THE LAST STRIDE TO 90-90-90: IMPROVING VIRAL SUPPRESSION IN CHILDREN (UNDER 16 YEARS) THROUGH COMMUNITY-BASED ART IN ZAMBIA

Perspective

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Key Messages

- *Viral suppression, remains low among children under 16 years in Zambia, two years before the endpoint of the UNAIDS 90-90-90 targets.*
- *Only 34% of HIV infected children on antiretroviral treatment (ART) are virally suppressed*
- *Community-based adherence counselling has been proven to increase viral suppression to 65%, while community-based drug dispensing coupled with community-based counselling could potentially increase viral suppression up to 90%.*

Problem Statement

In Zambia, currently, there are 94 000 children (under 16 years) living with HIV, with about 52% in HIV care, and only 34.1% of them are virally suppressed (see Figure 1).1, 2 Two years before the year 2020, the end-point of the UNAIDS 90-90-90 targets, the last 90 remains low among children under 16 years in Zambia (with the first 90 defined as those who know their status and the second as those that are in care, and the last 90% as those with viral load suppression). Broadly, adherence is one of the best determinants of viral suppression3. Unfortunately adherence is also an area of concern among children in Zambia (see Figure 2).1 Non-adherence or suboptimal adherence may include missed or late doses, treatment interruptions and discontinuations of care, as well as sub-therapeutic dosing.3

Figure 2: Non-Adherence* and no viral suppression among children

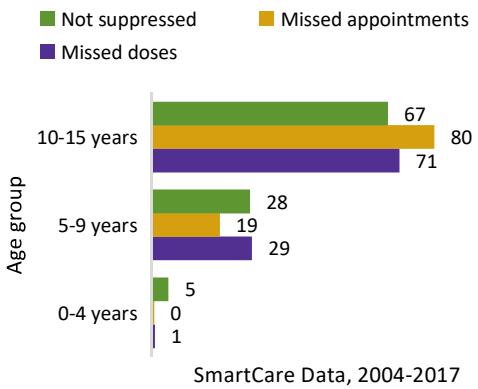
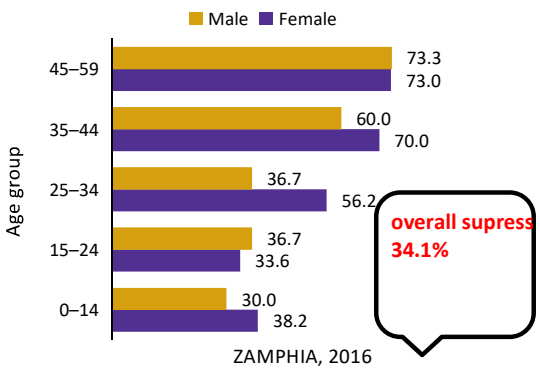


Figure 1: Viral suppression among people living with HIV in Zambia by age group



A study was conducted on the association between adherence and viral suppression in Zambia. Even though it was done on adults older than 16 years, it revealed that individuals with suboptimal adherence had 30% increased risk of virological failure compared to individuals with optimal adherence.4 Empirically, children and adolescents have the lowest adherence levels compared to adults.5-7 There are a number of factors affecting childhood adherence and viral suppression: depending on caregivers to administer medication, anticipating community level stigma, fearing disclosure, forgetting doses, changing ones routine, being too busy, and the child refusing medication coupled with poor flexibility of clinic opening hours are some of the factors affecting adherence and in turn viral suppression among children.8-10

Community-based differentiated service delivery strategies have been identified as important strategies for improving ART adherence and viral suppression, and they could be an intervention that could help Zambia reach the final 90.11 In a South African study conducted at 57 ART sites, among children under 16 years starting ART, community-based adherence support (CBAS) yielded higher proportions of virological suppression (65%) compared to those not in the program (55%) after 4 years of follow up.12 Various community-based differentiated service delivery models have also proven to improve adherence and viral suppression up to 90% among adults in Zambia .13 A good example is a project in Zambia that provides community-based HIV testing, opportunistic infection screening, adherence counselling, and ART dispensing in six districts in the country. The project has yielded adherence and viral suppression levels above 90%.13 Although these findings are among adults, a call to action to implement a similar intervention among children is needed in order to reach 90% viral suppression by 2020, among Zambian HIV infected children.

Policy Options

What are the policy options?

To meet the UNAIDS 90-90-90 targets, community-based differentiated service delivery models of care have to be implemented among children in Zambia. Policy options include providing community-based ART adherence counselling, providing community-based ART drug dispensing coupled with adherence counselling, or do nothing and maintain the status quo (see Table 1).

OPTION 1: Status Quo (Do Nothing)

What: Leave things the way they are and hope viral suppression will increase. Unfortunately, viral suppression is unlikely to increase due to the many barriers mentioned above.

Why: This is the current operation of the Ministry of Health.

Feasibility: High. Health facilities already have staff in place to attend to HIV infected children and standards of care are already established.

OPTION 2: Community-Based Adherence

What: Conduct home visits by ART nurses to provide adherence counselling and offer psychological support to children and caregivers. This option also ensures optimal drug dosage is being maintained

Why: Existing facility-based adherence counselling relies on the caregivers reports which may have biases. This option will aid in understanding child specific adherence needs through interaction with the child and the caregiver in the home environment, thus reducing most of the bias in addition to removing some of the barriers mentioned above related to low adherence.

Feasibility: Medium. The intervention will require additional training for community health teams to improve health care workers skills in family centered adherence counselling. This option will build on the community-based medicine model being implemented by the Ministry of Health in the sub-district structures.

OPTION 3: Community-Based Adherence and Drug Dispensing

What: Provide community-based drug adherence counselling and drug dispensing for clinically stable* children.

Why: Currently, health facilities are congested and experience staff shortages, making waiting time long and reduces quality of patient care. This will reduce both economic and time cost incurred by caregivers. This will also ensure child specific adherence counselling and reduce chances of missed appointments.

Feasibility: Medium. Pediatric ART is complex due to delicate and evolving drug dosages as the child grows. Community-based drug dispensing models have only been tried for adults. Additional training will be required for current staff on pediatric ART drug dispensing and treatment monitoring to increase proficiency levels. Standards on community-based pediatric ART treatment and adherence will have to be developed.

h interventions are cost savings, which means we are able to spend less money on the interventions compared to the status quo and increase the number of children with viral load suppression. With community-based adherence alone, the Ministry of Health saves USD 38 for every extra child whose viral load is suppressed when compared to no intervention. With the community-based adherence and drug dispensing, we save USD 34 per every child's viral load suppressed when compared to no intervention.

The most cost-effective option is Community-Based Adherence, however, less children will be viral suppressed compared to the Community-Based Adherence and Drug Dispensing.

Table 1: Cost-effectiveness comparison of policies

Interventions	Status Quo (57% suppression)		Community-Based Adherence (65% suppression)		Community-Based Adherence and Drug Dispensing (90% suppression)	
	Cost (USD)	Children Virally Suppressed	Cost (USD)	Children Virally Suppressed	Cost (USD)	Children Virally Suppressed
No Intervention	14682456	18666	14682456	18666	14682456	18666
With Intervention	-	-	14023656	35685	13615200	49410
Difference	-	-	-658800	17019	-1067256	30744
Cost-Effectiveness*			-38		-34	

Recommendations and Next Steps

Community-based adherence counselling and drug dispensing is not the most feasible or most cost effective but, it is the most effective option to increase the proportion of children virally suppressed by 2020. To achieve this option, stigma reduction campaigns will have to be conducted across the country (those costs are not included above).

Community-health nurses will also have to be trained in community pediatric ART and adherence counselling. The Ministry of Health will have to lobby the Ministry of Finance to increase the budgetary allocation to employ more community-health nurses to improve the nurse-child ratio.

The Ministry of Health will also have to develop standards and guidelines for community-based ART dispensing and adherence counselling among children.

In addition, the Ministry will also have to adopt strategies and work closely with partners that have implemented the differentiated service delivery models with success among adults in different project sites across the country.

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