

Pediatric HIV in Mozambique

Results from an Application of the Pediatric HIV Transition Model

HP+ POLICY *Brief*

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HIV among Children, Adolescents, and Young Adults in Mozambique

In recent years, Mozambique has made progress in reducing HIV prevalence in young populations; HIV prevalence among young people ages 15–24 decreased from an estimated 7.9 percent in 2009 to 6.9 percent in 2015 (MISAU et al., 2015). The government of Mozambique, with support from the U.S. President’s Emergency Fund for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis, and Malaria, significantly increased the number of children and adolescents that were identified as living with HIV and receiving antiretroviral therapy (ART) in this timeframe. For example, the number of children ages 0–14 on ART more than doubled from 2013 to 2017, resulting in pediatric ART coverage increasing from 36 to 52 percent (PEPFAR, 2017).

Despite these gains, immense challenges remain. Young women have a higher HIV prevalence rate than that of young men and are at higher risk of HIV infection due to biological and social factors (Barker et al., 2016). Although ART coverage for children and adolescents has improved, coverage lags behind that of adults (PEPFAR, 2017). The customized care for children and their families that is needed to support ART adherence, retention, viral suppression, and general well-being has yet to be implemented at scale. As Mozambique continues to increase the number of young people that are on ART, more

Pediatric HIV Transition Model

What is it?

- A program planning tool to determine the number of youth ages 0–24 that are eligible for transition in care/specific services
- A tool that is meant to be used in conjunction with epidemiological models, such as the AIDS Impact Model (AIM)
- A tool that builds off AIM by providing more nuanced ART coverage estimates and other disaggregated estimates not available in AIM

How can it be used?

- ART target setting for young people ages 0–24 (can be adapted for other age groups)
- Transition planning for adolescent and/or adult care and treatment programs
- Estimating resource requirements
- Supply chain planning and antiretroviral forecasting

children and adolescents will “age up” and require different types of support.

To address the specific needs of children and adolescents living with HIV—including setting targets and making resource allocation decisions—disaggregated estimates of the number of people living with HIV and on ART is required. However,



this information does not exist in many countries, including Mozambique, due to lack of data and data quality issues. Current targets for ART in Mozambique do not consider the large range in estimates of the HIV population ages 0–24 nor recent trends in identifying people living with HIV, linking them to care, and retaining them in care. As a result, the U.S. Agency for International Development- (USAID) and PEPFAR-funded Health Policy Plus (HP+) project applied its Pediatric HIV Transition Model to project the number of children, adolescents, and young adults ages 0–24 living with HIV on ART—disaggregated by single-year age band, viral suppression, sex, parental status, and province—from 2018 to 2025 under two coverage scenarios:

1. Increases in coverage based on past trends in identification, linkage to care, and retention in care (*trends scenario*)
2. Increases in coverage in line with meeting global HIV targets (*target scenario*)

Adolescent HIV care and treatment in Mozambique is primarily provided through standard care and treatment facilities. However, some adolescents have access to adolescent-friendly clinics called *Servicios Amigos dos Adolescentes*, or SAAs—comprehensive, one-stop-shop facilities that are promoted by the government. The Mozambican government is also in the process of defining a package of services for adolescents and young people living with HIV, regardless of where they receive care. The package will take into account the different needs of adolescents who are pregnant and/or mothers and those who are responding well to treatment and virally suppressed versus those who are not. This modeling exercise estimates the number of young people by pregnancy/parental status and viral suppression to assist the government of Mozambique in estimating how many adolescents and young people will need specific HIV-related services in the coming years.

Methods and Data Sources

The Pediatric HIV Transition Model uses official, country-specific AIM files to estimate the number of people living with HIV ages 0–24. Program targets and programmatic data on HIV testing coverage, yield rates, rates of linkage to care, and retention rates are used to estimate the number of people ages 0–24 on ART each year.

In Mozambique, HP+ used provincial AIM files updated with 2017 data (version 5.63) to estimate the number of people living with HIV by age, sex, and province. HP+ used PEPFAR programmatic data from 2017 and 2018 to calculate coverage increases under the trends scenario. For this scenario, the number of infants under the age of one on ART are based on linear extrapolation of four years of trend data on early infant diagnosis, including how many infants were tested each year, the percentage of those tested that were identified as living with HIV, the percentage of those that were identified as living with HIV who were linked to care, and the percentage of those on ART who were retained in care after 12 months. For children, adolescents, and young adults ages 1–24, the numbers on ART each year were determined using baseline numbers on ART in 2017 and linear extrapolation of trends in HIV testing, HIV testing yields, numbers linked to ART, and numbers retained in care after 12 months of treatment. In this analysis, HP+ assumes ambitious increases in testing from 2018 to 2025, a decline in yield rates as more people are identified as living with HIV, and constant rates for retention in care.

Using data from the 2015 AIDS Indicator Survey, HP+ estimated the proportion of those on ART ages 15–24 who are carrying a second pregnancy or have at least two children by a single-year age band. Due to the small sample size of HIV-positive adolescents in the survey, model assumptions are for youth ages 15–24, regardless of HIV status. HP+ estimated the proportion of those on

ART who are virally suppressed using 2017 PEPFAR data.

Results

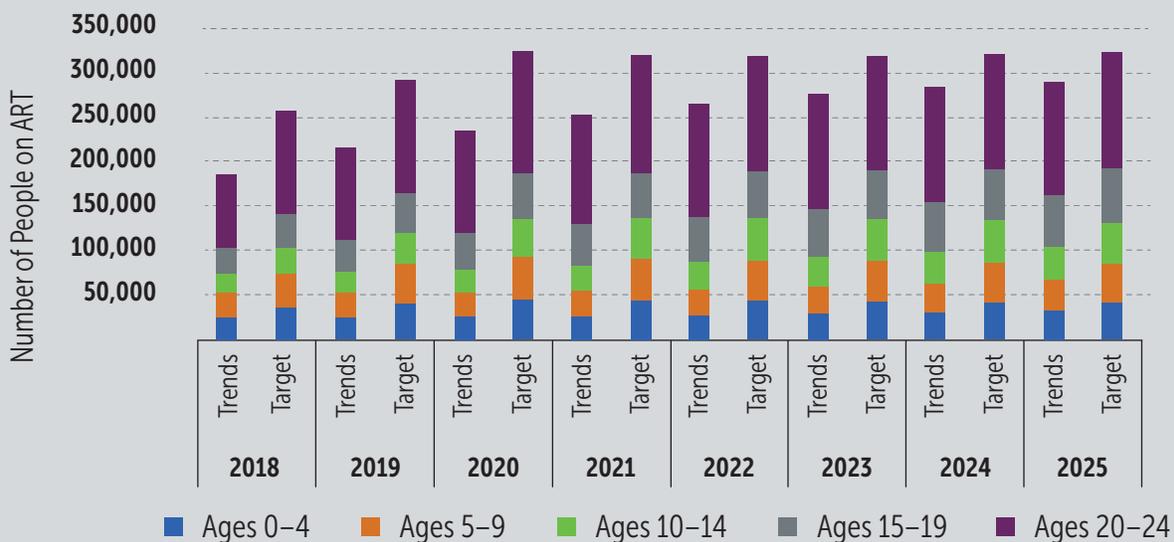
How many people ages 0–24 will be on ART from 2018 to 2024 in both scenarios?

The target scenario assumes that 81 percent of all people living with HIV will be on ART by 2020 and that 86 percent will be on ART by 2025, in line with reaching global 95-95-95 targets (95 percent of people living with HIV identified, 95 percent of those diagnosed on ART, and 95 percent of those on ART virally suppressed by 2030). Under this scenario, the numbers on ART are projected to increase from 256,774 in 2018 (a range based on underlying uncertainty in people living with HIV: 122,765–386,108) to 322,871 in 2025 (range: 181,439–491,935). Over half of youth ages 0–24 on ART are projected to be female (57–59 percent, depending on the year) in this scenario. Youth between the ages of 20 and 24 represent the largest proportion of 0–24-year-olds on ART (40–45 percent, depending on the year). The province of Zambezia has the highest number of youth ages 0–24 on ART

in this scenario: youth on ART in Zambezia is projected to increase from 13 percent of all youth on ART nationally in 2018 to 19 percent by 2025. This increase is a result of higher HIV prevalence and incidence in Zambezia compared to other provinces.

Under the trends scenario, the number of people ages 0–24 on ART is estimated to increase from 185,275 in 2018 to 288,967 in 2025, based on projections of trends in identification, linkage to, and retention in care (Figure 1). The results suggest that Mozambique will fall short of meeting its targets of ART coverage by 33,904 people, or 11 percent, by 2025. The majority of those ages 0–24 on ART under this scenario are projected to be female (64–65 percent, depending on the year). The number of 15–19-year-olds on ART is expected to double from 2018 to 2025, from 28,053 to 57,957. Still, by 2025, an estimated 44 percent of those ages 0–24 on ART are expected to be between the ages of 20 and 24. While Zambezia has the greatest number of 0–24-year-olds on ART in 2018, the provinces of Cabo Delgado and Gaza are projected to have the highest number of 0–24-year-olds on ART by 2025.

Figure 1. Number of People on ART by Age Band, Year, and Scenario



Source: HP+ calculations

How many girls and young women ages 15–24 will be eligible to participate in SAAJ?

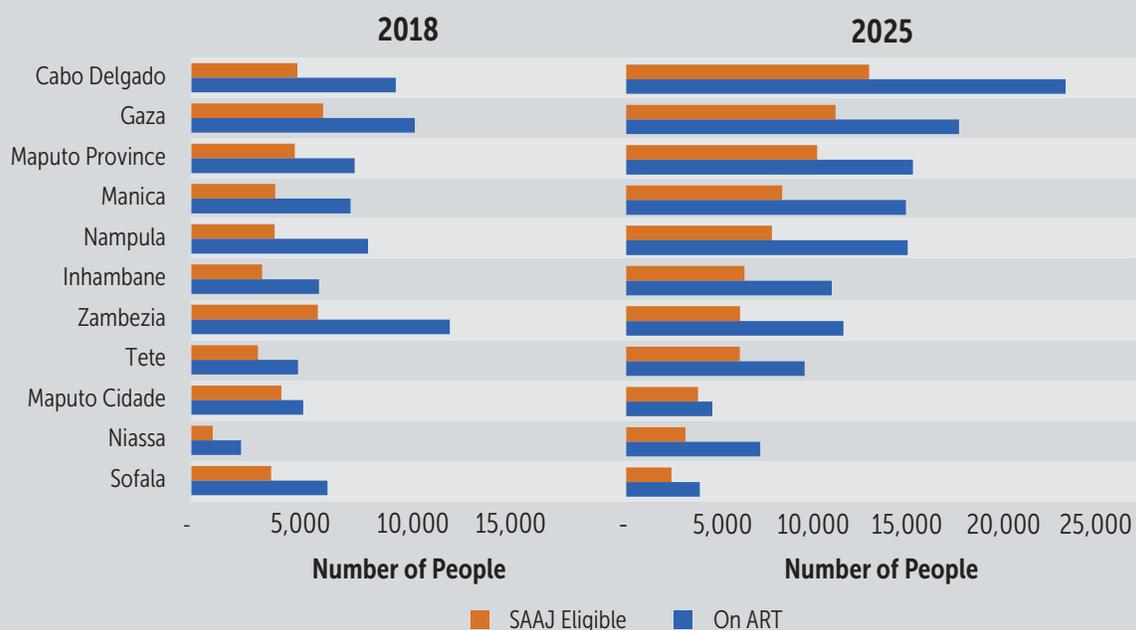
Girls and young women who have at least two children or are pregnant with their second child are usually ineligible to participate in SAAJ clinics. A small percentage of adolescents age 18 years and younger fall into this category (range: 0.3 percent for 15-year-olds to 12.1 percent for 18-year-olds, nationally). However, the proportion of older adolescents and young women with at least two children or who are pregnant with their second child is much higher; for example, two-thirds of 24-year-olds fall into this group. These rates also vary by province.

Assuming that these rates stay constant over time, the number of adolescent girls and young women ages 15–24 on ART who have at least two children or are pregnant with their second child is estimated to increase from 35,397 in 2018 to 55,978 in 2025 under the trends scenario. Overall, this means that just over half (56–58 percent) of all adolescent girls and young women ages 15–24 are expected to be eligible to participate in SAAJ clinics, depending on the year (Figure 2).

Key Findings from Model Application

- If the Mozambican government meets its ART coverage targets, 322,871 young people ages 0–24 are estimated to be on ART by 2025.
- Recent trends in identification, linkage to, and retention in care suggest that Mozambique may face challenges in meeting national ART coverage targets.
- Between 56 and 58 percent of all girls and young women ages 15–24 on ART are eligible to participate in SAAJ based on their parental/pregnancy status.
- If viral suppression rates by age remain constant, about half of all young people on ART are projected to be virally suppressed by 2025.

Figure 2. Number of Adolescent Girls and Young Women Ages 15–24 on ART versus Eligible to Participate in SAAJ, by Province and Year



Source: HP+ calculations under trends scenario.

How many people ages 0–24 on ART will be virally suppressed each year?

Viral suppression rates are lower among children and younger adolescents ages 0–14 than among people age 15 and older. Just 34 percent of children on ART under 10 years of age are estimated to be virally suppressed in Mozambique. Boys on ART ages 10–14 are less likely to be virally suppressed, compared to girls (34 percent versus 43 percent). Over half of people 15 and older on ART are virally suppressed (59 percent of women and 62

percent of men). Estimates by province are not available; therefore, HP+ assumes the same rates of viral suppression across provinces.

Assuming that viral suppression rates by age remain constant at baseline levels, the number of people ages 0–24 on ART who are virally suppressed is estimated to increase from 82,046 in 2018 to 147,703 in 2025 under the trends scenario. Zambezia accounts for the largest proportion of those who are on ART and virally suppressed in 2018 (15 percent of those ages 0–24), but by 2025, Cabo Delgado and Gaza have the largest numbers of this population (14 percent in each province) as these provinces have the largest numbers on ART (Table 1). As expected, 20–24-year-olds are projected to account for the largest proportion of 0–24-year-olds who are virally suppressed between 2018 and 2025.

Table 1. Youth Ages 0–24 Estimated to Be Virally Suppressed, by Province and Year

Province	2018	2025
Cabo Delgado	9,112 (53%)	21,217 (54%)
Gaza	11,890 (49%)	20,480 (50%)
Inhambane	6,180 (50%)	10,501 (52%)
Manica	8,447 (51%)	16,235 (53%)
Maputo City	6,492 (50%)	5,403 (50%)
Maputo Province	9,312 (48%)	16,511 (51%)
Nampula	9,498 (50%)	17,016 (50%)
Niassa	2,572 (50%)	8,003 (50%)
Sofala	8,435 (48%)	5,485 (48%)
Tete	6,123 (51%)	12,491 (51%)
Zambezia	14,424 (50%)	14,131 (50%)

Source: HP+ calculations under trends scenario

Note: Percentages show all people on ART ages 0–24 estimated to be virally suppressed

Conclusion

Key findings from the Pediatric HIV Transition Model application in Mozambique include the following takeaways:

- Mozambique may be able to rapidly increase ART coverage among children, adolescents, and young adults based on recent trends in identification, linkage to, and retention in care. However, this pace is not sufficient to meet global targets, assuming yield rates will decrease as more people are identified as living with HIV.
- It may be particularly difficult for Mozambique to reach global targets for children ages 0–14, as this population displays the biggest gap between those estimated to be on ART under the trends scenario compared to the target scenario.
- More than half (56–58 percent) of adolescent girls and young women ages 15–24 are estimated to be eligible to participate in SAAJ clinics under current practice.

- Even if viral suppression rates remain constant, the number of people ages 0–24 who are virally suppressed is estimated to increase by 50 percent, from 82,046 in 2018 to 147,703 in 2025, under the trends scenario due to significant increases in the number of people on ART.

These results can be used for ART target setting and planning for the introduction of a defined service package for adolescents and young adults living with HIV. Given the limited availability of SAAJ clinics and the rapidly increasing number of adolescents and young adults on ART in Mozambique, the country will need to consider how best to identify adolescents who would benefit the most from participation in an SAAJ clinic. As the Ministry of Health works to refine its recommended package of services for children, adolescents, and young adults, it would be beneficial to consider different needs by region, sex, age-band, parental status, and viral suppression status.

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