

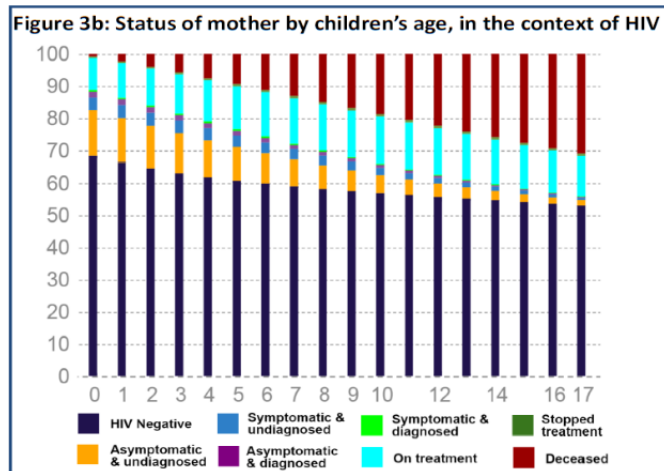
Report Highlights:

Modeling the impact of HIV on affected children

In order to more accurately identify the long-term consequences of the HIV epidemic for children in this and subsequent generations, the PEPFAR Orphans and Vulnerable Children Technical Working group, in partnership with Management Sciences for Health and the Human Sciences Research Council, undertook a three-phase project to create a model that predicts long-term negative outcomes for children affected by HIV using the best evidence available.

The results are now complete and include a full reportⁱ as well as a model to predict long-term risks and costs of inaction in the lives of children affected by adult HIV/AIDS. To simplify interpretation the results presented are for a single age cohort of women and their children^{lii}. The results presented are for a high prevalence context, with high levels of treatment. The following negative outcomes were modelled for children, based on their mothers' state of health (uninfected, HIV+ but asymptomatic, symptomatic, on treatment or deceased):

Some highlights of the modeling results are:



The majority of HIV-state changes for women – infection, diagnosis, occurrence of symptoms, uptake of treatment and AIDS-associated death – occur when women are between the ages of 15 and 45. This is also the peak period for reproduction and child rearing. The status of children's mothers, by children's age, is shown in Figure 3b from the report. In the HIV scenario, 16% of children will, by age 18, be orphaned as a result of HIV and AIDS. Although their mother is still alive when they reach 18, a further 19% will be affected by maternal HIV during their childhood. **In total 35% of all children will be affected by maternal HIV in some way.**

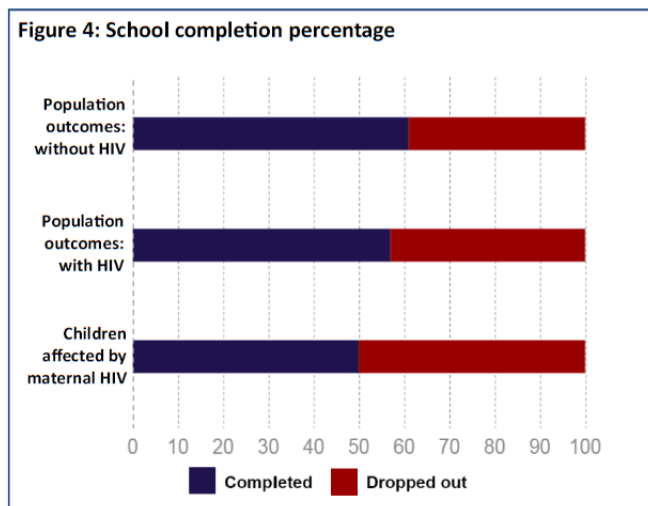
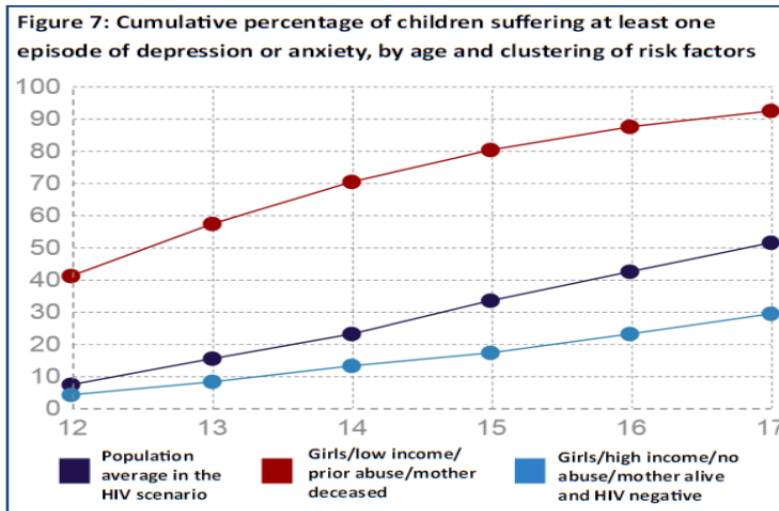


Figure 4 from the report depicts the estimates of the impact of maternal HIV on school completion. In the scenario with no HIV, 61% of children graduate from high-school. When HIV is present the population level completion rate falls by 4% points to 57%. **Population changes are significant. If South Africa had a 4 percentage point change it would imply 40,000 fewer graduates per annum.** Sub-groups of children affected by maternal HIV such as those whose mother's die earlier in life, have yet lower graduation rates.

Similarly, the report shows (see Figure 5 in the full summary) the percentages of children who experience at least one episode of depression and/or anxiety symptoms before they reach 18 years of age. *HIV leads to a noticeable difference in depression and anxiety at the population level. Compared to the no-HIV scenario, children affected by maternal HIV have a 10 % higher incidence of ever having an episode.*



The modeling efforts also point to the way risks accumulate in the life of a child affected by AIDS.

Figure 7 from the report demonstrates how these risks are unevenly spread and is an example of the cumulative risk of suffering at least one episode of depression or anxiety among a sub-population of girls living in a low income family, who have previously suffered abuse and have lost their mother, in comparison to girls without these adversities and all children in the HIV scenario.

SOME POLICY IMPLICATIONS

- In high prevalence settings a large proportion of children are at increased risk of adverse outcomes as a result of adult HIV (35% in our scenario).
- Because the entry and progression of adults through the HIV states is ongoing, interventions are needed to reduce risk at the population level requiring extensive coverage.
- Given the seriousness of the outcomes for altering life trajectories, and the consequent potential for long-term suffering, including in the subsequent generation of children, intensive interventions for mitigation will likely be needed.
- Risks associated with maternal HIV related ill-health are likely to concentrate in the first decade of life which is also when experience of adverse events is most likely to have long-term implications. Given this distribution of risk, supportive interventions should be targeted to affected families with young children.
- Longitudinal data is needed, beginning with children born into affected families, and children of all ages living with adults on treatment.

The adults of the future are shaped by the childhoods of today. Early childhood lays the foundation, and mid and late childhood determine the opportunities and barriers to reaching the potential embodied in that foundation. In adulthood the costs and rewards of these formative periods are realized. When an adult on whom a child relies is HIV positive, that child's risk of enduring adverse experiences increases. This modeling exercise contributes to understanding how risk environments in these contexts are shaped and where the potential to intervene lies, but further work is required.

ⁱ Consequences of Adult HIV for Affected Children: Modeling the Impact (September 2014) is now available (www.OVCSupport.net).

ⁱⁱ The estimates of the risk of negative outcomes are primarily derived from the Young Carers dataset (www.youngcarers.org.za).