Title: Assessment of outcomes of HIV-exposed infants enrolled in prention of mother to child transmission (PMTCT) of HIV follow up care in Embu District, Kenya

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Abstract: HIV infection transmitted from an infected mother to her child during pregnancy, labour, delivery and breastfeeding is known as mother-to-child transmission (MTCT). HIV infection through this route has become a major killer of children globally. In Kenya, there were about 141,000 HIV- exposed infants in 2007 with 22,000 of them getting HIV infected. Though the PMTCT services have been at the forefront of HIV prevention among HIV -exposed infants since 1998, outcomes of these infants in Kenya are rarely documented. This leaves an important PMTCT intervention aimed at eliminating peadiatric HIV largely unmeasured. The purpose of this study was to therefore establish the outcomes achieved among HIV -exposed infants enrolled in the PMTCT as a way of evaluating the efficacy of the program in Embu District. This was done through a descriptive retrospective study by reviewing HIV -exposed infants' registers in four health facilities in Embu District. The study population comprised HIV -exposed infants enrolled in PMTCT follow-up care in the district. Descriptive statistics used were proportions of HIV -exposed infants who received antiretroviral drugs for PMTCT, underwent early infant diagnosis of HIV, were HIV -positive, were lost-to-follow-up and were deceased. Analytic statistics calculated were the relative risk (RR) of HIV transmission and the RR of mortality associated with antiretroviral prophylaxis for PMTCT. The RR of loss-to-follow up among the infants associated with their HIV status was also calculated. The study found that the median infant age of enrolment into the follow-up care was 7 weeks. The uptake rate of infant and maternal antiretroviral prophylaxis was 8l. 7% and 86.8% respectively. Some 87.7% of the HIV -exposed infants underwent the first early infant diagnosis test for HIV at a median age of 8 weeks. The percentage of HIV -exposed infants who had early infant diagnosis of HIV conducted within the recommended six weeks of age was only 32%, while those who had it conducted by 12 weeks of age was 56% . Only 11.5% of the HIV -positive infants were put on paediatric highly active antiretroviral therapy (HAART) during the period of follow-up. The HIV transmission rate, when the first early infant diagnosis test for HIV was conducted, was 7%. For those infants whose mothers received antiretroviral prophylaxis for PMTCT, HIV transmission was reduced by 92% compared to those who did not (RR [95% CI] 0.08[0.03-0.14]). The cumulative HIV transmission rate at the end of follow-up was 7.3%. For those HIV-exposed infants who received ARV prophylaxis at birth, HIV transmission reduced by 90% by the end of follow-up compared to those who did not receive (RR [95% CI] 0.096 [0.087-0.109]). Cumulative infant mortality rate by the end of the 18-month follow-up was 14.8%; the median time of death' was 4 months. Although not statistically significant, there was a 54% mortality reduction among HIV- exposed who received ARV prophylaxis compared to those who did not (RR [95% CI] 0.46 [0.13-1.09]). HIV -exposed and infected infants had 53.8% mortality compared to a lower 13.1 % mortality rate among the HIV -exposed but negative infants. Cumulative loss-to-follow-up rate among the HIV-exposed infants was 14.8%. HIV-exposed and infected infants were 14 times more likely to be lost to follow-up than those who were uninfected (RR [95% CI] 14.0 [2.4-18.9]). The 18-month HIV -free survival was 68%. These results show that the PMTCT program in Embu District reduced mother-to-child

transmission of HIV and improved the HIV-free survival of the HIV-exposed infants. However, late enrolment of the infants, delay in conducting early infant diagnosis of HIV, poor uptake of peadiatric HAART and loss-to-follow-up posed a threat to successful program implementation. The study recommends measures to facilitate early conduction of infant HIV virologic diagnosis, eliminate missed opportunities in ARV prophylaxis for PMTCT, further reduce MTCT, improve peadiatric HAART uptake and reduce the high loss-to-follow-up.