC+ pediatric dolutegravir 10mg (pDTG)

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

uptake among CLHIV weighing 3-19.9kg 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 20-29.9kg increased from 28% to 71% representing a 156% change
- Tenofovir/lamivudine/dolutegravir (TLD) and/or TAFED uptake among CALHIV \geq 30kg increased from 63% to 85%, representing a 35% change \bullet

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

			Baseline	Endline	% Change
	3-19.9kg; ABC/3TC+pDTG or ABC/3TC+LPV/r	Nigeria	61%	100%	64%
		Tanzania	38%	94%	151%
		Uganda	68%	91%	34%
		Zambia	76%	91%	19%
	20-29.9kg; ABC/3TC+DTG or TAFED*	Nigeria	10%	87%	766%
		Tanzania	33%	81%	145%
		Uganda	22%	57%	160%
		Zambia	49%	74%	51%
	≥30kg; TLD or TAFED	Nigeria	74%	97%	32%
		Tanzania	73%	83%	13%
		Uganda	44%	82%	86%
		Zambia	62%	89%	43%

Figure 3. Summary of Optimal ART Uptake Over Time by Aggregated Weight Bands in 245 FASTER Priority Sites in Nigeria, Tanzania, Uganda, and Zambia



*TAFED for 25kg+ only

Baseline: NG - Mar'20, TZ - Dec'19, UG - Sept'20, ZM - Dec'20; Midpoint: NG - Dec '20, TZ - Nov' 20, UG - Dec '20, ZM - March '21; Endline: NG - Dec '21, TZ - Dec '21, UG - Sept '21, ZM - Dec '21 Sources: RADET files (Nigeria), CTC3 (Tanzania), Uganda EMR, facility SQAs (Zambia)

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 ARV 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 of CALHIV was essential to accelerating uptake, as was working alongside community members to foster demand generation and improve the capacity of caregivers and ALHIV 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 continues to scale globally, we expect to see VLS rates follow given the benefits that better, more effective ARVs offer in suppressing the virus.

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