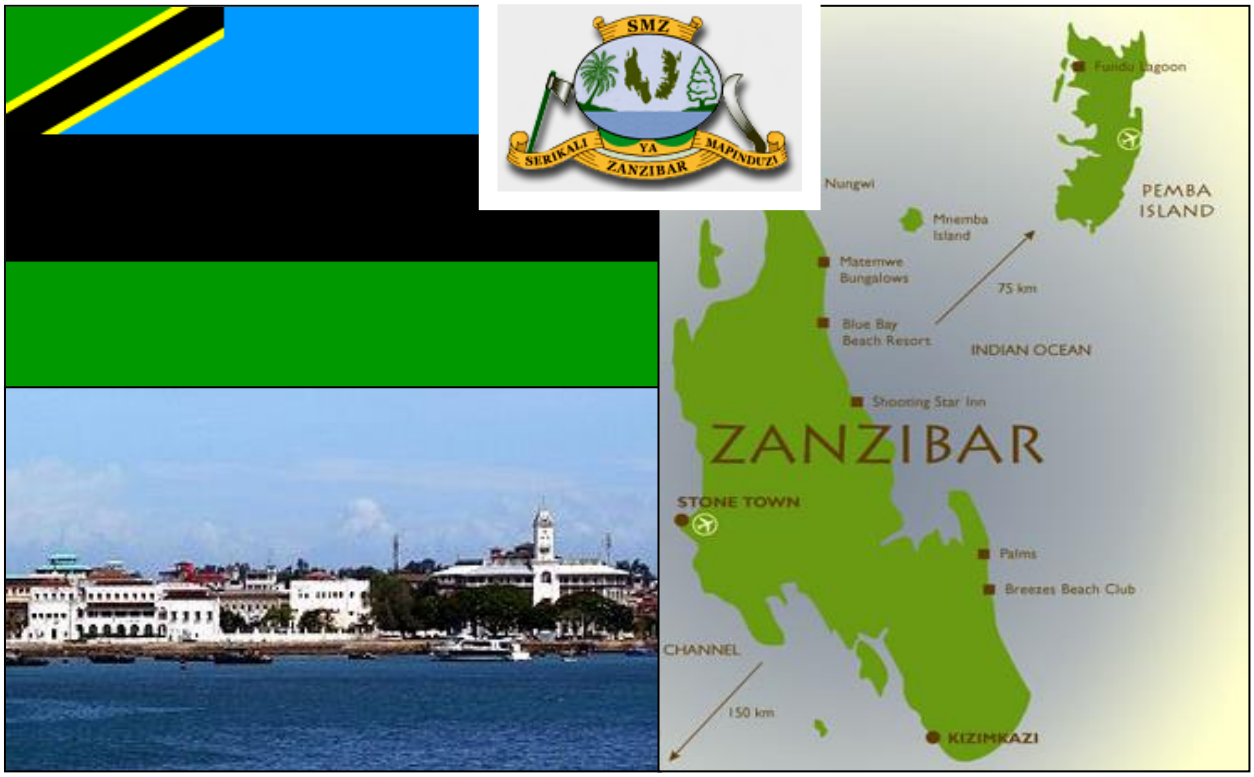

2019 HIV and TB Epidemiologic Profile – Zanzibar

Integrated Epidemiologic Profile for HIV and AIDS Prevention, Care and Treatment, TB Prevention and Treatment

Contributors

This document, *2019 Epidemiologic Profile – Zanzibar, Integrated Epidemiologic Profile for HIV and AIDS Prevention, Care and Treatment, TB Prevention and Treatment* was developed by the Zanzibar Integrated HIV, Hepatitis TB and Leprosy Programme (ZIHHTLP) in collaboration with University of California, San Francisco (UCSF), Tanzania.

Contributors included Dr Farhat J. Khalid, Dr Ali Salim Ali, Issa Abeid Mussa, Asha Ussi Khamis, Asha Ahmed Othman, Shaaban H. Haji, Dr Maryam A. Khamis, Damian J. Damian, Dr Khamis A. Suleiman, Dr. Hussein A. Haji, Dr. Ali H. Juma, Valeria Haroub, Christen Said and Joel Ndayongeje .

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1.0 Introduction

This epidemiologic profile provides detailed information about the current Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) epidemic in Zanzibar, Tanzania. This profile is a guide for planning and improving HIV and AIDS prevention, care and treatment and strategic information activities, and it serves to identify gaps in surveillance and prevention, justify and obtain funding for program implementation, and monitor and evaluate programs and policies throughout Zanzibar. The data sources described below were analysed to address three key epidemiologic questions:

1. What are the current trends in HIV and what is the direction of the epidemic in Zanzibar?
2. What are the current prevention efforts in Zanzibar?
3. What are the patterns of HIV service utilization in Zanzibar?

Each section of the report answers one of these questions through relevant data analysis and interpretation.

1.1 Data Sources

Data were compiled from the sources listed below to provide the most complete picture possible. When interpreting the data, it is advisable to keep in mind that each of the data sources has strengths and limitations.

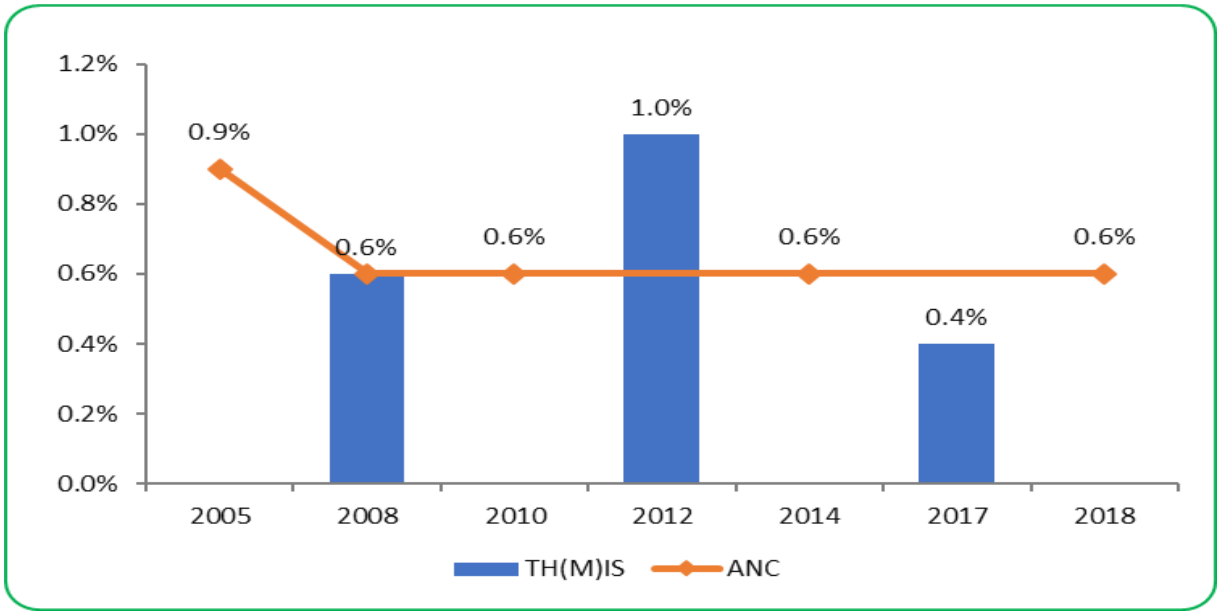
- Tanzania HIV/AIDS and Malaria Indicator Survey (THMIS) 2007/2008 and 2011/2012
- PMTCT Program Data (2005 - 2012)
- ANC Surveillance (2005, 2008 and 2010)
- Care and Treatment Program Data (2005-2012)
- Counselling and Testing Program Data (2005-2012)
- 2012 Census (NBS)
- Bio-behavioural Surveillance (BSS) 2007 and 2011/12 for MSM, PWID, SW

2.0 THE STATUS AND TREND OF HIV AND AIDS IN ZANZIBAR

2.1 Population Based Surveys and Antenatal Natal Care Sentinel Surveillances

Zanzibar has managed to maintain HIV prevalence below 1% for the last two decades. The Zanzibar's HIV epidemic has been stable as been established by both Population Based Surveys (TH(M)IS) and Antenatal Natal Care Sentinel Surveillance (ANCSS).

Figure 1: HIV Prevalence among adult women 2005-2018, Zanzibar, TH(M)IS and ANCSS



2.2 Spectrum Projection

UNAIDS developed AIDS Impact Module known as Spectrum Software that uses demographic data, routine and survey HIV and AIDS data to provide answers for various key indicators. The information provided is useful for the management and projection of HIV responses in the country. Zanzibar has been updating Spectrum file every year starting year 2013.

Figure 2: Population estimate of people living with HIV, 2010 – 2025, Zanzibar, Spectrum file

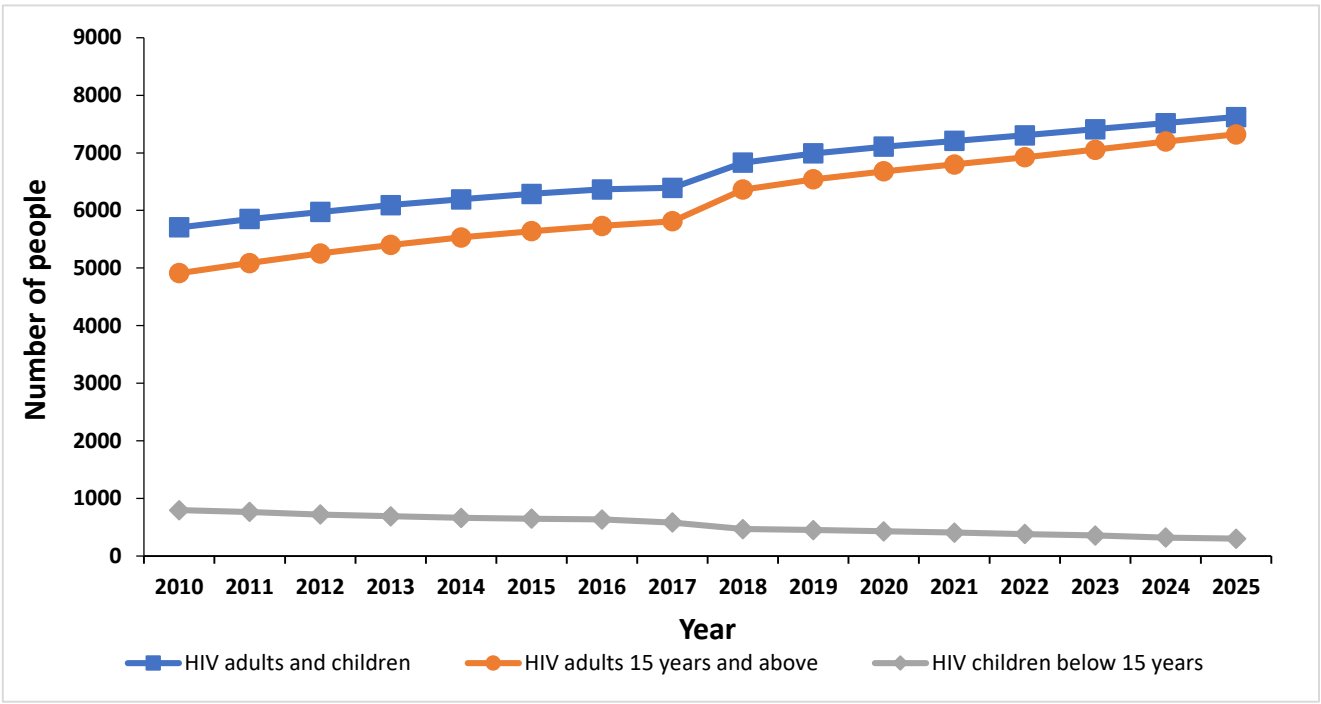
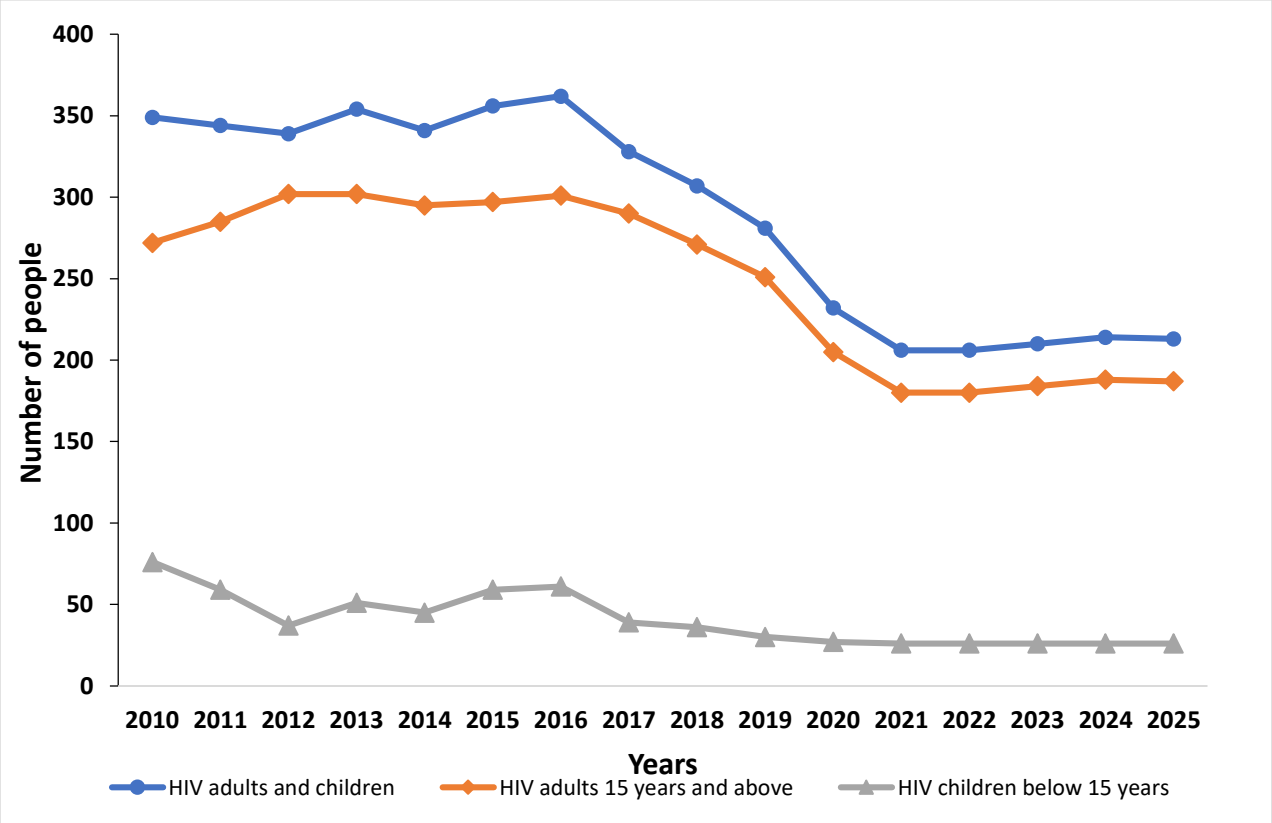


Figure 2 above shows trend of PLHIV in the last ten years according to the Zanzibar Spectrum file. It is estimated that an average of 6,991 people including adults and

children will be living with HIV in 2019 in Zanzibar. Among them, 93.5% (6,539) will be people in the age group of 15years and above and 6.5% (452) are children less than 15 years of age.

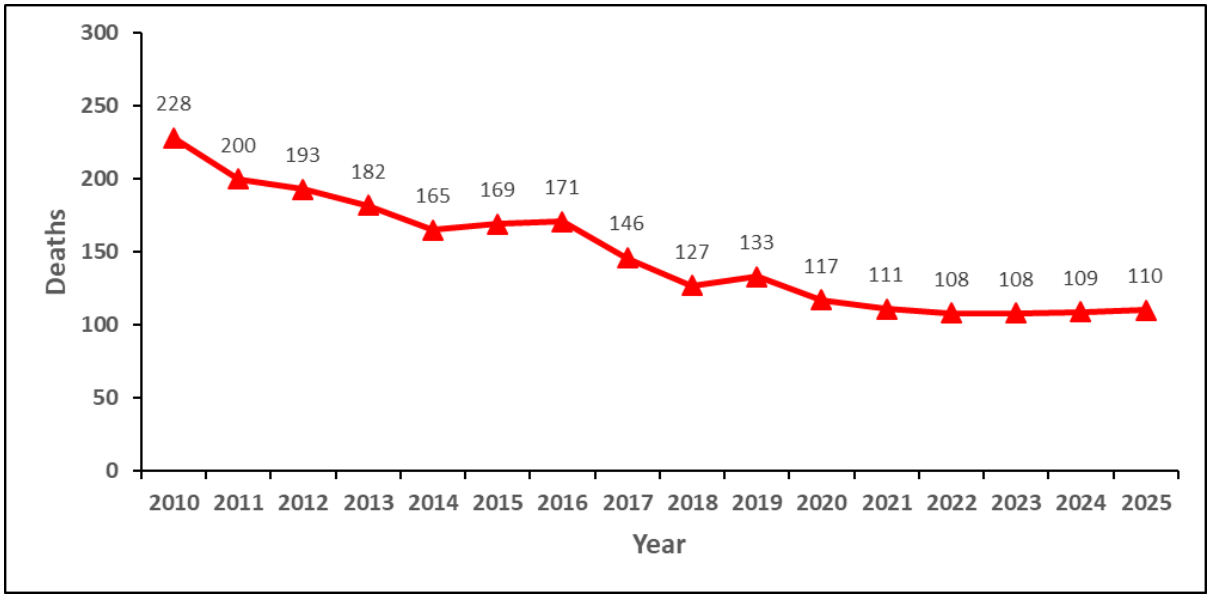
The population of PLHIV has been increasing gradually from 2010 to 2019. The steady state can be explained by the establishment of care and treatment services in 2005 and access to ART that improved the health outcome of PLHIV.

Figure 3: Trend of new HIV infection from 2010 – 2025, Zanzibar, Spectrum file



The trend of the number of new HIV infections shows a downward trend across all age groups for the last ten years as shown in figure 3. In 2019, 281 new cases are estimated whereby 30 (10.6%) are children less than 15 years and 251 (89.4%) are people above 15 years of age. The decline of new HIV cases has been attributed to several interventions that include effective HIV prevention and treatment of PLHIV.

Figure 4: Total deaths to HIV population, 2010 – 2025, Zanzibar, Spectrum file

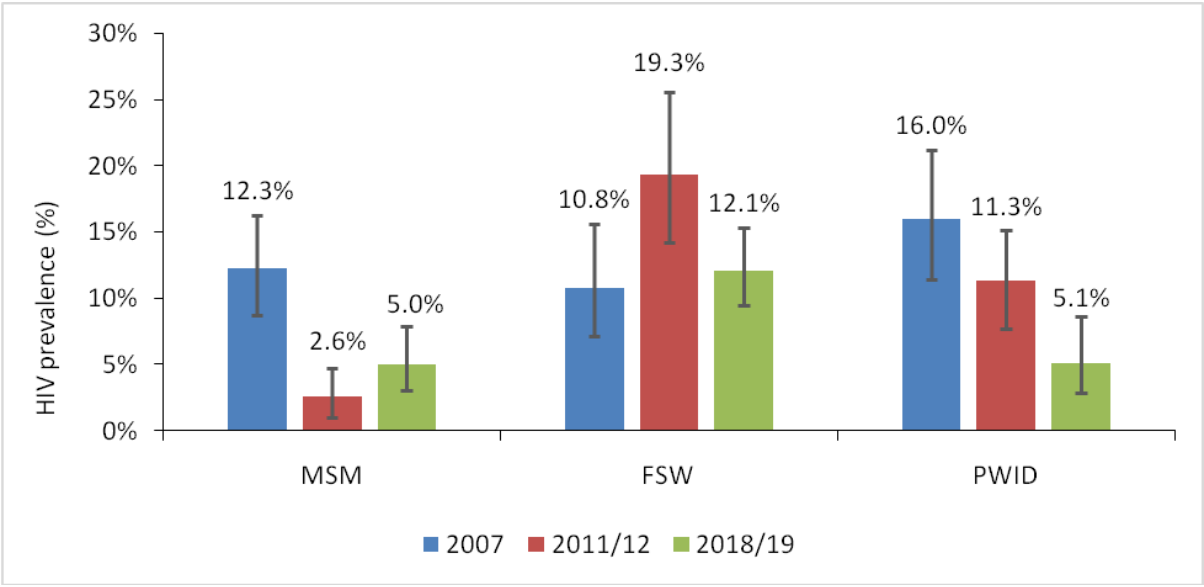


The figure 4 above shows steady decline of deaths among PLHIV for the last decade. The decline is due to effective ART program.

2.3 Integrated Bio - Behaviour Survey among Key Population

Zanzibar is having a concentrated HIV epidemic. Surveillance studies have been conducted in different risk groups with attention to Key Populations; Men who have Sex with Men (MSM), Female Sex Workers (FSW), and People Who Inject Drugs (PWID). These groups have been tested for HIV and their HIV risk factors have been extensively studied. As a result, IBBS studies with key populations (KP) at risk were conducted in 2007, 2011/12 and 2018/19 using respondent driven sampling (RDS) protocols.

Figure 5: HIV Prevalence among KP, Unguja IBBS 2007, 2011/12, 2018/19



The prevalence of HIV infection among Key Populations were relatively high; 16.0% among PWID, 12.3% among MSM and 10.8% among FSWs in 2007; 11.3% among PWID, 2.6% among MSM and 19.3% among FSWs in 2011/12; and in 2018/19 HIV

prevalence were 5.1% among PWID, 5.0% among MSM and 12.1% among FSWs (Figure 4). There is gradual decline of HIV prevalence among PWID. But for MSM and FSW there were some discrepancies noted in the findings of the HIV prevalence from year to year. The reasons for these discrepancies are unknown.

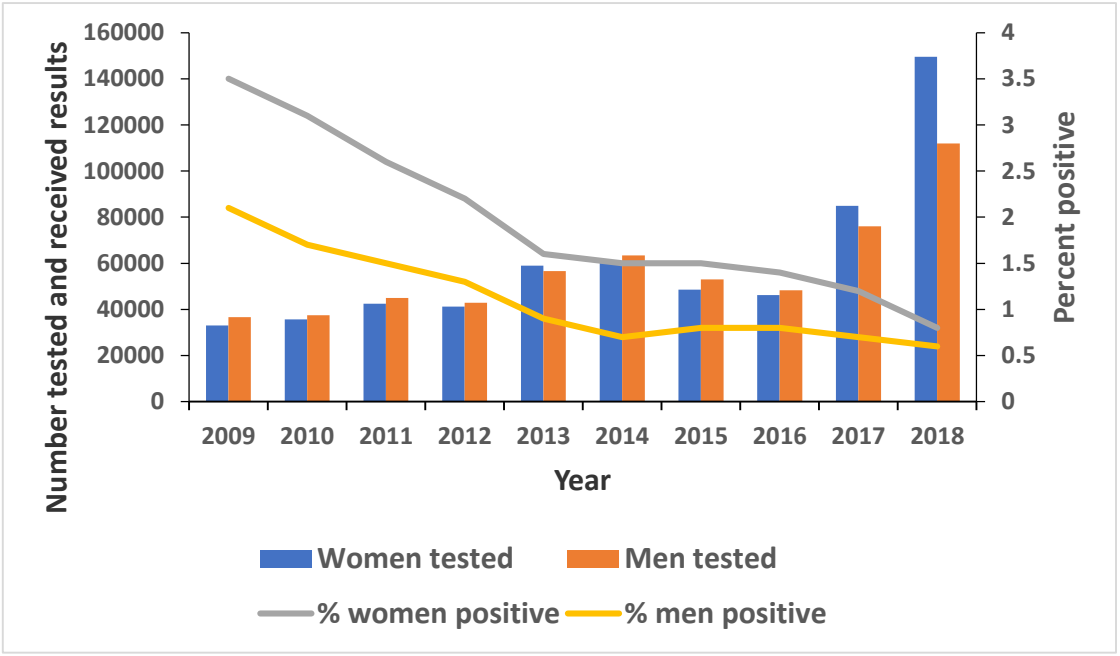
3.0 PREVENTION EFFORTS IN ZANZIBAR

HIV prevention remains a corner stone of Zanzibar's HIV Prevention. Combination prevention is implemented including various models of HIV testing and counselling (HTC), STI prevention services, PMTCT, condom distribution and IEC/BCC. The HIV prevention services are implemented in all eleven (7 Unguja and 4 Pemba) districts.

3.1 HIV testing and counselling

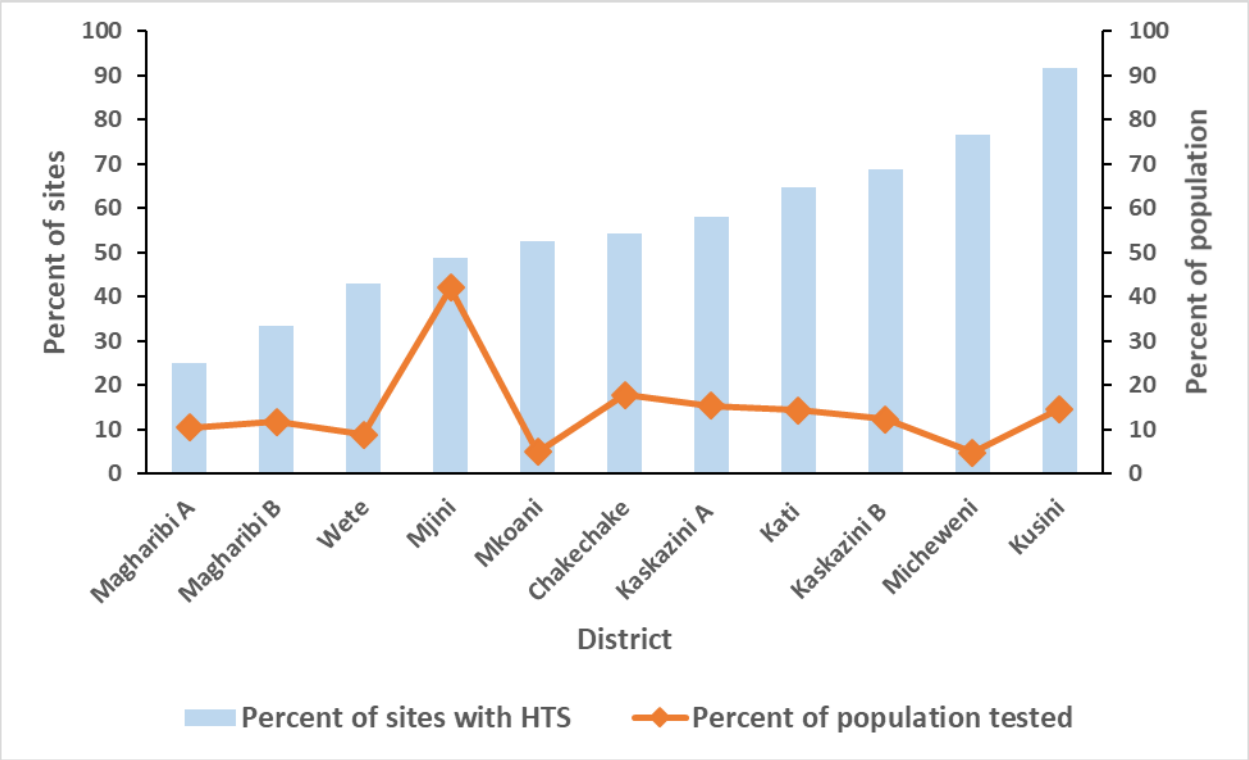
HIV testing and counselling (HTC) services were provided in 141 sites in Zanzibar in 2018. These services were offered through two main approaches including Client-Initiated Counselling and Testing (CITC)/Voluntary Counselling and Testing (VCT) and Provider Initiated Testing and Counselling (PITC). Among 141 established sites, 13 sites provide VCT services only, 79 provide PITC services only and 49 provide both PITC and VCT services.

Figure 6: Trend of number of clients tested for HIV and received results, and % positive in Zanzibar, ZIHHTLP program data, 2009-2018



The trend of HIV testing and counselling since inception is upward. There was a slight dipping in 2015-16 due to the shortage of HIV test kits. In the last three years' number of Women tested surpassed Men. The percentage of women testing positive is higher than men throughout the years, but the gap is closing fast. As trend shows overall there is decrease of positivity among those tested (Figure 6).

Figure 7: Percent of sites with HTS and percent of population tested for HIV by district, Zanzibar, ZIHHTLP program data, 2018

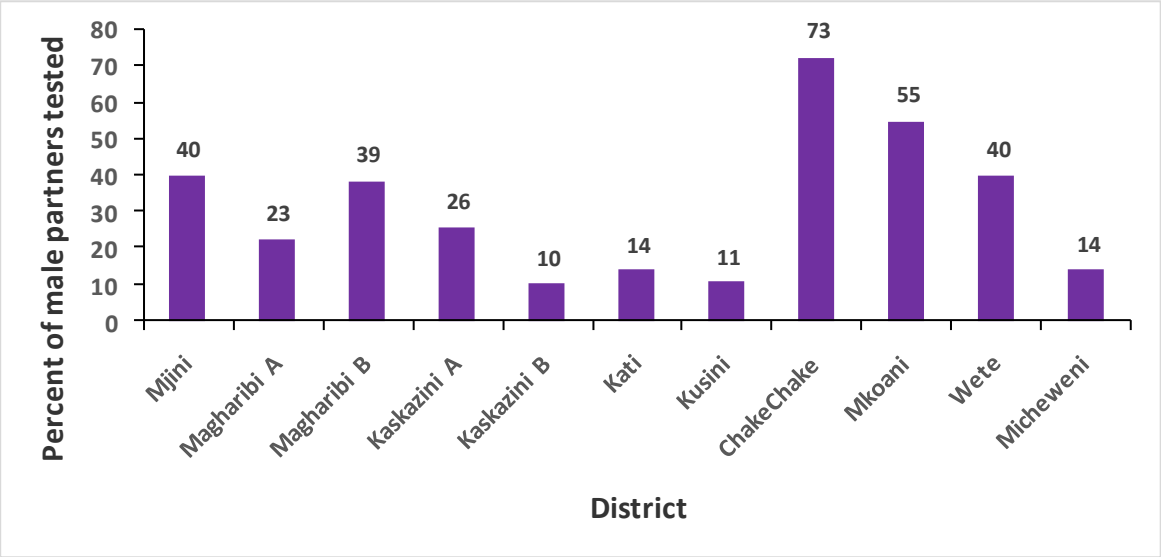


Zanzibar enjoys high coverage of HTC services. A Kusini district has more percentage of HTC sites followed my Micheweni district. But Mjini district conducted more HIV tests then any district (Figure 7). This is because majority of HIV testing are done through PITC provided by Mnazi mmoja and Mwembeladu Hospitals where majority of patients in Unguja are attended. A total of 68% of HIV testing are coming from PITC (ZIHHTLP Annual Report 2018)

3.2 Male Involvement

Experience in HIV prevention and care initiatives have shown positive benefits of male involvement in HIV services, including increased access to HTC, PMTCT and ART services for women and children.

Figure 8: Percent of male partners of ANC clients tested for HIV in the last 12 months per district, Zanzibar, ZIHHTLP Program data, 2018



Percentage of male involved in PMTCT services was noted more in Pemba than Unguja. Chake Chake and Mkoani districts involved male for HIV testing at higher percentages than the rest of the districts (Figure 8).

3.3 HIV Prevention among Young People

Prevention of HIV among youth is of the paramount importance. More than half of those newly infected with HIV in Zanzibar currently are between 15 and 24 years old. For the country to halt the spread of HIV it must focus on young people. The young people are more likely than adults to adopt and maintain safe behaviors.

Table 1: Percentage of males and females age 15–24 years who have had sexual intercourse before the age of 15, Zanzibar

	THMIS 2007-08		THMIS 2011-12		THIS 2016-17	
	Male	Female	Male	Female	Male	Female
Unguja	2.1	3.1	0.3	2.1	3.6	2.8
Pemba	1.1	4.1	0	2.4	1.5	0
Zanzibar	1.7	3.4	0.2	2.2	3.1	2.1

Most of young people have been reported getting exposed to HIV for the first time when engaged in the sexual activities. Therefore, it is important to track at what age young people are engaged in the sex for the first time. Young people of the age 15 to 24 years are the hope for the country to end HIV epidemic by 2030. The age of sexual debut associated with increase in HIV incidence among this age group. The percentage of young people who had sex before the age of 15 should be below 5%.

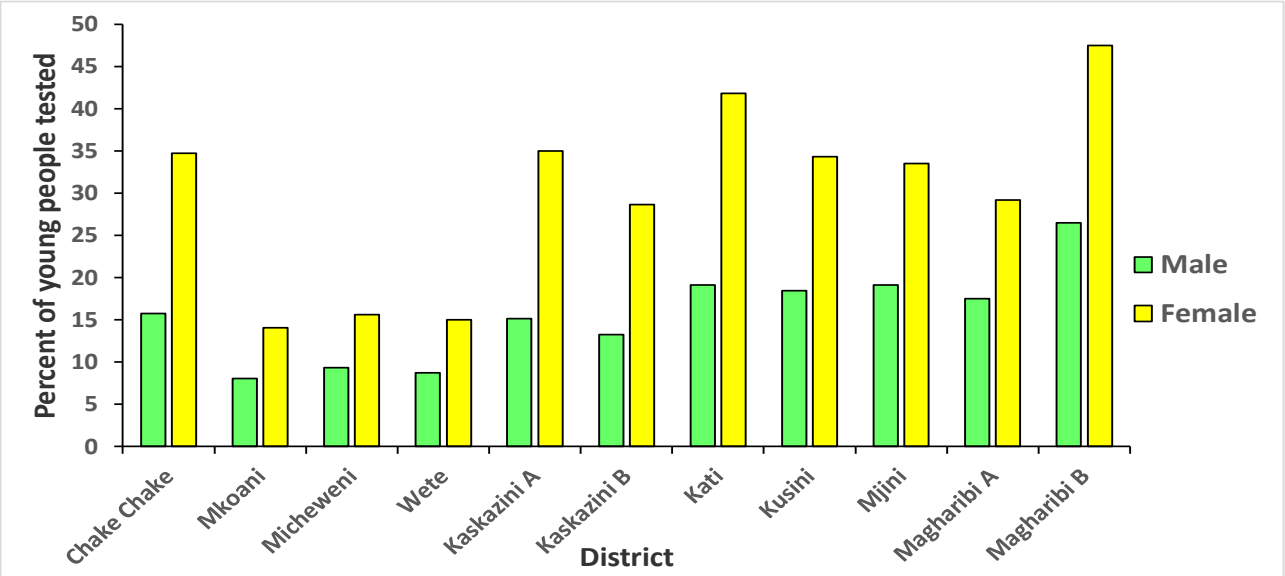
Table 1 above shows that since 2008 the percentage of youth who engaged in sexual activities for the first time below 15 years of age is low and stable. However, health education on comprehensive HIV prevention should be strengthened.

Table 2: Percentage of males and females age 15–24 years with correct knowledge on HIV transmission, Zanzibar

	THMIS 2007-08		THMIS 2011-12		THIS 2016-17	
	Male	Female	Male	Female	Male	Female
Unguja	31.8	32.5	30.4	36.2	27.7	30.8
Pemba	26.3	21.0	29.3	37.7	14.6	24.5
Zanzibar	30.1	29.0	30.1	36.6	24.6	29.2

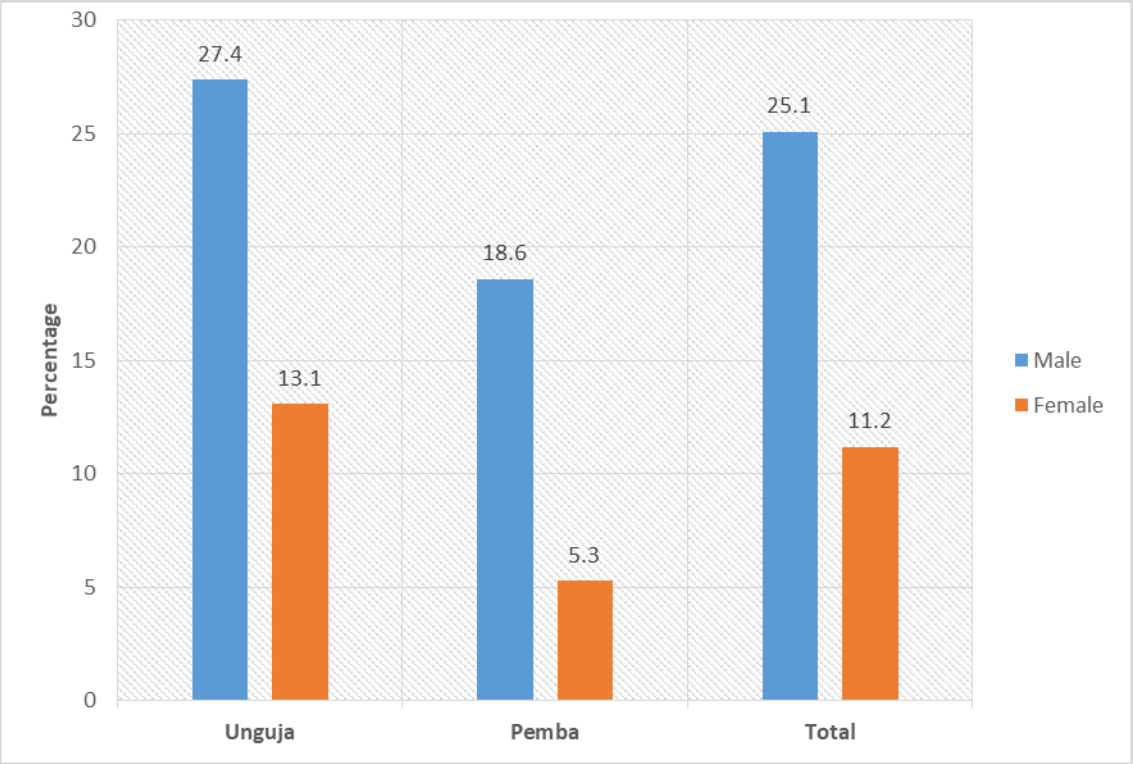
Positive behavior change can occur only when the young people are having enough knowledge on HIV prevention and care. Since 2008 percentage of youth who were able to answer correctly all 5 questions on Comprehensive knowledge on HIV prevention were below 40% (Table 2). This is not enough for sustaining low HIV prevalence and incidence in Zanzibar. For the country to eliminate HIV there is a need to strengthen training and sensitization of young people on HIV prevention and care.

Figure 9: Percent of young people aged 15-24 years tested for HIV by sex and district, Zanzibar, 2018, ZIHHTLP Program data



Young people are targeted to receive HIV Prevention Services. HTC for youth is provided throughout the country. Magharibi B and Kati districts tested more youth in comparison with other districts. Women were tested more than men in all districts (Figure 9).

Figure 10: Percentage of Young People who reported using a condom the last time they had sex with a nonmarital, non-cohabitating partner in the last 12 months, THIS 2016/17

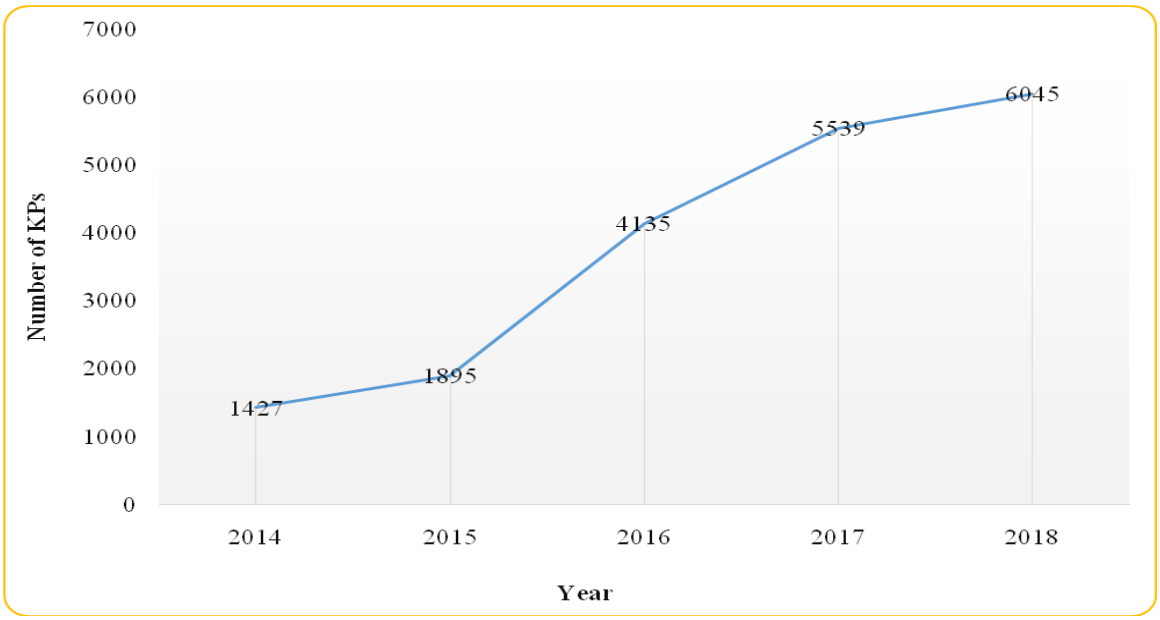


Condoms protect young people from HIV and unwanted unplanned pregnancy. Therefore, correct and consistent condom use is associated with reduction of new HIV infection. Figure 10 above shows that less than 25% of youth used condom the last time they had sex with a nonmarital, non-cohabitating partner in the last 12 months. The situation is not encouraging on the prevention of HIV infection among youth. More effort is needed towards effective implementation of developed condom strategy to increase condom use in Zanzibar.

3.4 HIV Prevention Services for Key Population

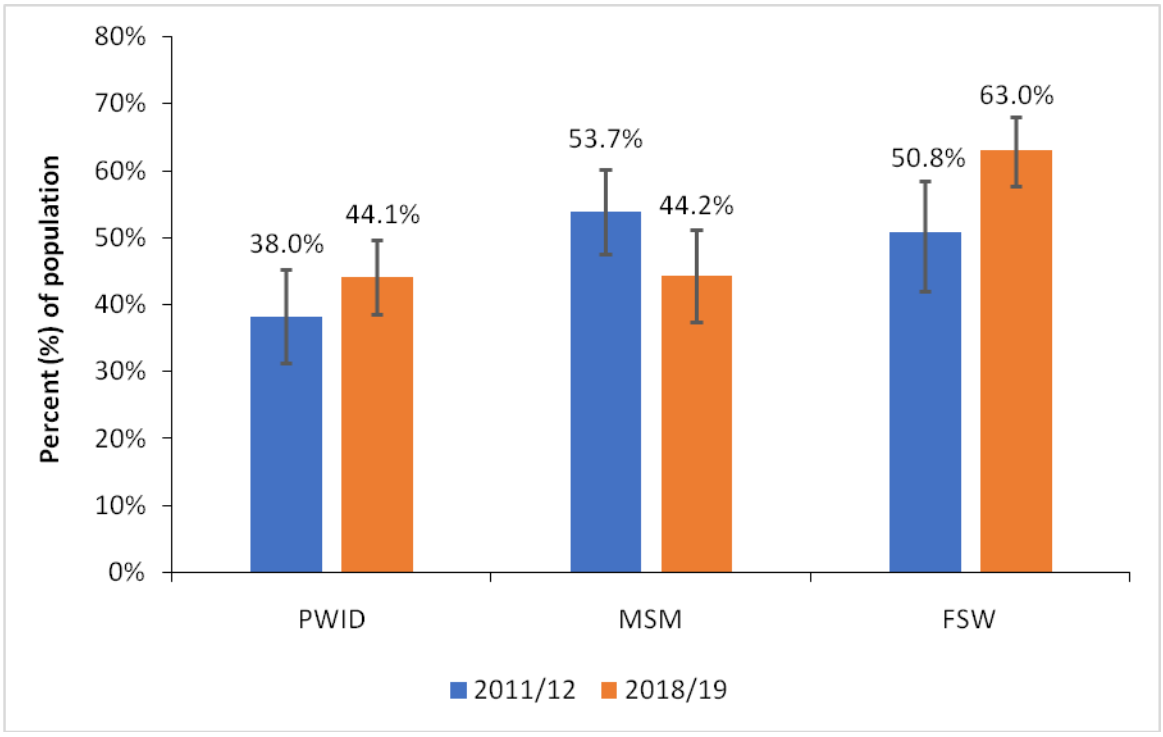
HIV Testing is the entry point for KPs to access HIV prevention and care services. KPs can receive HTC services through usual VCT, PITC and outreach services.

Figure 11: Trend of HIV testing services among KPs from 2014 – 2018, Zanzibar, ZIHHTLP Annual Report 2018.



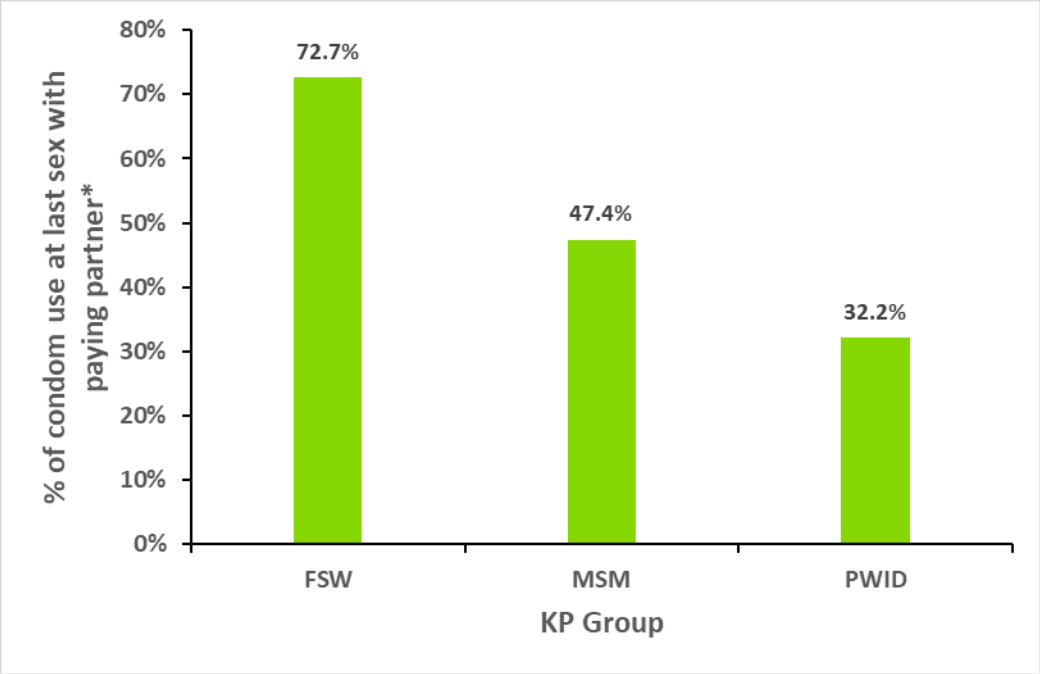
HIV Prevention services for KPs have been intensified over the last ten years. There is a rapid increase of number of KPs tested for HIV from 1,427 in 2014 to 6,045 in 2018 (Figure 11).

Figure 12: HIV testing in the past 12 months among KPs 2011/12 vs 2018/19, Unguja, IBBSS



Percentage of KPs tested for HIV in the past 12 months in the year 2011/12 and 2018/19 in Unguja remained stable about 50% (Figure 12). There is a need to increase the number of KPs tested for HIV in order to reach UNAIDS target of 90-90-90.

Figure 13: Condom use among FSW, MSM and PWID, Unguja, IBBSS 2018/19



* For MSM the condom use reported here is for receptive sex

Figure 13 shows that the condom use among KPs differs but in general condom use is low. The risk of HIV transmission is higher in this sub-populations and KPs are also engaging in sexual activities with general population. Hence, it is alarming that the condom use is low in this group. Increase use of condom in KPs would play a bigger role in HIV prevention in Zanzibar.

RECOMMENDATIONS

1. THE STATUS AND TREND OF HIV AND AIDS IN ZANZIBAR

1) Issue: Accelerate reduction of number (percentage) of new HIV infections

   Recommendation: Fast track implementation of HIV Health Sector Strategic Plan

2) Issue: Reduce number of HIV related death. Is the death more among TB/HIV or mono HIV infection?
   Recommendation: conduct study to look at the cause of deaths and to come out with strategies to reduce HIV related deaths.

2. PREVENTION EFFORTS IN ZANZIBAR

1) **Issue:** Coverage of HTC is low in some district despite high percentage of HTC sites. Also the positivity of HIV tests is decline that bring the question of value for money. The balance is needed between the need of

testing everybody preparing for elimination of HIV by 2030 and focused testing in order to increase yield and rational use of resources.

Recommendation: Advocate for the use of HTC sites among districts with low coverage. Consider cost effective way of HIV testing including self-testing using various body fluids. Also encourage multiple approach in HIV testing to increase positivity this include PITC in hospital settings, partner testing/index partner testing in the community and peer testing for outreach especially for KPs.

2) **Issue:** Overall Male involvement is low in all districts but the situation is worse in Unguja especially Kaskazini B, Kati and Kusini districts.

   Recommendation: Advocate for districts to sensitize men to be involved in implementing health initiatives. Strengthen inter faith committee to strengthen activity that will improve men involvement.

3) **Issue:** Intensity of health education on HIV prevention has reduced. Data shows us that the comprehensive HIV education is still low, number of youth tested for HIV is relatively low in some districts except Magharibi B and Kati districts.

   Recommendation: Develop and implement HIV Communication Strategy

4) **Issue:** Difficult in accessing KP for HIV prevention services. All HIV services starts with HIV testing and counseling. The data on HIV tests among KP show very low uptake for the past 10 years. HTC services for KP is also expensive.

   Recommendation: Mobilise enough resources for HTC for KPs and increase accessibility of the HTC services

4.0 Patterns of HIV service utilization in Zanzibar

4.1 PMTCT services

In Zanzibar, PMTCT services were established in 2005. The goal of the PMTCT program is to eliminate Mother to Child Transmission (MTCT) of HIV and improve care for HIV-infected partners and their children. To date, the services exist in 172 out of 177 RCH sites (97.2%) and are in all eleven districts of Zanzibar.

Figure 14: Trends in coverage of PMTCT services among RCH sites from 2012-2018, Zanzibar

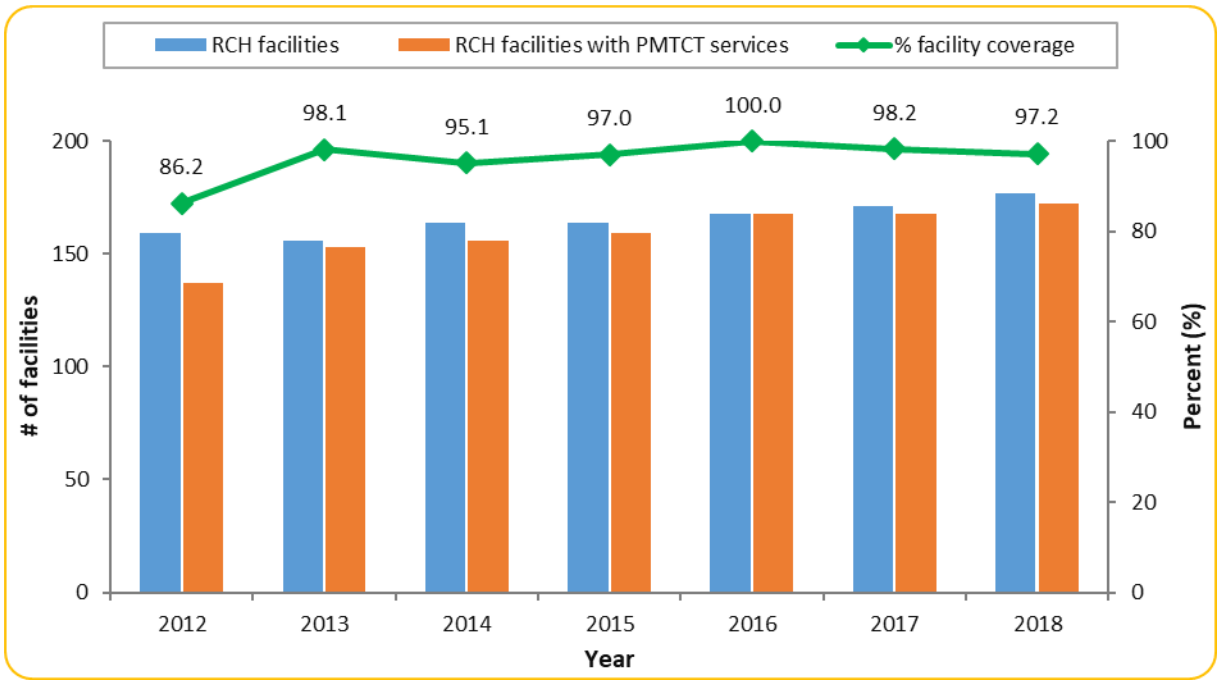
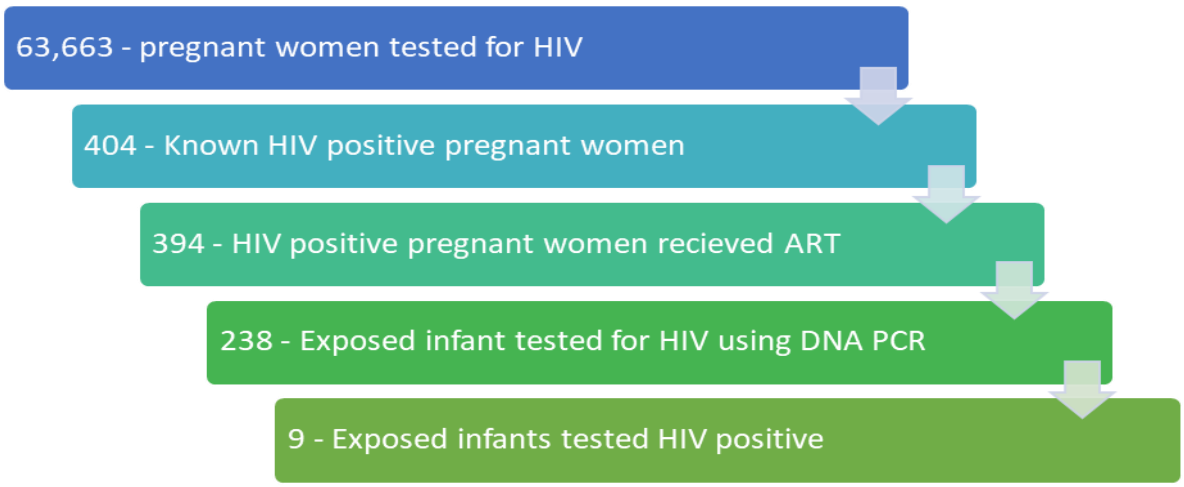


Figure xx below shows the PMTCT care cascade in Zanzibar for 2018. There were an estimated 67,947 pregnancies in Zanzibar in 2018 (4.2% of the overall population according to the 2018 population projection). Of these, majority (93.7%) were tested for HIV (ZIHHTLP Annual Report 2018). Of the 404 HIV positive pregnant women, vast majority (97.3%) received ART.

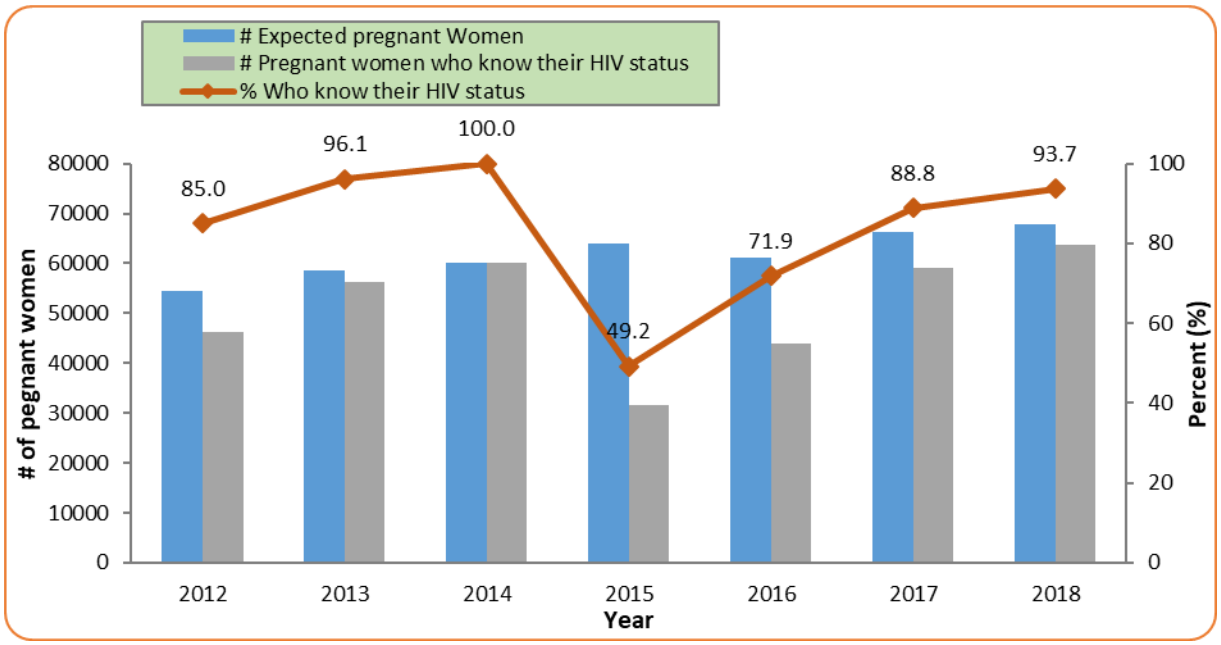
Figure 15: PMTCT care Cascade, Zanzibar 2018.



***Source**: ZIHHTLP Annual Report 2018*

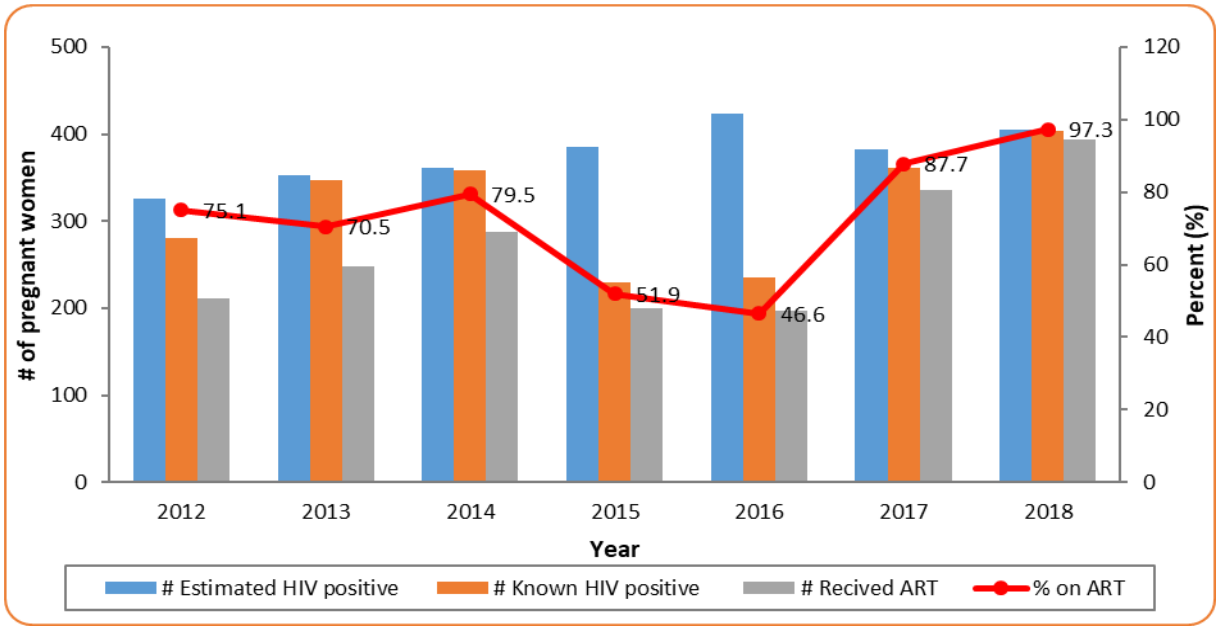
The proportion of pregnant women who are aware of their HIV status peaked in 2014 and dropped drastically in 2015. The reasons for a decrease in proportion of pregnant women who are aware of their HIV status include shortage of HIV test kits. Additionally, knowledge of HIV positive status among pregnant women has increased in two phases i.e. from 85% in 2012 to 100% in 2014 and from 49% in 2015 to 94% in 2018 (Figure xx).

Figure 16: Profile of HIV pregnant women aware of their status, Zanzibar, 2012–2018.



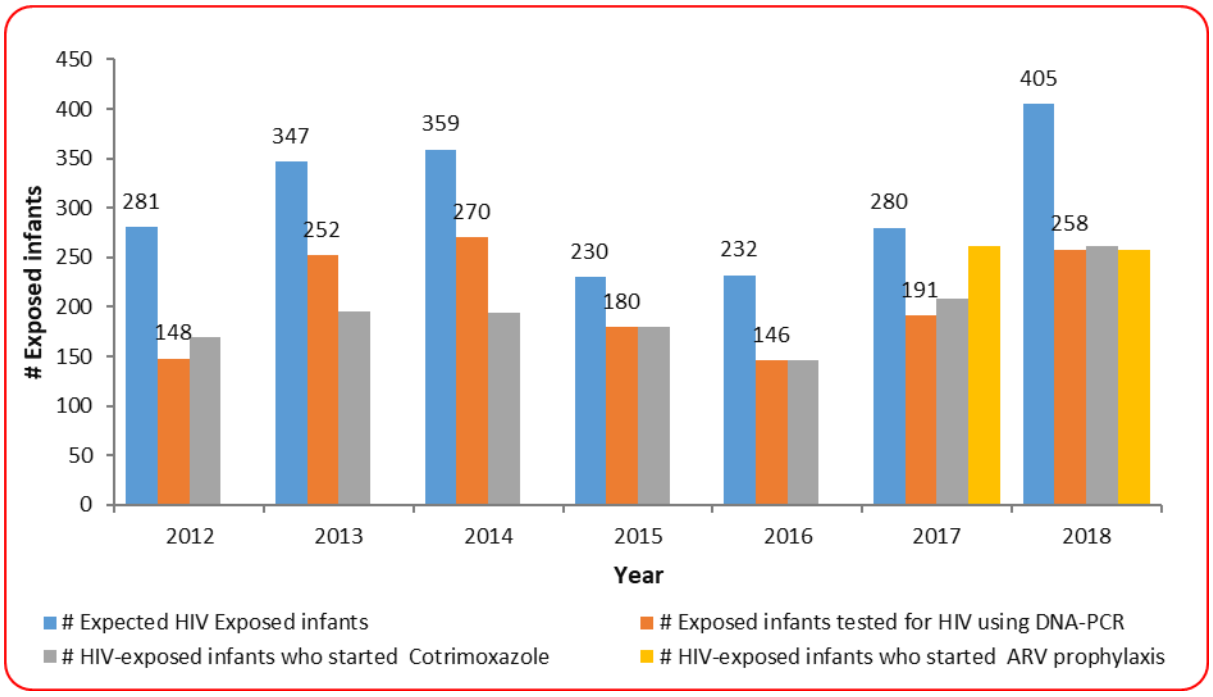
The proportion of HIV-infected pregnant women who started ART to reduce the risk of mother-to-child transmission of HIV has been increasing in recent years in contrast the previous period i.e. from 47% in 2015 to 97% in 2018 as shown in figure xx below.

Figure 17: Profile of HIV positive pregnant women and ART status, Zanzibar, 2012–2018.



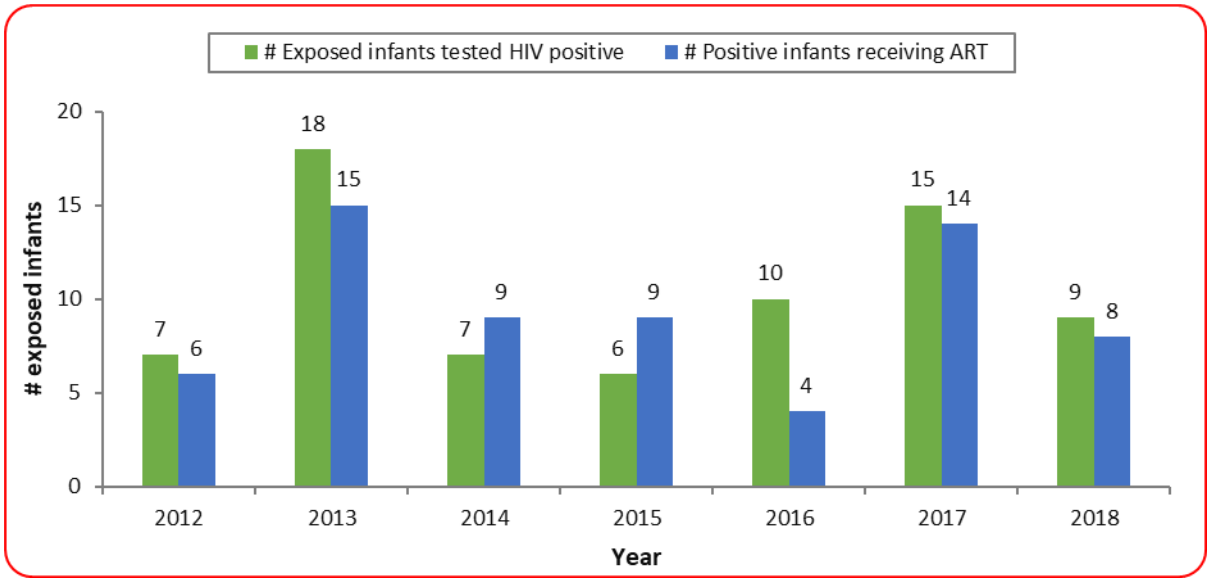
Retaining HIV-exposed infants in the PMTCT cascade is a challenge as shown by a discrepancy between the number of expected exposed infants and those who received a DNA-PCR test. The possible reasons for this discrepancy might be fear of stigma. The proportion of exposed infants tested for HIV using DNA-PCR had a similar trend as those who received cotrimoxazole prophylaxis within 2 months of birth, peaking in 2014 and 2018. The proportion of HIV-exposed infants started on ARV prophylaxis was reported from 2017 onwards, with a reasonable coverage.

Figure 18: Profile of HIV-exposed infants tested for HIV using DNA/PCR, on CTX and ART, Zanzibar, 2012 - 2018.



The number of exposed infants tested HIV positive among exposed infants born in the past 12 months has been highest in 2013 and 2017.

Figure 19: Profile of HIV-exposed infants who were tested HIV positive who enrolled on ART, Zanzibar, 2012–2018.



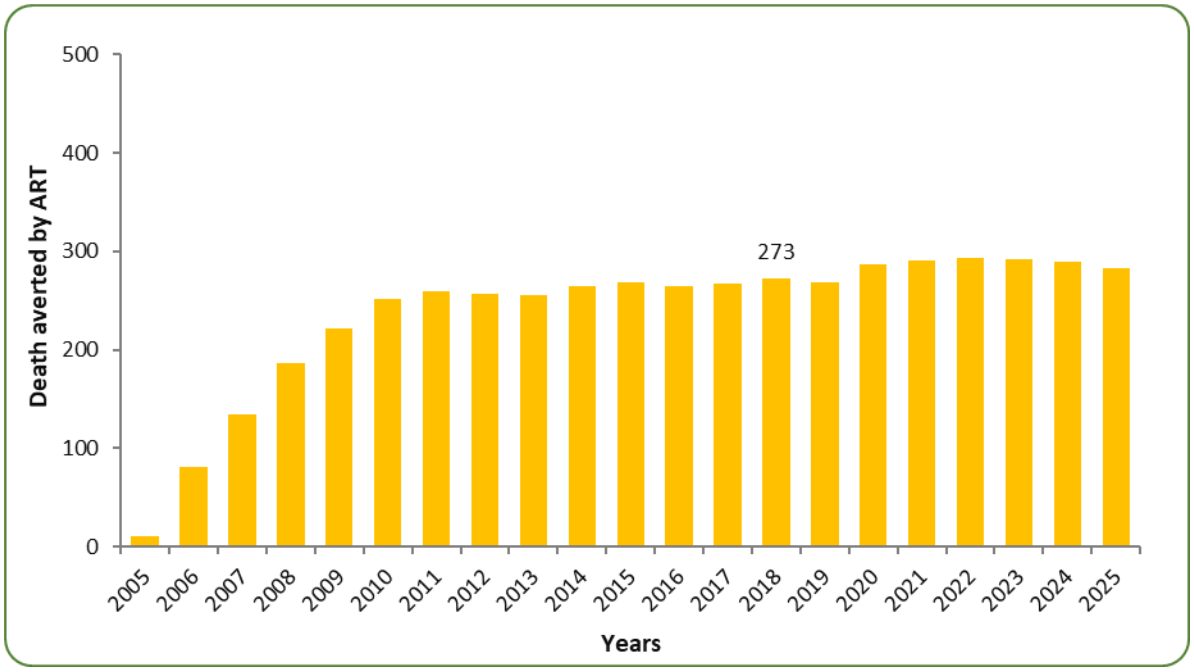
4.2 ART services

In Zanzibar, HIV care and treatment services were established in 2005 at Mnazi Mmoja Hospital. Currently there are 13 (9 Unguja and 4 Pemba) care and treatment clinics (CTCs) of which 11 are public health facilities, 1 private hospital and 1 Non-Governmental Organization. In addition, there are 3 ART refilling sites in Unguja. The main goal of the HIV care and treatment services is to reduce the morbidity and mortality related to HIV/AIDS by 2022. As of June 2019, a total of 11,900 clients have been enrolled in CTCs of whom 9,688 (81%) were initiated treatment. HIV Services provided at CTCs include: -

- Provision of ART
- Provision of HIV Care and Management of opportunistic infections (OIs)
- Provision of INH Prophylaxis
- Ongoing adherence support and Enhance Adherence Counselling (EAC) for those with high viral load
- Cervical cancer screening
- Family planning
- Continuum of care

Since the inception of ART services in 2005, Spectrum projections estimated that deaths averted due to ART increased sharply up to 2011, thereafter remained constant over almost a decade. In 2018, there were estimated 273 deaths averted due to ART provision (**Error! Not a valid bookmark self-reference.**).

Figure 20: Estimated number of deaths averted due to ARV per year, Zanzibar, 2005-2025, Spectrum.



As of June 2019, 90.1% of those estimated to be in need of ART in Zanzibar were currently receiving treatment which is above the UNAIDS estimated target of 90%. The highest coverage was observed in Unguja compared to Pemba.

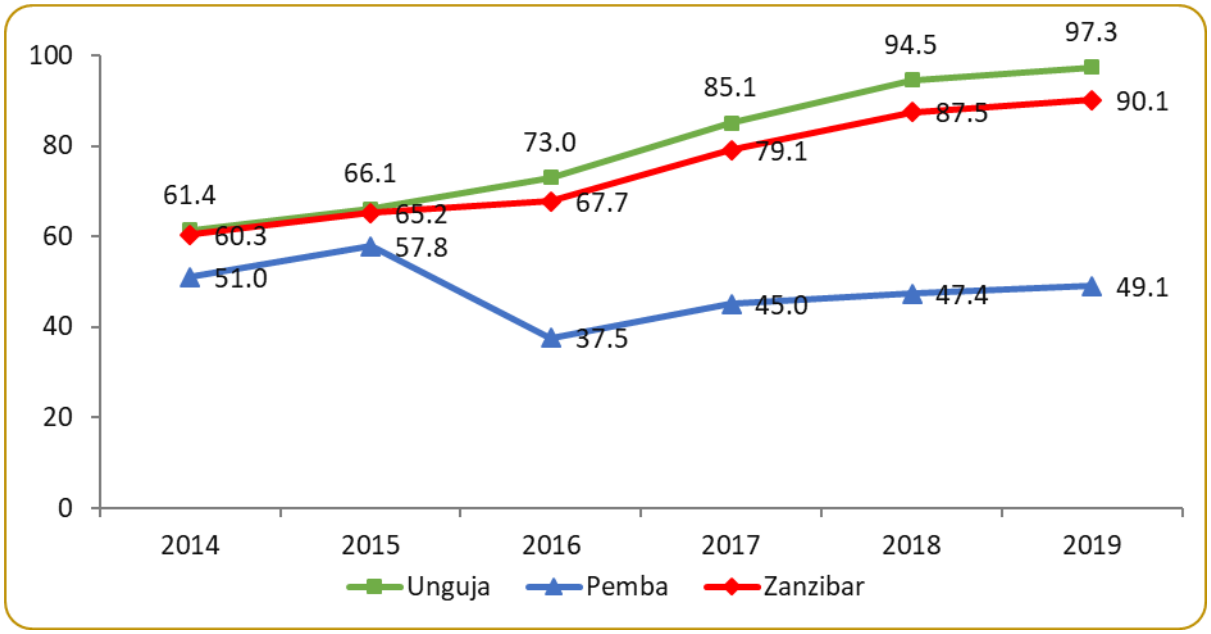
Table 3: ART coverage by Island, Zanzibar June 2019

Island	HIV Prevalence[1]	Population 2019[2]	Estimated # of PLHIV 2019[3]	# of PLHIV Current on ART[4]	Estimated ART coverage in %
Unguja	0.5	1,097,349	5,942	5,784	97.3
Pemba	0.2	497,874	1,049	515	49.1
Zanzibar	**0.4**	**1,618,845**	**6,991**	**6,299**	**90.1**

[1]THIS 2016/2017
[2] Census 2012 Projection
[3]Spectrum projection
[4]CTC2 database

There is a dramatically increase of coverage of clients on ART from 60.3% in 2014 to 90.1 by June 2019. This increment was due to the increase number of CTC sites from 10 in 2013 to 13 in June 2019. The estimated coverage varies widely by island. Coverage is highest in Unguja which is 61.4% in 2014 to 97.3% while decreased from 51.0% in 2014 to 49.1% in June 2019 in Pemba. The increase was contributed by the adaptation of new WHO recommendation "Test and Treat approach". Zanzibar has adopted test and start approach, which aim of reaching 90 targets by 2020.

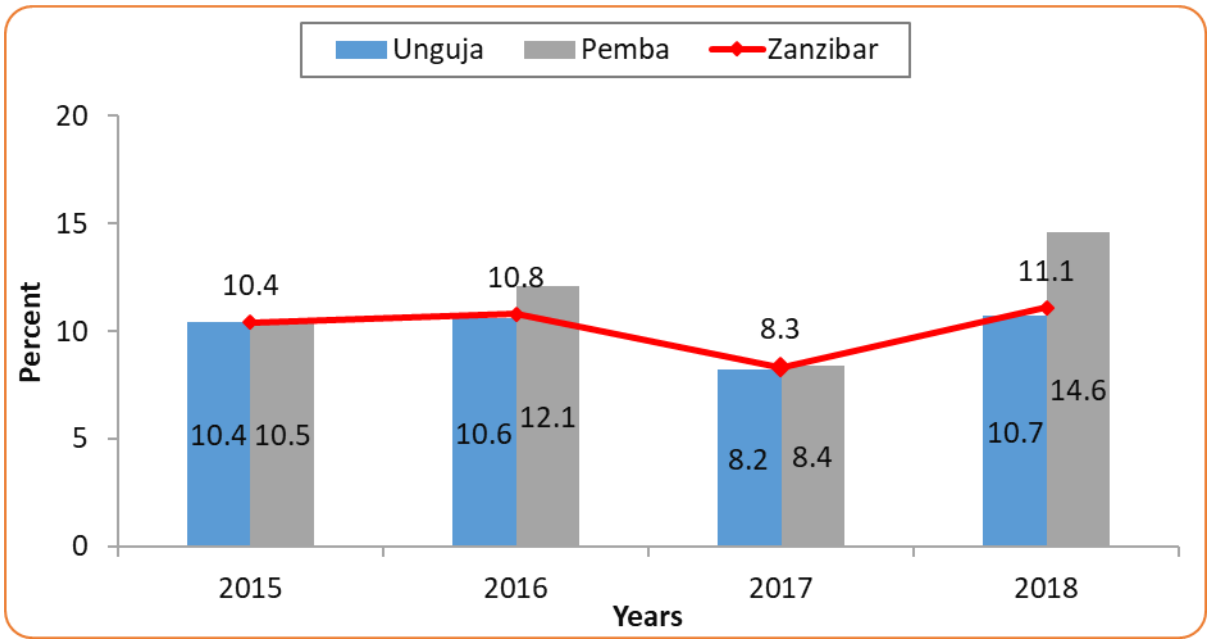
Figure 21: Trend of ART coverage by Island, Zanzibar 2017 – June 2019



The estimated attrition rate in 12 months for treatment services among patients on ART in Zanzibar has slightly increased from 10.4% in 2015 to 11.1% in 2018. The trend has been reported to be unfavourable in Pemba which increased from 10.5%

in 2015 to 14.6% in 2018 compared to Unguja which account from 10.4% to 10.7%. Overall, the attrition rate in 2018 was contributed by death 16.7% and lost to follow up 39.5%. (Recheck computations)

Figure 22: Trends of attrition rate in 12 months among patient on ART by Island, Zanzibar 2015 - 2018



***Source**: Programme data*

The figures below show that the progress toward achieving 90-90-90 target of ART on general population has been achieved on diagnosis and on ART, but Viral Load suppression is still low (73.0%). Overall Viral Load suppression is still low, and it is lowest among children aged less than 15 years of age. Recent supervisions and monitoring observed low viral suppression among children are partly due to poor adherence or adjustment of doses by providers.

Figure 23: 90-90-90 cascade from Jan 2018 to June 2019, Zanzibar.

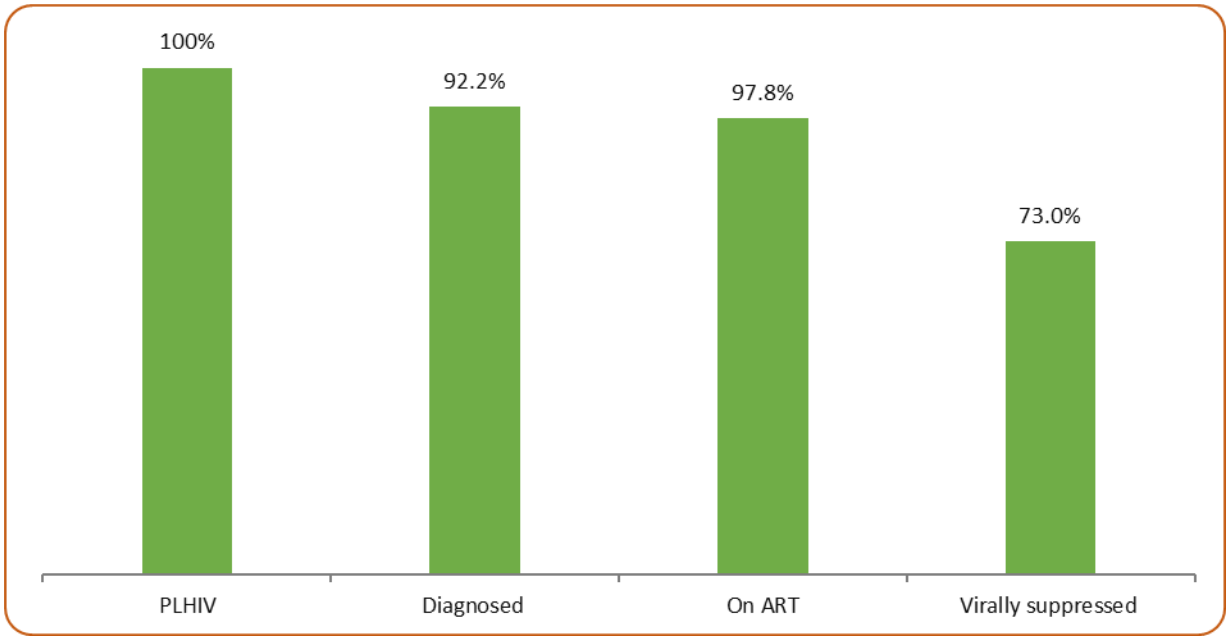
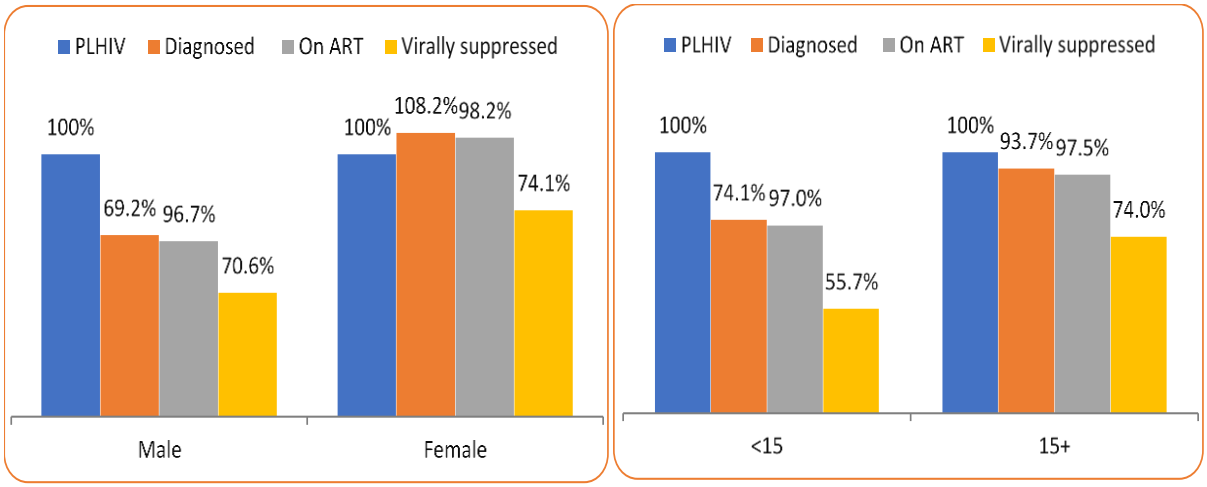


Figure 24: 90-90-90 cascade by gender and age distribution from Jan 2018 to June 2019, Zanzibar.

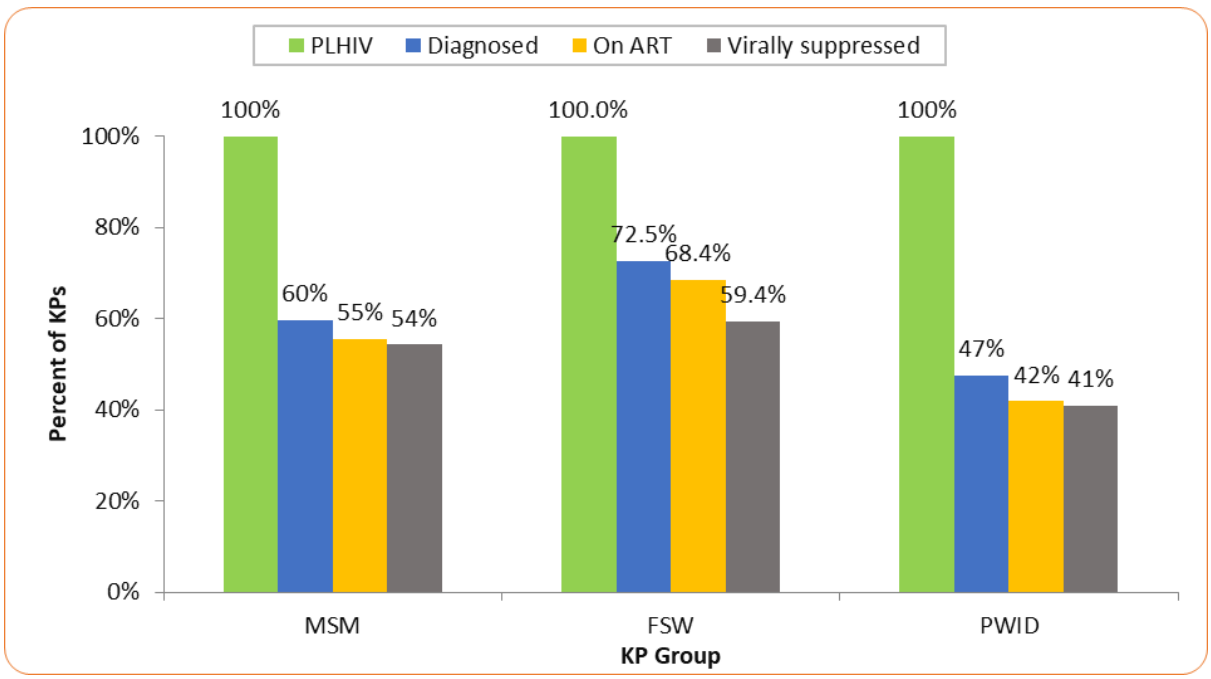


A total of 60.0% of MSM who are living with HIV had been previously diagnosed with HIV. Of those, 92.9% were on ART. Of those on ART, 97.9% were virally suppressed. In case of FSW 72.5% of whom are living with HIV had been previously diagnosed. Of those, 94.3% were on ART. Of those on ART, 86.9% were virally suppressed and 47.5% of PWID who are living with HIV had been previously diagnosed. Of those, 88.1% were on ART. Of those on ART, 97.6% were virally suppressed.

While the target for linkage to treatment has nearly been met for all types of KPs, and the target for viral suppression has been achieved for MSM and PWID but not for FSW, there is a notable gap in the diagnosis of types of KPs living with HIV.

While it is appreciated the challenges of testing for HIV among KPs, it is imperative to strengthen HIV testing among KPs in order to reach set targets.

Figure 25: Progress towards UNAIDS 90-90-90 targets among KPs, Unguja, 2018/19



5.0 Summary and Recommendations

5.1 Summary

What are the patterns of HIV service utilization in Zanzibar?

In 2018, nearly all (97.2%) RCH facilities in Zanzibar offer PMTCT services. In the same year, vast majority of the estimated number of pregnant women were tested for HIV (93.7%) and 97.3% of HIV-positive pregnant women received ARVs to prevent MTCT.

The estimated coverage for ART services among PLHIV on ART is 90.1 % by June 2019. The increase was contributed by the adaptation of new WHO recommendation "Test and Treat approach". Zanzibar has adopted test and start approach, which aim of reaching 90 targets by 2020. Also complimented by the increase number of CTC sites from 10 in 2013 to 13 in June 2019. Coverage is highest in Unguja which is 61.4% in 2014 to 97.3% while decreased from 51.0% in 2014 to 49.1% in June 2019 in Pemba.

5.2 Recommendations

Service Utilization

1. **Issue:** Significant challenges in reaching all exposed infants with EID services.
   ***Recommendations**: Strengthen mother-infant pairs tracking system to improve PMTCT care cascade.*

2. **Issues**: Low HVL suppression especially among children and FSW.
   ***Recommendations**:*
   i. *Strengthen paediatric ART services with specific focus on correct dosage and adherence*
   ii. *Strengthen ART services with specific focus on peer led services targeting FSW*

3. **Issues**: A notable gap in the diagnosis KPs living with HIV.
   ***Recommendations**: Strengthen HIV testing among KPs specific focus on outreach interventions in order to reach set targets.*

B. TB and TB/HIV

5.0 INTRODUCTION

Zanzibar Integrated HIV, TB and Leprosy Programme (ZIHTLP) is under the Department of Preventive Services, Ministry of Health. Administratively, ZIHTLP operates at three levels: national, regional and district.

At the national level, the Central Unit (CU), situated in the MOH, co-ordinates all activities pertaining to HIV, TB, and leprosy control in the country. The Unit is also responsible for planning, monitoring, evaluation and resource mobilisation. It also undertakes training of health care workers, supervision of field activities, data collection and its analysis, quality control and operational research. On-the-job training and mentoring of TB/leprosy coordinators is generally done during supervision visits to each zone and through quarterly Regional TB and Leprosy Coordinator (RTLC) and District TB and Leprosy Coordinator (DTLC) meetings. The central unit staffs advise the Zonal health management team on all matters pertaining to the control of tuberculosis, TB/HIV and leprosy and the performance of the RTLCs. In turn, the RTLC advises the District Medical Officer (DMO) on all matters pertaining to ZIHTLP and DTLC performance.

The RTLC is responsible for management and co-ordination of all ZIHTLP activities in the zone. The RTLC is also responsible for supervising the District Tuberculosis and Leprosy Co-ordinators (DTLCs) and TB/HIV officers and ensuring an uninterrupted and efficient drug supply to the districts, training, and advocacy. The DTLCs and TB/HIV officers get on-job training from RTLCs during quarterly supervision visits and quarterly DTLC meetings. The RTLC verifies quarterly tuberculosis, TB/HIV, leprosy and drug stock position and drug requests from DTLCs.

DTLCs and district TB/HIV Officers are answerable to the District Medical Officer (DMO) and are responsible for management and co-ordination of all TB and leprosy activities in the district. They are responsible for supervision of general health workers who diagnose and treat tuberculosis, TB/HIV and leprosy patients receiving health care according to programme technical guidelines. Tuberculosis, HIV and leprosy control activities are thus fully integrated into the basic health services, supported and facilitated by the programme through training, supervision and an uninterrupted supply of drug and laboratory reagents. The DTLCs maintain tuberculosis, TB/HIV and leprosy registers in which they accumulate all data on patient notification and treatment outcome, as they are recorded in the basic health services by general health staff. Quarterly reports are extracted from these registers and forwarded to the RTLC, together with a quarterly drug stock/request form. The DTLC advises CHMT on all matters pertaining to tuberculosis, TB/HIV and leprosy control in the district.

Observations, analysis and conclusions

The current and evolving epidemiology of TB, including trends and any significant geographic variations in incidence or prevalence of TB

5.1 TB Prevalence

The nationwide (Tanzania) TB prevalence survey in 2012 estimated a prevalence of 124 per 100,000 populations in Zanzibar. In 2018, a TB prevalence study was conducted among two risk groups including Diabetic patients and Students in correctional facilities revealed that; the TB prevalence in these groups were higher than the national prevalence in general population. Prevalence among students in correctional facilities is 1,643 per 100,000 populations and 675 per 100,000 populations among Diabetic patients.

5.2 TB laboratory and diagnostic services

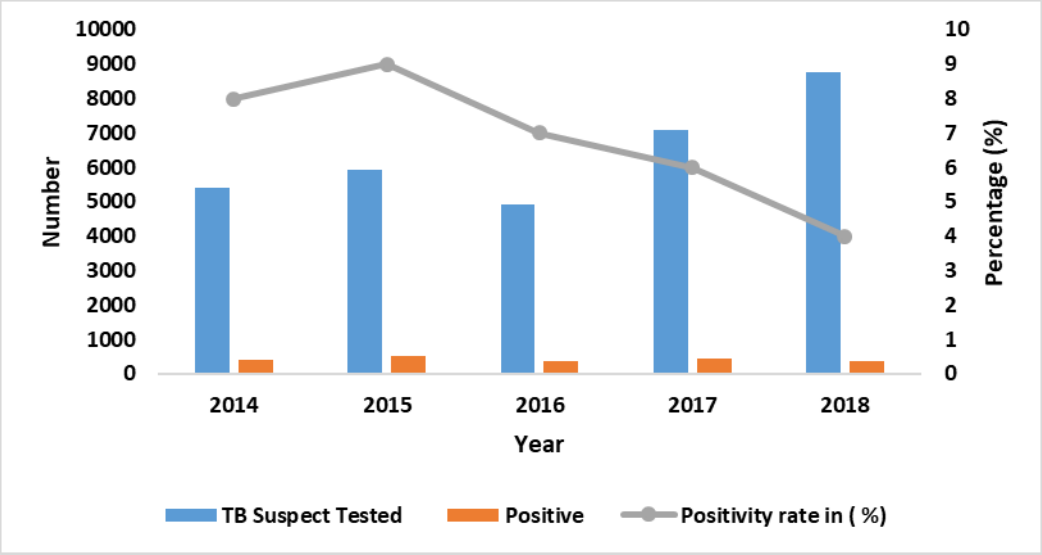
TB diagnosis services in Zanzibar is provided through Gene x pert as an initial test of all sputum sample since 2014 in Unguja and 2017 in Pemba. Currently there are two Gene X pert sites (Mnazi Mmoja and Chake Chake Hospitals) which perform TB molecular test. The programme has introduced a system of sputum samples collection from peripheral health facilities and transportation to Gene X pert site, one Public Health Laboratory performing TB culture where as the grown colonies transported to Central TB Reference Laboratory (CTRL) for Drug Sensitivity Test (DST).

A total of 56 (38 Unguja and 18 Pemba) TB diagnostic centres are performing follow up smear examination and 11 health facilities perform X-ray services (6 Unguja and 5 Pemba) in Zanzibar.

5.3 Sputum sample examination

The analysis of trend of sputum collected and tested showed the significance declined in positivity rate from 9% in 2015 to 4% in 2018, the low positivity rate might be contributed by to challenges in quality of sample collected and transportation system (Figure XYZ).

Figure 26: Trend of TB suspect tested and positivity rate 2014-2018, Zanzibar, ZIHTLP annual report



5.4 Case notification

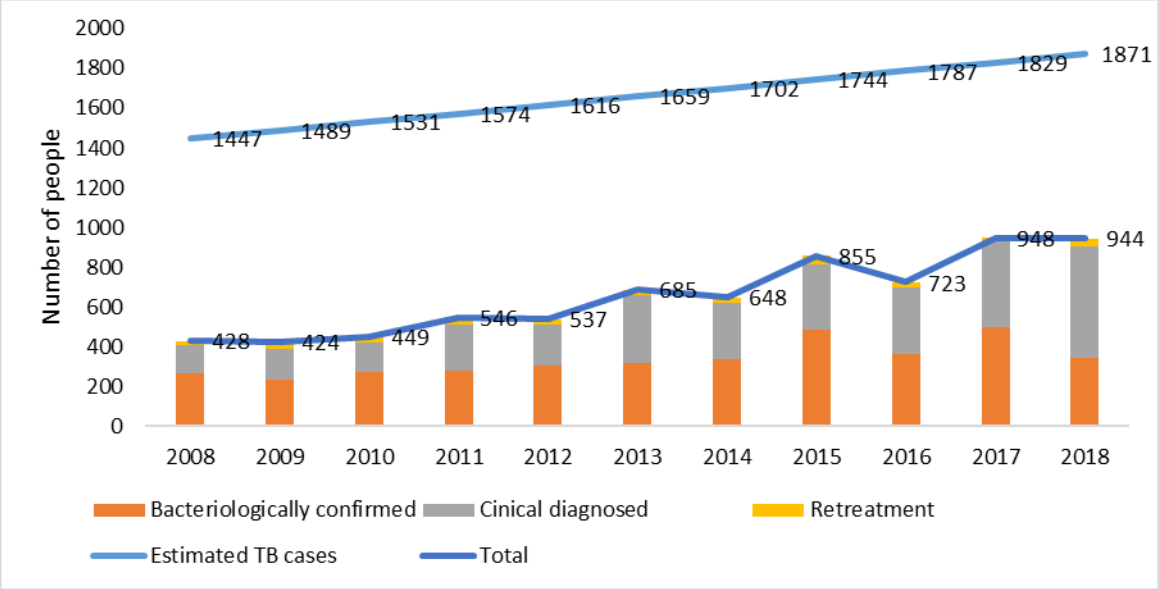
The trend in case notification rate (CNR) for TB showed a general increase over the last ten years between 2008 and 2018 from a level of around 36.7 in 2008 with clear peaks in 2011-2018, reaching a maximum of 81.0 per 100,000 population in 2018.

The increase in 2011-2018 is likely the results of introduction of Xpert machine in 2014. The analysis showed, a total absolute number of notified cases increased from 428 in 2008 to 944 in 2018. The increase in case notification was largest in the group of clinical diagnosed pulmonary TB and extra-pulmonary TB cases.

The analysis also showed a proportion of retreatment cases out of all cases is decreasing since 2010 but a small increase again from 2017 to 2018, and declining trend of notification rate among bacteriological confirmed TB, this might be due to very early diagnosis of TB patients (Figure X).

The notification of TB based on the estimates prevalence of TB is around half of the estimated number of TB per year. The challenge behind this could be the estimates were high as the prevalence was established from national survey result or that the programme is missing most of the patients (Figure X).

Figure 27: Trend of absolute notified TB cases by category and year, 2008 – 2018, Zanzibar



Notification by Island

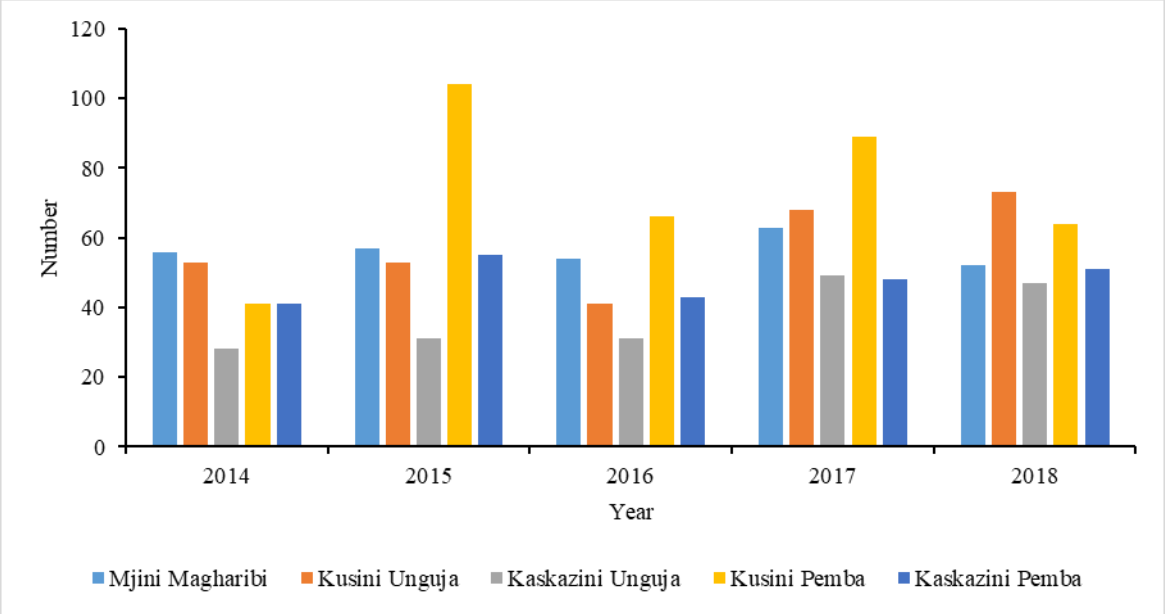
Unguja Island continue to report a higher number of TB cases every year compared to Pemba, the low notification in Pemba might be due to low population density compare to Unguja Island (figure 28).

Figure 28: Trend of notified cases by Island and year, 2014 – 2018, Zanzibar

Notification by TB Region

The trend shows case notification rate over the past five year 2014-2018. Generally, there is low notification rate in Kaskazini Unguja and Kaskazini Pemba, with remarkable increasing in South Pemba in 2015. Mjini Magharibi has the stable rate throughout the five years. More intervention is needed to increase case notification rate throughout the regions.

Figure 29: Trend of notified cases by region 2014 – 2018, Zanzibar, ZIHTLP annual report



TB cases distribution by Age and Sex

The pattern in case notification by age group and sex shows that. Th age group 25-44 years has highest number of reported cases for both male and females in all years, this might be due to the group is more like to be engaged in risk environment. Male patients represent a large proportion of TB cases (60%)

throughout the decade, this could be due to men are more exposed due to the nature of their work.
The analysis also showed a proportion of cases among children below 15 years has seen a downward trend, decreasing from 16.7% to 11.4% over the period 2014 to 2018 this might be due to challenges in diagnosis paediatric TB.

Table 4: Distribution of TB Cases by age and sex, 2014-2018, Zanzibar, ZIHTLP annual report

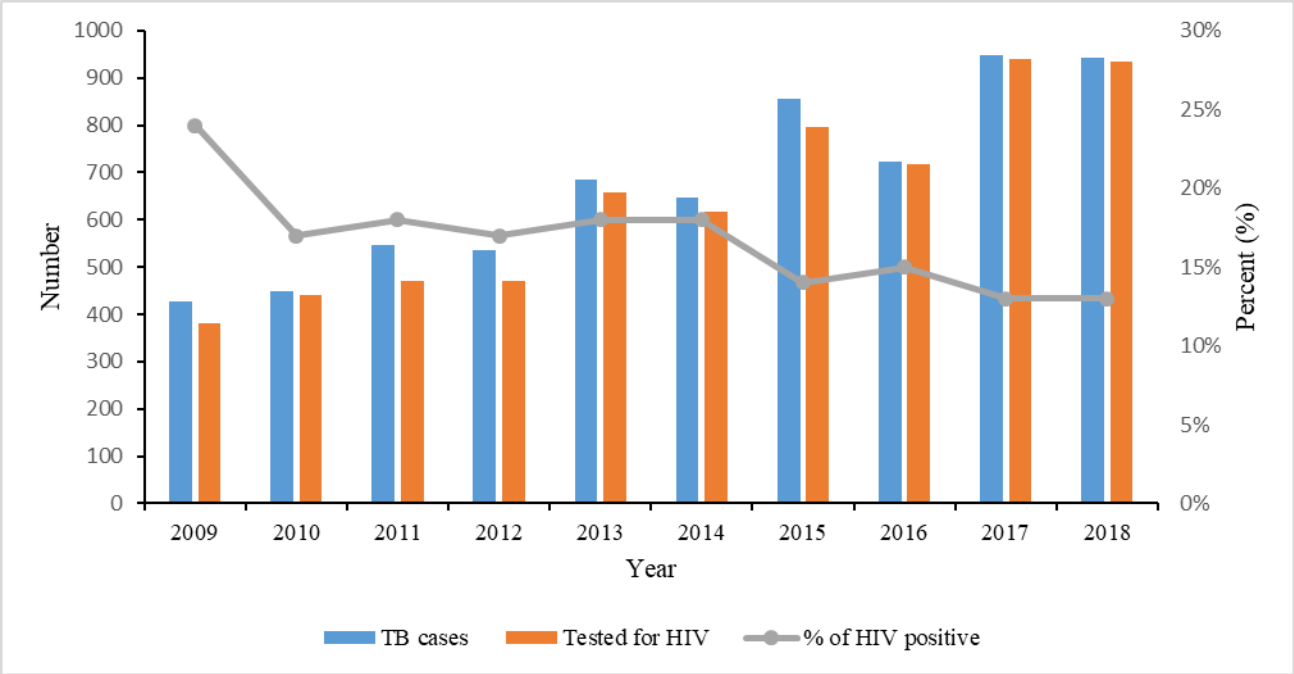
Year	Age group and Sex														Total
	0-14		15-24		25-34		35-44		45-54		55-64		65+		
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
2014	44	64	39	53	62	93	53	85	27	53	19	29	4	23	648
2015	46	57	73	60	84	94	67	84	49	84	29	57	26	45	855
2016	47	50	53	55	54	89	42	98	42	75	22	24	22	50	723
2017	56	68	75	70	80	113	69	125	64	76	27	52	31	42	948
2018	50	58	49	60	69	116	71	103	43	80	41	68	48	88	944

5.5 TB/HIV

TB/HIV notification

Since 2006, it is official policy to test all TB patients for HIV and all PLHIV should be actively screened for TB. The analysis demonstrates that the coverage of HIV testing of TB patients in all years was almost above 95%.
The trend also showed, the proportion of HIV positive is decreasing with time from 24% in 2009 to 13% in 2018. This might be contributed by decreasing in HIV prevalence in general population which was 1% in 2012 to 0.4% 2018 and program effort in preventing HIV transmission (Figure 3).

Figure 30: Number of TB cases tested for HIV and percent tested positive for HIV 2009-2018, Zanzibar, ZIHTLP annual report



TB/HIV coinfection source of notification and ART uses

The majority of TB/HIV co-infected were from CTC in all years. This mighty be due active TB screening of PLHIV at care and treatment clinic. The trend also showed, the percent of ART uptake among notified TB/HIV coinfected patients increase from 79.6% in 2014 to 95.9% in 2018. This might be due to accessibility of under one roof TB/HIV services and commitment of health care provider, However, the percentage of CPT uptake decline from 96.5% in 2014 to 78.7% in 2018, further investigation is needed to understand the exactly reason of low CPT uptake (Table 1).

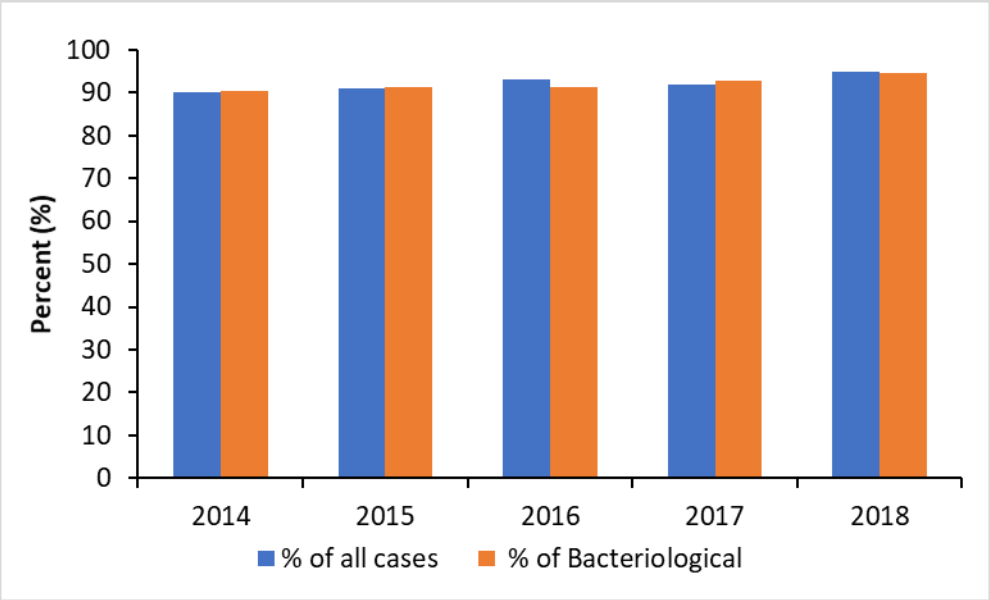
Table 4: Trend in TB/HIV co-infected started ART and CPT, 2009-2018 Zanzibar, ZIHTLP annual report.

Cases	2014	2015	2016	2017	2018
TB/HIV cases	133	109	110	124	122
Referred from CTC	90	78	73	80	95
From TB clinic	23	31	37	44	27
% Started ART	79.6	86.2	88.2	91.1	95.9
% Started CPT	96.5	89.9	81.8	79.8	78.7

5.6 TB treatment success rate

The treatment success rate in all Tb patients notified from 2014 to 2018 is more than 90% as illustrated in a figure 6. The trend also showed, the success rate among Bacteriological confirmed is almost the same as all TB cases.

Figure 31: Trend in TB treatment success rate of all TB cases and new Bacteriological confirmed 2014-2018, Zanzibar

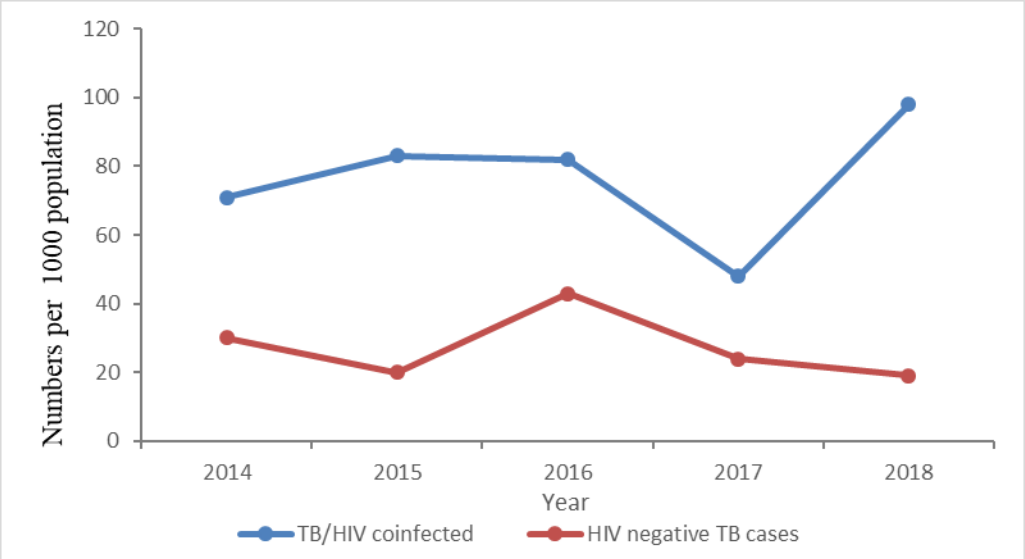


5.7 TB Mortality

Analysis of mortality is not possible for Zanzibar separately, since there are no reliable vital statistics with cause of mortality available in the country. We can only assess mortality as part of the treatment outcome analysis.

The analysis of trend of mortality rate showed, the mortality among TB/HIV co-infected patient is high in all years as compare to HIV negative TB cases with marked increases in mortality in 2018, further investigation is needed to understand the exactly reason of high mortality among TB/HIV co-infected patient compare to HIV negative TB patients (Figure 5).

Figure 32: Trend in TB mortality for all cases and TB/HIV co-infected among notified per 1000 population 2014-2018, Zanzibar, ZIHTLP annual report

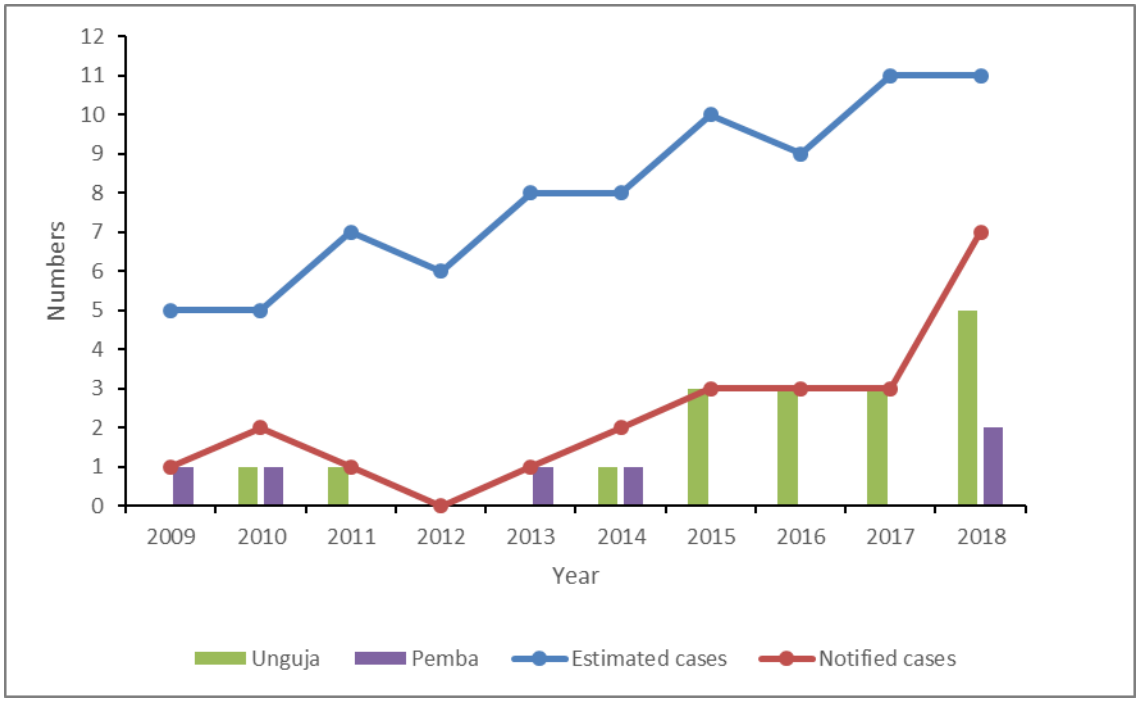


5.8 MDR-TB trend and **Treatment**

First MDR-TB patient was notified in 2009 in Pemba. Since then at least one MDR-TB case was notified every year except in 2012 with high notification in 2018. The analysis showed the increasing in MDR-TB notification especial in 2018, however the estimated MDR-TB cases per year still not reached despite implementation of several of MDR-TB case finding intervention. The trend also shows more cases are notified in Unguja as compare to Pemba, this might be due to high number of TB notification in Unguja (Figure 4).

The average MDR-TB treatment success rate from 2011 to 2016 is 80%, this might be due to late diagnosis and delayed in MDR-TB treatment initiation, where all notified cases were referred to Kibong'oto Hospital; for Management. The program decision to decentralize MDR-TB service in 2017 and introduction of gene Xpert in Unguja and Pemba in 2014 and 2017 respectively may improve the treatment outcome of MDR-TB patient.

Figure 33: Trend in estimated MDR-TB cases and notified MDR-TB cases by Island, 2009 – 2018, Zanzibar, ZIHTLP annual report.



5.9 Preventive treatment

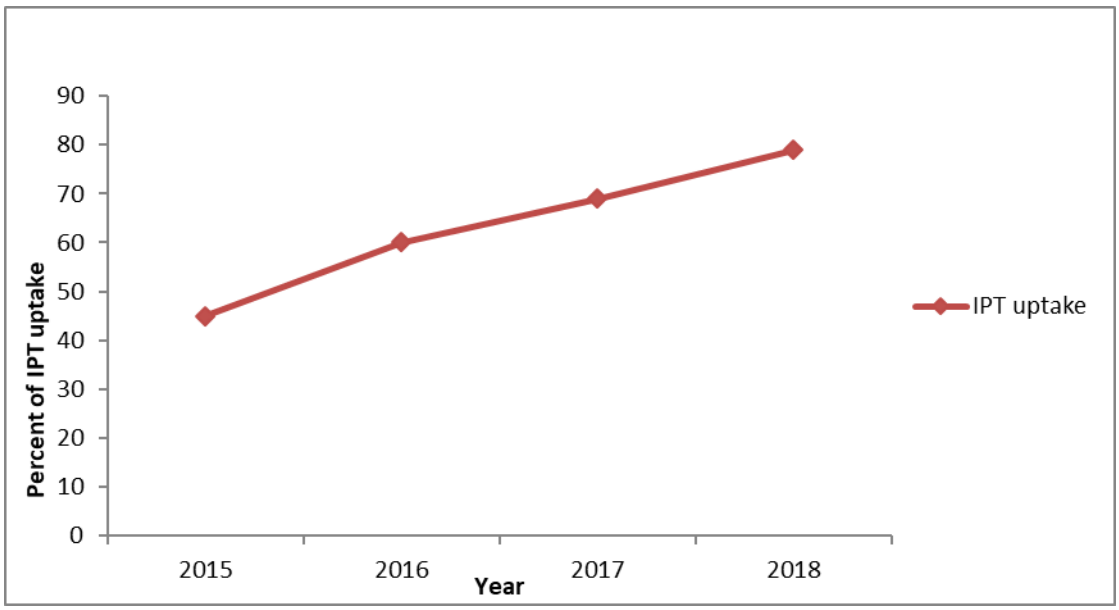
Isoniazid preventive therapy (IPT) is an intervention is part of the package of care for PLHIV and under-five TB contacts. IPT involves giving Isoniazid (INH) tablets to eligible individuals in order to prevent progression to active TB disease.

In individuals with HIV, IPT reduces the risk of developing tuberculosis by about 60% and prolongs survival. The protective effect is expected to last for about 18 months from the last dose of Isoniazid. It is however, important to exclude active TB before starting IPT. Isoniazid is given daily for six to nine months and should be repeated after two years from the first dose of the last IPT cycle.

5.10 Isoniazid Preventive Therapy for under-five contacts

The implementation of IPT for under-five children linked to contact investigation of bacteriological confirmed TB patients. Eligible under-five initiated INH and followed at TB clinic where monthly refilling and TB symptom screening done. There is an increasing of proportion of under - five initiated INH from in 2015 to in 2018 as shown in figure 34. However, the completion rate not yet established.

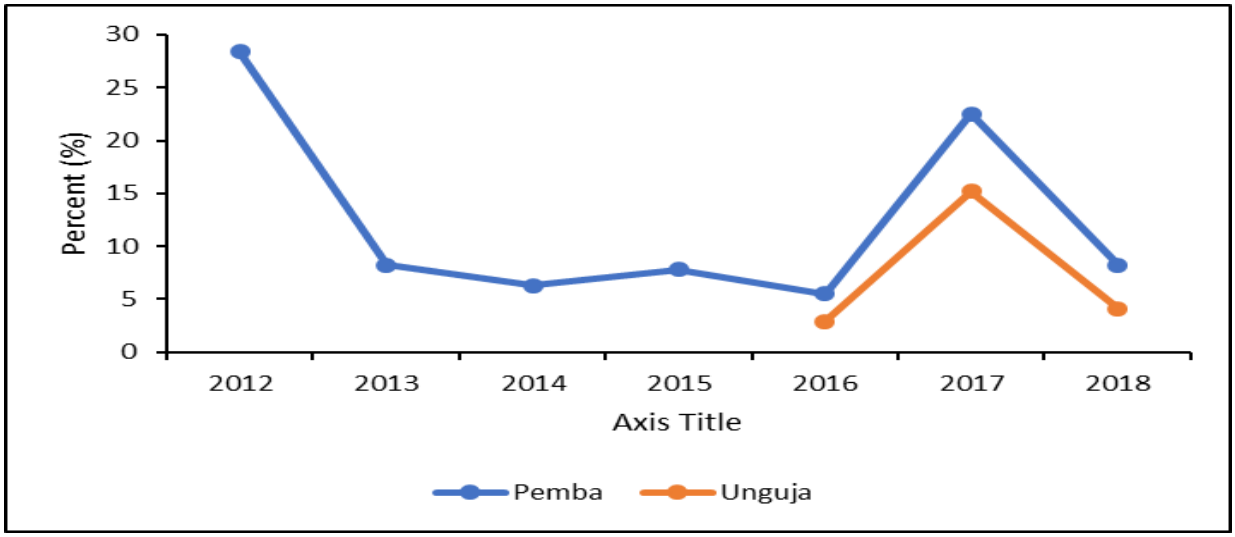
Figure 34: Proportion of INH preventive therapy for under five TB contact, 2015-2018



5.11 Isoniazid Preventive Therapy for PLHIV

IPT services for PLHIV in Zanzibar started since 2012 at Chake chake Hospital Pemba (as a pilot site), then scaled up to Mnazi Mmoja referral hospital Unguja in 2016. The trend from 2012-2018 showed the IPT uptake is very low in both Island 11.8% Pemba and 8.1% Unguja. There is a need to strengthen IPT provision and treatment completion in care and treatment sites.

Figure 8: Proportion of INH preventive therapy uptake for PLHIV, 2012-2018 in Zanzibar, IPT study report 2019



5.12 Recommendation

1. **Issue**: Low CPT and ART uptake among TB/HIV Co-infected

Recommendation:
Strengthen the provision of ART and CPT to improve its coverage.
Conduct detailed analysis to find the reason of low CPT uptake

2. **Issue**: Low INH uptake among PLHIV attending CTC

Recommendation:

To implement the recommendation of IPT study 2019 for improve IPT uptake.

3. **Issue**: High mortality among TB/HIV co-infected

Recommendation:

Investigate the reason why there is high mortality rate in TB/HIV co-infected.

4. **Issue**: Low TB notification rate including MDR-TB cases.

Recommendation:
Strengthening TB case finding through intensified case finding, involvement of CSOs, risk group and private health facilities.

5. Issue: Low TB positivity rate

Recommendation:

- Strengthen sputum sample collection and management
- Investigation on reasons for low positivity rate