Differentiated service delivery in the prevention of mother-to-child transmission of HIV: Lessons learned from its implementation in Cameroon amid the COVID-19 health crisis

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Abstract

Background: Despite significant improvement in prevention and treatment, HIV infection remains a major public health problem as new pediatric infections continue to increase especially due to vertical transmission.

Results: Actionable strategies to prevent mother-to-child transmission like differentiated service delivery for HIV/AIDS have increased the uptake of HIV care services by infected woman, children and families; and reduced the burden on health systems.

However, the implementation of DSD models encountered some challenges like little stakeholder commitment, outbreak of COVID-19, insufficient trained staff and funds, poor accountability and follow up, stigma, and national conflict. Nevertheless, activities were run with best practices.

Lessons learned: the importance of Multi-sector collaboration and community participation, monitoring and evaluation, decentralization of points of care and appointment spacing and fast-track drug refills.

Conclusion: In order to eliminate new HIV infections among children by 2030, policy makers should build upon the DSD models that will help consolidate the gains earned by PMTCT programs.

1. Background

The HIV infection remains a major public health problem and new childhood infections continue to increase. Prevention of mother-to-child transmission (PMTCT) is at the forefront of HIV care and treatment innovation for maternal, neonatal and infant health, and has increased access to ART among pregnant and breastfeeding women over the last decade.

Still, 90% of new pediatric infections are from the mothers. Several factors including time, cost, and disclosures, hinder adherence to PMTCT programs, especially in developing countries.

Differentiated service delivery (DSD) simplifies and adapts HIV services to the preferences and needs of infected pregnant and breastfeeding woman, children and families; and reduces the burden on health systems.

This review sought to identify the challenges and lessons learned from the implementation of DSD models in eliminating vertical transmission of HIV in Cameroon.

2. Results

The PMTCT strategy in Cameroon follows four axes:

- ❑ Integration of PMTCT in Maternal and Child Health
- ❑ Family Approach to HIV Care
- ❑ Delegation of tasks and decentralization of services
- ❑ Implementation of Option B+.

Mothers and children are counseled and tested at each visit and exposed children are followed up to 18 months to determine final serological status. HIV-positive pregnant women and exposed infants are immediately linked to care services and initiated on ART.

The DSD guidelines for infected pregnant and breastfeeding women and exposed children in Cameroon are described in **table 1**.

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Table 1: Guidelines for implementing DSD for Pregnant and Breastfeeding Women and children in Cameroon

Building Blocks	Clinical consultation	ART Refilling Visits	Psychosocial Support
WHEN	3 -6 months	3 -6 months	Every month up to 6 months based on client request
WHERE	Primary health care services Mother and child health services (MCH) Community outreach services	HIV care centers MCH services Outreach services (health campaigns) Home-based ART refills Community-based organizations (CBO)	HIV care centers MCH services Out of facility services Phone calls, text messages Social media (Whatsapp)
WHO	Doctors, nurses, midwives, laboratory scientists, HIV care support staff.	Doctors, nurses, midwives Lay providers, Peers Community health workers (CHWs)	Doctors, nurses, midwives Counselors, social workers Lay providers, Peers CHWs, Informal care givers
WHAT	-Tuberculosis screening, prevention and treatment. -Other opportunistic infection management -Laboratory tests like Viral Load every 6-12 months -Mental health and drug and alcohol screening -MCH (antenatal, labor and delivery, postnatal, neonatal and pediatric care) -Prescription renewal or adjustments on dosage for children	-ART and Bactrim refill -Adherence to ART and PMTCT -Need for referral -Retention in PMTCT, maternal, newborn and child health services	-ART refill -Adherence to ART and PMTCT - Need for referral - Retention in PMTCT, maternal, newborn and child health services (motivators and barriers). -Progress of disclosure procedure

Despite the contribution of DSD models in improving ART uptake by pregnant and breastfeeding women, and children in Cameroon, from 76% in 2016 to 90% in 2017, their implementation experienced draw backs which are presented in **table 2**.

Table 2: Challenges encountered in the implementation of DSD for prevention of vertical transmission of HIV and best practices in Cameroon.

Challenges and demonstrable impact on the DSD program	Best Practices
Little stakeholder commitment in the DSD program for HIV *Low confidence and awareness about the models in the country. *Health facilities provide less intensive DSD models	- The President Emergency Fund for AIDS Relief (PEPFAR) scaled up HIV care package at the 307 highest volume clinical sites to achieve 90% ART coverage nationwide by 2022. This included active linkage activities like extension of DSD models, use of satellite sites to decentralize drug distribution, improved management of advanced HIV disease; and active patient tracking.
Lack of national policies and SOPs for DSD implementation in the country *No policy for group models of DSD for HIV treatment	-DSD models scaled up in all PEPFAR supported sites by leveraging on peer mentorship and expert client and mother mentors' programs. The use of polyvalent community relay agents to work with patients facing issues impacting retention, including mental health conditions and relationship problems were also expanded.
The COVID-19 Pandemic * Reduction in facility visits by pregnant and breastfeeding women and children. *Restriction of community case finding and follow up activities.	- COVID-19 restrictions facilitated the scale up of multi-month dispensing of ART across Cameroon, resulting in 56% of all patients receiving 3+ month dispensation and 3% of patients receiving 6-month dispensation by the end of 2020.
Funding constraints *Many rural communities still have gaps in the PMTCT program.	- The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) provided direct financial support and technical assistance, through private donor funding, to Cameroon Baptist Convention Health Services to enhance PMTCT services in the West, North West, and South West Regions.
Insufficient availability of ARVs *Community ART dispensation through CBOs, family/home dispensation, and client-managed groups was limited.	- EGPAF supported 190 health facilities in the country to provide high-quality, comprehensive HIV and AIDS services to women, children, and families.
Insufficient training of health workers * Inadequate knowledge about DSD models	-The DSD online course was taken by some Cameroonian HCWs who gained knowledge on the various models.
Poor accountability and follow up *Difficulty in identifying loss to follow up women and evaluating the effectiveness of DSD in PMTCT.	- PMTCT cohort monitoring which improved retention of pregnant and breastfeeding women on ART, has been expanded to all PEPFAR supported sites in the 10 regions. Cohort monitoring tools and SOPs were produced to monitor outcomes for HIV-exposed infants and the mother-baby pair on ART and service providers were trained on their use.
Limited integration of comorbidity management services in ART * TB case identification, diagnosis and treatment remain suboptimal, especially for pregnant women and children.	- TB clinical units have been strengthened to offer systematic HIV testing to all TB patients and refer positive cases for ART initiation. -Capacity building training to offer integrated TB/HIV services using a ""one-stop shop model". - A symptom checklist was set up and used to screen for opportunistic infections) during clinics and home visits.
Lack of time and stigma * Barriers to compliance, retention and sustained viral suppression. *Shift from maternal and child services and HIV services to longer-term care result in some patients being lost to follow-up.	-ANC and maternity and pediatric HCWs organize therapeutic education sessions and adherence counseling for HIV-positive pregnant women and infected children at sites according to national guidelines. - Linkage and retention case managers strengthened community-facility linkages through active defaulter tracking programs, home visits, and psychosocial support group programs.
National Conflict in the North West and South West Regions *PMTCT delivery packages at health facilities were ineffective and follow up of women on ART in affected areas is challenging.	-Community care card to facilitate pregnant and breastfeeding women receiving services and ART refills at different facilities; 6month drug supplies for displaced and hard to reach women. - Mobile community clinics working in hide outs and bushes.

3. Lessons learned

Lessons learned from the implementation of DSD in eliminating vertical transmission of HIV in Cameroon included:

- ✓ Multi-sector collaboration and community participation are important for successful integration of DSD models in PMTCT.
- ✓ Decentralization of points of care reduces turnaround time and accelerates early management.
- ✓ Proper training of healthcare providers is pivotal for high uptake of HIV care services.
- ✓ Electronic communication channels ease patient-healthcare provider interaction during health and national crises.
- ✓ Appointment spacing and fast-track drug refills save costs, reduce clinical visits and staff workloads.
- ✓ Continuous monitoring and evaluation is essential to identify bottle necks and best practices.

4. Conclusion

Differentiated service delivery helps address PMTCT barriers by bringing services closer to where women and children live.

In order to eliminate new HIV infections among children by 2030 and improve maternal health in HIV, programmers and policy makers should build upon actionable strategies like DSD models that will consolidate the gains earned by PMTCT programs and help avoid reversals in progress already made.

5. References

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