**Appendix S2**. Equation used to calculate HIV prevalence in children. PMTCT is Prevention of Mother to Child Transmission.

**HIV PrevChild = (PrevPMTCT \* TRPMTCT) + (Prev Non-PMTCT \* TRNonPMTCT) + ((Prev HIV+ -(PrevPMTCT \* TRPMTCT) - (Prev Non-PMTCT \* TRNonPMTCT))\* TRbf)**

Where:

HIV PrevChild = HIV prevalence in children < 5

PrevPMTCT = Prevalence of HIV+ pregnant women participating in PMTCT (Based on prevalence of HIV+ women receiving ante-natal care, DHS, 2009)

TRPMTCT = Transmission rate from mothers receiving PMTCT (Hellen Muttai, personal communication, July 22, 2011)

Prev Non-PMTCT = Prevalence of HIV+ pregnant women not participating in PMTCT; (1- PrevPMTCT)

TR Non-PMTCT = Transmission rate from mothers not participating in PMTCT (*46*)

Prev HIV+ = Prevalence of HIV+ pregnant women (*47*)

TRbf = Transmission rate from breastfeeding (*48*)