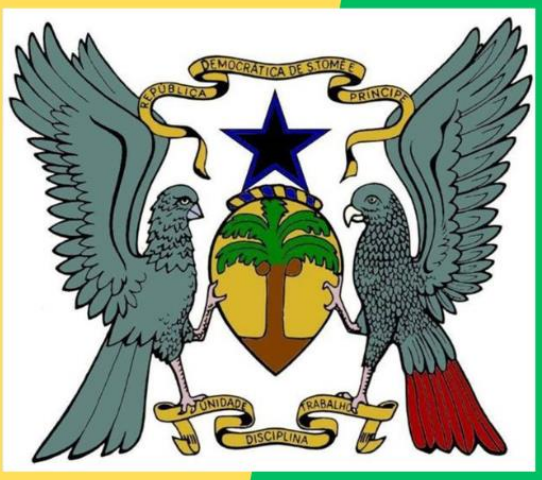


2023

São Tomé and Príncipe

# EMTCT ASSESSMENT REPORT

APRIL, 2023

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ANC | Antenatal Care |
| ARV | Antiretroviral |
| CSO | Civil Society Organization |
| EMTCT | Elimination of mother-to-child transmission |
| FP | Family Planning |
| GDP | Gross Domestic Product |
| GNP | Gross National Product |
| GFATM | Global Fund to Fight AIDS, Tuberculosis and Malaria |
| MCH | Maternal and Child Health Unit |
| MTCT | Mother to Child Transmission of HIV |
| MOH | Ministry of Health |
| HBV | Hepatitis B |
| HIV | Human Immunodeficiency Virus |
| PCR | Polymerase Chain Reaction |
| PLHIV | Persons living with HIV. |
| PMTCT | Prevention of Mother to Child Transmission of HIV & Congenital Syphilis. |
| SDG | Sustainable Development Goals |
| STIs | Sexually Transmitted Infections |
| TB | Tuberculosis |
| VCT | Voluntary Counseling and Testing |
| VH | Viral Hepatitis |
| UHC | Universal Health Coverage |
| UN | United Nations |
| UNC | Universal Health Coverage |
| UNAIDS | United Nations Programme on HIV and AIDS |

| | |
|---|---|
| UNDP | United Nations Development Programme |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations International Children's Emergency Fund |
| WHO | World Health Organization |

# 1. Introduction

Since 2011, globally countries are in the process of strengthening the primary prevention and treatment to advance towards the elimination of HIV, Syphilis and Hepatis B (EMTCT Plus) which is rooted within the Maternal and Child Health (MCH) Services. While the primary emphasis of all maternal and child service is to ensure quality people centered services for women and their children, the end goal to receive certification for the elimination of the mother-to-child transmission of HIV, syphilis, and hepatitis B. Given that the MCH platform is responsible for the primary prevention and treatment services of the three diseases that can cause significant maternal and child morbidity and mortality, and that these diseases can be identified during ANC and treated to prevent vertical transmission, it is imperative that the interventions are strengthened, and that ownership lies within this framework. Given the experiences and lessons learned from the EMTCT of HIV and syphilis, the elimination strategy for the mother-to-child transmission has been expanded to include Hepatitis B and is now referred to as EMTCT Plus.

Triple elimination is linked to various global commitments, one of which is Universal Health Coverage (UHC). UHC is the overarching goal of global action to address health inequalities. In 2015, the United Nations General Assembly adopted as one of the 17 sustainable development goals (SDGs), to ensure healthy lives and promote well-being for all at all ages (SDG3) and UHC as an SDG health target 3.8. UHC includes integrated care for pregnant women as an essential healthcare service and recommended (at least) eight antenatal care contacts. This comprehensive management of key necessary components of the care of pregnant women and their newborns includes the prevention of transmission of infectious diseases such as HIV, syphilis and hepatitis B. Over the past decade, WHO policy recommendations have increasingly integrated healthcare interventions to support person centered care. Beginning in 2016 at the regional level, WHO has worked to operationalize UHC in the context of integrated communicable disease prevention in order to bring together the elimination of mother-to-child transmission efforts for HIV, syphilis and hepatitis as part of a ‘triple elimination’ initiative.

In 2022 the World Health Assembly approved the Global Health Sector Strategy (GHSS) for HIV, Viral Hepatitis (VH) and STIs (2022-2030). The document provides guidance for the integration of services, including the EMTCT of HIV, syphilis and HBV within the MCH continuum of care and toward the elimination of all three diseases. Also, within the Global Guidance for the elimination of HIV, Syphilis and Hepatitis B, WHO has provided the criteria and tools for countries to be able to measure progress towards the elimination of mother-to-child transmission and for this elimination achievement to be validated.

**Global Criteria Standardized Criteria for the EMTCT of HIV, Syphilis and Hepatitis B**

The standardized criteria for the validation of EMTCT of HIV, syphilis and HBV must ensure:

- Achievement of EMTCT of HIV, syphilis and HBV in accordance with agreed upon minimum standards.
- Adequate coverage and quality of HIV, syphilis and HBV interventions (including immunizations) within MCH services, including postpartum follow-up of mother–infant pairs and exposed infants and young children through to the final diagnosis.

- Reliable national routine data collection and programme monitoring systems.
- Quality testing services, including quality-assured laboratory services.
- The promotion of quality HBV programming integrated with HIV and syphilis EMTCT efforts; o gender equality and the protection of human rights of women living with HIV or HBV.
- Meaningful involvement of communities of people living with HIV and HBV, particularly women, in programme design, monitoring and implementation.

In keeping in line with the global commitments, the Island of Sao Tome and Principe requested to the WHO country office an assessment of the EMTCT services which will detail the strategy, how it is implemented within MCH, integrated and is supported by other essential programs and services. The overall objectives are to detail the service provided and analyze the gaps and challenges and to develop a comprehensive plan which will seek to expand the primary prevention and treatment services within MCH. Interventions identified to address the gaps and challenges are expected to contribute to the development of a national plan. Interventions from the plan will be utilized to see funding from the Global Fund project which is currently under development.

Improving quality care for women, newborn and children is a priority for countries. Positive pregnancy outcome is a positive maker for the health situation of a country. While the country is seeking to advance with the elimination of the mother to child transmission of HIV and syphilis, the assessment also included hepatitis B. In addition, efforts were taken to include information on congenital abnormalities which collectively all contribute to the positive outcome of pregnancies.

## Methodology

The assessment was conducted during the period March 8-2023 and emphasized meetings with key departments and services within the Ministry of Health, discussions with key partners and civil society organizations to obtain a clear understanding of the primary prevention and treatment services that are implemented in Sao Tome and Principe for the elimination of the mother-to-child transmission of HIV, syphilis and hepatitis B. For ten days interviews and site visits were conducted and supported the analysis of the gaps and challenges identified. A desk review was also done which captures and details information and data, regarding the country's context, governance and the health system in general. This crucial information provides the overarching conditions and realities of which the EMTCT strategy is implemented in Sao Tome and Principe. Kindly refer to annex 1 with the list of sites visited and people interviewed.

The assessment report was completed utilizing the format for the development of national EMTCT report. This format supports the analysis of the criteria for EMTCT, as well as the essential services that must be available before a country can advance for EMTCT of any of the three diseases.

## Limitations

The limitation of time to conduct a comprehensive assessment, coupled with the availability of disaggregated data were two major challenges identified. Data collected from a previous mission (development of the new strategic plan for HIV/STI, VL &TB) were utilized for the assessment. Some of the data were triangulated, and some discrepancies were identified. The revised data following discussion with the team from the national HIV/STI, VL &TB program was utilized to

calculate the mandatory table detailed in table 1. However, there appears also to be some additional discrepancies and as a result, retrospective data collection is recommended. This will allow for accurate analysis of the data with the global targets for triple elimination.

The national surveillance system and the manner it functions to capture and report data from the national programs was not reviewed and analyzed. As it relates to the component for human rights, gender equality and community involvement, information was obtained through desk review and also factored into the analysis is the information provided by health care providers.

## 2. Country Context

### Demography

The Democratic Republic of Sao Tome and Principe is a former Portuguese colony and is a twin island country situated in the Gulf of Guinea, off the western equatorial coast of Central Africa. This African nation which also consists of several islets is close to the equator and is part of a volcanic chain featuring striking rock and coral formations, rain forests and beaches. Sao Tome is the Capita and is the larger of the two Islands and comprised of six other big cities which are Trindade, Guadalupe, Santana, Angolares, Neves and Santo Antonio, and Principe. With a total land area of approximately 1,001 square kilometers, the country is divided into six administrative districts.


São Tomé and Príncipe is the second smallest and second-least populous African sovereign state after Seychelles. The country is considered to have two seasons, the rainy season, and the dry season.

### Political

The Democratic Republic of São Tomé and Príncipe consists of a democratic parliamentary system. There is a governmental and parliamentarian election that takes place every four years which elects the Prime Minister and a Presidential election which occurs every five years. The President of São Tomé and Príncipe is the Head of State, and the Prime Minister is the Head of Government, a multi-party system. While the Island of Principe is under the overall administrative policy of the country, there is some degree of political and administrative autonomy to the municipality through the Autonomous Region of Principe (RAP).

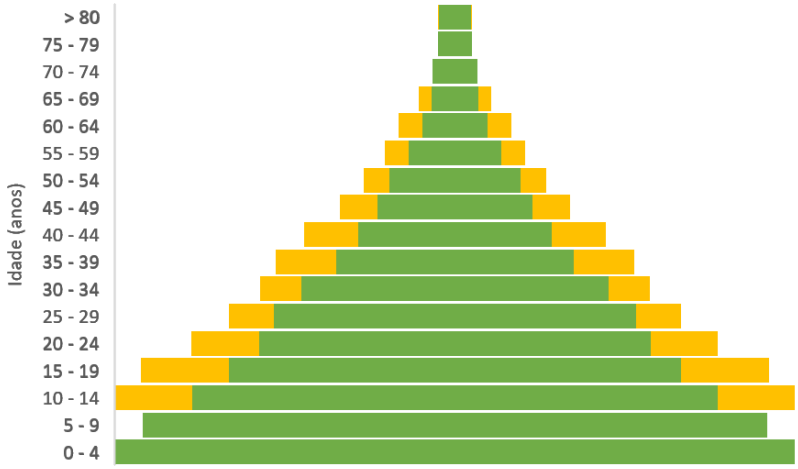
**Population**

The Portuguese speaking Island of Sao Tome has a population of approximately 210,240[1] of which most of the population approximately 80, 454[2] resides in the capital city which carries the same name of the country and is located on the south side of the Island. Approximately 50.5% of the population is female representing 110,606 and 108,472 (48.5%) are males. Most of Sao Tomeans live in urban areas which is approximately 149,640 or 68.3% of the total population[3].

The proportion of children below the age of 15 in 2020 was 35.5%, 61.2% was between 15 and 64 years of age, while 3.3% was 65 years or older[4].

The population of Sao Tome known a as São Toméan speaks four languages which are Portuguese (95%) which is the official language, Portuguese-based creoles Forro (85%), Angolar (3%) and Principense (0.1%)[5].

**Figure 1: Population Pyramid Sao Tome & Principe**




Source: INE, Sao Tome and Principe

The people of Sao Tome and Principe are predominantly of African and mestico decent with most approximately 55.7% Catholics. Other major religions include Adventist which constitutes

[1] National Institute of Statistics. Sao Tome & Princip. 2023

[2] National Institute of Statistics. Sao Tome and Principe. 2021

[3] National Health Development Plan. Ministry of Health, Sao Tome and Principe 2023-2033.

[4] World factbook, 2022.

[5] World Factbook 2022

approximately 4.1%, Evangelical 3.4% while others belong to some smaller religious group. Approximately 21.2% indicated that they do not identify with any religion[6].

**Economy**

The economy of São Tomé and Príncipe is based on agriculture which was rooted in cocoa plantations in the past. Despite the massive reductions in such plantations, cocoa remains a dominant crop which represents about 95% of the export market[7]. Other main products which contribute to the overall economy of the country includes Banana, coconuts, coffee, fish Palm kernels and timber. The remoteness of the Island increases the export cost, preventing the country from diversifying, and hence, more vulnerable to trade shocks[8]. "Economic growth over the past two decades has been spurred by agriculture, tourism, oil-fueled foreign direct investment, but mainly by government spending driven by foreign aid and government borrowing[9]". During the period 2010-2019, the GDP grew at a rate of 4%, but decreased by 3% between 2018 and 2019 as a result of "severe power cuts, government delays in paying local supplier and loss of domestic financing[10]". While COVID-19 has affected the country significantly, according to official data, the country's real GDP grew by 3.1% in 2020[11].

The unemployment rate in the country is 15.9% and is much higher among women than men which is 20% and 9% respectively[12]. Based on figures from the World Bank, approximately one third of the population lives on less than 1.90per day, a figure that is below the international poverty line. The population residing in the urban areas, as well as the southern and northern districts, have a higher level of poverty.

A household survey in 2017 indicates that 47% of the population is extremely poor and that the most vulnerable group are the head of households that are unemployed[13]. It is estimated that 14.3% of the average cost of health services is from households[14]. This situation has the potential to affect access to health care as it relates to the transportation cost and co-payment which are required for some services at the clinics and health posts.

The economic and development challenges the country faces are characteristics of small Island development states. Such challenges include high dependency on imports to support the national market. In addition, "the country's remoteness increases production, costs and its size and ability

[6] 2021. National Institute of Statistics, Government of Sao Tome and Principe.

[7] World factbook 2022

[8] 2022. United Nations Sustainable Development Cooperation Framework 2023-2027

[9] ibid

[10] ibid

[11] ibid

[12] National Health Development Plan. Ministry of Health Sao Tome and Principe. 2023-2033

[13] ibid.

[14] ibid

to reach production scales, curbs the diversification of its economy, making it more vulnerable to external shocks"[15].

The HDI (2021) categorizes the country as a medium development country with a ranking of 138 out of 191 countries and territories worldwide. As of December 2024, Sao Tome and Principe is expected to advance to a middle-income country which will have significant implication for the country[16]. During the period 1990-2021, the HDI of Sao Tome and Principe increased from 0.485 to 0.618, representing an increase of 27.4%[17].

The UN Agencies in Sao Tome coordinate and collaborate with the government on priority areas that are important for the growth and development of the country. To this end, the United Nation Cooperation Framework for Sustainable Development (2023-2027) was developed. The cooperation framework provides guidance for the planning and implementation of sustainable development interventions in the county is aligned with the principles of achieving the 2030 SDGs.

## 3. Description of the Health System

### Governance and Leadership

The Ministry of Health is responsible for the provision of health services to the general population. At the central level, the Ministry is responsible for establishing health plans, norms and protocols that respond to priority health conditions. The Directorate of Health is responsible for all the technical areas relating to health for the entire country while the administration is managed by the Head of the Administrative and Financial Department.

The health system in Sao Tome and Principe is divided into two distinct levels, which are the national and district levels. The central level includes the technical and administrative processes of the Ministry of Health. The Directorate of Health is responsible for sexual and reproductive health, Adolescent health, school health, oral and mental health, epidemiology department, pharmaceutical, as well as sanitation and environment departments. The National Center for Endemic Diseases which coordinates HIV/STIs, Viral hepatitis and TB, tropical and neglected diseases, as well as non-communicable diseases are also located at the central level, coupled with the overall administration of health which includes planning, finances and human resources for health, and health information system[18].

The district level is responsible for the provision of the services and the implementation of the plans and protocols, norms and standards which are established at the central level. This level is compromised also of the health care providers critical to meet the needs of the growing populations. Kindly see Figure 3 which details the health districts of Sao Tome and Principe.

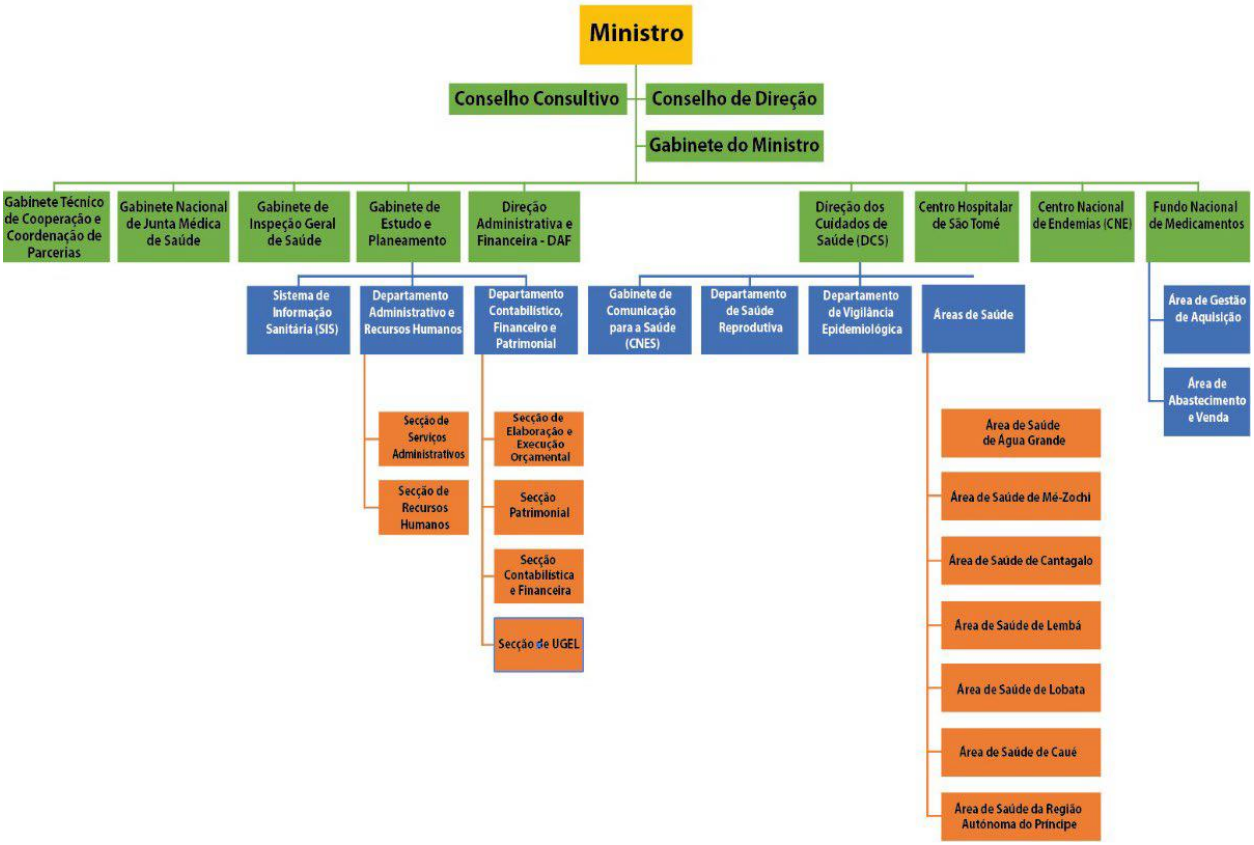
[15] United Nations Sustainable Development Cooperation Framework 2023-2027

[16] National Health Development Plan. Ministry of Health Sao Tome and Principe. 2023-2033

[17] National Health Development Plan. Ministry of Health Sao Tome and Principe. 2023-2033

[18] Organogram of the Ministry of Health Sao Tome and Principe. 2023

**Figure 2: Organogram of the Ministry of Health**




The ministry of Health has developed plans to support the strategic implementation of interventions to address priority health conditions. These include such as the National Health Development Plan, National Strategic Plan for HIV/STI, TB & Viral hepatitis, National plan for Sexual and Reproductive health, Maternal and Child & Adolescent Health, National Immunization plan among others.

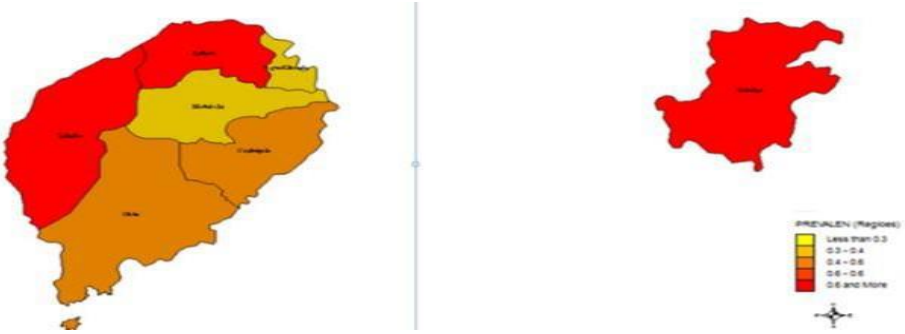
At the Central level the National Program for HIV/STI, Viral Hepatitis and TB and MCH are responsible for the integration of the primary prevention and treatment services within MCH services. The programs at the central level coordinate and collaborate to ensure the effective implementation of appropriate interventions at the district level within all the clinics. Collectively they establish the relevant norms, standards, protocols and policies, and as is necessary, organized training for the health care providers.

**Health Services and Programs relating to EMTCT.**

Health services are delivered by six health districts which have a network of health clinics and health posts on both Islands of Sao Tome and Principe. There are two hospitals Dr. Ayres de Menezes Hospital is the national referral hospital and Dr. Manuel Quaresma Dias de Graca is the regional hospital that are located on the Islands of Sao Tome and Principe respectively. The structure of the health service is to ensure basic and equitable access to health care for the general

population, while ensuring universal coverage. A survey which was conducted in 2008 regarding access to health services indicated an average, 95% of the population can walk approximately 30 minutes to access a health center or post in their district[19].

**Figure 3: Six Health Districts of Sao Tome and Principe**



Other health facilities consist of Community Health Posts (21), Health Posts (32), Health Centers (6, one per health district)[20] throughout the twin Islands. Primary care is the backbone of the health services and provides a wide variety of health care ranging from prevention and treatment of non-communicable diseases, communicable diseases, mental health, adolescent and reproductive health as well as antenatal care and child health services. Each program of health has a Focal Point at the district level which coordinates directly with each program Focal Point at the central level.

***Antenatal Care Services***

ANC service is provided by nurse midwives and includes screening every trimester for syphilis, hepatitis B, HIV, malaria and access to preventative malaria treatment and supplements. Data from the MICS (2020) reveals that approximately 98% of all pregnant women receive at least one prenatal consultation. While the package of ANC services said to be free, including the consultations at the clinics, there is a cost associated with some laboratory tests and medications for the pregnant woman. In some districts and clinics, there may be a cost associated with the access of ANC services. This cost may include co-payment for syphilis treatment among other pregnancy related tests. Some district clinics may support a payment plan to ensure access to the service by the pregnant woman. While the cost is small, this can have significant impact on pregnant women accessing the comprehensive package of services, including the tests for HIV, Syphilis, hepatitis B, malaria and access to preventative treatment and supplement. While the package of services should include HIV and syphilis, only HIV is currently provided as there are no rapid tests available for syphilis. Hepatitis B rapid test is no longer provided.

Given the priority of the Government to advance to the elimination of the mother-to-child transmission of HIV and syphilis (EMTCT of HIV and syphilis), at the health centers and post, based on the national protocol, there is a comprehensive package of services that are offered to all

[19] UNICEF MIC 2014

[20] National Health Development Plan. Ministry of Health, Sao Tome and Principe 2023-2033

pregnant women and children within maternal and Child health. Hepatitis B was later included as part of the comprehensive package of services supporting the advancement of the country to triple elimination (HIV, syphilis and hepatitis B). As a result, free testing was scaled up for and offered to all pregnant women the partner of the sero-positive woman and the exposed infants.

PMTCT services are decentralized at the districts within all MCH clinics. At the Central level there is a PMTCT Focal Point, and also one in each of the six districts. All HIV positive results for pregnant women at the clinics are forwarded to the HIV Focal Points who in turn sends the results to the Focal point at the Central level. The Focal points visits the hospitals or clinics to follow-up on cases and are expected to follow all the pregnant women who tested positive for HIV and the exposed infant after delivery. The functions of the Focal Points do not include the follow-up of the sero-positive syphilitic pregnant woman and the exposed infants. Information on the positive syphilis pregnant woman is not forwarded and the follow-up is not the same for exposed infant.

PMTCT commenced in 2005 with the introduction of ARVs to the country at national level. In 2007 the treatment, including the PMTCT of HIV was decentralized within MCH services with the primary prevention and treatment services occurring at the district levels. The package of services, at the initiation of the PMTCT for HIV included testing of all pregnant women at ANC and treatment of Lamivudine + Zidovudine + Nevirapine starting at 14 weeks gestation. The exposed infants were treated with Zidovudine, coupled with cotrimoxazole for 45 days with the provision of mix supplement. Syphilis was introduced into MCH services many years before HIV and continues to be included as a primary prevention service for pregnant women and the exposed infant.

All deliveries approximately 95%[21] occur within the main hospital on the Islands of Sao Tome and Principe. Approximately 96.8% of all deliveries are assisted by professional health care providers. Some clinics has a maternity center which provides uncomplicated deliveries for pregnant women, allowing for the mother to deliver closer to place of residents. A mother without any complications or health concerns may remain in such facilities for approximately two days.

***Prevention and Treatment for HIV/STI, Viral Hepatitis and TB***

Prevention services in the country include HIV testing and counseling, the mother-to-child transmission of HIV, syphilis & hepatitis B, and outreach services in collaboration with civil society organizations for key populations, etc. Pre-Expose Prophylaxis (PrEP) and HIV self-testing services are not currently implemented but are expected to with the financial support of the new Global fund project for the period 2024-2026.

The program for HIV/STI, Viral hepatitis and TB has established protocols and provided guidance to the implementation of the services at the district level based on WHO recommendations. Over the years the prevention and treatment services for HIV have strengthened. Treatment for persons with HIV commenced in 2005 thorough a cooperation with Laco-Sul and Brazil. It has transitioned from the provision of prophylaxis for women with HIV to the provision of Option B+. The country is advancing toward the use of Dolutegravir (DTG) since 2021 and has already transitioned many

[21] National Health Development Plan. Ministry of Health, Sao Tome and Principe 2023-2033

persons, including pediatric patients. The WHO policy to treat all persons tested for HIV immediately has been adopted and continues to be implemented.

Treatment for hepatitis C is currently not available in the country. All pregnant women who are tested positive for HBV receive the hepatitis B vaccine. Testing is done for other STIs, including syphilis based on clinical observation in the health centers.

***Sexual and Reproductive Health Services***

Maternal and Child Health are offered within the broader sexual and reproductive health services. At each of the clinics, family planning, with a range of contraceptive is available as well as other sexual and reproductive health services to all women. In each district there is a Focal Point for MCH and who works closely with the HIV Focal Point.

HIV positive women have access to a full package of SRHR services as well as family planning at the treatment sites. Access to sexual and reproductive health services are also available at the IPPF affiliates, ASPF. Sexual and reproductive health services are also available to adolescents without parental consent.

***Pediatric Unit***

There is a pediatric unit at the referral hospital that provides care for neonates with special conditions. Some of the services provided by the Unit are pediatric surgery including the treatment of various congenital abnormalities, gastroenterology, respiratory conditions, malnutrition, among others. In addition, prior to discharge from the hospital, all neonates are seen and examined by a doctor. The remodeled unit is staffed by general practitioners who dedicate their time to providing care for this target population. The unit has instituted a neonatal service registry to track and monitor care for children, including those with abnormalities. Currently exposed children with HIV and syphilis are not seen by the pediatric unit. All HIV exposed infants are seen at the primary care clinics at the treatment center. However, all HIV infants, if diagnosed with any special conditions are referred to the unit for treatment of HIV related condition. If a newborn has a reactive syphilis result, consideration should be given to referring to the pediatric unit for ongoing treatment and follow-up as per guidance.

***Immunization Program***

The Expanded Vaccination Program (EPI) commenced in 1977 with the support of WHO, UNICEF and GAVI. The program is part of the Sexual and Reproductive Health Program and is responsible for all childhood vaccination in the country as well as the roll out of COVID-19 vaccines. A Vaccination study in 2017 indicated that 96% of children aged 12-23 were vaccinated and approximately 93% received the 3rd dose of pentavalent. The MIC study in 2020 highlighted that approximately 65.9% of children had all of their vaccines by their first birthday[22].

Following a special pilot program where pregnant women were tested for hepatitis B in ANC; the services were officially rolled out allowing for all pregnant women to be tested and if positive were vaccinated accordingly. In 2016 the introduction of the universal birth dose was done and

[22] UNICEF MIC 2020

currently are newborn are vaccinated accordingly and subsequent dose provided based on the immunization schedule.

***Services for Adolescent and Youth Health***

There is a national adolescent and health policy and plan based on the WHO AH! Guidelines and recommendations. Services for adolescent health are provided in all clinics at the district level and access, depending on the age, does not require parental consent.

The analysis of the health of adolescents and youths in São Tomé and Príncipe reveals a lack of knowledge regarding sexuality and reproductive health, with early and unwanted pregnancies, unsafe abortions and their complications, early, unprotected sexual intercourse, often with multiple partners, sexually transmitted diseases (including HIV/AIDS and HPV infection). Problems in this age group are trauma, illicit and non-illicit drug use (alcohol and tobacco) and mental health problems and violence, including gender-based violence.

According to data from MICS 2020, 36.8% of adolescents have initiated sexual activity and 5.4% have done so before the age of 15. The Knowledge Attitudes and Practice study conducted in 2014 by UNICEF noted that the rate of condom use among adolescents was 40.6%, having increased to 61.7% in 2016 and 62.5% in 2019.18 These data indicate an improvement in knowledge and use of condoms in sexual relations, possibly a result of communication actions developed by various youth associations and NGOs, and the free availability of condoms in various places, including in schools.

***Multisectoral Coordination***

The National Endemic Center is the responsible arm of the Ministry of Health for HIV/STIs, Viral hepatitis and Tuberculosis programs. This program is responsible for establishing policies, norms and standards as it relates to the three diseases and is currently in the process of developing a multi-disease plan for the period 2023-2033 and which will also support the development of the new Global Fund Project. Since all four diseases are under one program, this facilitates the integration and coordination of the services at the national level as well as help to mainstream the services at the district levels.

The national program in its effort to eliminate the priority health conditions by 2030 (HIV/STIs, Viral Hepatitis B) among pregnant women and the general population works very closely with civil society organizations. These organizations include ASAPRASSEH, ANAPRASSEH Apoio a VHIDA (persons living with HIV) and ASPA-TB (TB support group) providing community and outreach services for persons living with HIV, TB and key populations including MSM, transgender and sex workers. Most of the civil society organizations are supporting the area of HIV prevention at the community level and includes HIV testing and to return to care those clients that are lost to follow-up. The organization of persons living with HIV also provides support to EMTCT by ensuring the follow-up to pregnant women who are positive with HIV.

The program also coordinates with the Country Coordinating Mechanism (CCM) in support of the global fund project for HIV, Malaria and TB. The program works closely with the CCM to support the development of new GF projects and the implementation of grant funding.

The program coordinates, collaborates and works very closely with MCH, ensuring that all protocols for the primary prevention and treatment services are integrated accordingly. The Focal Point for HIV in each districts works closely with the Focal Point for MCH clinics, follow-up and monitors the HIV positive woman post deliver to ensure she is accessing treatments and the exposed infants following delivery. The Focal Point for HIV also provides follow-up to the breastfeeding mother at the district level.

**Health Financing**

Funding for the public sector results from various sources such as government budget and by partners through grants. While there are some services that are free in the public health facilities, there are co-pays or out-of-pocket payments for patients, which may include some cost for MCH services (i.e., procurement of syphilis test, or other cost related to the pregnancy) women and children. Health care for diseases that are covered by programmes supported by external funding (notably communicable diseases), is completely free of charge[23].

The OGE is the general state budget which finances the national programs of health. OGE finance the human resources for the program through salaries, facilities, office supplies and copayment of some medications for women and children. The National programs are also financed by bilateral and multilateral partners. UN partners which include WHO, UNICEF and UNFPA provides financial support for medical pharmaceutical and supplies, while GAVI provides support for vaccines.

Funding for HIV, Malaria and tuberculosis is supported completely by the Global Fund. Approximately €11.6 million was allocated for the three health priorities for the period 2021-2023.

**Table 1. Health Financing by Partners and Government of Sao Tome and Principe**

| Partners | Total Planned Amount 2018-2022 (Euros) | Total Executed Amount 2018-2022 (Euros) | GAP/ DIFFERENCE |
|---|---|---|---|
| GLOBAL FUND | 4 188 720.45 | 1,420,954.62 | 2,759,863.81 |
| UNICEF | 327 788.78 | 251 860.95 | 75 927.83 |
| BRAZIL | 274 752.08 | 391 445.13 | -116 693.05 |
| GOVERNMENT | 633 620.37 | 79 323.33 | 554 297.04 |
| GAVI | 2,247.56 | 0.00 | 2,247.56 |
| UNFPA | 127 630.00 | 113 438.98 | 14 191.02 |

[23] 2023. National Health Development Plan. Ministry of Health Sao Tome and Principe.

| | | | |
|---|---|---|---|
| CARN-TB | 28 662.64 | 8,000.00 | 28 564.68 |
| HEALTH FOR ALL | 65 914.80 | 51 185.84 | 14,728.96 |
| WHO | 39 952.61 | 12 318.36 | 27 634.25 |
| | | | |
| Total ---------- | 5 689 289.29 | 2 328 527.21 | 3 360 762.10 |

Source: National Program for HIV/STI, Viral Hepatitis & TB

**Human Resources**

There is a national Human Resources for Health (HRH) plan which outlines the need to provide adequate and efficient health care works to meet the growing demand for priority health conditions. A study conducted in 2021 indicated that 1441 health professionals are providing services to the populace[24]. Gaps in HRH are provided through bilateral cooperation with other countries.

**Table 2: Human Resources for Health by Category[25]**

| Professional Category | 2019 | 2021 |
|---|---|---|
| Doctors | 107 | 107 |
| Nurses | 462 | 397 |
| Diagnostic and therapeutic technicians | 285 | 280 |
| Medical auxiliaries | 532 | 321 |
| Administrative | 122 | 164 |

Based on the recommendations from WHO, the ratio of doctors to nurses per 1000 inhabitants is less than recommended. This complement of HRH will have significant impact on universal health coverage and access to health services.

[24] Anuário Estatístico 2021

[25] National Health Development Plan. Ministry of Health, Sao Tome and Principe 2023-2033

**Procurement of Medications Laboratory commodities and supplies**

There are several processes to procure pharmaceuticals and medical supplies for the health system. The procurement system comprises of the FNM which is responsible for the procurement of all pharmaceuticals and supplies for the Ministry of health (clinics and hospitals). In addition to the medications that are procured for the general health services, there are multilateral partners that provide support for the procurement of medical supplies. These includes GAVI, Global Fund for HIV/TB & Malaria, UNICEF, UNFPA, and WHO. All requests for procurement are made by the national programs to the respective agencies.

UNFPA through its agreement with the country provides technical support for the quantification, forecasting and distribution of commodities, which includes contraceptives and other pharmaceuticals. The organization also procures HIV and syphilis rapid testing kits based on the request that is submitted from the country. The distribution of the kits to the various clinics is the responsibility of the MCH program. UNICEF also procures rapid test kits, DBS tests and pediatric solutions for HIV exposed infants through the national program.

***Stocks outs***

The country is currently experiencing stock-out of all the rapid testing kits for the three conditions, including DNA PCR for the exposed infant, a situation that may have been compounded by the pandemic. As a result of the stock-out in some health facilities, not all pregnant women are receiving the tests for HIV and syphilis. Benzathine Penicillin is also not widely used in the public clinic and if available, there is some co-payment at the clinic or for full cost at the private pharmacy.

***Public private partnership***

The private health sector is small and as a result most of the health care services are provided by the public health facility. There are two private clinics that provides consultations for pregnant women and children among others. Women access such consultations for various reasons including obtaining special diagnostics. The program (PNLS) collaborates with the private clinics and CSO, providing HIV test kits to those who access their services. If there is a positive result, the information and referral is made to the program. Health care providers such as obgyn and pediatricians also work at the public health facilities.

The PNLS coordinates, collaborates and supports the integration of the three diseases at the service level for areas such as TB and reproductive health services. The Ministry of Health, through the National Endemic Center, also partners with the international community which provides technical and financial support to national programs.

### *Vulnerable populations*

The vulnerable populations include isolated elderly, HIV patients, people with disability, including mental health, those living in hard-to-reach areas, teen mothers as well abandoned and orphan children[26].

### *Impact of COVID on the Health Services*

COVID has had a significant impact on the overall health system and the economy of the country. As a result of lock downs were characteristic of the country with the limited availability of all services, including health. Initially, all the health services were not accessible, but was later reopened. Essential services such as HIV and ANC were prioritized, and clients had access to testing and other consultations. While pregnant women accessed ANC services, the number of visits were definitely reduced as the fear on getting COVID was evident despite the measures that the country put in place to mitigate transmission in all facilities.

The pandemic has also delayed the procurement and the shipment of the commodities and other medications to the country.

### *Basic Health Indicators, Sao Tome and Principe*

The average life expectancy of Sao Tomeans is 69. Between 2019 and 2021 the average life expectancy of is increased by 6.1 years. The average years of school attendance also increased by 1.9 years[27]. Based on the most recent data from UNICEF, the under five mortality rate is 16 per 1,000 live births[28]. The fertility rate for girls 15-19 years is 33/1000 or 177/1000 for those in the upper and poorest quintile respectively.

## 4. Epidemiological Profile of HIV and Syphilis

### *HIV and Syphilis prevalence in the general population*

The prevalence of HIV in Sao Tome continues to be very low. Based on the MIC study (2014), the prevalence for HIV in general population was 0.5[29]. The age group mostly affected is from ages 30-49 years and those over 65 years old, representing a total of 76%[30]. The HIV response in Sao Tome and Principe commenced in 1988 with the surveillance and monitoring of the response started in 2005 with the introduction of ARVs. Currently there is a cumulative case of approximately 1,300 persons with HIV. A total of 50 new were identified in 2021 and 80 in 2022.

[26] 2023. National Health Development Plan. Ministry of Health Sao Tome and Principe.

[27] 2023. National Health Development Plan. Ministry of Health Sao Tome and Principe.

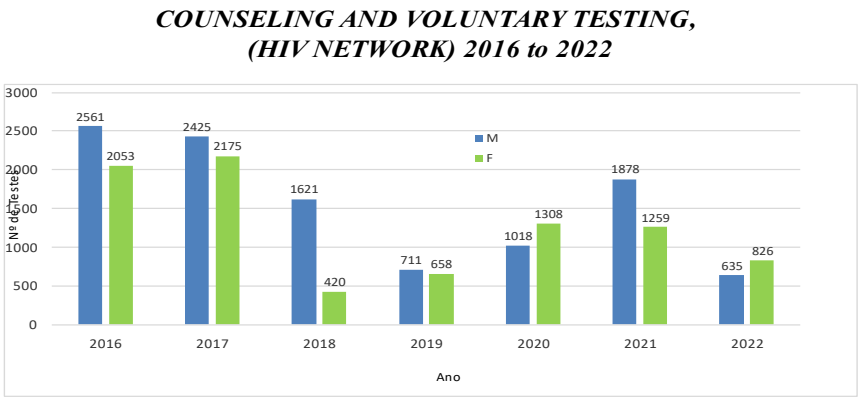
[28] UNICEF MIC 2020

[29] MIC 2014

[30] 2023. National Health Development Plan. Ministry of Health Sao Tome and Principe.

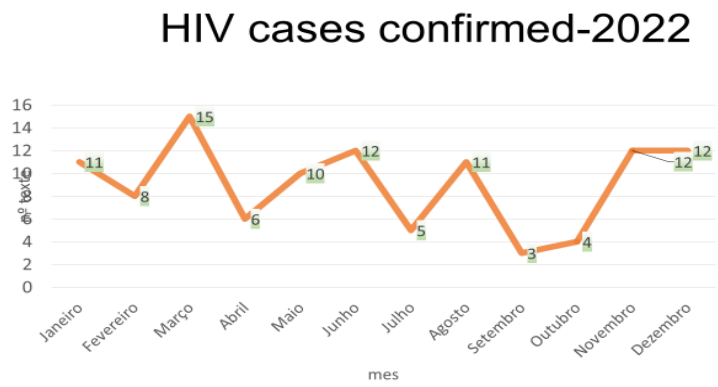
HIV testing and counseling is the cornerstone of prevention. Except for 2020 and 2022, there were men tested for HIV within the general population.

**Figure 4: HIV Testing in the general population**




Source: National Program for HIV/STI, Viral Hepatitis and TB

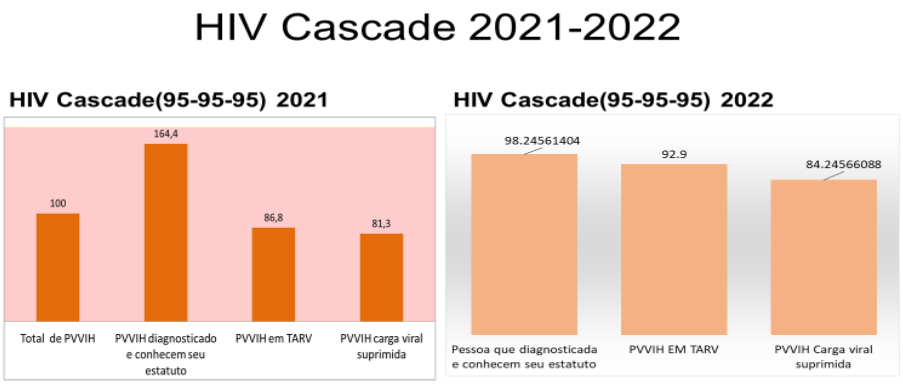
**Figure 5: Newly diagnosed HIV cases 2022**




Source: National Program for HIV/STI, Viral Hepatitis and TB

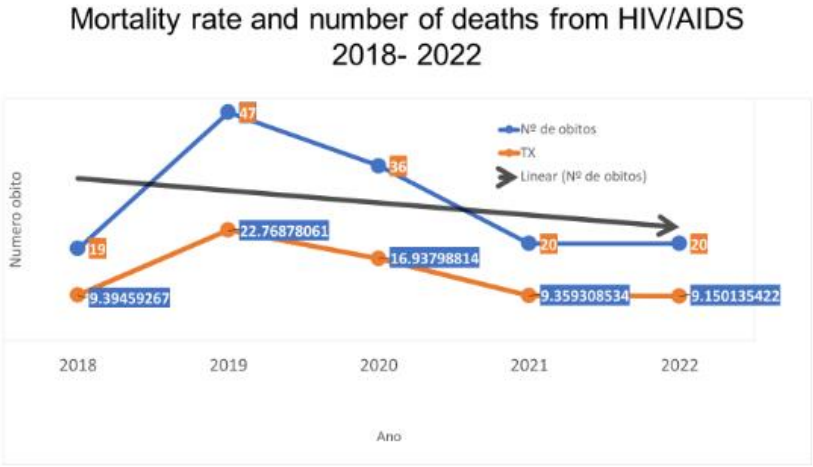
An analysis of the 90-90-90 targets indicated that the country may have achieved the first two indicators (9 percent know their status and 90% on treatment). However, the challenge is with the last indicator which relates to viral suppression. It is important that this target is achieved, especially among breastfeeding women so as to ensure the reduction of vertical transmission of HIV to the exposed child. Firgure 6 below details the cascade for 2021 and 2022.

**Figure 6: HIV Treatment Cascade Sao Tome & Principe**




Source: National Program for HIV/STI, Viral Hepatitis and TB

**Figure 7: Mortality rate and number of deaths related to HIV 2018-2022**




Source: National Program for HIV/STI, Viral Hepatitis and TB

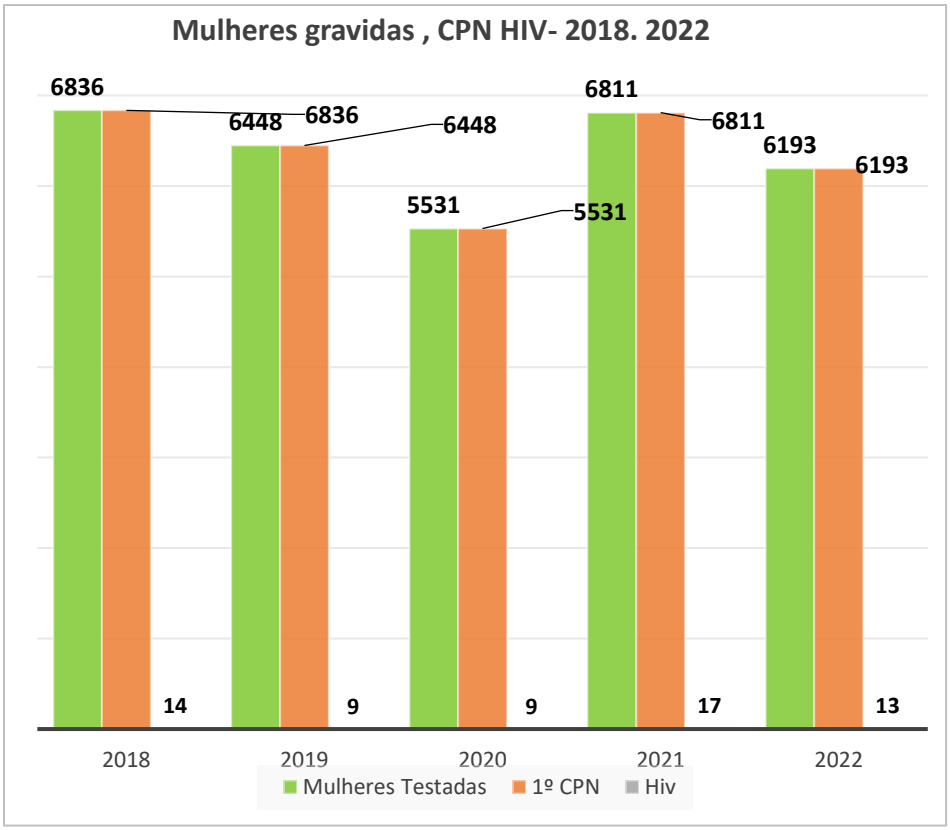
### *HIV transmission*

HIV transmission appears to be driven by heterosexual transmission. During the period 2019-2022, there were four perinatal transmissions from HIV. There was no transmission from blood transfusion.

***Syphilis in general populations***
No data is available to assess syphilis in the general population.

***HIV and Syphilis prevalence among pregnant women.***
During the period 2019-2022 at total 117 pregnant women (known and tested at ANC) that delivered. Based on information provided, all the women were treated for HIV prior to delivery to reduce the risk of transmission from the mother to the newborn.

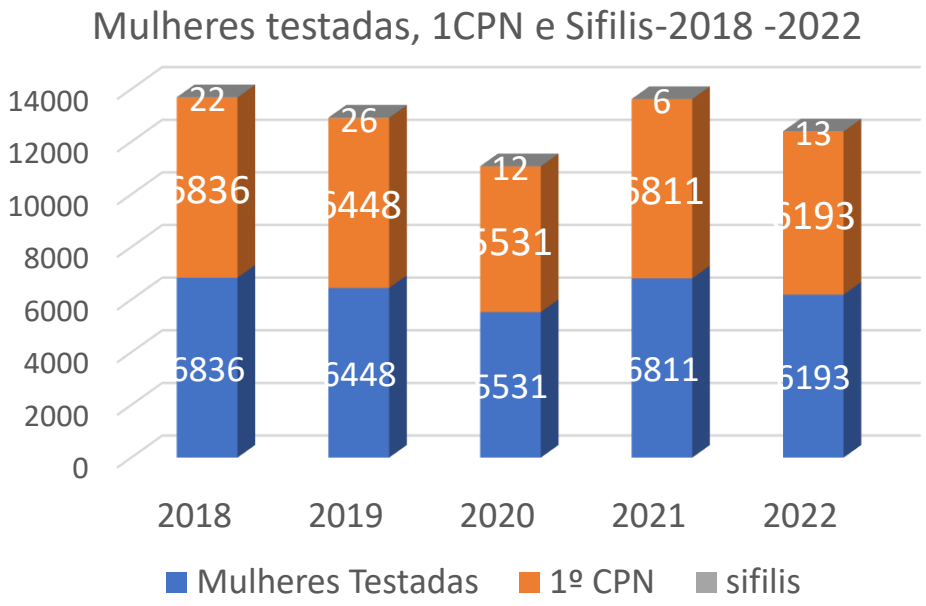
**Figure 8: Pregnant women tested for HIV 2018-2022**




Source: National Program for HIV/STI, Viral Hepatitis and TB

During the same period 57 women tested positive for syphilis. These women were tested with syphilis rapid test and no confirmatory test was provided. Also, no information is provided therefore it is unknown if the women received any treatment.

**Figure 9: Pregnant women tested for Syphilis 2018-2022**




Source: National Program for HIV/STI, Viral Hepatitis and TB

***Exposed Infants tested.***

All exposed infants during the period assessed received the first PCR test at 2 months following delivery. Sao Tome is a breastfeeding country and based on the protocol of the country, the second PCR test is not done until six weeks after cessation of breastfeeding. Based on the information provided, it is uncertain as to the number of transmissions during the period 2019-2022, with the exception of one infant, all are awaiting final diagnosis following breast feeding.

**Table 3: Status of HIV exposed infants 2019-2022**

| Year | Total number of Pregnant Women Positive for HIV | PCR test done | Lost to follow-up | Number of perinatal transmissions | Died |
|---|---|---|---|---|---|
| 2019 | 19 | 11 | 8 | 1 | 0 |
| 2020 | 29 | 25 | 4 | 1 | 0 |
| 2021 | 37 | 34 | 3 | 2 | 1 |
| 2022* | 32 | 27 | 5 | No known to date | 1 |
| Total | 117 | 86 | 20 | TBD | No known to date |

Based on the information collected by the program, the number of HIV transmission has increased since 2019 from 19 pregnant women to 32 in 2022. However, some of these women could have been diagnosed previous to the current pregnancy, but the information is not analyzed in such manner.

***Hepatitis B***

In 2002the birth dose was introduced through a pilot program for breastfeeding mothers that was positive for HBV. Screening was done for all pregnant women at ANC, and approximately 4% of pregnant women had a HBsAG result. An evaluation of the services was done in 2015 and a plan was developed to introduce the birth dose in 2016.

While hepatitis B test is not provided to pregnant women, based on the national protocol, all infants are provided with the birth dose (zero dose) within 24 hours. However, there are some infants who may not receive the zero dose within the 24 hours as it is given at the hospital based on the number of infants at a given time. If there are less than 20 infants born in a given day, zero dose may be provided the following day. It appears that this is not the situation in all maternity clinics.

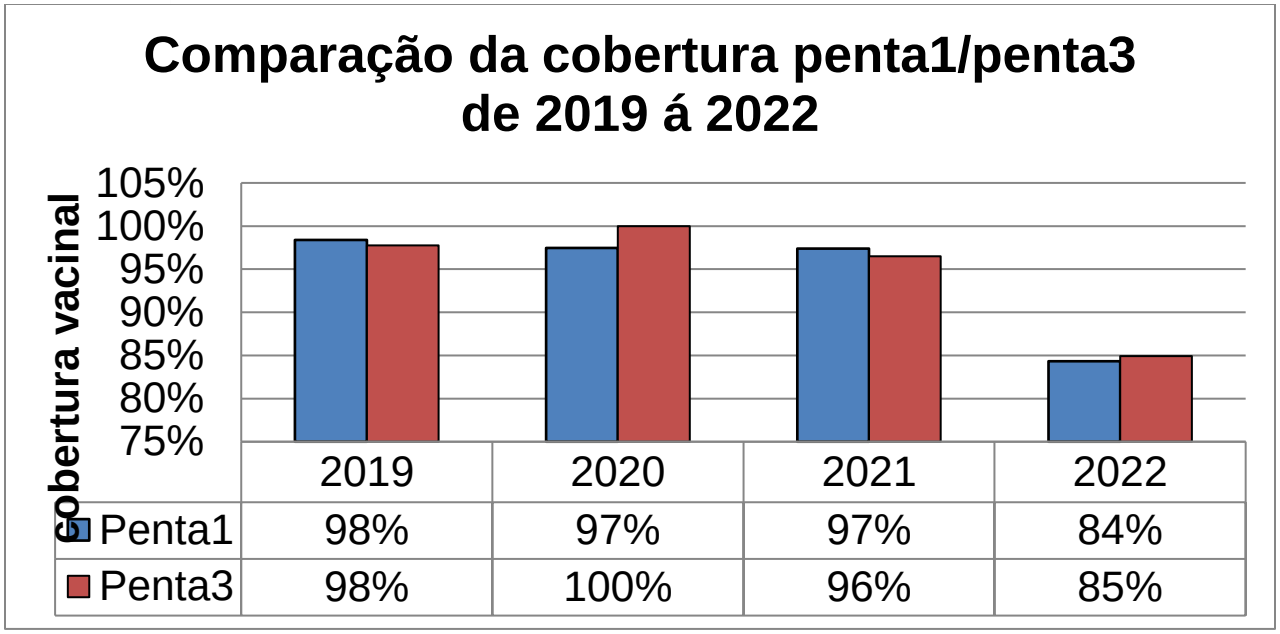
Based on information from the 2017 National Vaccination Coverage Survey (NVI) 93% of all children received the 3rd dose of pentavalent. Table 3 provides coverage data for both the birth dose and follow-up doses for the period 2019-2022.

**Table 4: Hepatitis B vaccination 2019-2022**

| ***Year*** | ***Number of birth dose*** | ***Subsequent doses (pentavalent)*** |
|---|---|---|
| ***2019*** | ***97%*** | ***98%*** |
| ***2020*** | ***94%*** | ***100%*** |
| ***2021*** | ***72%*** | ***96%*** |
| ***2022*** | ***81%*** | ***85%*** |

*Source: National Immunization Program*

**Figure 10: Comparison of vaccine coverage for 2019-2022**




Source: National Immunization Program

***Still births***

During the period 2019-2022 there were a total of 195 still births. Unfortunately, the mothers with still births did not have a syphilis test done and no additional information was available regarding the contributing factors for the stillbirths. Based on the definition for syphilis which uses a surveillance definition, all the still births will be considered a congenital syphilis case.

***Teen Pregnancy trends and rates***

The rate of pregnancy in adolescents between 15-19 years old continues to be high. Based on the MICS study, 32% of the adolescents surveyed admitted to having one child before the age of 18 years. The high rate of pregnancy among is especially high among the unprivileged adolescents with less years of education[31]. While there is no legislation or policy that affects the access to SRH services by this population, based on the MICS study, there is a low demand for sexual and reproductive health services.

The Ministry of Health has a national plan integrated strategic plan for sexual and reproductive health, maternal and child health and adolescent health (2019-2023). This plan details the services to be provided for adolescent health as it relates to SRH services. The country has also developed a national adolescent health plan based on the WHO guidelines.

Data reviewed for one year at a specific (February 2022-February 2023) indicates that there were 22 adolescent health pregnancies with ages 14-19 years old. Five of the adolescents were noted to have received an abortion and there were no HIV or syphilis cases identified for the same period.

[31] UNICEF MICS 2020

## National EMTCT Data Sao Tome and Principe 2019-2022

Based on the data provided from the national program, the following table with the EMTCT indicators were calculated. There is a need for the data in the table to be verified. In general, the data indicates that the country may have achieved the targets for HIV for the period 2020-2022. However, small countries need to report on 4 years of data. Data for 2019 which is missing should be collected urgently. Total births for all the reporting years should also be collected and verified.

Any country applying for the EMTCT of any of the three diseases must provide data on all the diseases. As a result, outstanding data on syphilis data needs to be verified.

**Table 5: Sao Tome and Principe EMTCT Mandatory Data**

| Targets | Target | 2019 | 2020 | 2021 | 2022 | Pooled data | Data source |
|---|---|---|---|---|---|---|---|
| HIV MTCT rate (%) (breastfeeding country) | ≤5% | 5.2<br>1/19 | 3.4%<br>1/29 | 5.4%<br>2/37 | 0*<br>0/32 | 3.4%<br>4/117 | National HIV /STI Program |
| Annual Rate of perinatal HIV per 1,000 live births | ≤0.3 | 0.015<br>1/6448 | 0.036<br>1/5531 | 0.029<br>2/6811 | 0.032<br>2/6193 | 0.024<br>6/24983 | National HIV/STI Registry |
| Annual Rate of congenital syphilis per 1,000 live births | ≤0.5 | ??<br>??/6448 | ??<br>??/5531 | 0<br>0/6811 | 0<br>0/6193 | ??<br>??/ 24983 | MCH & Labour Registries |
| ANC coverage | ≥95% | ??%<br>??/6448 | ??%<br>???/5531 | ??%<br>???/6811 | ???%<br>??/6193 | ??%<br>??/24983 | MCH Registries |
| % Pregnant Women tested for HIV (ANC and labor and deliver) | ≥95% | 100%<br>6448/6448 | 100%<br>5531/5531 | 100%<br>6811/6811 | 100%<br>6193/6193 | 100%<br>18535/24983 | MCH& Labour Registries |
| % of Pregnant Women tested for Syphilis | ≥95% | 25%<br>1661/6448 | No Data Available<br>0/5531 | 57%<br>3884/6811 | 54%<br>3355/6193 | 39%<br>7239/24983 | MCH Registries |
| % Pregnant women received ART to reduce risk of transmission (ANC & L&D) | ≥95% | 100%<br>4/4 | 100%<br>29/29 | 100%<br>37/37 | 100%<br>32/32 | 100%<br>98/98 | MCH Registries |
| % of Pregnant women adequately treated with penicillin | ≥95% | 100%<br>33/33 | 100%**<br>17/17 | 100%<br>14/14 | 100%<br>25/25 | 100%<br>56/56 | MCH Registries |

*Note: The above is calculated based on the numbers provided from the list of exposed infants. Retrospective data collection is required to validate the data in the above table, especially for the total births.*

*The still births identified; the mothers did not have a syphilis test done. As a result, it is not possible to determine if there were any congenital syphilis cases due to maternal syphilis.*

***For syphilis, since the treatment is not free, it is uncertain of all the seropositive women received the treatment and when (at least 30 days before delivery based on the EMTCT surveillance definition).*

**Only one exposed infant with a final diagnosis as other mothers are still breastfeeding.*

## 5. Primary prevention and treatment services for HIV and Syphilis for Pregnant women and exposed Infants

### *Primary Prevention and treatment services to reduce mother-to-child transmission of HIV, syphilis & Hepatitis B*

The ANC clinics offer a full range of services for pregnant women. There is a comprehensive package of services which includes tests, that are provided to all pregnant women who attends ANC in the public sector. In addition to the full prenatal package of tests for all pregnant women, the testing for HIV, syphilis and hepatitis B is offered.

Blood samples are collected at the health facilities and sent to the laboratories located at the facilities and also at the hospital for testing for all prenatal tests. However, all pregnant women receive testing for HIV and syphilis in Sao Tome and Principe at the clinics, utilized rapid test kits. The dual test for HIV and syphilis is not utilized, as a result three different tests may be performed: Determine rapid test is used for HIV, and for syphilis.

All pregnant women who access the ANC service in the public sector are expected to receive the tests for all three diseases during the first encounter with the health system. Individually women are advised on the importance of receiving a test for HIV. If the mother agrees, verbal consent is provided, and the rapid test is performed. The second test is normally given three months after the first, with the last test given in the last trimester.

While HIV tests is a routine test given to all pregnant women, it is not the same for syphilis and hepatitis B. stock outs of syphilis test kits have resulted in ad hoc testing at ANC for pregnant women. During the site visits it was noted that no syphilis test kits are available since October 2022 and HIV tests since January 2023. This situation may vary by clinics. Since the roll-out of the birth-dose in 2016 and which is given within 24 hours at Labour and Delivery, the testing for hepatitis B among pregnant women have been discontinued.

The testing for partners for both HIV and syphilis is limited, and it was noted that most women are hesitant to reveal to the partner their test results for fear of abandonment, violence as well as stigma and discrimination.

All pregnant women who are tested positive for HIV are referred to the treatment site in their nearest district to received ARVs. At the treatment center, the pregnant woman receives the confirmatory test for HIV, viral load (given at the first consultation at the treatment site and 3-5 months before delivery) and is placed on treatment immediately based on the treat all policy. The sero-positive pregnant woman receives dolutegravir and continues after pregnancy. The seropositive pregnant continues to attend ANC for the management of the pregnancy. For pregnant women who were positive previously with HIV prior to the current pregnancy, they remain on treatment and are managed at ANC for the pregnancy. Counseling on breast feeding is done for all pregnant women, informing them of the risk of transmission and the need to exclusively breast feed.

For syphilis, once tested and if positive, the sero-positive pregnant women are treated with benzathine penicillin for three weeks, is retested to determine if the titre was reduced 4 folds. However, the medication is not in stock at some of the clinics and pregnant women who are

positive for syphilis may be given a prescription to purchase the penicillin at the private pharmacy for approximately 15-20.00US per treatment or a co-payment in some facilities for 1.00 dobras.

***HIV and syphilis prevention and treatment during labour***

Approximately 95% of all pregnant women delivers in a health institution with the support of a health care professional. Deliveries either take place either at the hospital or the maternity centers in the districts for which there are no complications. Approximately 5% of deliveries may happen before reaching the medical facility (home or on the way to the hospital).

ANC information documented on the mother's take home card is reviewed at the time accessing Labour and Delivery to ensure the appropriate tests were completed. If the HIV tests were taken more than 3 months prior, the mother would need to retake the tests at Labour and Delivery. Retesting is done at labour for those who were tested at ANC. All information regarding the pregnant women and the tests received are logged at Maternity Ward.

If a pregnant woman is not tested during ANC, or if she did not have the documents to demonstrate that the test for HIV was done at ANC, the test is given at labour and deliver. Rapid test for HIV is utilized at labour and delivery. All positive HIV tests results are sent to the laboratory at the hospital for a confirmatory test. If the mother is positive and not in active labour, no medication is provided to reduce the risk of HIV transmission of the fetus.

No syphilis testing is done at labour and delivery. The infant is not tested for syphilis, even if the mother was diagnosed and treated at ANC prior to delivery. At birth the infant is examined for congenital syphilis and other abnormalities. Infants with congenital abnormalities are referred to the pediatric clinic for follow-up and monitoring.

All newborns are provided with the hepatitis B birth dose which should be approximately within 24 hours. Based on the number of dosages that are available from a single vile (20), some infants may receive the tests after 24 hours. Premature babies must wait until their weight increased before being given the birth dose. BDG and polio are also given immediately after birth before leaving the hospital or maternity centers to all infants, including those exposed to HIV.

The pregnant sero-positive HIV woman is treated at labour and delivery with dolutegravir, and the infant is given Zidovudine for six weeks. Also, if the mother was tested positive for HIV at labour and delivery, she is provided with formular feeding as the viral load is unknown. The same applies to mothers with high viral load prior to delivery. The mother is provided with milk supplement for up to six months. Mother and infant upon discharged from the hospital are provided with medication (if the mother was diagnosed at hospital) and is instructed as to how to provide the medication to the newborn. Mother and new-born are referred to the nearest treatment site for follow-up.

***Management of the Exposed Babies to HIV and Syphilis***

All HIV and exposed infants are followed up after discharged from the hospital. The HIV exposed infants are tested for HIV approximately two weeks following delivery in the districts. Dry Blood Spot is utilized, and this test can be done at the district level. The turn around time for the DNA PCR is approximately one week. It was reported that currently there are no DBS available in country.

The District Focal Points follow-up with the HIV exposed infant and ensure the ongoing monitoring of the mother and the exposed infant. The mother is expected to attend the treatment centre monthly for follow-up care, including her medication. It was noted that the viral load test is done every six months for all breastfeeding mothers as part of regular monitoring. The mother continues to be breastfed and a final DNA PCR is given approximately six weeks after the cessation of breast feeding. No DNA PCR is provided for the infant at 9 months as recommended by WHO for breast feeding infants.

There are no follow-up tests or monitoring that is provided to the syphilis exposed infants following delivery.

**Table 6: Summary of diagnosis and treatment for HIV, syphilis Hepatitis B for the pregnant woman and exposed infant based on national protocol.**

| SUMMARY SCREENING AND TREATMENT FOR HIV AND SYPHILIS PREGNANT WOMAN AND EXPOSED INFANT | | | |
|---|---|---|---|
| **Treatment** | | | **Diagnosis for HIV and Syphilis** |
| **Syphilis** | **Pregnant women** | 2.4 MU Penicillin IM 3 doses before retest | Syphilis diagnosis : RPR (Determine RT)<br>Confirmatory: Not done |
| | **Delivery (if tested 1st time)** | 2.4 MU Penicillin | Syphilis diagnosis: RPR<br>Confirmatory: Not done |
| | **Exposed infant** | None | *Syphilis diagnosis: Not done<br>Confirmatory: Not done |
| **HIV** | **Pregnant women** | DTG | Serial Rapid Testing: yes<br>Type of Rapid test: Determine<br>Confirmatory: SD Bioline |
| | **Delivery (if tested for 1st time)** | DTG | When the status is not known at delivery blood is drawn & taken to the lab, and a Rapid HIV test is done. (Same as above is followed) |
| | **Exposed infant** | Oral Zidovudine | DNA PCR -2 weeks & 6 weeks after breast feeding |
| **Hepatitis B** | **Pregnant Woman** | Not done | Rapid test for HBV is not used given the introduction of birth dose |
| | **Infants** | Birth dose (Zero dose) given at birth. However, there are some infants that may not receive the zero dose at birth as there must be 20 babies born to provide the vaccine | |

** Note: Only rapid test is used for syphilis and no confirmatory testing is provided. Exposed infants born to a syphilis sero-positive pregnant woman is also not done at birth.*

Kindly refer to the information below regarding the recommendations from WHO for the clinical management of the exposed HIV (those that are breastfeeding) and syphilis infants as well as a summary of the WHO guidance for the prevention of the mother to child transmission of hepatitis B virus.

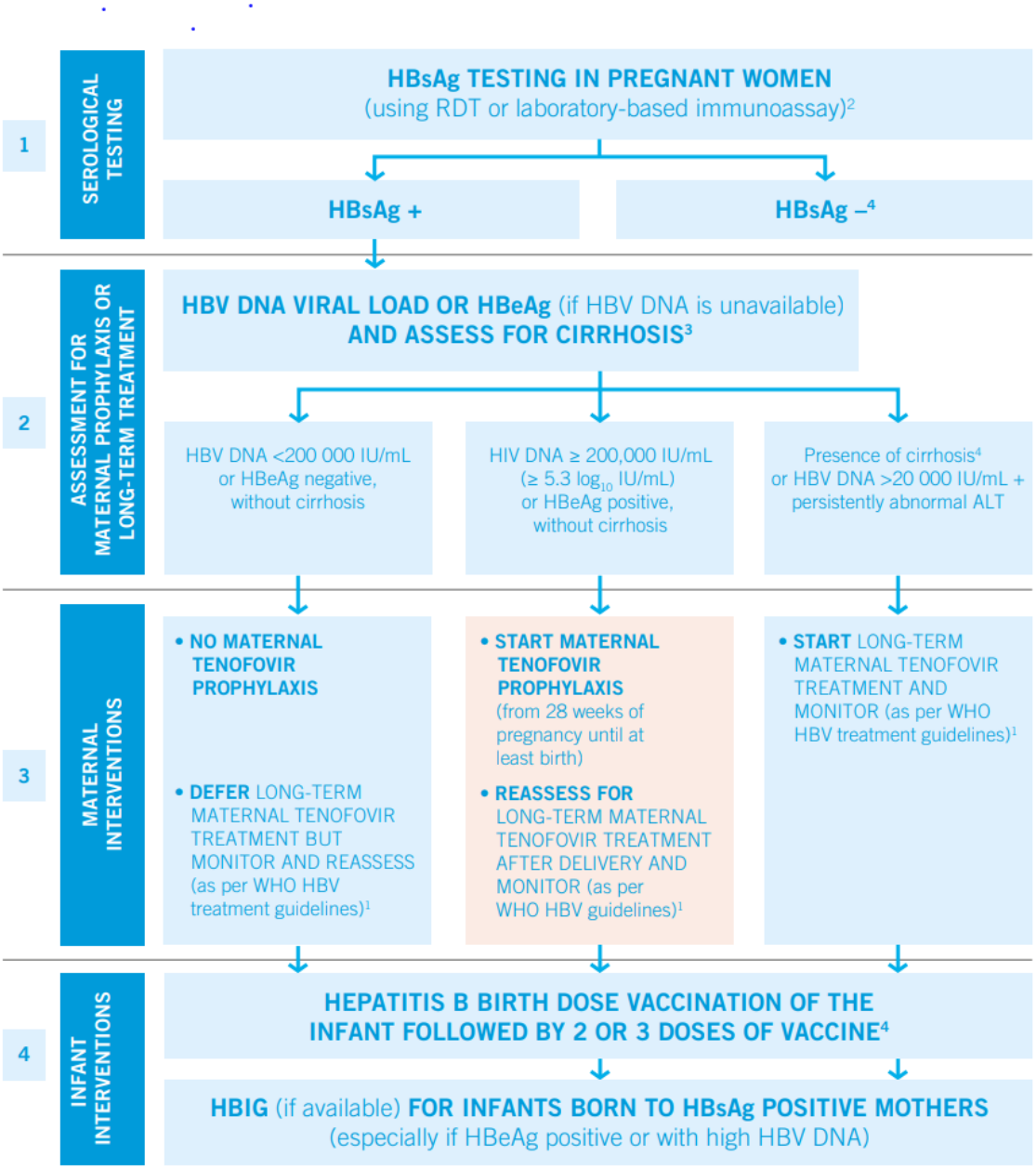
**WHO Guidance on HBV testing in pregnant women and treatment[32]**

All pregnant women should be tested for HIV, syphilis and hepatitis B surface antigen (HBsAg)* at least once and as early as possible in the pregnancy (HIV standing recommendation since 2007; syphilis: *strong recommendation, moderate-quality evidence;* HBsAg*: *strong recommendation, low-quality evidence*).

WHO recommends that pregnant women testing positive for HBV infection (HBsAg positive) with an HBV DNA ≥ 5.3 $\log_{10}$ IU/mL (≥ 200,000 IU/mL)[1] receive tenofovir prophylaxis from the 28th week of pregnancy until at least birth, to prevent mother-to-child transmission of HBV. This is in addition to three-dose hepatitis B vaccination in all infants, including timely birth dose *(conditional recommendation, moderate quality of evidence).*

[32] WHO guidance on the prevention of the mother-to-child transmission of hepatitis B virus. Available at https://apps.who.int/iris/bitstream/handle/10665/333391/9789240002708-eng.pdf

**Figure 11: Summary algorithm of HBV testing of pregnant women to Prevent mother to child transmission of HBV and refer eligible women to treatment[33].**




[33] WHO guidance on the prevention of the mother-to-child transmission of hepatitis B virus. Available at https://apps.who.int/iris/bitstream/handle/10665/333391/9789240002708-eng.pdf

**WHO Recommendations for the clinical follow-up for syphilis exposed infants[34]**

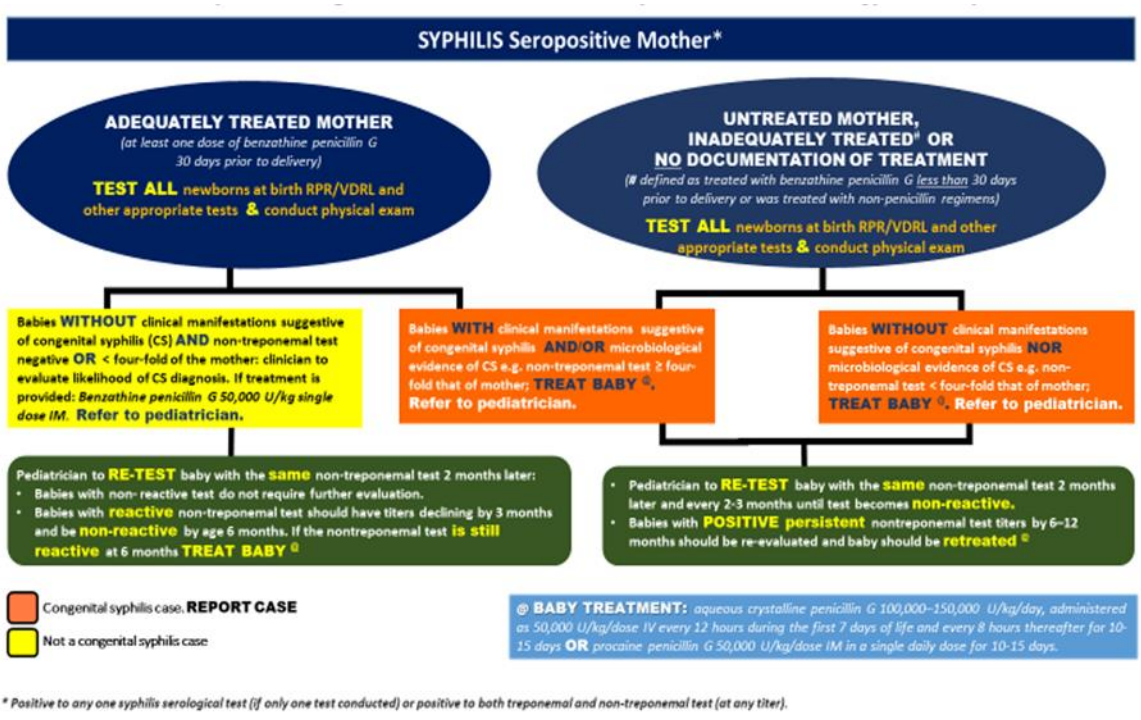
WHO recommends that all syphilis-exposed infants should receive treatment when recommended based on recommendations and managed and monitored as follows:

• Infants born to inadequately treated mothers should receive treatment for Congenital Syphilis and have a non-treponemal test with titre at delivery as well as at six months post-treatment to evaluate treatment response.

• Infants born to adequately treated mothers with no signs of maternal reinfection do not require treatment or follow-up non-treponemal titres, but they should be evaluated for clinical signs suggestive of CS at delivery. If such clinical signs are identified, these infants should receive testing, recommended treatment and follow-up.

• Any previously undiagnosed and untreated infant ≥6 months of age who has a reactive non-treponemal titre should be considered a case of Congenital Syphilis and receive treatment according to WHO syphilis treatment guidelines.

**Figure 12: Summary of Flow chart for the simplified management and notification of an exposed infant born to a syphilis-seropositive mother[35]**



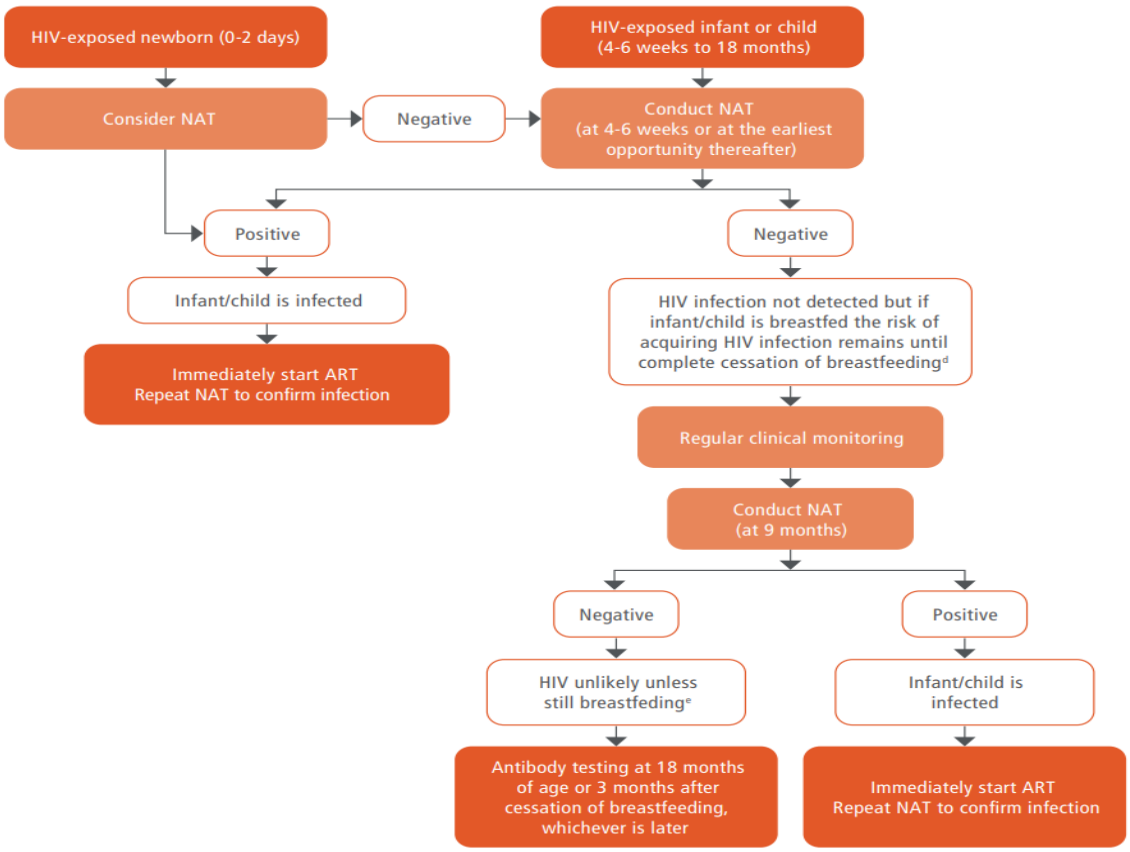

[34] WHO Global Criteria for the Elimination of the mother-to-Child Transmission of HIV, Syphilis and Hepatitis B

[35] Pan American Health Organization. Flow Chart for the clinical management of the syphilis exposed infant.

**WHO Recommendations for the Clinical follow-up of the HIV exposed infants that are breastfeeding[36].**

According to WHO guidance, HIV testing of infants and young children, which is the basis on the infant diagnosis is conducted with nucleic acid testing at 4-6 weeks (or soon after birth as possible and before two months of age), at nine months and final diagnosis with serological testing at 18 months or (three months after the end of breast feeding, whichever is later).

**Figure 13: WHO Recommendation for the Monitoring of the HIV Exposed Infant during breastfeeding[37]**




Notes: the addition to the existing testing algorithm of NAT at birth can be considered. b Point-of-care NAT can be used to diagnose HIV infection as well as to confirm positive results. c Start ART without delay. At the same time, retest to confirm infection. As

[36] WHO Global Criteria for the Elimination of the mother-to-Child Transmission of HIV, Syphilis and Hepatitis B

maternal treatment is scaled up and MTCT transmission rates decrease, false-positive results are expected to increase retesting after a first positive NAT is hence important to avoid unnecessary treatment, particularly in settings with lower transmission rates. If the second test is negative, a third NAT should be performed before interrupting ART. d for children who were never breastfed, additional testing following a negative NAT at 4–6 weeks is included in this algorithm to account for potential false-negative NAT results. e the risk of HIV transmission remains as long as breastfeeding continues. If the 9-month test is conducted earlier than 3 months after cessation of breastfeeding, infection acquired in the last days of breastfeeding may be missed. Retesting at 18 months or 3 months after cessation of breastfeeding (whichever is later) should be carried out for final assessment of HIV status. f If breastfeeding extends beyond 18 months, the final diagnosis of HIV status can only be assessed at the end of breastfeeding. If breastfeeding ends before 18 months, the final diagnosis of HIV status with antibody testing can only be assessed at 18 months. Antibody testing should be undertaken at least 3 months after cessation of breastfeeding (to allow for development of HIV antibodies). For infants younger than 18 months of age NAT should be performed to confirm infection. If the infant is older than 18 months, negative antibody testing confirms that the infant is uninfected; positive antibody testing confirms infant is infected.

## 6. **Laboratory and Network Services**

The country does not have a National Public Health Laboratory but two laboratories that provide screening and diagnosis for priority health conditions. At the Central level there is the referral laboratory which provides diagnostics for HIV, early infant diagnosis and tuberculosis. There is also a laboratory at the hospital which provides testing for all clinical diagnostics including HIV and Syphilis. There are laboratories in each of the districts which provide screening for various health conditions including TB, HIV, and COVID-19. The National TB reference laboratory oversees the district laboratories. There are also two private laboratories that also provide service to clients accessing the private health facilities.

A draft of national laboratory policy and strategic plan was developed for the period 2023-2033 and which details the laboratory quality management system and provision for accreditation. The laboratory policy and strategy are expected to establish a framework for the organization and regulations of public health laboratories.

### *Screening for HIV, Syphilis & Hepatitis B*

For pregnant women, the blood samples are drawn at the clinics and are sent to the laboratory at the clinic/districts for the panel of tests given to pregnant women. Rapid testing is done at the clinics for HIV and the confirmatory test is completed at the reference laboratory. Also at the clinics, rapid test is utilized for syphilis, no treponemal test is done to confirm the result from the non-treponemal test. Clients once treated are based on the result of the non-treponemal test. Currently there are no rapid tests done for hepatitis B and syphilis, however in some clinics/health facilities, blood samples are drawn and sent to the laboratory for testing. The same is done in some clinics for HIV testing.

### *Internal and External Quality assurance*

The reference laboratory conducts internal and external quality assurance. The reference laboratory for HIV and tuberculosis conducts proficiency testing for these two diseases only. It is not certain if the laboratory at the hospital and those at the districts participate in proficiency testing. No proficiency testing is conducted for syphilis and viral hepatitis.

As it relates to EMTCT, proficiency testing is mandatory for the three diseases. As a result, proficiency testing for syphilis and hepatitis should be considered and prioritized if the elimination of MTCT is expected.

**Table 7: HIV and Tuberculosis Reference Laboratory Results of HIV Proficiency Testing for 2019-2021**

| Analyte | Supplier Proficiency Test | Periodicity of PT challenger (per Year) | Results for 3 years 2019- 2022 | | | | Overall result | Are PT Results Reviewed | Is corrective action taken and documented |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2019 | 2020 | 2021 | 2022 | | | |
| Syphilis HIV | None | None | None | None | ??? | ???? | None | N/A | N/A |
| | Public Health Agency of Canada* | 2 per year (Apr, Oct) | 100% | 100% | 100% | | 100% | Yes | Yes |

No proficiency testing data was provided for 2022 and no explanation was provided. Therefore, it is uncertain if the proficiency testing was done for 2022 as the requested information was not provided.

***Laboratory Information System***

The referral laboratory system has an electronic laboratory system called GesLab. This system is only available at the reference laboratory and not in the districts. The system was programmed, and connection was made to the district laboratories as well as the private laboratory, but the use was discontinued due to the limited capacity of the server. The laboratory is in the process of identifying an appropriate server so as to expand the use of the laboratory information system.

***WHO Laboratory Recommendations for EMTCT Validation[38]***

Meeting laboratory standards is critical to the validation process and review, and it draws from existing WHO guidance for laboratory audits, the laboratory quality improvement and accreditation guidance of PAHO and the International Organization for Standardization (ISO) 15189 standards.

Laboratories that contribute data to the surveillance and clinical monitoring systems should:

1. Have a quality management system in place with sufficiently supportive leadership and governance.
2. Ensure the quality of test kits and procedures: that tests are procured, stored and used according to international standards, such as WHO pre-qualification or another regulatory equivalent.
3. Ensure the quality of testing: personnel performing the tests who have been trained in accordance with nationally recommended algorithms.

[38] WHO Global Criteria for the Elimination of the MTCT of HIV, syphilis, and hepatitis B

4. Have a laboratory quality assurance mechanism that is routinely and consistently applied and verified through participation in both external and internal quality assurance programmes for HIV, syphilis and HBV testing.

Laboratory quality assurance, including EQA, is a mandatory requirement for validation of EMTCT of these infections. An example of an overall internal laboratory quality assurance programme for testing is the Stepwise Laboratory Quality Improvement Process Towards Accreditation. An example of an EQA programme for syphilis testing is the WHO/US Centers for Disease Control and Prevention (CDC) Syphilis Serology Proficiency Programme. CDC also provides international assistance in EQA for HIV testing. Countries should consistently achieve scores >80 percentile in the EQA.

When point-of-care tests are used, the quality and diagnostic performance of the test kits should be verified in accordance with international standards set by stringent regulators such as the WHO prequalification programme. National reference laboratories should oversee and monitor procurement and storage of the tests and perform routine lot testing to verify satisfactory test kit performance. Laboratory quality management systems should include proficiency testing of clinical, laboratory and other staff to ensure the quality of testing and monitor compliance with approved algorithms.

## 6. DESCRIPTION OF THE NATIONAL SURVEILLANCE SYSTEM

There is a department of surveillance at the national level that is overall responsible for the monitoring of diseases in the country. Unfortunately, it was not possible to obtain meetings with this Unit and as a result the information as it relates to disease surveillance and monitoring is limited. Most of the information in this section is from discussion with health care providers at the sites visited as well as with the IT personnel.

The country in 2022 has launched DHS2 which collects data at the district level, and which is available at the central level. Most of the data collected via this system appears to be aggregated data. However, at the district level, and depending on the services such as HIV and maternal and child health data, there is individual client data/records.

An adequate surveillance system is essential to capture and monitor all cases for the three diseases within MCH. Data captured at MCH reflects registries and various forms. Also, in each districts data is captured in the DHS2 but the data is not comprehensive. Information to support the monitoring and reporting based on global criteria is not readily available from the system.

At Maternal and child health the data is collected by the District Focal Point and is sent to the national level to the Coordinator of Maternal and child health. The same method applies for pregnant women who are HIV and syphilis positive.

Data sources are record books and excel spreadsheets. The data is sent from the health post to the health center which in turn is validated by the delegate and sent to the national program for the fight against HIV. These data are handled at the district level by the RDRs (responsible for statistics and epidemiology of the districts.

At the national level the HIV Focal point visit the hospital three days per week and collects the data on all the pregnant women for HIV that delivered, their exposed infants and the treatment received. The result is also sent to the national program and the surveillance unit. The FP visits the hospital and collects the forms.

Data appears not to be analyzed and used for evidence based planning. No evidence that data collected and analyzed is send back to the users and producers of the system.

***Congenital Syphilis Definition***

The country is utilizing the clinical definition for congenital syphilis in order to determine if there is a case. However, for the purpose of EMTCT, the surveillance definition is applied. It is recommended that the surveillance definition is adapted to support alignment to the global EMTCT strategy and requirements. Kindly refer to the WHO Global guidance on the criteria for the elimination of the mother-to-Child transmission HIV, syphilis and hepatitis B (2021).

**Impact Indicators for Validation of EMTCT of Syphilis[39]**

EMTCT targets use a surveillance case definition, not a clinical case definition (first treatment of penicillin, 30 days before delivery). A surveillance definition provides a uniform set of criteria to define a condition for public health surveillance purposes. The use of the surveillance case definition permits public health programs to classify and count cases consistently across jurisdictions and countries. A surveillance case definition may not always be consistent with a clinical case definition and is not intended to be used by health-care providers for making a clinical diagnosis or for making treatment decisions.

**The global surveillance case definition for congenital syphilis is given below.**

1. A live birth or fetal death at >20 weeks of gestation or >500 g (including stillbirth) born to a woman with positive syphilis serology and without adequate syphilis treatment*

* **Adequate maternal treatment is defined as at least one injection of 2.4 million units of intramuscular benzathine benzylpenicillin at least 30 days prior to delivery.[40]**

OR

[39] WHO Global Updated Guidance on Criteria and Process for Validation of the mother to child transmission of HIV, syphilis, and hepatitis B 2021.

[40] In pregnant women with late syphilis or unknown stage of syphilis, WHO recommends benzathine penicillin.

2.4 million units intramuscularly once weekly for three consecutive weeks.

A woman with a history of syphilis diagnosis and for whom previous syphilis treatment can be confirmed should be evaluated for risk of re-infection. Those without physical (e.g., ulcer, unexplained rash) or laboratory evidence of syphilis (increasing non-treponemal titre) need not be classified as having current syphilis. However, women living in high-prevalence settings or who have personal or partner behavioral risk or whose partners were not treated for syphilis may warrant evaluation for reinfection later in pregnancy. An infant born to a woman with a documented history of adequate treatment for syphilis prior to the current pregnancy, with no physical or laboratory evidence of reinfection (e.g., increasing maternal non-treponemal titre), can be excluded from the country counts of congenital syphilis cases.

2. A live birth, stillbirth, or child aged <2 years born to a woman with positive syphilis serology or with unknown sero-status, and with laboratory and/or radiographic and/or clinical evidence of syphilis infection (regardless of the timing or adequacy of maternal treatment).

**Laboratory and radiographic evidence consistent with a diagnosis of congenital syphilis includes any of the following:**

1. Demonstration by dark-field microscopy or fluorescent antibody detection of Treponema pallidum in the umbilical cord, placenta, nasal discharge or skin lesion material or autopsy material of a neonate or stillborn infant.
2. Analysis of cerebrospinal fluid (CSF) is reactive for Venereal Disease Research Laboratory (VDRL) test, or elevated CSF cell count or protein.
3. Long bone radiographs suggestive of congenital syphilis (e.g., osteochondritis, diaphyseal osteomyelitis, periostitis).
4. Infant with a reactive non-treponemal serology titre fourfold or more than that of the mother.
5. Infant with a reactive non-treponemal serology titre less than fourfold more than that of the mother but that remains reactive ≥6 months after delivery.
6. Infant with a reactive non-treponemal serology test of any titre AND any of the clinical signs listed below born to a mother with positive or unknown serology, independent of treatment.
7. In settings where a non-treponemal titre is not available, an infant born to a mother with positive or unknown serology, independent of treatment, and whose 6-month examination demonstrates any of the early clinical signs listed below.
8. For stillborn infants, maternal syphilis serostatus should be determined. Any case with a reactive maternal test should be considered a congenital syphilis case (i.e., a syphilitic stillbirth).

## 7. HUMAN RIGHTS, GENDER EQUALITY AND COMMUNITY ENGAGEMENT

Human rights, gender equality and community engagement are major components of the EMTCT services. All primary prevention and treatment services should be implemented based on human rights principles. The interventions to reach the targets must be implemented in a manner consistent with international, regional and national human rights standards. These standards must include equitable access to sexual and reproductive health services (SRH) and ANC, pregnant women's autonomy in decision making, informed consistent for HIV testing, respect for privacy and confidentiality, freedom from violence, abuse and coercive practice, discrimination of HIV and syphilis and syphilis transmission, while ensuring meaningful participation of people living with HIV in the design and delivery of programs.

There are ten human rights, gender equity and community engagement criteria. The table below includes a review of the criteria and demonstrates the status of each criterion in Sao Toma and Principe.

**Table 8: Summary of Human Rights, Gender Equality and Community Engagement**

| No | Criteria for Human Rights, Gender Equality and Community Engagement | Country Status |
|---|---|---|
| 1 | Ending criminalization of HIV, Syphilis and HBV | No legislation that criminalizes the three diseases. |
| 2 | Ensuring voluntary testing and treatment | All testing and treatment for all health conditions, including the three diseases are voluntarily. |
| 3 | Ensuring prior, voluntary and informed consent | Consent must be provided by all patients before any medical procedure is performed. For the three diseases, verbal consent is given by all pregnant women before any procedure is performed. A pregnant woman must consent to the testing of the three diseases at ANC. |
| 4 | Eliminating coercive practices including involuntary sterilization, contraception and abortion | All medical practices are based on voluntarily indicated by all clients. No reports of coercive or forced sterilization. Abortions are performed and are legal |
| 5 | Ensuring confidentiality of health information | Confidentiality of health information data and reports are adhered in all health systems. Information to other health care providers is done to support clinical care. |
| 6 | Ensuring equality and non-discrimination | There is a law that protects persons living with HIV from discrimination. |
| 7 | Ensuring accessibility and quality of women-centered health care services | Services provided are specific to women-centered care. |
| 8 | Addressing gender-based-violence | There is gender institute and gender policy. A national strategy for gender and gender equity is also available for the country. National domestic violence legislation and service programs are available in Sao Tome |

| | | |
|---|---|---|
| | | and Principe. Further assessment is necessary for validation. |
| 9 | Engaging and being accountable to communities | There are three major community-based organizations that work closely with the national program for HIV/STI, VL and Hepatitis. There are networking of persons living with HIV who collaborates and supports the EMTCT program |
| 10 | Ensuring access to justice | To be determined as this was not assessed. |

8. Recommendations

Following the assessment of the primary prevention and treatment services for the EMTCT of HIV, syphilis and hepatitis B, the following recommendations are made in order to address the gaps and challenges. The recommendations will also support the advancements of the country to EMTCT validation as well as sustaining and building on the gains that have been made over the years.

The recommendations are provided separately for the national and district levels. It also reflects interventions that are critical in the event the country wishes to proceed with EMTCT of HIV.

**Central Level**

1. Establish and institute national mechanisms that will support the strengthening of the PMTCT of HIV, syphilis and hepatitis B primary prevention and treatment services within MCH. Consideration should be given to:
    a. Development, implementation and monitoring of a national plan which addresses the gaps and challenges identified during the assessment.
    b. Review and update the PMTCT guidelines, ensure the inclusion of the prevention and treatment for three diseases, alignment to WHO recommendations, partners testing, testing of the partner of the sero-positive syphilis pregnant woman, criteria for triple elimination and full integration into national policy and plans for MCH, sexual and reproductive health, pediatrics, HIV/STIs, VH, etc.
    c. Identify and put in place appropriate tools to collect data from the clinics at the district level that will support timely monitoring of all sero-positive pregnant women, the exposed infants and that will respond to the global indicators.
    d. Institute a national committee that is responsible for the PMTCT of the three diseases, and that will also review all cases for which there was a perinatal transmission, EMTCT data and institute necessary change as is necessary. This committee should be multi-disciplined and could serve as the National

Validation Committee (NVC). See annex 2 for suggestions for the Committee.

e. Identify mechanisms that will support strong collaboration, coordination, and communication between the MCH/SRH/Immunization and HIV/STI, VH and TB program at the central level.
f. Consider integrating the follow-up of the seropositive pregnant woman for syphilis and HBV as functions/responsibilities within the scope of the HIV Focal Point at the Central and District levels.

2. Adapt the surveillance case definition for the elimination of the mother to child transmission of syphilis. This will ensure that congenital syphilis cases are aligned to the global definition.
3. Ensure all updated EMTCT documents (policies, protocols, and data collection forms) are shared with the district clinics and if applicable, the two private health facilities.
4. Develop/adapt appropriate flowcharts that will support the clinical management of pregnant women and the exposed HIV and syphilis infants.
5. Ensure ongoing training for health care providers (public and private health sectors) on priority health issues related to maternity and pediatric, including primary prevention and treatment services for the seropositive pregnant woman and the exposed infants for the three diseases.
6. Revision of the DHIS2 to ensure it captures the essential indicators for the EMTCT of the three diseases (based on the indicators in the mandatory table), monitor progress at the national and district levels, and which will also respond to the global indicators.
7. Improvement in stock management practices to prevent stock out of HIV and syphilis testing kits, medications and other commodities at the service delivery level. Develop a system for forecasting and for the monitoring of rapid test kits (taking into consideration not only the number of pregnant women, but also an increased, the number of tests to be performed for each pregnant women based on protocol, as well as the exposed infants for syphilis) both at national and district levels.
8. Conduct training in the forecasting and management of supplies; develop a plan for annual/biannual procurement in collaboration with partners.
9. Incorporate syphilis confirmatory testing at the reference laboratory, as well as the implementation of proficiency testing for syphilis and hepatitis B.
10. Consider utilizing the dual test kits for HIV and syphilis which will support efficiencies and ensure the test for syphilis is provide to all pregnant women in all health facilities in the same manner as HIV.
11. Consider testing pregnant women for hepatitis B and provide intervention based on WHO recommendations/guidance.
12. Consider the implementation of PrEP for discordant couples, as well as syphilis and VH testing for all those enrolled in the PrEP service.

**District Level:**

**Programs and Services**

1. Capacity building for all health care providers at ANC, Labour and Deliver, child health and immunization on the newly developed/updated protocol.
2. Utilize the dual rapid tests kits as the primary method for the syphilis and HIV testing for pregnant women and procure rapid tests kits for hepatitis B kits.
3. Provide viral load testing for all HIV seropositive pregnant women during the last trimester so as to determine the viral load status of the mother before delivery. If the viral load is high (over 1000 copies/mL), consider cesarian section (neonate given prophylaxis immediately at birth) and provide milk supplement for the infant. Ensure the information regarding the viral load is provided to the nurses at labor and delivery in a timely manner.
4. Review and implement the WHO recommendations for the monitoring of the seropositive pregnant woman who is breast feeding. The monitoring should include viral load testing every six months (should be less than 1,000 copies/mL), adherence to treatment for mother and child and provide testing for the exposed infant who is breastfeeding at 9 months. Final diagnosis should be made utilizing serology at 6 weeks following cessation of breast feeding.
5. Revisit the protocol at the hospital and other maternity center country wide to ensure that the hepatitis B zero dose is provided to all infants within the 24 hours at birth.
6. Review the comprehensive package of service to ensure there is no cost for the primary prevention and treatment for services for the pregnant women, the partner and the exposed infant as this may affect timely access to testing and treatment for the three diseases and quality of care.
7. Implement contact tracing, while ensuring the availability of free HIV and syphilis testing and treatment for all partners of the sero-positive HIV and syphilis pregnant woman.
8. Testing of all exposed syphilis newborns immediately at birth, the provision of treatment and follow-up testing by the pediatric consultant 2 months after delivery.
9. Documentation of all PCR tests between 4-6 weeks and 9 months) and serology following breast feeding at all treatment sites in the established registries.
10. Ensure the availability of DBS kits to facilitate the timely Early Infant Diagnosis (EID) of all HIV exposed infants.
11. Review WHO recommendations for the provision of BCG vaccination for HIV exposed infants.
12. Utilize the current audited sheet to standardize, track and monitor the continuum of care and outcome of all HIV, syphilis and HBV of the pregnant woman and the exposed infants by the PMTCT or MCH Focal Point as is appropriate.
13. Update the registries at the clinics and Labour wards to include key indicators for the testing of HIV, syphilis and Hepatitis B and treatment dates so as to ensure the availability of data to monitor the programmatic progress locally and nationally and to report on global indicators.

14. Ensure that all registries (MCH, Labour and delivery, etc.) include all essential health data/indicators relating the pregnant women and the exposed infant. This should also include information on hepatitis B zero dose where appropriate.

**Laboratories Services**

1. Develop and implement standardized algorithm which includes confirmatory testing for syphilis in all district and hospital laboratories.
2. Consider instituting confirmatory testing for syphilis at the reference laboratory.
3. Inclusion of proficiency testing annually at the reference laboratory for syphilis and viral hepatitis.
4. Finalize and update the national laboratory policy and strategic plan and provide oversight for all those district laboratories providing HIV, syphilis, HBV & TB tests.

**Surveillance**

1. Develop format and process for the collecting/reporting of EMTCT key data based on individual cases (not aggregate) periodically from the clinics and to the Central. Ideally this information should be collected in DHIS-2 for analysis at the district and national levels.
2. Transitioned from manual record system to an electronic system. Identify an appropriate perinatal clinical record which can interface with other databased and will support comprehensive clinical records[41]. See below a recommendation for consideration and which can be adapted accordingly.
3. Record all still births, including the contributing factors, as well as the maternal syphilis (positive or negative) of the mother. If the mother was not tested prior to the delivery of the stillbirth, test all the mothers to determine the status of syphilis.
4. Produce bi-annual or annual EMTCT reports and share with users and producers of data for EMTCT. This will support the monitoring of EMTCT Plus strategy, programmatic and evidence-based planning.

**Community engagement**

1. Consider expanding the scope of CSOs of persons with HIV to also monitor pregnant women who are breastfeeding at the district and community levels and with adherence counseling and to include TB into the work at the district level.
2. Include on the national committee for EMTCT, women living with HIV and other members of the CSOs engaged at the district levels.

[41] Information on one existing perinatal clinical record can be accessed at https://www.paho.org/en/latin-american-center-perinatology-women-and-reproductive-health-clap/perinatal-information-system#:~:text=In%201983%2C%20CLAP%2FWR%20published,provided%20to%20mothers%20and%20newborns.

**Activities to be implemented prior to the submission of EMTCT Report**

Preliminary data for mother-to-child transmission shows that the country may have achieved the targets for EMTCT of HIV for three years, 2020-2022. However, the data needs to be validated and activities such as retrospective data collection, review the cause of the perinatal transmission of HIV and the testing of all 2022 exposed infants that are over 9 months and are still breast feeding are me completed for a comprehensive and proper analysis of the country. In addition, 2019 data is required as global guidance states that for small countries, it is important to submit data for 4-5 years in order to support the pooling of data. In order to determine if Sao Tome can advance to EMTCT validation in the near future, the following actions are urgently required with the coordination of the MCH and the national program for HIV/STI, Viral hepatitis and TB.

PROPOSED ACTIVITIES FOR IMMEDIATE IMPLEMENTATION

| Gaps and Challenges | Recommended actions | Responsible Persons/Department/Unit | Implementation date |
|---|---|---|---|
| There seems to be a discrepancy in the MCH data (live births and still births) provided for the mandatory table. The data on total births and live births are needed to accurately calculate the mandatory table. | Review and provide updated data on total births and live births for each of the four years (2019-2022) | MCH Director | To be determined by the national committee |
| Data for HIV and syphilis testing have some inconsistencies with the data previously provided. This data is needed for the mandatory table regardless of if the country is applying only for EMTCT of HIV. | Conduct retrospective data collection from all the ANC clinics and health posts (Sao Tome and Principe) to determine the number of women tested for HIV and syphilis for the 4 years 2019-2023 in all the clinics. | MCH & HIV Foal Points at central and district levels | To be determined by the national committee |
| | Also collect data on HIV and syphilis testing from the labor and delivery on those women who had no ANC and were not tested prior to delivery. | MCH & HIV Foal Points at central and district levels | To be determined by the national committee |

| Gaps and Challenges | Recommended actions | Responsible Persons/Department/Unit | Implementation date |
|---|---|---|---|
| | Review the data at Labour and delivery and at the maternity centers to ensure no double counting of persons tested for both HIV and syphilis. | MCH & HIV Foal Points at central and district levels | To be determined by the national committee |
| | Review and if possible, update the MCH registries in each of the ANC clinics indicating that the HIV, syphilis was provided for each pregnant women and the results. This is necessary if the country decides to go for validation. | MCH & HIV Foal Points at central and district levels | To be determined by the national committee |
| | Update as necessary or develop and implement a registry within ANC that will detail the treatment date and monitoring of all the seropositive HIV and syphilis pregnant women, the continuum of care provided and the outcome of the infant. | MCH Director | To be determined by the national committee |
| | Update all clinical files at the district level with appropriate testing and treatment information for all sero-positive pregnant women for HIV and syphilis. | MCH and HIV Focal Points (central and district level) | To be determined by the national committee |

| Gaps and Challenges | Recommended actions | Responsible Persons/Department/Unit | Implementation date |
|---|---|---|---|
| Follow-up testing for the HIV exposed infant is not aligned to the WHO recommendations. HIV exposed infants born in 2022 only have one PCR test which was done between 4-6 weeks. | Conduct 9 months PCR tests on all HIV exposed infants born in 2022. | HIV Focal Point at central and district level/Lab | To be determined by the national committee |
| | Review all HIV exposed infants (2019-2022) to determine if they are still breast feeding. If not breast feeding, conduct a serology test on those not breast feeding based on date of cessation. | HIV Focal Point at central and district level/Lab | To be determined by the national committee |
| There are HIV exposed infants without final diagnosis as they are lost to follow-up. | Babies that are lost to follow-up, consideration should be given to checking the immunization records to try and identify the infants and conduct testing so as to ensure a final diagnosis. | HIV Focal Point at central and district level | To be determined by the national committee |
| Gaps in PCR registries at the clinics need to be completed. | Registries at all treatment sites should update accordingly, indicating the date of the PCR tests, the results and final diagnosis of each infant if they are no longer breastfed. | PMTCT Nurse | To be determined by the national committee |
| Mother and babies are not linked in all registries. | In all registries (national and district), link all infants to the year of birth | HIV Focal Point at central and district level/ PMTCT nurse | To be determined by |

| Gaps and Challenges | Recommended actions | Responsible Persons/Department/Unit | Implementation date |
|---|---|---|---|
| | and provide PCR results based on the year of birth and not the year they were tested. | | the national committee |
| Ensure data in the EMTCT report correlates to all national systems. | Ensure that the final data in the audited sheets for HIV/syphilis are similar to what is available at the district & central surveillance, and HIS. | HIV Focal Point at central and district level/ PMTCT nurse/M&E Officer | To be determined by the national committee |
| Gaps in testing and treatment of pregnant women and exposed infants for HIV, syphilis and HBV | Update the guidance for HIV, syphilis and hepatitis B and have it available in all ANC clinics. (Updated guidelines will be shared) | MCH Director/NAP Director | To be determined by the national committee |
| | Review and adopt flowcharts (to be shared) for the clinical management of HIV and syphilis exposed infants. | MCH Director/NAP Director | To be determined by the national committee |
| | Provide training for all ANC health care providers on the newly updated guidance | MCH Director/NAP Director | To be determined by the national committee |

| Gaps and Challenges | Recommended actions | Responsible Persons/Department/Unit | Implementation date |
|---|---|---|---|
| Socialization of EMTCT validation if country decides to advance to EMTCT of HIV | Finalize the national EMTCT report, update the epidemiological profile, rewrite the sections on laboratory, surveillance and human rights as the current information is insufficient for submission to RVC. | MCH Director/NAP Director | To be determined by the national committee |
| | Send communication/reminder to all MCH & health care providers regarding the EMTCT validation process and the need for urgent action(s) necessary at each clinic (i.e., updating registries, be familiar with the primary prevention and treatment for pregnant women, testing and treatment of the partner, and the exposed infant, contact tracing and follow-up actions) | MCH Director/NAP Director | To be determined by the national committee |
| | Convene an additional Stakeholders meeting with key persons from the public and private sector to advise on the EMTCT strategy and validation requirements and possible interviews during the in-country assessment process. | MCH Director/NAP Director | To be determined by the national committee |

| Gaps and Challenges | Recommended actions | Responsible Persons/Department/Unit | Implementation date |
|---|---|---|---|
| | Official letter from the Minister of Health to the WHO Country office requesting EMTCT validation | MCH Director/NAP Director | |

**9. Conclusion**

There are in place strong Maternal and Child Health Services that provides comprehensive primary prevention and treatment for pregnant women and the exposed infants. The primary prevention services are supported at the primary care level by a cadre of dedicated and qualified health care professionals that are capable of providing the services in a sustained manner. However, the ongoing availability of the necessary commodities (testing reagents) and medications and existing copayments has the potential to undermine the achievements and gains, and the sustainability of the EMTCT strategy.

The ongoing improvement and programmatic synergies under the leadership of MCH will strengthen the EMTCT Plus strategy. In addition, the availability of an adequate surveillance system that will monitor and track the seropositive pregnant woman and the exposed infants at the primary care level will generate quality data to support programmatic review of EMTCT Plus ((including maintenance) the advancement of the overall goal of elimination.

Preliminary data indicates that Sao Tome and Principe may be on the path for the EMTCT of HIV. However, retrospective data collection coupled with other suggested activities will help to further analyze this situation.

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13. UNICEF MIC Survey 2020
14. World Health Organization Country Cooperation Strategy 2017-2021
15. WHO Global Criteria for the Elimination of the mother-to-Child Transmission of HIV, Syphilis and Hepatitis B


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**Appendix I: Data sources for mandatory EMTCT impact and programmatic indicators:**

| Indicator | Data Source | Does data represent country |
|---|---|---|
| **MTCT rate of HIV by birth cohort** | Antenatal charts, Care and Treatment charts, PMTCT registry/database, clinical Registry | Yes |
| **Annual rate of new pediatric cases of HIV infections** | Care and Treatment registries, data base | Yes |
| **Annual rate of Congenital Syphilis** | Antenatal and hospital Registries | Yes |
| **Antenatal care coverage (at least one visit)** | Primary Health Care Registry & Antenatal chart | Yes |
| **HIV testing coverage of pregnant women** | Antenatal chart, Primary Health Care Registry, Care and Treatment charts, PMTCT registry | Yes |
| **Syphilis testing coverage of pregnant women** | Antenatal chart, Primary Health Care Registry, Care and Treatment charts, PMTCT Database | Yes |
| **ART coverage of HIV positive women** | Antenatal chart, Primary Health Care Registry, Care and Treatment charts, PMTCT Database | Yes |
| **Treatment coverage of Syphilis positive pregnant women** | Antenatal chart, Primary Health Care Registry, Care and Treatment charts, PMTCT Database | Yes |

**Annex: 2: Suggestion for National Committee**

The National Committee or NVC should be led by Maternal and Child Heath and should bring together expertise from the following disciplines and areas:

1. District Health Official
2. Maternal and Child Health
3. Sexual and reproductive health
4. Health care providers from ANC/Labour
5. Health Information officer/surveillance officer/monitoring and evaluation officer
6. Laboratory personnel
7. National HIV/STI/VH & TB Program
8. PMTCT Coordinator
9. District MCH Coordinator
10. Health care professional for HIV, syphilis and HBV prevention and treatment
11. Representative of national Gender program
12. Representative of civil society organization
13. Representative of woman living with HIV

**Annex 3: List of persons interviewed.**

| No. | Names | Positions | Organizations |
|---|---|---|---|
| 1 | Bonifácio de Sousa | Coordinator | National Program against AIDS, STIs, Viral Hepatitis and TB |
| 2 | Jean Claud Fahé | HIV case management doctor | National Program against AIDS, STIs, Viral Hepatitis and TB |
| 3 | Paulina Alcântara | Focal Point PMTCT | National Program against AIDS |
| 4 | Semoa da Trindade | Monitoring and evaluation | National Program against AIDS, STIs, Viral Hepatitis and TB |
| 5 | Martinho Nascimento | TB case management doctor | National Program against AIDS, STIs, Viral Hepatitis and TB |
| 6 | Lagchar Barreto | Viral hepatitis case management doctor | National Program against AIDS, STIs, Viral Hepatitis and TB |
| 7 | Amilton dos Santos Graça | Statistics intern | National Program against AIDS, STIs, Viral Hepatitis and TB |
| 8 | Miselte Coelho | HIV focal point Agua Grande district | District of Agua Grande |
| 9 | Lábica Soares Vilhete | HIV focal point Agua Grande district (PMTCT) | District of Agua Grande |
| 10 | Edniliza Solange Barros | Coordinator | SRH and MCH |
| 11 | Adilé Conceição Afonso | Focal Point | SRH and MCH |
| 12 | Maria Rodrigues Amado | Focal Point | SRH and MCH |
| 13 | Rosa Neto | Responsible (head) | National Laboratory references TB and HIV |
| 14 | Lazismino Lázaro | Laboratory technician | National Laboratory references TB and HIV |
| 15 | Yardlene Sequeira | Laboratory technician | National Laboratory references TB and HIV |
| 10 | Cremilde Bragança | Director | Maternity service of hospital central |
| 11 | Olímpia Aragão | Responsible nurse | Maternity service of hospital central |

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|---|---|---|---|
| 12 | Daniel Carvalho | Director | Pediatric Service of hospital central |
| 13 | Kelvio de Barros | President of the Association | ASAPRESSHE |
| 14 | Santiago Preto | President of the Association | ASAPRESSHE |
| 15 | Jaybel Lima | Association member | ASAPRESSHE |
| 16 | Mila das Neves | President of the Association | ANAPRESSEN |
| 17 | Wilma dos Ramos | President of the Association | ANAPRESSEN |
| 18 | Ana Isabel Rita | CEO | ARS clinic |
| 19 | Azevedo Matias da Vera Cruz | Laboratory technician | ARS clinic |
| 20 | Nelito Gomes | Laboratory technician | ARS clinic |
| 21 | Olinto Boa Morte | health delegate | District of Lobata |
| 22 | Maria de Lurdes | Maternity nurse head | District of Lobata |
| 23 | Carlos Silva Capela | HIV focal point | District of Lobata |
| 24 | Zelfigénia Sousa | Focal point SRH and MCH | District of Lobata |
| 25 | José Manuel Carvalho | Program Analyst | UNFPA |
| 26 | Luis Bonfim | Health Specialist | UNICEF |
| 27 | António Lima dos Santos | CEO | ASPF |
| 28 | Wilson do Nascimento | Managing Director of Finance | ASPF |
| 29 | Arlindo Lima Ruyvo | Program Director | ASPF |