**Reasons for new paediatric HIV infections: findings from a cohort of HIV infected children screened at Harare Family Care Clinical Research Site.**

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**Background**: While the Zimbabwe national ART role out program has reduced mother to child transmission (MTCT) rates of HIV from more than 25000 new infections per year in 1996 to less than 5000 new infection per year in 2017, the country is still to achieve the <5% targets for elimination of mother to child transmission of HIV(eMTCT). To achieve these minimum eMTCT targets, it is acknowledged that effective implementation of the eMTCT agenda requires interventions beyond biomedical approaches as socioeconomic and psychological factors also play a role. There is need to strengthen PMTCT services by shifting to a case finding, response and elimination approach.

We set out to identify reasons for new pediatric HIV infections in children screened for possible enrolment into IMPAACT protocols at Harare Family Care Clinical Research Site (HFC CRS) from 2014- 2017. For all HIV infected children screened at the CRS, baseline background sociodemographic, pregnancy and birth and developmental history is routinely collected.

Data was abstracted from charts of children 0-3years screened at the CRS during the period Jan 2014 and July 2018 using a structured tool. This data included socio-demographics, pregnancy and birth history, PMTCT and child development history. Data was captured and analysed using EPI INFO version 7.2.2.1.

**Results:** 40 participant charts were reviewed. The mothers’ age range was 19-41yrs (median 25.5years). Children age range at the first HIV positive test was 0-38 months (median 11.5months). 17/40 of the mothers (42%) attended at least one ante-natal (ANC) visit of which 14 of these registered during the third trimester.

22 children whose mothers were HIV negative at delivery acquired HIV during breastfeeding. After the first negative HIV test, repeat testing was not done for 17/22 mothers. Five mothers had repeat HIV testing done regularly during breastfeeding but by the time they got a positive HIV diagnosis, their infants had already acquired HIV infection.

12 infants whose mothers did not access antenatal care services had evidence of in utero transmission. These women could not afford to pay the required ANC registration fees.

6 mothers who were HIV infected at the time of ANC registration had infants who acquired HIV infection (Four mother infant pairs were not adherent to their ART regimens, 1 opted out of PMTCT procedures, 1 never started ART).

Condoms use was reported by 1/40(2%) during pregnancy and 0/40 during breastfeeding. Only 4/40 male partners were involved in clinic visits at some point during pregnancy and breastfeeding.

**Conclusions: 55% of the new paediatric infections occurred in infants born to women who were HIV uninfected at first contact with a health facility (during pregnancy or delivery). Strengthening serial testing algorithms as well as HIV prevention packages like providing pre-exposure prophylaxis for women at high risk of HIV infection may avert these infections. Making ANC services free may help averting new HIV infections in infants born women who fail to access PMTCT services due to unaffordable user fees.** Offering comprehensive ART adherence support to mothers known to be HIV infected during pregnancy and/or breastfeeding is also very important.