

Introduction

The *New Horizons Collaborative* advances high quality, sustainable pediatric and adolescent care and treatment for children, adolescents and young adults ages 0-24 years that are failing their current 1st or 2nd line antiretroviral therapy (ART). Through increased drug access of Darunavir (DRV) and Etravirine (ETR) and strengthening health systems and health worker capacity for treatment failure management, the collaborative advances a holistic approach to reaching critical unmet needs of children and adolescents living with HIV who are their failing HIV treatment. Globally, children lag behind adults in almost all countries working towards the UNAIDS 90-90-90 targets, and the collaborative contributes directly to one of the most challenging the 3rd 90th target of 90% of those on treatment being virally suppressed.

In 2021, the *New Horizons Collaborative* transitions to a new phase of ***New Horizons 2.0***, with the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) as a key implementing partner. EGPAF works with multiple partners in the New Horizons Collaborative, including donor Johnson & Johnson (J&J), Partner for Supply Chain Management (PFSCM), CIPHER, Imperial Logistics, Right to Care and Baylor College of Medicine. Through these partnerships, the donated antiretroviral drugs darunavir (DRV) and etravirine (ETR) supplied by J&J are distributed to nine participating countries, and healthcare systems are working towards identifying and retaining clients ages 0-24 years in need of advanced antiretroviral regimens. EGPAF is the main implementing partner for technical assistance (TA) and provides capacity building of healthcare systems and personnel, supporting data collection, and assisting with national guideline updates. In 2021, EGPAF provided TA to all ten countries in the collaborative, stratified into three tracks. *Track A countries* with signed MOUs in place, Cameroon, Eswatini, Lesotho, Nigeria, Rwanda, Uganda, and Zambia, and received TA to increase the uptake of donated product and strengthen national and regional treatment failure management capacity. *Track B countries* without signed MOUs in place, Kenya and Zimbabwe, received limited TA and continued receiving donated products for clients enrolled through December 2020. Republic of Congo was the *track C country* which entered the collaborative in 2020 and received TA to initiate the capacity building to prepare to receive donated product in 2022.

This report highlights the activities and targets achieved in each country in 2021, including Technical Working Group (TWG) activities, healthcare worker (HCW) trainings, the annual New Horizons Collaboratives Technical Workshop, clinical case reviews and progress in switching clients to donated antiretroviral products. The report also includes report on challenges encountered including COVID-19 pandemic, impact of the rollout of dolutegravir (DTG), stockouts and competing Ministry of Health (MOH) priorities, as well as lessons learned and plans for the ***New Horizons 2.0 Collaborative*** in 2022.

Activity Highlights by Country

Cameroon

- EGPAF Cameroon and the Cameroon MOH held a national *New Horizons Collaborative* meeting on March 10, 2021. Fifty participants from MOH, WHO, UNICEF, CHAI and CDC attended the meeting as the operational plans were made for optimized site enrollment and activities. In June 2021, Cameroon received the first shipment of donated product, and EGPAF worked with the MOH to assure smooth movement of the shipment from the airport to the National Central Warehouse and assisted in drafting a distribution and storage plan.

- In May 2021, EGPAF facilitated a workshop to train 14 healthcare facilities in the Littoral and Centre regions on Management of Pediatric and Adolescent Treatment Failure. These facilities optimized the enrollment of children and adolescents on 2nd and 3rd line on donated products in June 2021.
- In August 2021, Extension for Community Healthcare Outcomes (ECHO) sessions started for continuous training of providers, averaging 30 participants per session.
- In September 2021, TWGs in Cameroon started supporting facilities presenting cases pre-selected for eligibility for drug resistance testing (DRT). TWG groups included discussions of enhanced adherence counselling (EAC) for children and adolescents and the management of procurement of donated products from central warehouses to supported healthcare facilities.
- In September 2021, EGPAF set up an agreement with the International Reference Centre for HIV/AIDS Prevention and Management to support payment for DRT for pediatric and adolescent clients. The Cameroon MOH covers 90% of the cost for testing, but the remaining 10% is still cost prohibitive for clients' families. This agreement makes the cost of DRT free for children and adolescents referred for testing for DRT.

Eswatini

- EGPAF Eswatini provided weekly in person and remote mentorship to 65 sites. The mentorship works with facilities focused on to review of unstable clients, including high viral load (HVL) clients, and provided detailed clinical reviews and planning for the additional support.
- In 2021 EGPAF supported facilities to:
 - Scale up dried blood spots (DBS) viral load (VL) prioritizing children
 - Active follow up and documentation of VL results
 - Optimized use of the laboratory management information system-client management information system interface at pilot sites to fast-track VL results return
 - Review of clients failing protease inhibitor (PI) based regimens (LPV/r and ATV/r)
 - Active follow up of clients on empiric 3rd line antiretroviral regimen
 - VL sample collection in the community antiretroviral drugs distribution points
 - Support for collection of genotypes from facilities to the National Reference Laboratory and Baylor Laboratory
 - Conduct virtual clinical case review meetings
- EGPAF also participated in HIV DRT activities as a part of the task team and 3rd line committee. TWGS were conducted virtually and case summaries were compiled using a standard template for genotype requisitions submitted via email for discussions and calls.
- EGPAF participated in diverse activities with TWGs in Eswatini including CoP stakeholder meetings, Paediatric Core team meeting and Paediatric Sub TWG, Care and Rx task team meeting, Supply chain updates and TWG, PV policy review, Global Fund support planning meeting, Hhohho regional multi-disciplinary team, adolescent and pediatric TWG and linkages TWG.
- EGPAF facilitated the Right to Care webinar on HIVDR that was attended by 52 doctors, nurses and other professionals attended.
- In November 2021, EGPAF Eswatini conducted a national HIVDR training for 109 doctors, nurses and HIVDR mentors focusing on pediatrics. Following this training EGPAF is finalizing onsite curriculum and plans for regional onsite trainings, as well as follow-up mentorship support for attendees for 2022.

Kenya

- EGPAF supported regional TWGs. In March 2021, the national 3rd line TWG reviewed 2020 performance, the number of DRTs done, number of children and adolescents those transitioned to 3rd line, and resistance patterns.
- EGPAF presented at the Nyawest TWG in May 2021 on optimal pediatric ARV formulations for 1st, 2nd and 3rd line, as well as the anticipated transition to pediatric DTG. EGPAF also advanced review of the national data warehouse reporting and emphasized the need for capturing pediatric weight in the reporting tools to help in forecasting for pediatric commodities. Nyawest and South Rift Valley TWGs were very consistency active in 2021, and EGPAF also had a meeting to revive the Pwani TWG in December 2021.
- In April and May 2021, EGPAF supported the finalization of national ART and differentiated service delivery (DSD) guidelines, with an anticipated launch in July 2022. EGPAF participated in the country stakeholder consultations held in June 2021; the National AIDS Control Council and the National AIDS and STI Control Programme working with UNAIDS took leadership in the planning for the discussions and were part of the secretariat that reviewed national strategies to address gaps in prevention, diagnosis and treatment of pediatric TB and HIV.
- EGPAF assisted in the revision of the national pediatric HIV toolkit in September 2021, which includes topics such as minimum package of care, clinical assessment, ART regimens, treatment monitoring, treatment failure algorithm, nutrition and other non-clinical support for children and adolescents living with HIV.
- In September 2021, the Kenya MOH signed the MOU with J&J to receive donated product, the culmination of a dedicated effort from EGPAF, J&J, and MOH colleagues. Discussions with J&J and PFSCM started in October regarding 2022 shipments and forecasting.
- EGPAF participated in the planning and presentations at the MAISHA conference in June 2021. EGPAF CEO Chip Lyons spoke at the opening ceremony and Dr. Natella Rakhmanina was a keynote speaker in the pediatric session. The pediatric session's theme was progress of Pediatric HIV service delivery towards the last mile of 95-95-95. There was emphasis on innovation, accelerating treatment optimization in children, the use of DRV/r and WHO updated guidelines including VL monitoring. EGPAF Kenya held several virtual CMEs throughout 2021 on topics such as disclosure, administration of ritonavir (RTV) powder as a booster, EAC for children and adolescents and pediatric HIV updates on diagnosis and management of difficult cases. An estimated 300 participants attended these sessions, making them one of the best training and capacity activities within the collaborative.
- EGPAF facilitated several virtual and hybrid healthcare workers (HCWs) trainings, including refresher trainings for Nyawest Regional TWG in August and the South Rift Valley TWG in September of 2021 on multiple pediatric HIV topics.
- Finally, EGPAF mentored 10 and 9 facilities in October and November 2021, respectively. The mentorship objectives strengthened already existing multidisciplinary teams (MDT) in the facilities.

Lesotho

- In 2021, EGPAF Lesotho provided physical and virtual mentorship to HCWs at facilities in Berea, Leribe, Mhale's Hoek, Maseru, Quthing, Mafeteng, Qacha and Thaba Tseka. Mentorship visits

focused on HVL follow up with psychologists and case management of children and adolescents living with HIV including home visits, caregiver days, and EAC. EGPAF Lesotho conducted HVL clinics for pediatric clients in Maseru in March and Quthing in May, with 31 children and 27 caregivers attending from 10 clinics at Maseru and 43 children and 40 caregivers from 9 clinics in Quthing. All children were reviewed by MDT, and 1480 pill boxes were distributed to children in January and February 2021, prioritizing children with unsuppressed VL and poor adherence.

- In February 2021, EGPAF Lesotho followed up on clients from high viremia clinics from Mafeteng, Leribe and Mohale's Hoek districts. 37/47 children were reached in the follow up and 29/37 reported improved ART adherence following the clinics.
- EGPAF participated in several TWGs throughout 2021. These included National AIDS Council meetings, ART advisory committee, CME sessions using ECHO platform and the HIV/TB TWG that worked on national HIV and TB guidelines in September 2021. EGPAF Lesotho conducted New Horizons Collaborative treatment failure management trainings in Berea and Mohale's Hoek in June 2021 for 12 and 14 ART nurses, respectively. EGPAF also conducted a training on New Horizons Disclosure toolkit in December 2021 for 20 HCWs. In total, 208 HCWs were trained on disclosure, treatment failure and EAC in 2021 in Lesotho.

Nigeria

- EGPAF launched New Horizons TA activities in Nigeria in April 2021 following the hiring of an EGPAF program manager, Dr. Nguavese Torbunde. Dr. Avese attended and facilitated several meetings and calls with the National Agency for the Control of AIDS, MOH, Project Hope, and J&J to get stakeholder engagement for the collaborative.
- EGPAF participated in the Nigeria National Workshop on the Development of Pediatric SOPs, Job Aids and Information, Education and Communication (IEC) Materials in September 2021. EGPAF contributed to key areas including Treatment and Treatment Failure, Adherence, Referrals and linkages, Universal Precautions, Pre- and Post-Exposure Management and Monitoring and Evaluation.
- EGPAF has also been working with PFSCM in Nigeria to optimize the supply chain in Nigeria, given that NASCP consumption data is not currently disaggregated by age.
- In November 2021, EGPAF facilitated the inauguration of the Taraba State Pediatrics and Adolescent TWG with Director, Public Health, State Coordinator, State AIDS and STI Control Program (SASCP), members of SASCP, Taraba State Agency for the Control of AIDS, RISE, healthcare facility focal persons, and the Network of People Living with HIV/AIDS in Nigeria in attendance. The focus of the TWG is continuum of care and treatment amongst children and adolescents living with HIV in Taraba State and evidence-based interventions.
- In November 2021, EGPAF facilitated a training for HCWs on the management of treatment failure in children and adolescents. The two-day training included ART clinicians, pharmacists, pediatric/adolescent leads from implementing partners, pediatricians, and members of the state AIDS and STI Control Programs. The training employed a dual approach (participatory and interactive) with presentations resulting in brainstorming sessions to provide optimal services to the clients and improve the skills of HCWs.

Republic of Congo

- EGPAF established a strong working relationship with several Republic of Congo MOH colleagues in 2021. Through regular phone calls in January-March 2021, EGPAF assisted with the development of the terms of reference for clinical case discussions to be reviewed and approved by the government.
- In April 2021, EGPAF facilitated two virtual clinical case reviews with Republic of Congo MOH staff over zoom. The first was facilitated by an EGPAF Cameroon staff member and had 25 people in attendance. The second was facilitated by Dr. Natella Rakhmanina and had 12 people in attendance. The response from MOH attendees has been very positive and EGPAF is working towards regular case discussion calls in 2022. A limiting factor in long term participation is the cost of internet, and EGPAF is looking into reimbursing attendees for airtime bundles as a facilitation cost.
- Other progress includes MOH team receiving the New Horizons tools in French for government approval for future trainings and MOH representatives attending the 2021 New Horizons Collaborative workshop for the first time.

Rwanda

- Rwanda MOH presented their data and national guidelines at the 2021 New Horizons Technical Workshop for the first time, and EGPAF has been in discussion with Rwanda MOH about facilitating a treatment failure management training.
- Rwanda has also shown interest in a south to south exchange with neighboring Uganda to learn about their DRT database; both of these items are in the 2022 workplan and EGPAF is eager to provide this TA and south to south learning opportunity to Rwanda.

Uganda

- Uganda has been implementing a decentralized 3rd line ART program since November 2017. The switch decisions are made national by a 3rd line ART sub-committee while the day-to-day patient management is done at the parent facility. Regional 3rd line ART committees were established at the start of the program and the regional committees support and mentor the healthcare providers face-to-face at the facilities with clients on 3rd line ART, with support of the Implementing Partners.
- EGPAF supported these regional committees with TWGs and mentorship, with mentorship shifting to virtual platforms due to the COVID-19 pandemic and national lock-down in 2021. Centrally led virtual conferences were held every Wednesday afternoon for 2 hours and included didactic presentations on HIVDR and other programmatic presentations from the different stakeholders including EGPAF, followed by break out rooms in the different regions with mentors/mentees supporting the discussions.
- The national program was strengthening use of quality improvement initiatives to identify gaps along the pediatric care cascade to minimize the proportion of children failing on treatment, timely identification of failing children and ensuring that all children failing on 2nd line are initiated on 3rd line treatment. EGPAF supported a consultant to assist MOH in setting up a system that will implement an intensive capacity building program based on the continuous quality improvement (CQI) framework to optimize clinical outcomes for clients on 2nd line treatment with

virological failure. EGPAF also supported an M&E officer to directly support MOH and worked to support DRT data management at national, regional and facility levels.

- The Uganda national program is strengthening use of CQI initiatives to minimize the proportion of children failing on treatment, improve timely identification of failing children and ensuring that all children failing on 2nd line are initiated on 3rd line treatment. EGPAF assisted MOH in June 2021 with developing an audit tool for collection of baseline data to support the roll out of the CQI collaborative and serve as a baseline for the CQI activity while technical support is given to the regions and the third line program is tracked. In August 2021, EGPAF and MOH piloted the tool in five regional referral hospitals, and then facilitated trainings for three regions on the CQI collaborative.
- MOH Uganda developed an HIVDR curriculum with J&J support to build the capacity of regional and facility teams in requesting and interpreting HIVDR tests and results. In October 2021, EGPAF supported MOH in rolling out the HIVDR curriculum at the national level to cover 16 regions (Regional Referral Hospitals) targeting HIVDR committees and regional implementing partner care and treatment leads with a total of 126 participants being trained.
- In November 2021, EGPAF supported MOH to decentralize the HIVDR CQI curriculum to 5 regions of Masaka, Kayunga, Lango, Acholi and Soroti with a Training of Trainers (TOT). Six teams of five were created in each region consisting of a clinician, pharmacist, laboratory staff, M&E staff and a counsellor to improve the capacity of regional teams to review and switch failing clients in a timely manner. After the November regional TOTs, 329 HCWs in 10/16 regions were trained in December 2021 and are tasked with cascading the trainings in their districts to the facility level in 2022.

Zambia

- Zambia MOH participated and presented at the New Horizons Technical Workshop as they have for the past several years.
- EGPAF worked with several MOH colleagues to facilitate pediatric HIV management workshops in November and December 2021 in five districts. In total, six workshops were held over the course of one month in Lusaka (2), Copperbelt, Northern, Muchinga and Southern districts training 178 HCWs.

Zimbabwe

- Mentorship and TWG activities were delayed in the first few months of 2021 due to the significant 2nd COVID-19 pandemic wave and accompanying restrictions. EGPAF attended the pediatric and adolescent HIV partnership forum meeting in April 2021 which included a discussion on 3rd line ART.
- EGPAF has continued advocating for the signing of the MOU, which has been delayed due to MOH officials working from home due to COVID-19 pandemic. In May 2021, EGPAF provided post-training support to Gweru Provincial Hospital, one of the sites trained on the 3rd line ART. In August 2021, EGPAF provided mentorship visits at provincial and central hospitals to disseminate the HIV DRT circular to provinces, assess the functionality of 3rd line ART provincial committees and identify and address bottlenecks. The second round of planned mentorship visits for November was not approved by the MOH and will hopefully be rescheduled for early 2022.

Summary of Country Quantitative Progress

The quantitative indicators for the participating countries in the New Horizons Collaborative are based on the number of clients ages 0-24 years on donated products, including the number switched each year, and the number of HCWs trained. **Table 1** shows the number of clients ages 0-24 years switched to donated products (DRV and/or ETR) in 2021 and the total number of clients on donated product, by country.

Table 1: Clients on Donated Product and Switched to Donated Product in 2021 by Country

Country	# of Clients 0-24 Switched to Donated Product in 2021	Total # of Clients 0-24 on Donated Product
Cameroon	0	0
Eswatini	8	47
Kenya	N/A ¹	65
Lesotho	0	10
Nigeria	5	5
Republic of Congo	N/A ²	N/A ²
Rwanda	--	5 ³
Uganda	536	536 ⁴
Zambia	--	39 ⁵
Zimbabwe	N/A ¹	95
Total	549	802

1. Kenya and Zimbabwe were not eligible to enroll new clients in 2021.
2. Republic of Congo did not receive donated products in 2021.
3. EGPAF does not have a country presence in Rwanda, so this number is from the Rwanda MOH as of November 2021. The data was not disaggregated by year enrolled.
4. Uganda is still working on getting data from past years in its new HIVDR database, so they could not provide a total of clients on donated product other than the ones switched in 2021.
5. This is the number of 0-24 clients enrolled in the New Horizons Study and is probably a low estimate of all 0-24 clients on donated product in the country.

In 2020, there were total 355 clients 0-24 on donated product in the four 2020 focus countries (Eswatini, Lesotho, Kenya and Uganda). Table 1 shows the number of clients on donated product as more than doubled as a result of the dedicated work of collaborative country teams, especially in Uganda, despite ongoing impact of COVID-19 pandemic

Table 2 shows the number of HCWs trained through the collaborative in 2021 by country.

Table 2: Healthcare Workers Trained in 2021 by Country

Country	# of Healthcare Workers Trained
Cameroon	31
Eswatini	109
Kenya	1,189
Lesotho	208
Nigeria	74
Republic of Congo	0
Rwanda	0
Uganda	499
Zambia	178
Zimbabwe	N/A
Total	2,288

These numbers represent HCWs trained in virtual or in-person trainings, on topics ranging from treatment failure management, transition of care, pediatric HIV management, drug resistance testing, and transition of care. These numbers do not include mentorship activities or TWGs, as HCWs receiving mentorship and/or attending TWGs often attend trainings as well.

IAS Satellite Session

EGPAF collaborated with J&J to develop a virtual satellite session for IAS 2021. The satellite session highlighted the Collaborative achievements to date including development of the databases and toolkits, and dissemination of the toolkits on the New Horizons and EGPAF websites. Two HIV positive young adults and a caregiver spoke during the session on their experiences dealing with virologic failure and the challenges navigating the healthcare system to improve physical and mental health. The session also included examples in Cameroon and Kenya of the toolkits in use, discussing tailoring interventions to reach and sustain viral suppression and the role of regional HIV groups in achieving viral suppression. The satellite concluded with a look towards the future of New Horizons 2.0 launched in July 2021 as well as opportunities for new partnership collaborations. The satellite session was viewed on the IAS website by 286 people from 46 countries in July and August.

Annual Workshop

The 8th annual *New Horizons Collaborative Workshop* was held virtually on November 2nd and 3rd in two 4-hour sessions. More than 175 participants from 18 countries attended, representing J&J, EGPAF, USAID, CDC, PFSCM, Baylor, and collaborative country MOHs. Eight collaborative countries gave country presentations on updates to national approaches on pediatric and adolescent ART guidelines, management of treatment failure, and program successes and challenges. Data on the national cascades in management of treatment failure were shared with focus on pediatric and adolescent populations. Other presentations included the role of TB in co-infection in pediatric HIV, managing treatment failure in pediatric and adolescent clients in the era of DTG rollout, data and guideline changes from the NADIA trial, COVID-19 pandemic related challenges in service delivery, and DSD solutions for implementors. Participant feedback was highly positive, with many requesting presentation materials and contact information for presenters for further knowledge sharing. Presentation materials were shared with all

participants following the workshop, and several potential areas of future knowledge sharing were identified such as the development of Uganda's DR database.

Challenges and Lessons Learned

The collaborative faced several challenges in 2021, including the continuation of the COVID-19 pandemic, long turnaround times for VL and DR testing, and supply chain issues. Collaborative countries experienced the second and third waves of COVID-19 pandemic, resulting in travel and gathering restrictions in most countries for several months multiple times. EGPAF country teams continued to respond to these restrictions with creativity and endurance, shifting many activities to virtual or hybrid models for continuation of care and capacity building. Several countries also collaborated with governments to combine COVID-19 public health activities with *New Horizons*, such as offering COVID_19 vaccines at a high viremia clinic in Lesotho.

EGPAF mitigated supply chain issues by following up with suppliers and working with MOHs on forecasting and redistributing supplies and donated product as available. EGPAF also worked with laboratories to figure out solutions to long TATs, such as moving data clerks around in Cameroon to remove the paperwork burden of additional DR testing on the laboratory staff.

The biggest lesson learned in 2021 continues to be the ingenuity of the country teams and MOH colleagues in their creativity to find and fill the gaps in the pediatric treatment cascade. For this reason, a focus in 2022 will be south-to-south learning opportunities to share best practices amongst collaborative countries beyond the annual technical workshop.

Conclusion and Looking Forward

The *New Horizons Collaborative* continued to work towards increased management of pediatric and adolescent treatment failure management in 2021, successfully transitioning to New Horizons 2.0 and meeting the challenges of COVID-19 restrictions and stock outs with creativity and endurance towards the project goals. EGPAF looks forward to working with the participating countries and J&J to further decentralize treatment failure management and ensure that all children and adolescents receive the optimal care and treatment they need to thrive.