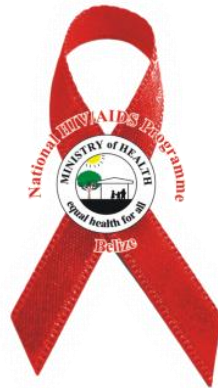
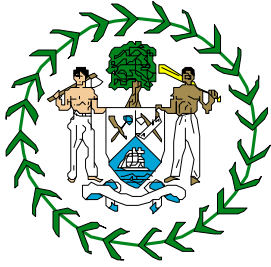


ANNUAL HIV STATISTICAL REPORT 2017





Annual HIV Statistical Report

2017

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
BHIS	Belize Health Information System
CD4	Cluster of differentiation 4; also known as T-cells or T-helper cells
ECLIA	Electrochemiluminescence Immunoassay
EPTB	Extra Pulmonary Tuberculosis
HIV	Human Immunodeficiency Virus
PCR	Polymerase chain reaction
PLHIV	Person living with HIV
PMTCT	Prevention of Mother to Child Transmission
PTB	Pulmonary Tuberculosis
ND	Not Done
STI	Sexually Transmitted Infection
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
VL	Viral Load

Acknowledgments

The HIV Surveillance Report is published annually by the HIV Program, Epidemiology Unit. This report is possible thanks to all health facilities using the Belize Health Information System (BHIS) and partners that provided surveillance data to the Ministry of Health. These include Hand in Hand Ministries, Kolbe Foundation and the Belize Defense Force.

HIV testing information from non-BHIS users include: Belize Family Life Association.

Surveillance report can be accessed on the web: <http://www.health.gov.bz>

Preface

HIV Surveillance Report 2017

The HIV Surveillance Report is published annually by the National HIV/AIDS program, Epidemiology Unit, Ministry of Health, Belmopan.

HIV data presented here is from the HIV case-based surveillance system for the period January to December 2017.

Rates were calculated using the Belize Postcensal Estimates 2010-2020 of the Statistical Institute of Belize.

Published October 2017

Introduction:

Belize, as part of its mandate to meet the health needs of persons living with HIV (PLHIV), introduced viral load testing in 2016 to monitor the effectivity of services being provided. Viral load test is a measure of the viral load (count) in a HIV infected person's blood. It is measured as viral copies per milliliter of blood.

During the first few weeks after a person contracts HIV, the viral load is usually very high – about several million viral copies per milliliter of blood (copies/ml). At this point there is a considerable risk of passing on HIV, and many people acquire HIV from someone who has only recently acquired HIV themselves (and may not know it). After this period of early infection, viral load usually drops. A typical viral load in someone not taking treatment may be 50,000 copies/ml. The fact that the viral load may be low does not remove the risk of passing HIV to another person. Once a person is placed on HIV treatment, the viral load usually becomes undetectable within six months. The risk of HIV transmission is greatly reduced when people have an undetectable viral load also referred to as viral load suppression.^{1, 2,3} If the person does not know he/she is infected and not placed on treatment, viral replication continues and starts attacking the immune system until the person's defenses are so weak that they cannot fight infection.

So, with the acquisition of a viral load machine, the Ministry of Health made viral load testing available, free of cost, twice a year to persons living with HIV and are on antiretroviral therapy (ART). Establishing viral load baselines was also offered to all newly diagnosed patients prior to being placed on treatment and all HIV infected pregnant women. Additionally existing free services include HIV testing, provision of ART, counseling, medical/clinical services and screening for other opportunistic infections.

While the Ministry of Health has these services available, it is up to the PLHIV to access these services for the maintenance of their wellbeing.

¹ Myron S. Cohen et al., Prevention of HIV-1 Infection with Early Antiretroviral Therapy. N Engl J Med 2011; 365:493-505. Available at: https://www.nejm.org/doi/full/10.1056/NEJMoa1105243?query=featured_home

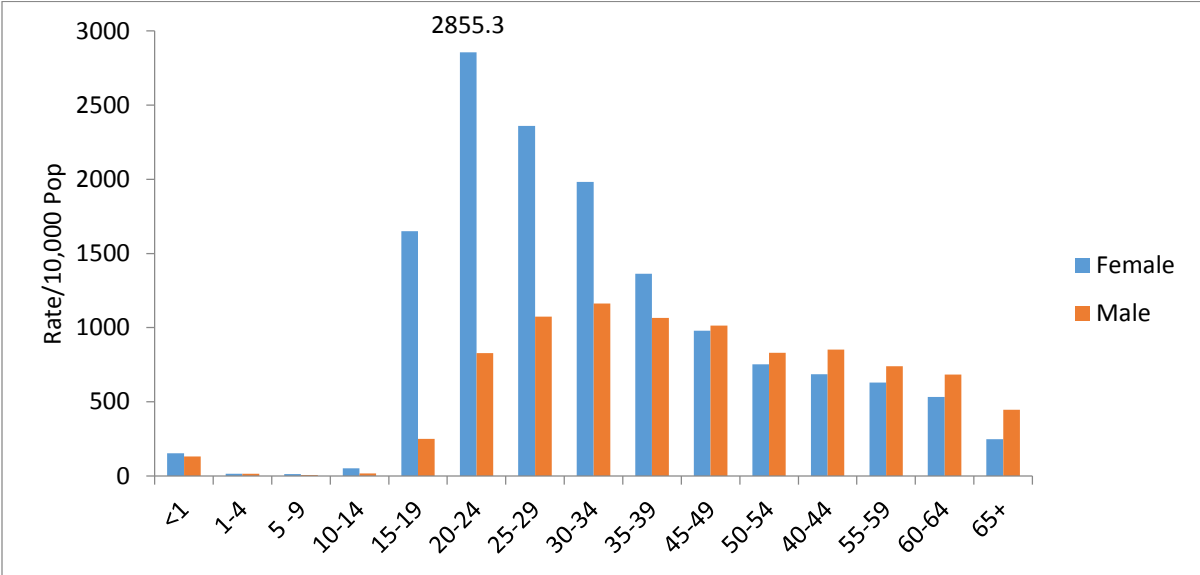
² British HIV Association (BHIVA) and Expert Advisory Group on AIDS (EAGA). *Position statement on the use of antiretroviral therapy to reduce HIV transmission*. 2013.

³ Rodger A. *Association between sexual activity without condoms and risk of HIV transmission in serodifferent couples when the HIV-positive partner is using suppressive antiretroviral therapy: the PARTNER study*. 21st International AIDS Conference, Durban, abstract TUAC0206, 2016. Available at: <http://jama.jamanetwork.com/article.aspx?articleid=2533066>

Section 1: HIV Testing

The Belize Health Information System (BHIS), the Ministry of Health’s electronic patients’ records, captured a total of 30,435 HIV tests conducted in 2017 while an additional 6,512 tests were reported by non-BHIS sources such as the Belize Family Life Association, outreach programs including Agriculture and Trade Show, Regional Testing Day and World AIDS Day activities.

Graph 1: HIV Rapid Tests by Age Group and Sex, Belize 2017 (Rate x10, 000 Population)



Source: Epidemiology Unit, Ministry of Health

Overall 800 tests/10,000 population were conducted with females testing twice as much as males with 1,047 tests and 522 tests per 10,000 population respectively. However, when comparing testing by age group, females in the 15-39 age group are testing more than males. This is the reproductive age group for females. This can then be attributed to the Prevention of Mother to Child Transmission (PMTCT) strategy where pregnant women are offered HIV testing as part of the routine prenatal screenings.

With the advancement of age, namely starting at age 45 years, men appear to be testing more than women. This may be an indication of late access to HIV services by men or they might already be presenting with advanced HIV infection and are being screened to confirm their diagnosis since men 65 years and older are not usually seeking HIV testing services. All infants born from an HIV positive mother are tested for HIV as represented in the <1 year old tests.

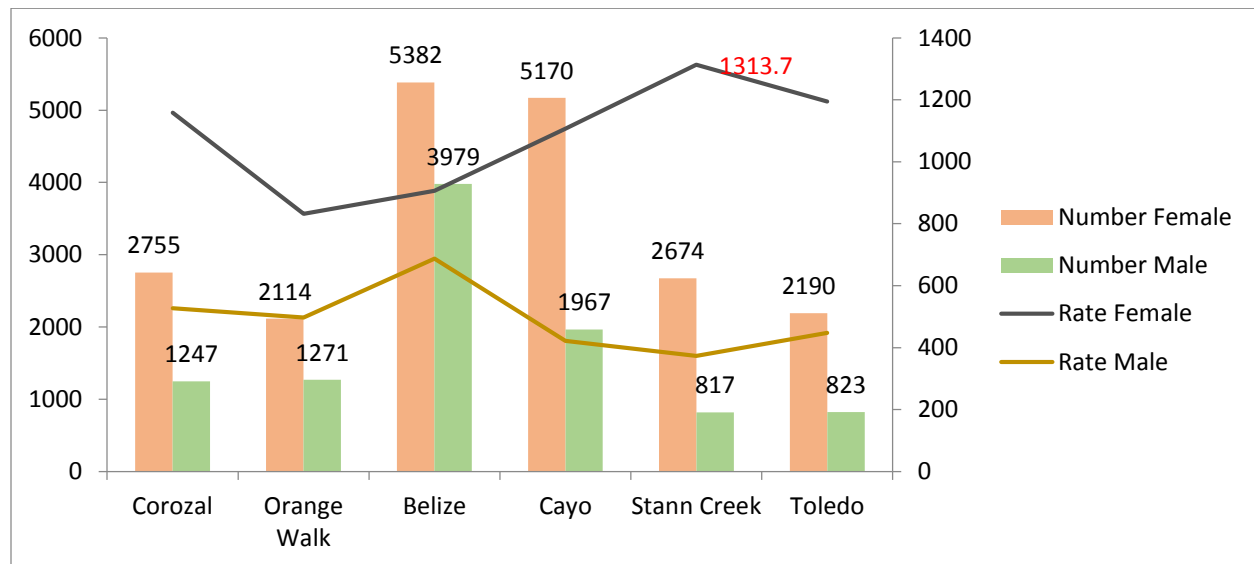
Table 1: Number and proportion of Persons 15-49 years tested for HIV- BHIS, Belize 2017

Age 15-49 Years	Female	Male	Total
Total Tested	14,075	6,337	20,412
Population*	102,150	99,356	201,506
%	13.8	6.4	10.1

Source: Epidemiology Unit, Ministry of Health, *SIB-Mid-year Population estimates

When we look at the actual number of persons 15-49 years tested and being aware of their HIV status, it totals 20,412 persons. (Table 1) This represents 10% of the population in this age group (14% women and 6% men) knowing their HIV for 2017.

Graph 1: Number and Rate of Rapid Testing by District and Sex, Belize 2017(Rate x 10,000 pop)



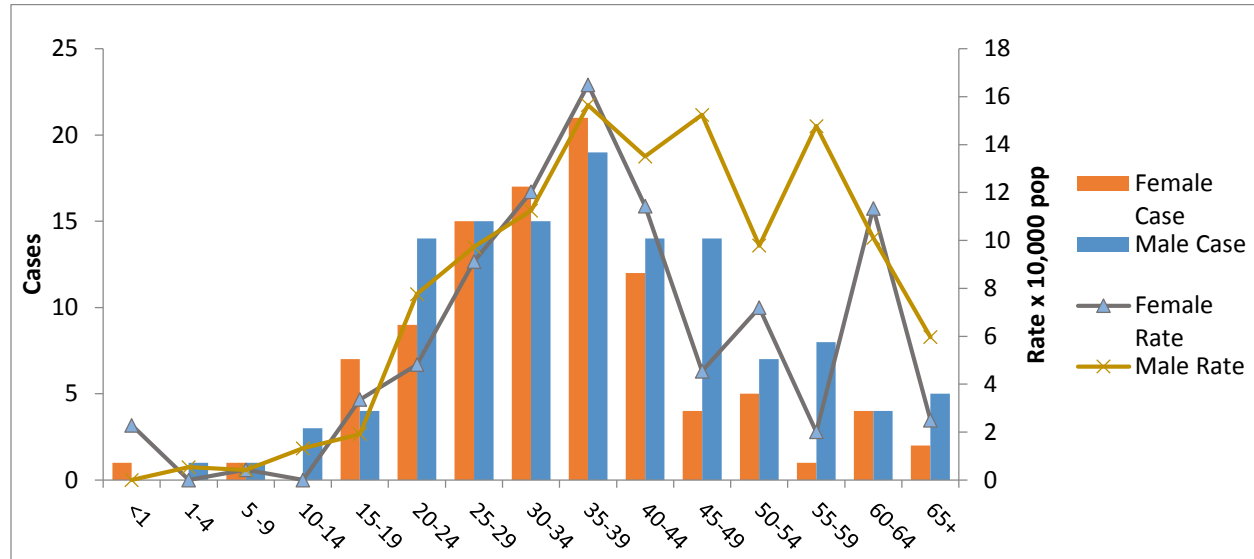
Source: Epidemiology Unit, Ministry of Health

Although the Belize District did the most testing in numbers with over 9,000 tests (male and females), the district with the highest testing rate was the Stann Creek District (1,314/10,000 pop) followed by Toledo District. In all districts the rate of testing among females was higher than males. The Stann Creek District screened females 3.5 times more than males, Toledo and Corozal screened females 2.6 times more than men. The Belize and Orange Walk Districts have a more equitable share of HIV testing in both sexes with 1.5 times more females than males compared to the other districts.

Section 2: Newly Diagnosed HIV Cases

In 2017, there were 223 newly diagnosed cases of HIV in Belize with 99 females and 124 males. This is represented as a rate of 5.7/10,000 population for the country with males at 6.4/10,000 population and females at 5.1/10,000 population with males surpassing the national rate.

Graph 3: New HIV Cases and Rates by Age Group and Sex Belize, 2017



Source: Epidemiology Unit, Ministry of Health

The new HIV cases diagnosed appear to increase with age until 39 years after which it starts to decrease. More women test positive up to age 39 years with the exception of those 10-14 years and those 20-24 years where more males are positive. Since females testing positive are in the reproductive age, it can be a reflection of the prevention of mother to child transmission program where pregnant women are offered HIV testing as part of the routine prenatal screenings.

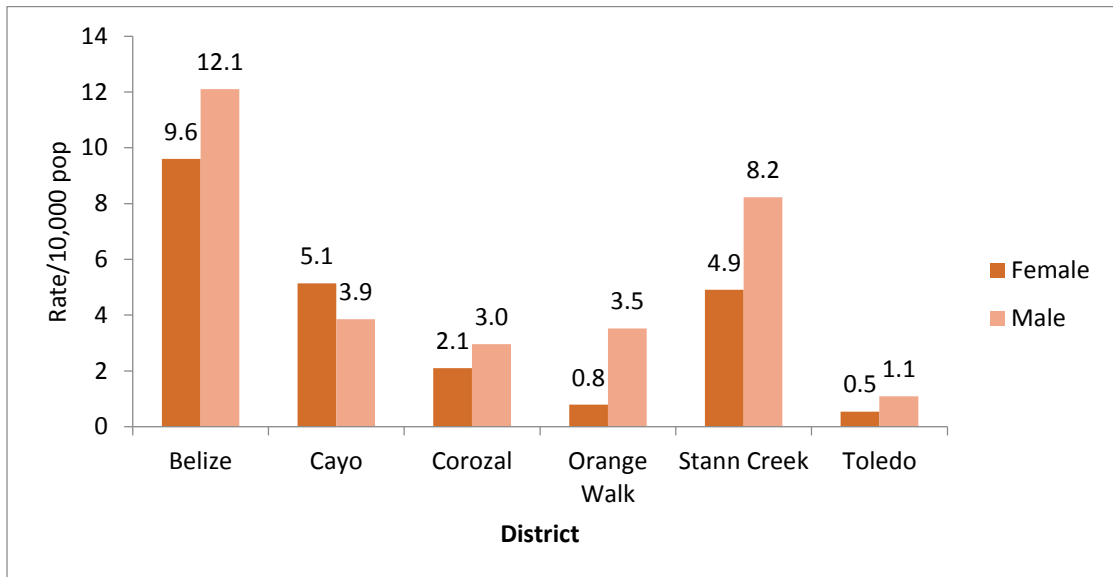
After age 39, HIV infection in males is significantly higher than females. Similarly, rates among males and females in those less than 40 years are equally distributed but after age 40 the rates increase exponentially among men. Rates among women decreases until age 60-64 years where there is a very marked increase and then falls again at age 65+. As discussed earlier in the testing segment, the elderly do not actively seek HIV testing, so they are being detected in the late stages of HIV when they most likely present with an opportunistic infection or disease and then are screened to rule out HIV infection.

Looking at the rate of infection in the elderly males and female population, screening opportunities similar to those in the younger age bracket should be provided. This late diagnoses also highlights the risk of infection by these persons as they were probably infected between 5 and 10 years before they are diagnosed. The need to reach males at a younger age for testing is necessary to curb the above scenario and minimize the risk of them infecting others with their unknown HIV status.

Since young boys 10-14 are being confirmed with HIV, the mode of transmission is important as these are legally considered children. Some are a result of mother to child transmission of HIV where the mother is not detected during pregnancy, which occurs with some of the imported cases of children with HIV from neighboring countries.

Looking at the rate of infection among districts, the Belize District had the highest rate of HIV infection for this year with almost twice as much as the Stann Creek District which has the second highest rate of infection. Corozal and Toledo had the lowest rate of infection which is significant considering that they were among the districts with the highest rate of testing. Overall, all districts had more males being newly diagnosed with HIV infection with the exception of Cayo District which had more females than males being diagnosed. It is important to note that Cayo District also had the lowest rate of male testing.

Graph 4: Rate of Newly Diagnosed HIV cases by Districts, Belize 2017 (x 10,000 pop)



Source: *Epidemiology Unit, Ministry of Health*

Section 3: Care and Treatment

The primary goal of antiretroviral therapy (ART) is to suppress the HIV virus thus improving the quality of health and life of a person living with HIV. Suppression is achieved by interfering with the ability of the virus to replicate or reproduce resulting in an undetectable viral load. When the virus cannot replicate, damage to the immune system is minimized.

In Belize, the biggest challenge of the HIV program has been to retain in care and treatment all newly diagnosed HIV infected persons and those that are already on antiretroviral therapy. Additionally, those that have been lost to care need to be identified and get them back on treatment.

At December 2017, a total of 1,385 persons living with HIV were on treatment with 95% being adults (>14 years) and 5% being children (\leq 14years).

Table 2: Number of patients on Antiretroviral Treatment at the end of 2017, Belize

Children and Adults on Antiretroviral Treatment, 2017				
Age Group	Female	Male	Total	%
Adult	656	663	1319	95.2
Children	38	28	66	4.8
Grand Total	694	691	1385	100.0

Source: Epidemiology Unit, Ministry of Health

The Belize District accounts for 55% of persons with HIV accessing ARVs followed by Cayo and Stann Creek with 18% and 12% respectively. There is an equal distribution among males and females accessing ARV services. Although males seek HIV services less than females, once they are diagnosed, they access treatment similarly to women.

Table 3: Number of Patients on Antiretroviral Treatment by District of Residence at the end of 2017, Belize

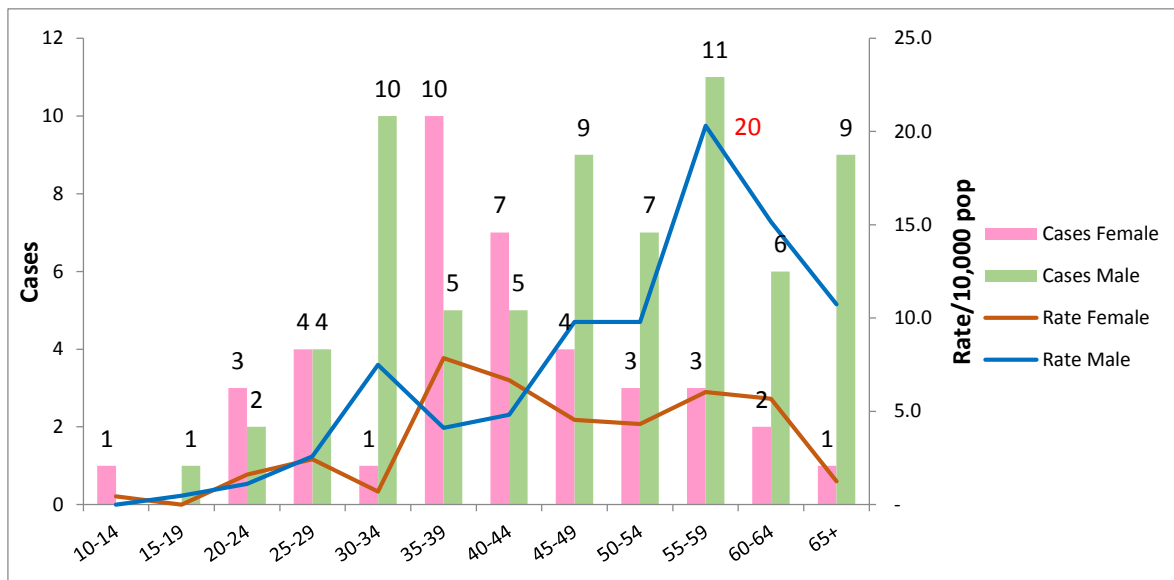
Children and Adults on Antiretroviral Treatment by District of Residence, 2017				
District	Female	Male	Total	%
Belize	363	392	755	54.5
Cayo	118	126	244	17.6
Corozal	36	43	79	5.7
Orange Walk	46	44	90	6.5
Stann Creek	101	67	168	12.1
Toledo	29	16	45	3.2
Unknown	1	3	4	0.3
Grand Total	694	691	1385	100.0

Source: Epidemiology Unit, Ministry of Health

Section 4. HIV Related Deaths

There were a total of 108 HIV related deaths in 2017 with 39 females and 69 males (1:1.7). This is a rate of 2.8/10,000 population for the country with 2/10,000 for females and 3.6/10,000 for males with males surpassing the national rates.

Figure 5: HIV Related Death Cases and Rates by Age Group and Sex, Belize 2017



Source: Epidemiology Unit, Ministry of Health

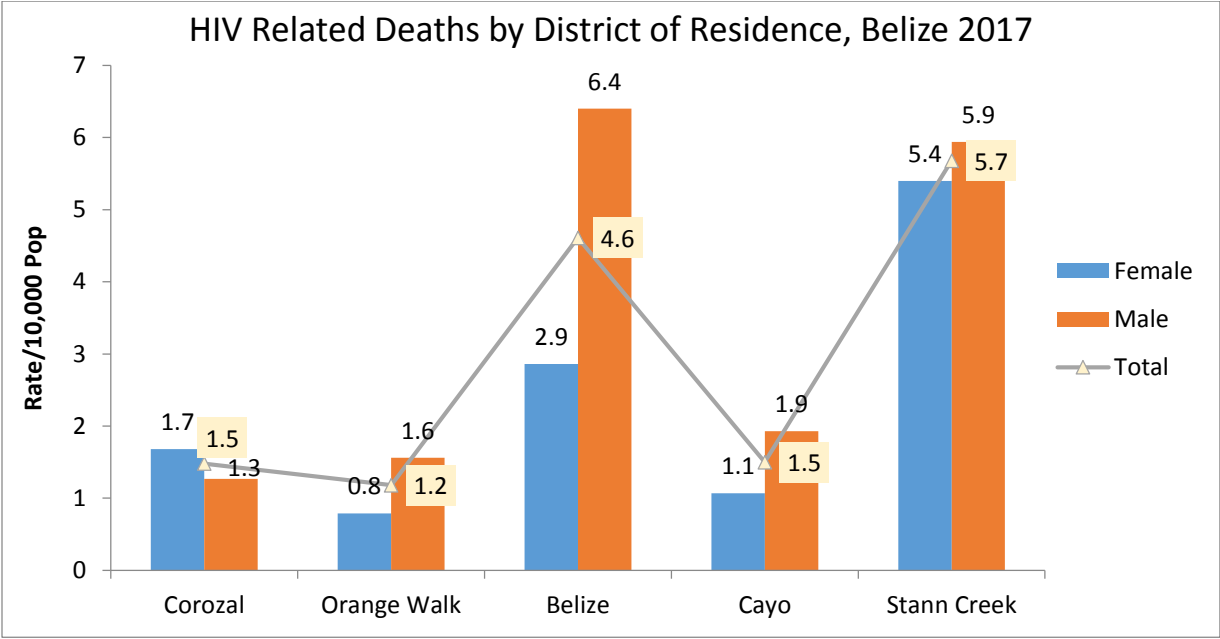
The mortality rate increases as the age of the person advances with the highest numbers(11) and rate(20/10,000 pop) in the age group 55-59 years. Among the younger age groups, females are dying more than males; however, in the age group 30-34 years, there is a 7 fold death rate as compared to women. Thereafter, the female death rate goes up again until the age of 45 years when men again lead the rate of mortality increasing eight-fold again at age 65 years and over.

When data from the 20-59 age group is aggregated, it can be appreciated how HIV impacts this productive group. The gap left by these parents, income earners and producers needs to be highlighted.

The Stann Creek District is reporting the highest HIV related mortality rate with 5.7/10,000 population followed by the Belize District with 4.6/10,000 population. The Orange Walk District reported the least rates with 1.2/10,000 population. In Belize and Orange Walk Districts, males are dying twice the rate as females. In all districts males are dying at a higher rate than females with the exception of Corozal where the rate of death in women is higher than men. Stann Creek District recorded similar rates of death among men and women.

Men generally do not access health services like women. Late access to services is the main challenge for the management of HIV infection. Once a HIV infected person accesses late services, they are already experiencing an opportunistic infection making it difficult to respond to treatment and this contributes to the death rates.

Graph 6: HIV related deaths by District of Residence and Sex, Belize 2017



Source: Epidemiology Unit, Ministry of Health

Summary of 2017 HIV Cohort

In summary (Table 5), at December 2017, a total of 223 newly HIV diagnosed persons were confirmed. All these persons were enrolled in care, meaning that they had a consultation evaluating their physical and mental health status. Of these only 63% received a CD4 cell count which is an initial measure of the immune response system. Of these that received a CD4 cell count only 34% were above 350 cells/mm³, which is an acceptable level; however, 49% were below 200 cells indicating that these were already presenting with advanced HIV infection. Additionally, our records show that 28 (13%) of the patients already had an opportunistic infection again indicating advanced infection.

Among all the newly diagnosed patients, 58% were placed on ART while 42% were pending evaluation for readiness to commence ART. Readiness includes acceptance of condition and commitment to adhere to medication. This can be affected by persons in denial or those with drug or alcohol dependency or other social problems.

At the end of the year almost 15% of these newly diagnosed cases had died and only 47% of those that were alive were on ART meaning that almost 11% of those placed on ART either died or were lost to follow-up. The remaining 38% were either pending ART readiness or were lost to follow-up.

Table 4: Summary of 2017 HIV Cohort

Newly Diagnosed	223	%
Enrolled in Care	223	100.0
Received CD4 (counts) cells/mm ³	140	62.8
> 350	47	33.6
200-350	25	17.8
<200	68	48.6
Opportunistic Infection	28	12.6
Placed on ART	129	57.8
Pending ART readiness	94	42.2
Deceased	33	14.8
Alive and on ART	105	47.1

Section 5. Prevention of Mother to Child Transmission of HIV (PMTCT)

Table 5: Prevention of Mother to Child Transmission of HIV (PMTCT), Belize2017

Indicators	2017	
	N	%
HIV Positive Pregnant Women	48	100
New HIV cases	21	44
Old HIV cases	27	56
HIV + Pregnant Women on ARV	48	100
Deliveries to HIV + Women	47	98
Infants received ARVs	47	100.0
HIV MTCT	2	4.2
1st PCR Coverage*	47/47	100.0
2nd PCR Coverage*	35/47	74.5
3rd PCR Coverage*	25/47	53.1

*Coverage = PCR Done /PCR Required

Source: Epidemiology Unit, Ministry of Health

Pregnant women infected with HIV pose the risk of transmission to the infant. This can happen in utero, at birth or during breastfeeding. The Ministry of Health has introduced the Prevention of Mother to Child Transmission (PMTCT) program to address this special group. All pregnant women are offered a HIV test at booking, at 36 weeks gestation and at delivery to ensure detecting a positive case and provide interventions to minimize transmission to the baby. If a woman is confirmed as being infected with HIV, she is immediately placed on ART. Once the baby is born, he/she is immediately started on ART prophylaxis and formula is provided for 9 months. His/her status is monitored with a HIV PCR test at birth, 6 weeks and 12 weeks. An Elisa test is repeated at 18 months after which, if negative, the baby is discharged from the PMTCT program.

During 2017, 48 women were registered as being HIV positive with 56% of them being known (old) cases. This means that they have been detected as HIV positive during a previous pregnancy. New HIV cases are those that are being newly identified in the pregnancy cohort. One of the positive pregnant women lost the pregnancy.

HIV positive women have good adherence to treatment and care during pregnancy compared to remaining HIV infected population. Since all exposed infants are screened at birth, there is 100% coverage. As the baby gets older, the PCR coverage falls as they rely on their parents to take

them to the clinic for a test. Since women no longer have to go for prenatal checks, the visits to the clinic become less and the public health nurses have to go into the communities to seek them out to ensure PCR coverage.

Table 6: Pregnant women age 15-24 who are HIV infected, Belize 2017

	Age group (years)	2017
Number of pregnancies	15-19	1457
	20-24	2158
	15-24	3615
Number of HIV+ pregnant women	15-19	9
	20-24	10
	15-24	19
Number of HIV+ pregnant women	New case	14
	Known case	21
Percentage of HIV+ pregnant women (15-19y)		0.6
Percentage of HIV+ pregnant women (20-24y)		0.5
Percentage of HIV+ pregnant women (15-24y)		0.5

Source: Epidemiology Unit, Ministry of Health

Pregnant HIV positive women aged 15-24 years, represented 40% of all pregnant and HIV positive women, with little variation between those 15-19 years and those 20-24 years. When we consider the newly diagnosed cases, these are 14 young women who engaged in risky behavior resulting in both pregnancy and HIV infection. However, those 19 known cases indicate that although they are aware of their HIV status, they are still engaging in sex without protection which has resulted in another pregnancy while being HIV infected.

Section 6: HIV Continuum of Care Cascade

The continuum of care cascade follows a cohort of HIV infected persons and follows them through their lifetime or every year. The purpose of the cascade is to quantify the number of people at each step of the continuum of care, from the total number of people with HIV (PHIV) to viral suppression. Continuum of care data should be used to strengthen country program responses to the HIV epidemic. Cascade usually represents a one direction approach looking at a series of five steps, including HIV diagnosis, Long Term Care engagement/retention in care, ART initiation and adherence, and viral suppression.

Table 7. The cascade definitions are as follows:

Diagnosed with HIV	Number of people who have been diagnosed with HIV in the reporting period specified for the cohort
Enrolled in care	Number of people diagnosed with HIV in the reporting period specified for the cohort that have received a clinical assessment OR CD4 count OR viral load (including patients on ART)
Retained in care	Number of people diagnosed with HIV in the reporting period specified for the cohort with 1 or more CD4 cell count or viral load tests
Eligible for ART	Number of people diagnosed with HIV in the reporting period specified for the cohort with an HIV diagnosis who are eligible for treatment
Prescribed ART	Number of people diagnosed with HIV in the reporting period specified for the cohort with HIV diagnosis who are prescribed ART
Retained in ART	Number of people diagnosed with HIV in the reporting period specified for the cohort who are retained in ART for 12 months since initiation
Received a VL test	Number of people diagnosed with HIV in the reporting period specified for the cohort who are retained in ART and received a viral load test
VL suppression	Number of people diagnosed with HIV in the reporting period specified for the cohort, who are on ART and have a suppressed viral load (<1000 copies per ml)

For the purpose of this report, we will use the 2016 cohort of HIV patients and follow them for 12 months.

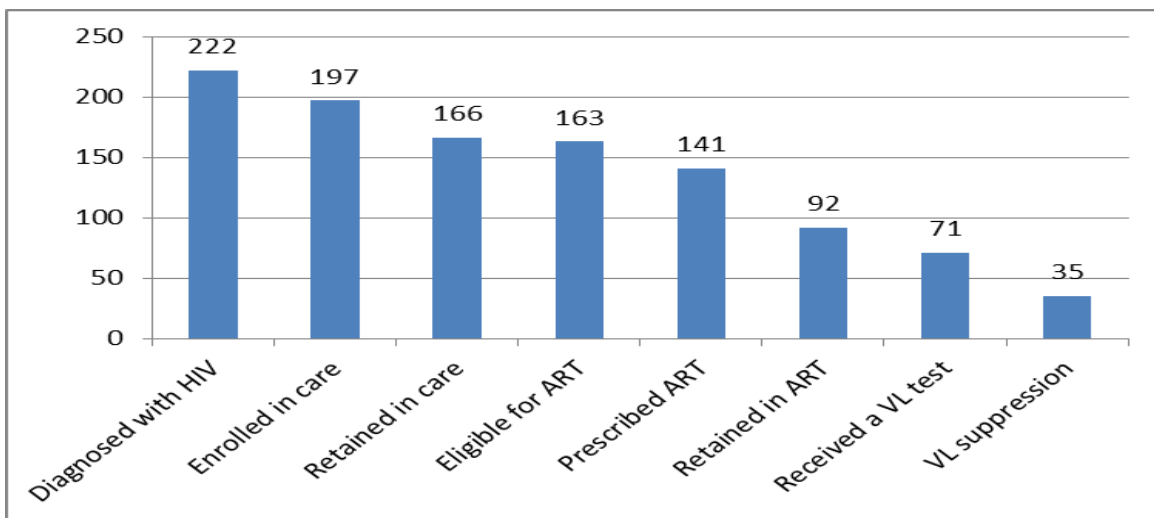
Viral load testing begun on a regular basis for all active patients in the latter part of 2015. For the 222 patients in the 2016 cohort, 106 (54%) received viral load tests. Results ranged from 0 to over 2 million copies/ml³. Immunosuppression is measured by the viral load count with <1000 copies/ ml³ being acceptable. Persons with viral suppression from this cohort were 44% while those that had >1000copies/ ml³ were 56%.

This cascade presents the data using the 5 steps approach to identify the areas where the program can be strengthened. The cascade highlights the loss of patients throughout the continuum of care.

In 2016, 222 patients were diagnosed with HIV and at the end of 2016, 88.7 % (197/222) were enrolled in care. This means that 11% did not return for an evaluation after testing positive. Of these that were enrolled in care, 84.2% (166/197) were retained in care meaning that they had a viral load or CD4 test done to evaluate whether they were eligible for ART. Of the 141 patients placed on ART only 65.2% (92/141) were retained on ART. Of the 92 patients retained on ART, only 77% (71) received a viral load test of which 50% (35) were virally suppressed.

So at the end of December 2017 the data indicates that 32 patients of the 2016 HIV cohort died and 190 patients are alive of which only 92 (48%) have been retained on ART . The remaining 98 (52%) patients are either lost to follow-up or non-adherent to their care and treatment. The gap as highlighted by the cascade is wider between those prescribed ART and those that are virally suppressed.

Graph 7: HIV Continuum of care cascade, Belize 2016 Cohort



Source: Epidemiology Unit, Ministry of Health

Section 8: Co-infection Tuberculosis/HIV

Table 8: Summary of HIV/TB Co-infection by District, Belize, 2017

TB all forms by District distribution, HIV status and Deaths in TB/HIV Cases Belize 2017						
District	TB*			HIV Status	Deaths	
	PTB [†]	EPTB ^{††}	Total	HIV+	Deaths	Co-infection HIV/TB Deaths
Belize	54	1	55	17	6	2
Belmopan	12	0	12	0	1	0
Cayo	15	0	15	4	3	1
Corozal	1	0	1	0	0	0
Independence	7	0	7	1	3	1
Orange Walk	10	0	10	3	2	1
Stann Creek	10	0	10	2	2	1
Toledo	7	0	7	1	1	0
Grand Total	116	1	117	28	18	6

*TB all forms; †PTB: Pulmonary Tuberculosis, ††EPTB: Extra-pulmonary Tuberculosis

Source: Epidemiology Unit, Ministry of Health

TB is one of the leading causes of death among people living with HIV. Without treatment, as with other opportunistic infections, HIV and TB can work together to shorten lifespan. When a person has both HIV and TB each disease speeds up the progress of the other.

This report measures the burden of known Tuberculosis (TB) co-morbidity among people in HIV care. All TB patients are screened for HIV and all HIV patients should be screened for TB. It is difficult to do the latter as these are hard to reach patients. TB infected persons, due to the nature of their illness, seek medical attention more readily and this provides the opportunity to screen for HIV.

Of the 117 TB positive patients, who were screened for HIV, 28 were HIV positive meaning they were co-infected. There were 18 deaths among these TB patients of which six (6) were HIV/TB co-infection. The Belize District saw the highest TB cases with 55 cases, followed by Cayo with 15 cases and Belmopan 12.

Conclusions/Recommendations:

UNAIDS 2017 Spectrum⁴ estimates calculates the 2016 HIV prevalence in Belize as 1.9 in those 15-49 years which is higher than the Caribbean Region (1.2) and Latin America (0.5). When compared with countries like Jamaica (1.8), Barbados (1.6), Panama (1.0) and El Salvador (0.6), the prevalence in Belize is only comparable to Haiti with 1.9 which has decreased from 3.8 in 2015. Although our reported HIV rates are decreasing (Graph 9), Spectrum estimates (Graph 8) that it is increasing and we are not identifying these new infections.

Late access to services resulting in late diagnosis and lack of adherence or retention continues to be a challenge with HIV patients leading to high mortality rates. Belize, Stann Creek and the Cayo districts remain the districts with the highest burden of HIV infection. Even though the new HIV diagnoses seem to have plateaued, it is mostly young females and older males that are being diagnosed.

The Ministry of Health with support from the Global Fund conducted a study in 2017 to look at factors affecting adherence⁵ and it identified both patient and service provider factors. Among the most cited from the patients' side were poverty, denial, drug and alcohol use and lack of support. The health care providers' indicated work overload resulting in poor rapport with patients and inadequate counseling. Stigma and discrimination was cited by both parties as one of the reasons why patients have poor adherence to treatment and care.

With this information, the HIV Program with support from the Global Fund has hired additional adherence counselors and there is ongoing stigma and discrimination sensitization and training with health staff. Additionally, in an attempt to reduce the pill burden and side effects on patients, the ART regimens have been modified with lower pill count and minimal side effects introducing the newer but affordable drugs on the market. Testing services have also been expanded to the rural public health clinics as well as the NGOs in an attempt to make testing more accessible.

With all the interventions mentioned, there is still a need to reach out to men, especially young men to expand testing coverage and identify those that are infected with HIV early and place them on treatment to minimize the risk of transmission. Since the men are not coming for the services, strategies/programs to reach out to them need to be established ensuring continuity and sustainability of these.

For those persons already infected with HIV and non-adherent to treatment and/or care, a well-defined strategy needs to be developed by all stakeholders with adequate monitoring tools to ensure that the interventions are effective. Comprehensively assessing barriers during medical visits is time consuming, therefore pre-visit assessment tools for barriers to adherence may be useful. These can be implemented by Ministry of Health and other stakeholders.

⁴ Spectrum: A UNAIDS HIV burden estimates tool

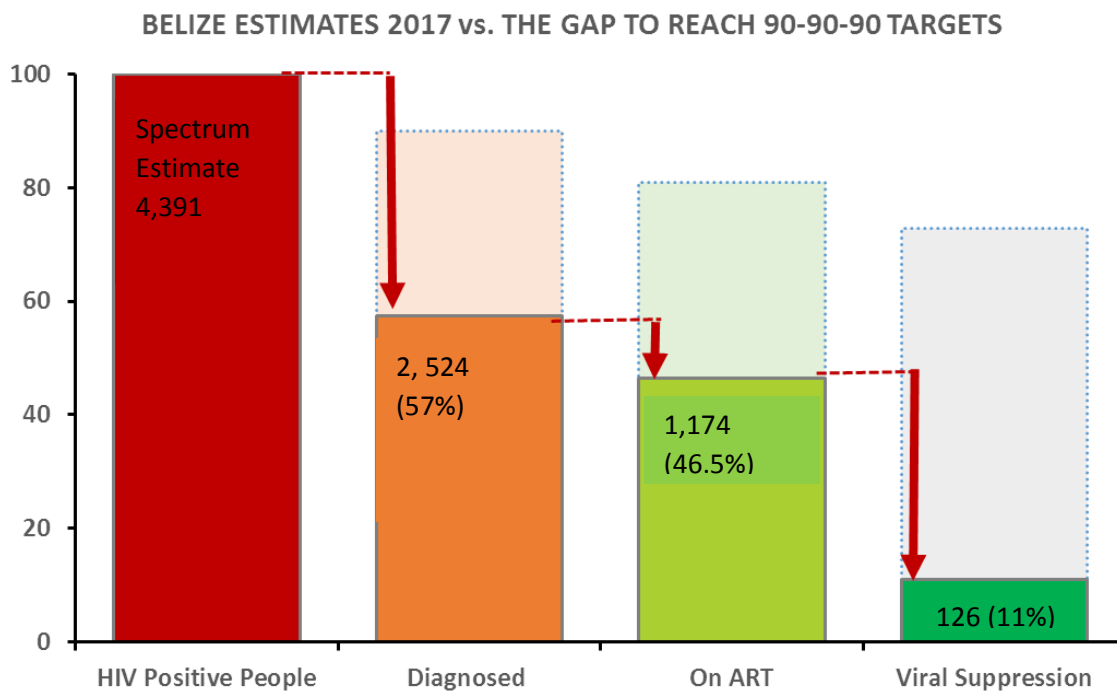
⁵ Arana, P., An analysis of the Barriers to Adherence to HIV treatment, Ministry of Health. 2017

There are many studies that have been done that recommend strategies^{6,7} to improve adherence such as: provide social support; treat concomitant psychological disorders and substance abuse; refer patients to social services; create a social environment conducive to adherence and enlist support from patient’s social network, among others. Based on these recommendations, it is important that stakeholders participate in the development of these strategies and monitor the effectiveness or the need to revisit the proposals.

The Ministry of Health needs to monitor the effectiveness of adherence counseling/counselors as major investment has been made in this strategy. Additionally, development of monitoring tools for the effectiveness of the stigma and discrimination sensitizations/trainings that are ongoing needs to happen and implemented.

As the country struggles to accomplish the 90-90-90 target by 2020 as established by UNAIDS and the Sustainable Development Goals **Target 3.3**: end AIDS as a public health threat by 2030; we have a long way to go as a country and as a region. Below is a summary as to these targets and the gaps. (**90% of people living with HIV know their status; of whom 90% are on treatment; of whom 90% are virally suppressed (90-90-90)**) and the national trend as per country data.

Graph 8. Belize 90-90-90 Cascade and the Gaps



⁶ Genberg BL, Lee Y, Rogers WH, Wilson IB. Four types of barriers to adherence of antiretroviral therapy are associated with decreased adherence over time. *AIDS Behav.* 2015;19(1):85-92.

⁷ Shubber Z, Mills EJ, Nachege JB, et al. Patient-Reported Barriers to Adherence to Antiretroviral Therapy: A Systematic Review and Meta-Analysis. *PLoS Med.* 2016;13(11):e1002183. Published 2016 Nov 29. doi:10.1371/journal.pmed.1002183

Graph 9. Newly Reported HIV Cases by Year. Belize 2000-2017

