



Photo: Eric Bond, 2019

# ACHIEVING SUCCESS OF HIGH VIRAL LOAD COVERAGE, SUPPRESSION & RETENTION AMONG CHILDREN AND ADOLESCENTS LIVING WITH HIV IN ESWATINI

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Fighting for an AIDS-free generation



# Background

Children and adolescents living with HIV (CALHIV) consistently experience sub-optimal treatment success and outcomes compared to adults across the cascade of care. This is due to the unique challenges they face throughout their care and treatment experience including disclosure of status, navigating adherence through life changes (such as transitioning from dependence on adults to being independent), adjusting to school settings, and experiencing self and perceived stigma and discrimination. These factors, among others, have negative impacts on their treatment outcomes including retention in care, as well as achieving and sustaining an undetectable viral load (VL).

Viral load testing is essential to monitor antiretroviral therapy (ART) and identify viral suppression success or failure. Viral load monitoring is an essential element required to achieve the UNAIDS 90-90-90 targets, for which globally, to achieve the 'third 90' 73% of all those on ART need to reach viral suppression. This is a challenge across all populations, as only 59% of people living with HIV (PLHIV) worldwide have achieved viral suppression. Due to increased access to treatment, improvements in ART, and differentiated service delivery (DSD), this number has risen by 14% since 2015; however, viral load suppression remains lower in children and adolescents and they continue to be less likely than adults to be suppressed.

Not being able to meet and sustain those targets, in particular for children and adolescents, significantly hinders the ability to intervene promptly to optimize treatment regimens, management, and support. Achieving these targets requires optimally tailored strategies at the facility and community level.



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# Eswatini Context

Eswatini is a small country of 1.2 million people in southern Africa and has one of the highest HIV prevalence in the world.<sup>i</sup> Approximately 210,000 people are living with HIV in Eswatini, including 120,000 women and 10,000 children 0-14 years of age.<sup>ii</sup>

Eswatini is among only a few countries to have achieved the 95-95-95 targets. This notable feat is the result of a multifaceted approach and broad support from the national and ministerial levels.

The Ministry of Health (MOH) is a leader and enabler of innovative strategies to combat HIV and AIDS in their country. They support and lead initiatives such as quality improvement approaches to increase viral load coverage and suppression at facilities. The revision of national guidelines, re-orientation of sites in response to the updated guidelines, and provision of job aids support the strong implementation of viral load monitoring. Moreover, they champion the implementation of differentiated service delivery. For instance, Eswatini began with three-month multi-month dispensation (MMD) in 2010, which was rapidly scaled up to six-month MMD in 2020 in response to the COVID-19 pandemic.

This enabling environment allows for the adoption and application of initiatives aimed at improving and maintaining gains in retention, viral load coverage, and suppression among all people living with HIV.

Retention and improving treatment outcomes for pediatric populations is a priority in Eswatini as is evident by a myriad of projects including the pediatric-focused accelerated case-finding effort (PACE) initiative and the vast portfolio of innovative and tailored activities implemented by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in Eswatini.

## EGPAF Eswatini

Since 2003, EGPAF-Eswatini has supported the Kingdom of Eswatini to implement comprehensive, innovative, and successful programs supporting PLHIV to reach treatment success.

Through a comprehensive approach of intentional integration of community and facility services, as well as tailored interventions to meet the needs of adults, children, adolescents, youth, and families, EGPAF-Eswatini reached over 95% of viral suppression across age cohorts (<5, 5-9, 10-14, 15-29, 20-24, 25+ years).

Figure 1 reflects the multi-dimensionality of the approach taken, utilizing community partners, strengthening structural factors, and ensuring tailored quality services at the facility to enable viral load coverage and suppression success.

### Viral Load Activities in Eswatini

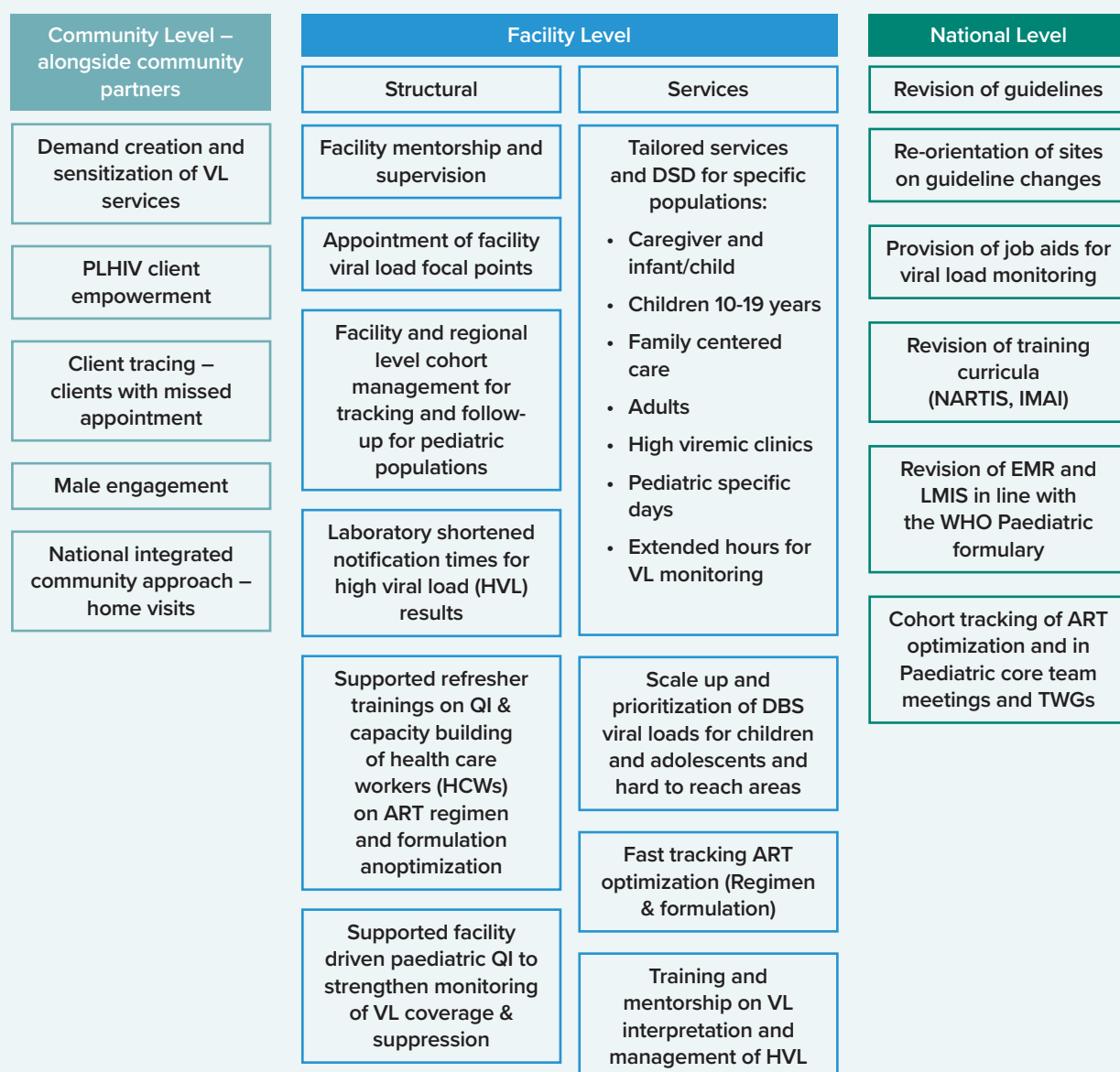
- ✓ Alignment to World Health Organization (WHO) recommendations: phasing out NVP for ART optimization and revision of guidelines, tools, trainings
- ✓ Addressing gaps in viral load coverage
- ✓ ART optimization
- ✓ Capacity building: training, mentorship on VL interpretation, HVL management, PSS support, HIVDR, QI methodologies
- ✓ Caregiver engagement: literacy and skills building
- ✓ Scale up of DSD models
- ✓ Strengthen PSS support
- ✓ Quality improvement initiative that foster facility ownership



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## INTEGRATED AND COMPREHENSIVE APPROACH TO REACH PLHIV



**Figure 1.** Elements of EGPAF-Eswatini's Comprehensive Approach

Despite overarching success for all PLHIV, the innovative approaches tailored to meet the needs of pediatric populations are particularly notable. The sections below discuss the different approaches used to target children, adolescents, and their caregivers.

## Pediatric Interventions

### Mother and Child Interventions

The interventions in this section target mothers and their infants or young children as mother-baby pairs or as the full family group. The interventions aim to increase messaging to caregivers and families on the importance of VL testing, suppression, and access. The incorporation of VL monitoring and the management of high VL messaging to the whole family is essential to address challenges that hinder children’s attainment of an undetectable VL. This is particularly important as the first five years of life is a critical time for child development and the time that children living with HIV are at the highest risk for HIV progression and co-infections.

**Table 1.**

Intervention	Details
Mother-Baby Clubs	<p><b>Purpose:</b> To support healthy child development and remove barriers to the achievement of viral load suppression.</p> <p><b>Participants:</b> Mothers with children under the age of two years and all patients meeting the eligibility criteria are invited to participate upon the first diagnosis of HIV at the clinic or upon transferring from outside the clinic.</p> <p><b>Process:</b> Information and discussion on health education, child welfare services (immunization, vitamin supplementation), maternal services (family planning, cervical cancer screening), adherence review and support, peer-to-peer support, clinical review, the incorporation of ART optimization, and VL monitoring and management in the context of a mother-baby pair.</p>
Mentor Mothers	<p><b>Purpose:</b> Improve client engagement with the prevention of mother-to-child transmission of HIV (PMTCT) services and management of treatment.</p> <p><b>Participants:</b> Pregnant women and female caregivers with young children on ART.</p> <p><b>Process:</b> EGPAF selects PMTCT expert clients known as mentor mothers to engage with caregivers and soon-to-be mothers at the facility and in the community. Mentor mothers share their experiences, lessons, and knowledge in managing HIV care and treatment for themselves and their children along the cascade, including viral load testing and achieving suppression. This support is both facility and community based and they provide individual peer-to-peer and group counseling and psychosocial support.</p>
High Viremic Clinics	<p><b>Purpose:</b> Decrease high viral load in pediatric patients.</p> <p><b>Participants:</b> Pediatric patients with persistent high VL results.</p> <p><b>Process:</b> High volume facilities invite pediatric clients who have a high viral load and their caregivers to attend appointments to review their VL status and discuss an approach to address it going forwards with a provider. This model is nested within the family-centered approach to care.</p>
Nested Pediatric-Specific Days	<p><b>Purpose:</b> Improve pediatric retention and viral load coverage.</p> <p><b>Participants:</b> Pediatric patients (0-18 years).</p> <p><b>Process:</b> Comprehensive child-centered ART services are provided for children and adolescents with their primary/secondary caregivers on a specific day each week.</p>



## Highlighting Caregiver Engagement

Meaningfully engagement with caregivers to support their children and adolescents living with HIV is critical to a young client's treatment success. The caregiver's role as treatment supporters has significant implications for their child's health and success in the fight against HIV. The capacity of the caregiver to hurt or help the treatment management of children, as well as the journey to self-management of treatment for adolescents and youth, is substantial.

VL coverage and retention for children under 5 years and < 1 year of age is a significant challenge and a remaining gap in the Eswatini HIV cascade. To address this gap, EGPAF-Eswatini recognizes the critical role of the caregiver and intentionally engages them in a variety of ways to build their capacity in treatment literacy and as treatment supporters and advocates.

For example, a caregiver-specific curriculum is being updated to reflect current priorities. Caregivers of infants (<2 years) are engaged in clubs to discuss relevant topics and build skills and understanding about supporting successful treatment. Additionally, caregivers with children are intentionally scheduled for appointments at the facility on the same day and are engaged in their children's care, particularly when focused on making action plans and addressing challenges around reaching or sustaining viral suppression. Caregivers of adolescents participate in discussion groups while adolescents are in teen clubs. The separated time provides an opportunity to continue to improve caregiver's treatment literacy and discuss ways to support the children in their care.



Photo: Eric Bond, 2019

## Interventions for Children and Young Adolescents <15 Years

To address challenges faced by children and young adolescents under 15 years of age, EGPAF activities use a multi-dimensional approach to intentionally address various aspects to provide comprehensive support to improve viral load suppression for this population.

Table 2.	
Intervention	Details
Multi-Disciplinary Teams	<p><b>Purpose:</b> Provision of holistic support to patients to reduce viral load</p> <p><b>Participants:</b> Nurse, expert client, social workers (when available), doctor, EGPAF mentors</p> <p><b>Process:</b> Facility-based multi-disciplinary teams (MDT) meet to review files of patients and caregivers/treatment supporters with high viral loads. The MDT discusses patients with high viral loads, identify barriers to be addressed, and fast track any actions in response to support management, including optimizing their treatment regimen.</p>
Specialty Lists	<p><b>Purpose:</b> Identify children and young adolescents &lt; 15 years of age for VL suppression support.</p> <p><b>Participants:</b> Patients with pending, due, and high viral loads.</p> <p><b>Process:</b> Creation of specialty lists for active follow-up of children and young adolescents &lt;15 years with pending, due, and high viral loads. The lists are generated on a quarterly or semi-annual basis to ensure children who missed an appointment are captured and receive viral load testing and support services.</p>
Family-Centered Models of Care	<p><b>Purpose:</b> Improve pediatric retention and ART adherence through family engagement.</p> <p><b>Participants:</b> HIV-positive child and HIV-positive family members.</p> <p><b>Process:</b> An HIV-positive child and their HIV-infected family members receive care together. Services provided are clinical, including viral load monitoring, adherence and disclosure support, ART and prophylaxis refills, as well as family planning and NCD screening.</p>
Dried Blood Spot (DBS) Viral Loads	<p><b>Purpose:</b> Decrease wait time to receive results for pediatric patients.</p> <p><b>Participants:</b> Pediatric patients and those in hard-to-reach areas.</p> <p><b>Process:</b> DBS has been prioritized for children, adolescents, and hard-to-reach areas to improve VL coverage in these populations while ensuring that the turnaround time (TAT) for their results is not too long. DBS viral loads have a longer TAT due to the lengthy processing time.</p>
Cohort Monitoring	<p><b>Purpose:</b> Identify patients with suboptimal VL for a referral.</p> <p><b>Participants:</b> Patients with suboptimal VL.</p> <p><b>Process:</b> Using cohort monitoring to track high viral loads of pediatric patients at the facility and regional levels allows for a more in-depth understanding of the status of clients and enables faster intervention when viral load outcomes are suboptimal.</p> <p><i>Cohort monitoring →</i> Line listing of patients are shared periodically for those who are:</p> <ol style="list-style-type: none"> <li>1. Due or who have missed their viral load appointment</li> <li>2. Have an HVL</li> </ol>
Fast Tracking ART Optimization (Regimen and Formulation)	<p><b>Purpose:</b> Optimize ART.</p> <p><b>Participants:</b> Patients struggling to reach VL suppression.</p> <p><b>Process:</b> Alignment to WHO recommendations for guidelines and tools phasing out NVP, and revision of trainings and orientations based on the updates made. Introduction of optimized regimes and formulations (DTG, ABC/3TC (120/60) LPV/r (100/25 tablets, 40/10mg Granules). Fast-tracking of results of HVL (cohort lists and virtual platforms) allows for fast-tracked management and optimization of ART in response.</p>

## Adolescents and Youth

Adolescents and youth require medically-focused interventions as well as assistance navigating the transition to adulthood. EGPAF-Eswatini’s interventions recognize the need for comprehensive psychosocial and clinical support.

Table 3.	
Intervention	Details
Teen Clubs	<p><b>Purpose:</b> Improve viral load suppression through peer engagement.</p> <p><b>Participants:</b> Adolescents living with HIV (10-19 years).</p> <p><b>Process:</b> Teen Clubs are PSS groups that provide peer support and opportunities to engage in discussions around viral load testing and the importance of achieving suppression. Each teen club is facilitated by a peer leader who is graduating teens selected from within the group. They demonstrate good adherence and viral load suppression and receive training to be a peer leader. The teen club curriculum follows national guidelines and clinical practices and is updated as clinical practice and guidelines change.</p>
Transitioning Adolescent and Youth Support	<p><b>Purpose:</b> Support adolescents and youth living with HIV (AYLHIV) to transition to adult HIV and AIDS care services.</p> <p><b>Participants:</b> Adolescents 16+ years</p> <p><b>Process:</b> Teen Club leaders facilitate clubs that support AYLHIV with self-care and transitioning to adult care. Specific transition clubs are designed to support AYLHIV with the transition to receiving care in adult settings. Peers attend and actively participate in trainings and meetings, lead peer education sessions on various topics, and provide peer psychosocial support and one-on-one sessions based on their lived experiences. This is aimed to support AYLHIV to achieve personal and medical independence and enable them to assume responsibility for their treatment as well as participate in decision-making.</p>
Targeted Communication Messages	<p><b>Purpose:</b> Support CALHIV and caregivers to improve viral load suppression and retention in care.</p> <p><b>Participants:</b> Caregivers of CLHIV and ALHIV.</p> <p><b>Process:</b> Use virtual platforms (phone calls, SMS, the radio, or U-report<sup>1</sup>) to share information on the availability of clinical services in their area and teach the importance of utilizing these services, including viral load testing.</p>
Caregiver Engagement	<p><b>Purpose:</b> Educate and support caregivers of AYLHIV.</p> <p><b>Participants:</b> Caregivers of AYLHIV.</p> <p><b>Process:</b> While teens attend teen clubs, their caregivers participate in a separate discussion around a variety of topics including the importance of reaching suppression and remaining suppressed. Topics include ART literacy and building skills on administering medication to children. The sessions are led by a nurse or expert client, supported by EGPAF mentors. Before COVID-19, these were group sessions targeting caregivers of children of all ages. Since COVID-19, this has been done one-on-one or virtually by phone call.</p>

1 U-Report is an MOH platform supported through UNICEF where adolescents and care givers can call or SMS questions and concerns. A nurse addresses these questions and concerns.



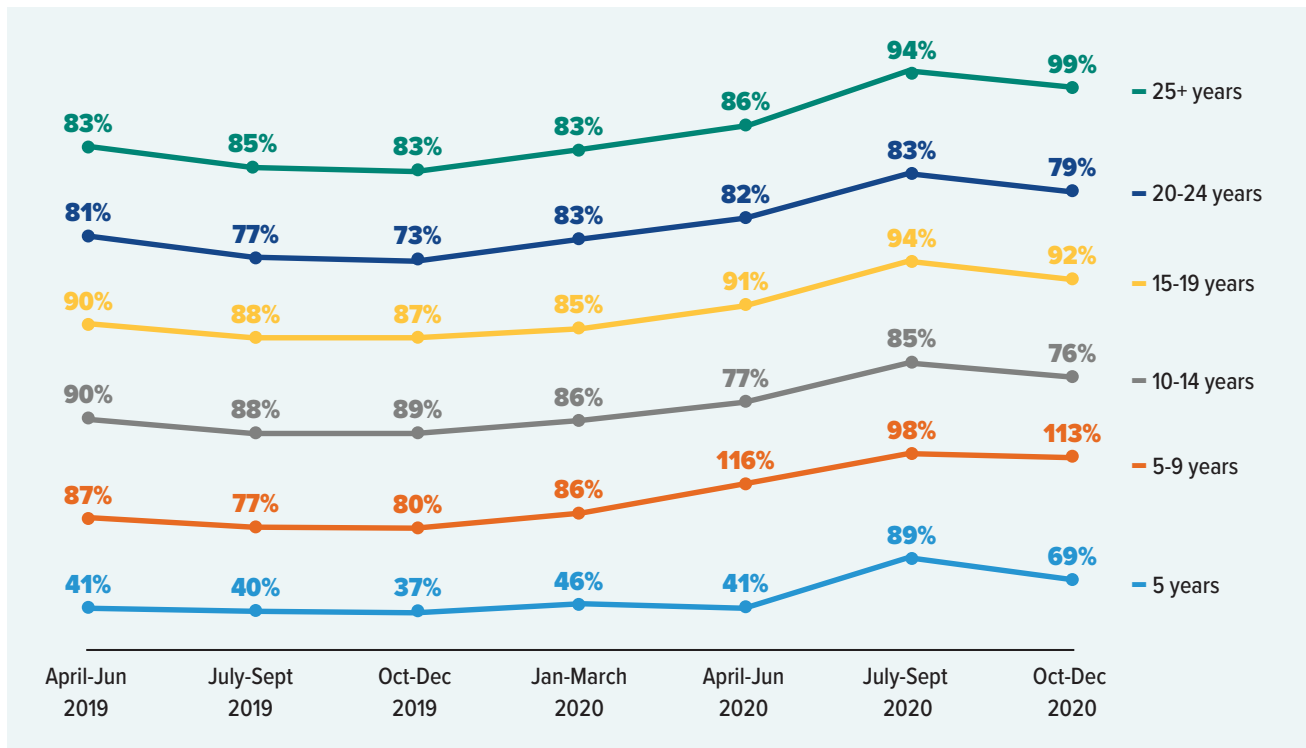
## Rewarding Viral Load Suppression in Teen Clubs

Some facilities employ creative means to reward viral load suppression among adolescents in teen clubs. For example, one facility uses sweets as an incentive to motivate children and adolescents participating in the teen club to take responsibility for their adherence and strengthen viral load suppression. Each suppressed child is congratulated and presented with a sweet for good adherence and viral load suppression. Non-suppressed children are counselled and encouraged to adhere with the agreement that they would receive the sweet at their next viral load review.

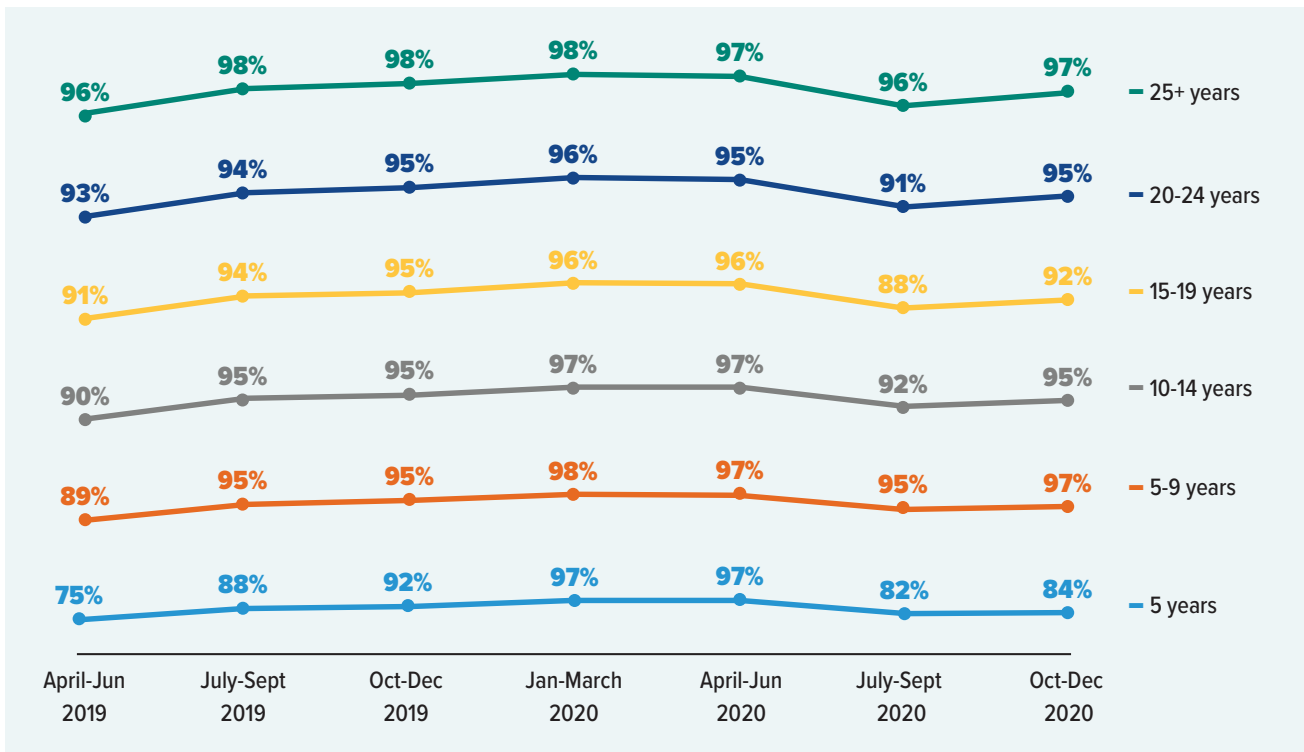
## Impact

The various approaches employed in general at a system and facility level, along with those specifically tailored to meet the needs of various populations, including children and adolescents, have resulted in increased coverage over time of viral load testing and suppression across age groups.

Figure 2 illustrates the viral load coverage across age groups over 7 quarters. Figure 3 depicts the change in viral load suppression over 7 quarters disaggregated by age.



**Figure 2. Viral Load Coverage Over Seven Quarters Disaggregated by Age**



**Figure 3. Viral Load Suppression Over Seven Quarters Disaggregated by Age**

The data highlight the continued increases in both viral load coverage and suppression across the seven quarters for the majority of age groups. For example, the viral load coverage for children ages 5-9 years increased from 87% to 113% by December 2020, while there was less change in children under 5 years of age, where coverage was 69% by December 2020.

For viral load suppression, there was a consistent increase across every age group with all groups achieving more than 95% suppression by June 2020 with the higher end being 97%. Retention rates above 95% across age groups also reflect the successful ability of these various models to engage patients and fast track corrective actions early to re-engage patients.

It is difficult to gauge the impact of one strategy employed from another around the positive effects on viral load testing, suppression, and retention among children, adolescents, and youth. The increase and sustained achievements in viral suppression over time highlight the positive impacts of implementing a comprehensive, multi-dimensional approach working with and supporting diverse stakeholders including facility staff, providers, caregivers, and children, adolescents, and youth living with HIV.



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# Lessons Learned

The successes achieved have also illuminated numerous lessons to be shared:

- ✓ An enabling environment where the MOH supports the adoption and application of initiatives aimed at improving and maintaining gains in retention, viral load coverage and suppression among all people living with HIV is necessary to achieve sustained positive health outcomes.
- ✓ Collaboration with community-based partners is important in order to avail resources, maintain connections with clients, and ensure successful follow-up for those who may have missed appointments.
- ✓ Use of tailored DSD models for pediatric and adolescent populations assists in meeting their needs and providing the appropriate support.
- ✓ Ensure buy-in from the community through sensitization on viral load and empowering the seeking and accessing of services, as well as ownership of self-management.
- ✓ Enable early initiation in response to client disengagement to ensure a timely response and remediation to optimize treatment success.
- ✓ Engage with caregivers of children of all ages through various means to build skills, knowledge, and improve sustainable adherence.

# References

- Joint United Nations Programme on HIV/AIDS (UNAIDS). 2016. <http://aidsinfo.unaids.org>
- <https://www.unaids.org/en/regionscountries/countries/swaziland>

## Acknowledgements



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