## Societal cost of the Mother-to-Child transmission of HIV/AIDS in Ethiopia: Urban high HIV prevalence versus rural low HIV prevalence settings

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**Background**: Societal costing plays a critical role to inform health care policy and program decisions, and facilitate the effort towards new HIV infection elimination and universal health coverage. However, in low income countries, like Ethiopia, there was no satisfactory costing data from health care system, patient and societal perspectives. This study assesses the societal cost of mother-to-child transmission of HIV/AIDS across the HIV prevalence heterogeneous (high, low) and urban-rural contexts.

**Methods:** Health care system cost, patient direct medical and direct non-medical expenses were considered for the societal perspective. Health service provider ingredient costing was collected from twelve health facilities in Ethiopia. Six health facilities with the highest HIV prevalence among pregnant women (8.1% to 17.3%) were chosen in urban setting, and six health facilities with the lowest prevalence rate (0.0% to 0.1%) were surveyed from the rural setting. Simultaneously, patient cost data were collected from 85 HIV positive pregnant women attending the surveyed health facilities, 17 Mother Support Groups (MSGs) and 12 health care professionals. The unit cost per pregnant women-infant per year was reported in 2014 base year, adjusted at 3% discount rate and adjusted inflation.

**Findings:** The societal cost per pregnant women-infant per year (PPY) ranged from 5832.80 ETB (296.53 USD) to 24,054.56 ETB (1222.88 USD) in rural low HIV prevalence and urban high HIV prevalence settings, respectively. Health care system cost comprised of 74% - 90% of the unit cost. Direct medical and non-medical cost contributed for 7 - 17% of the cost (per PPY). Nationally, in rural low HIV prevalence catchment and with the current 57% service coverage, the societal total cost was 3.35 million USD. In urban high HIV prevalence setting, the society incurred 7.3 million USD at the base year. At the universal coverage aiming to reach all those who need the treatment, the society would incur 12.82 million USD and 5.88 million USD in urban high HIV prevalence and rural low HIV prevalence settings, respectively.

**Conclusion**: The societal unit cost varied across HIV heterogeneity and urban-rural contexts. The society in urban high HIV prevalence would incur a high cost as compared to low HIV prevalence rural population. In the current momentum to eliminate new HIV infection, it is vital to analysis the wider societal perspective costing so as to inform health care priority decisions, as well as to conduct a robust cost effectiveness analysis.