Taking Malawi's option B+ programme from a B+ to an A+

Published Online
November 19, 2018
http://dx.doi.org/10.1016/
S2352-3018(18)30320-5
See Articles page e688

In *The Lancet HIV*, Beth A Tippett Barr and colleagues[1] present national estimates of early mother-to-child transmission (MTCT) of HIV and factors associated with early MTCT from the National Evaluation of Malawi's Prevention of MTCT Program (NEMAPP) for the period 2014–16. Among HIV-exposed infants aged 4–12 weeks, the MTCT rate was 3·7% (95% CI 2·3–6·0) and consistent across all four subnational regions. A somewhat lower prevalence was observed among infants aged 4–7 weeks than among those aged 8–12 weeks (2·9% *vs* 5·2%; p=0·07). As expected, the mother's antiretroviral therapy (ART) status during pregnancy was strongly associated with MTCT prevalence: it was 2·3% (95% CI 1·3–4·0) among those who were on ART during pregnancy compared with 19·6% (14·3–26·3) among those who were not on ART (p<0·0001).

Malawi pioneered its prevention of MTCT option B+ programme in late 2011 in response to the poor results of a CD4-based programme that was hindered by delays in ART access.[2] Option B+ was designed for simplicity and impact, offering all pregnant and breastfeeding women free lifelong ART at diagnosis, regardless of CD4 count or clinical stage. Although no nationally representative estimates of early MTCT were available before the introduction of option B+, comparable estimates from immunisation settings were considerably higher and varied by region.[3] Thus, this nationally representative study suggests a substantial decline in the prevalence of early MTCT 3–5 years after option B+ was introduced.

NEMAPP has several important strengths. First, it is national in scope and uses a rigorous sampling method to obtain nationally and subnationally representative estimates. Second, mothers were recruited in under-5 vaccination and outpatient sick-child clinics, which are settings with near universal attendance in Malawi.[4] Third, the authors assessed actual infant HIV infection, and not an intermediate maternal outcome or proxy. Together, these strengths resulted in the first national estimates of early MTCT under option B+.

Although NEMAPP provides better estimates of early MTCT than do routine programme data, missing data are the study's weakness. Non-participants include mothers who declined participation, were too sick to present, or were not engaged in the health-care system, as well as infants who died before clinic attendance. Although these groups might be small, they are all at higher risk of early MTCT than those who participated, suggesting that a transmission rate of 3·7% might be an underestimate.

Tippett Barr and colleagues' study highlights three sets of challenges that need to be addressed to further reduce the prevalence of early MTCT. First, of the 99 MTCT cases observed in the raw data, 52 occurred in infants whose mothers were on ART during pregnancy, suggesting challenges associated with maternal ART retention and adherence. Several barriers related to the mothers, their partners, and their communities and environments might contribute to these behaviours, and several promising evidence-based interventions are available to address them.[5–8]

Second, there are challenges associated with maternal HIV acquisition during pregnancy and breastfeeding. High rates of early MTCT were observed among infants whose mothers' self-reported HIV status during pregnancy was negative (weighted proportion 20·9%, 95% CI 12·0–33·8), suggesting that some mothers are being infected during the peripartum period. Several prevention approaches exist for reducing HIV acquisition among pregnant and breastfeeding women, including pre-exposure prophylaxis,[9] repeat couple testing to identify HIV-discordant couples,[10] and testing and treating HIV-infected men in the general population to reduce ongoing heterosexual transmission.[11]

Third, there are challenges in identifying HIV-exposed infants and engaging them in care. Less than half of HIV-exposed infants in the analysis were enrolled in an exposed infant care clinic at the time of study screening, despite presenting to a health facility. This finding underscores the need to strengthen the infant steps of the prevention of MTCT cascade. Integration of routine maternal retesting and point-of-care, early infant diagnosis procedures into immunisation clinics are promising steps for rapidly identifying those in need of services.[12,13] Similar improvements in Malawi's antenatal programme, including integration of routine maternal testing and elimination of laboratory delays, have been integral to the success of option B+ along the early steps of the prevention of MTCT cascade.

This study shows that the prevalence of early vertical transmission under Malawi's option B+ programme was low only a few years after it was introduced. To achieve further declines, attention needs to be paid to HIV-infected women who experience challenges along the ART cascade, uninfected women who are at the highest risk of HIV acquisition, and HIV-exposed infants in need of care. These steps are important for Malawi and other high-prevalence settings that have followed Malawi's lead in adopting option B+.

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NER is supported, in part, by the National Institute of Health through grants R00 MH104154 and P30 AI50410. The funder had no part in the writing of this manuscript or in the decision to submit for publication. We declare no competing interests.

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