

Annual HIV Statistical Report

2015

HIV Surveillance Report 2015

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 2015.

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

<http://www.health.gov.bz>

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HIV testing information from non-BHIS users include: Belize Family Life Association and La Loma Luz Hospital

Abbreviations

HIV	Human Immunodeficiency Virus
PMTCT	Prevention of Mother to Child Transmission
VL	Viral Load
CD4	Cluster of differentiation 4; also known as T-cells or T-helper cells
BHIS	Belize Health Information System
Elisa	Enzyme-linked immunosorbent assay
ARV	Antiretroviral
ART	Antiretroviral Therapy
PCR	Polymerase chain reaction
LTFU	Loss to follow-up

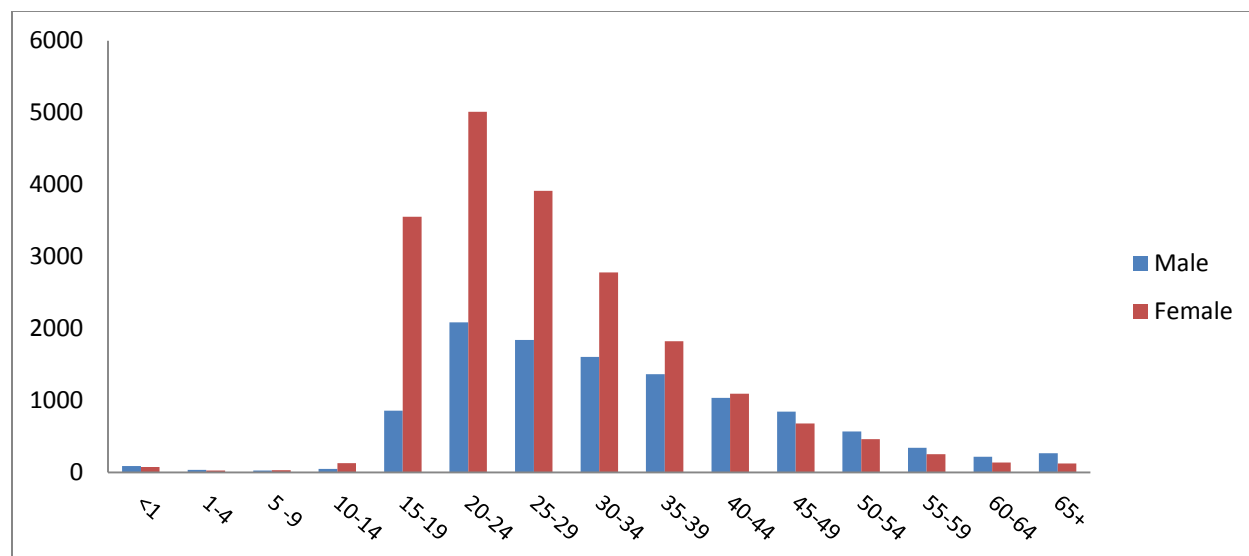
Introduction

As a result of the health sector reform, the electronic medical record system called the Belize Health Information System (BHIS) was implemented in 2008 which included an HIV-specific module. This was in an effort to better understand the national epidemic as well as to improve the capacity to monitor patients and facilitate care of people with and getting tested for HIV within the system. However the HIV module collects a limited amount of information, specifically on sexual and other sensitive behavioral history. With the BHIS being an integrated health information system, other HIV related data such as laboratory results and pharmacy information were captured in other parts of the patients electronic health record not specific to HIV.

In 2010 HIV case-based surveillance was introduced. Case-based Surveillance captures the individual's socio-demographic, risk factors, clinical status, laboratory and treatment information for all persons with an HIV infection. Each person with an HIV infection is reported on using an individual case report electronic format provided by the BHIS. A positive HIV diagnosis is established at the facility level using two rapid tests (Determine/Alere and Medmira) and is usually confirmed at the national reference lab using an enzyme-linked immunosorbent 4th generation assay (ELISA). Passive surveillance data is captured from voluntary counselling and testing (VCT) sites, clinics, pharmacies, non-governmental organizations, the Central Medical Laboratory (CML) and the 4 regional labs, and is intended to capture data on HIV trends and behaviors from a variety of clinical settings, ranging from hospitals to blood banks to rural clinics linked to the BHIS. Information on HIV positive cases is also directly reported outside of the BHIS system to the national level from private clinics, the national census and the vital registration system. In addition, the Maternal Child Health (MCH) Unit sends in separate MCH data generated by the Prevention of Mother-To-Child Transmission (PMTCT) strategy. Data is aggregated and analyzed by the Ministry of Health's Epidemiology Unit, which is responsible for collection, compilation, analysis, interpretation and dissemination of health data.

Section 1. HIV Testing

Graph 1. HIV testing by Age Group and Sex, Belize 2015



Source: Epidemiology Unit, Ministry of Health

For 2015 there was a greater volume of HIV testing done among persons 15 to 39 years. Though there is an increase of HIV testing in both sexes, there is a continued short fall under the 10% of the program's established target of increasing HIV testing in the male population. The continued increase of HIV testing in the number of females aged 15 to 39 years can be attributed to ongoing efforts in antenatal care and shows the program's strength in the PMTCT area. (Graph 1) Those under one represent those children exposed to HIV during pregnancy and the remaining under fifteen are those where there is the possibility of exposure from mother-to-child or other forms of risk exposure such as sexual abuse.

Table 1: Total HIV tests done (Rapid and ELISA), Belize 2015

YEAR	Male	Female	Grand Total	Positive Cases	Testing Ratio (M:F)	Positivity Rate
2012	9061	17528	26589	241	0.5:1	0.9
2013	10341	19136	29477	233	0.5:1	0.8
2014	9611	19016	28627	226	0.5:1	0.8
2015	11,241	20,105	31,346	239	0.6:1	0.8

Source: Epidemiology Unit, Ministry of Health

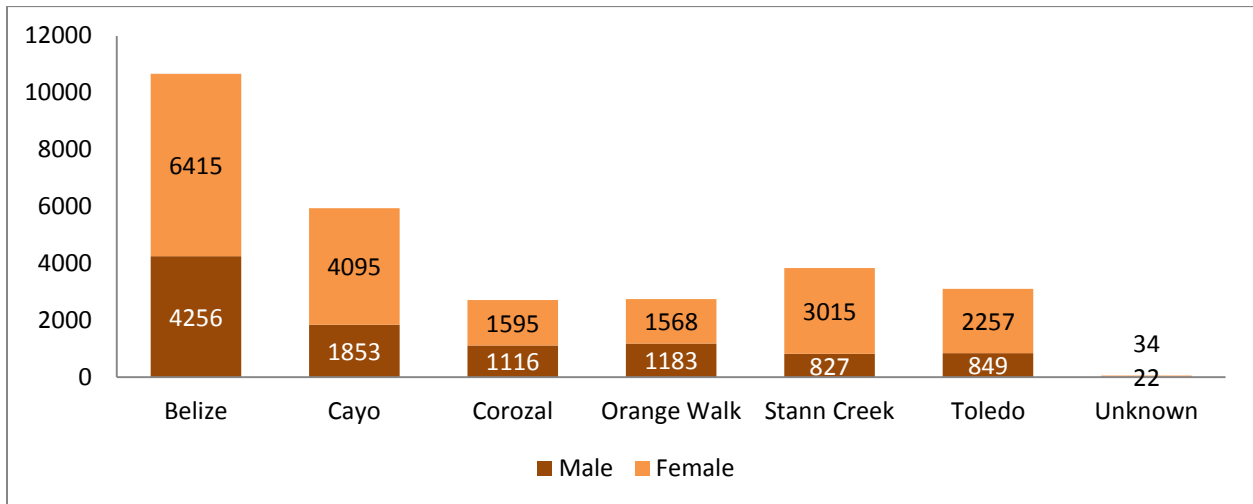
There were a total of 31,346 HIV tests done for 2015, of these 64% were female and only 36% were in the male population. As similar patterns have shown in previous years there is greater HIV testing in the female population, at a ratio of 0.5 to 0.6M:1F; highlighting continued and

innovative strategies are needed to engage the male population in HIV testing. The northern region has closed the gap in regards to testing almost 1 male to every female while the southern region shows a large gap with almost 3 females to every male screened for HIV. The difference in these regions can be attributed to the culture or the innovative ways to reaching males. (Table 1)

All HIV testing carried out at national level adhered to the program’s established algorithm. The majority of HIV testing performed and reported here were rapid kits (Determine and Medmira) followed by ELISA testing done at the Central Medical Laboratory for confirmation.

In terms of HIV positive cases, the ratio for positivity rate has been consistent at 0.8 to 0.9 over the past 4 years (Table 1).

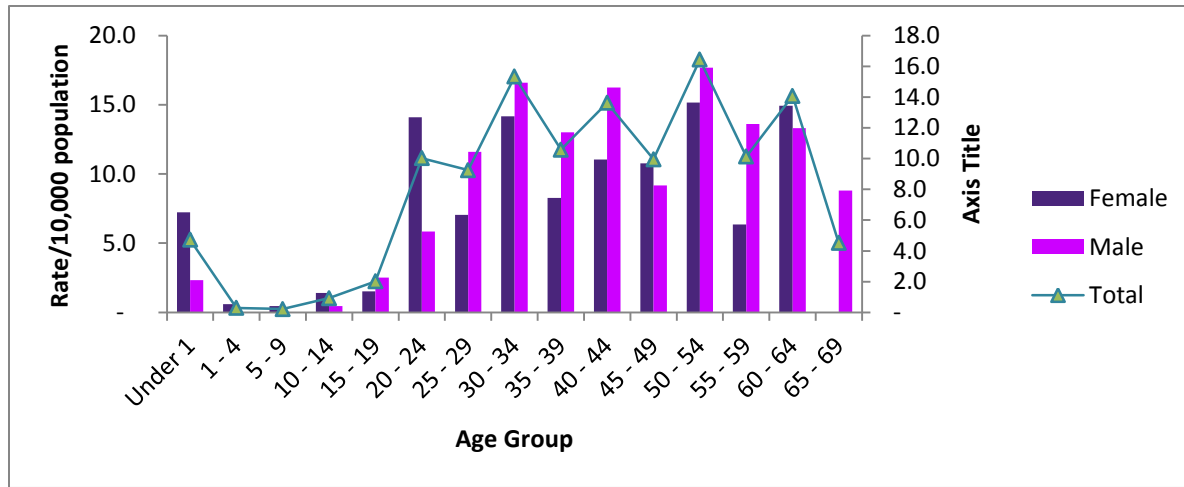
Graph 2: Number of HIV tests by District of Residence and Sex, Belize 2015



Source: Epidemiology Unit, Ministry of Health

Section 2: Newly Diagnosed HIV Cases

Graph 3: Rate of New HIV Cases by Age Group and Sex, Belize 2015



Source: Epidemiology Unit, Ministry of Health

An increase in rate of newly diagnosed HIV cases can be seen in the 20+ years age groups in both sexes, with predominance in the male population after the age of 25. Although the numbers highlight males between the age groups 25-44 years as being most affected, the rate of infection is high among females 20-24 years and females 60-64 years. The majority of HIV positive young females are reached through the prenatal clinics which is an indicator of unsafe sex resulting in pregnancy and HIV infection. This continues to reflect the need to capture the younger population with prevention strategies before they engage in risky behaviors. New interventions to address females after their reproductive years need to be identified to capture this population. (Graph 3) Infants under the age of one year infected through mother to child transmission (PMTCT report) were high for 2015 after reaching an all-time low in 2014. (Graph 3, Table depicted as “Under 1” on the table and graph)

Table 2. Number of New HIV cases by Age Group and Sex, Belize 2015

Age group	Female	Male	Total
<1	3	1	4
1-4	1		1
5-9	1		1
10-14	3	1	4
15-19	3	5	8
20-24	25	10	35
25-29	11	17	28
30-34	19	21	40
35-39	10	15	25
40-44	11	16	27
45-49	9	8	17
50-54	10	12	22
55-59	3	7	10
60-64	5	5	10
65+		7	7
Grand Total	114	125	239

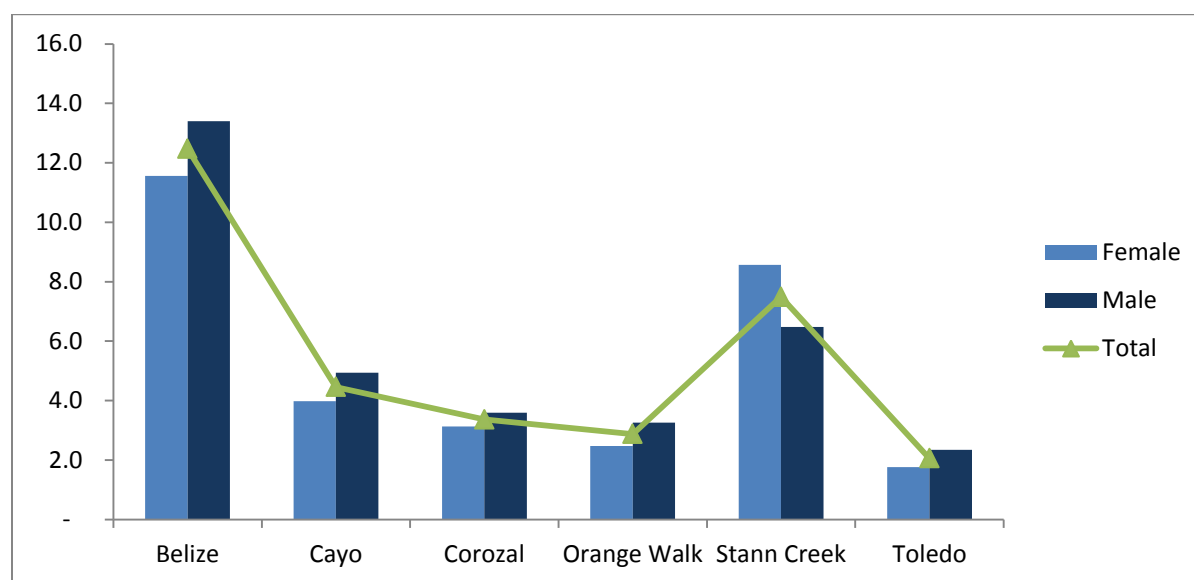
Source: Epidemiology Unit, Ministry of Health

Table 3. Number and Rate of New HIV Infections by District of Residence and Sex, Belize 2015

District	Female		Male		Total	
	N	Rate/ 10,000 pop	N	Rate/ 10,000 pop	N	Rate/ 10,000 pop
Belize	63	11.6	71	13.4	134	12.5
Cayo	17	4.0	21	5.0	38	4.5
Corozal	7	3.1	8	3.6	15	3.4
Orange Walk	6	2.5	8	3.3	14	2.9
Stann Creek	16	8.6	13	6.5	29	7.5
Toledo	3	1.8	4	2.3	7	2.0
Unknown	2	-	-	-	2	-
Grand Total	114	6.35	125	7.0	239	6.7

Source: Epidemiology Unit, Ministry of Health

Graph 4. Rate of New HIV infections by District of Residence and Sex, Belize 2015



Source: Epidemiology Unit, Ministry of Health

For 2015, rates of newly diagnosed HIV infections per 10,000 population were highest in the Belize District with 12.5 and 7.5 in the Stann Creek district, notably there has also been an increase of newly diagnosed HIV infections in the Cayo District. Males remain the higher affected group with exception in the Stann Creek district where newly detected HIV cases were seen among females.

Section 3: Care and Treatment

The ultimate goal of the HIV program is to have the entire population of HIV infected persons on antiretroviral therapy and virally suppressed as a means of reducing morbidity and mortality as well as a secondary prevention strategy.

Table 4. Total Patients on Antiretroviral Treatment, Belize 2015

	Female	Male	Grand Total
First Line Medications			
Efavirenz+Emtricitabine & Tenofovir Disoproxil Fumarate	92	92	184
Efavirenz +Lamivudine + Zidovudine	127	158	285
Emtricitabine & Tenofovir Disoproxil Fumarate +Nevirapine	7	7	14
Lamivudine + Zidovudine + Nevirapine	196	156	352
Lamivudine + Zidovudine + Nevirapine (ZDV or AZT)+ Suspension	13	18	31
Total 1st Line	435	431	866
Second Line Medications			
Emtricitabine & Tenofovir Disoproxil Fumarate +Lopinavir + Ritonavir	83	95	178
Lamivudine + Zidovudine+ Lopinavir + Ritonavir	60	72	132
Total 2nd Line	143	167	310
Grand Total	578	598	1176

Source: Epidemiology Unit, Ministry of Health

For 2015, after diagnosis of HIV infection, 1,176 patients reported to have picked up antiretroviral with no significant difference between males and females. Of the total reportedly on antiretroviral, 74% (866) are on first line medication whilst 26% (310) had been placed on second line medication which indicates a level of resistance to first line medication. Added to this, 3 persons are on 3rd line/salvage therapy which is provided by external sources.

Table 5. Summary of 2015 HIV cohort, Belize 2015

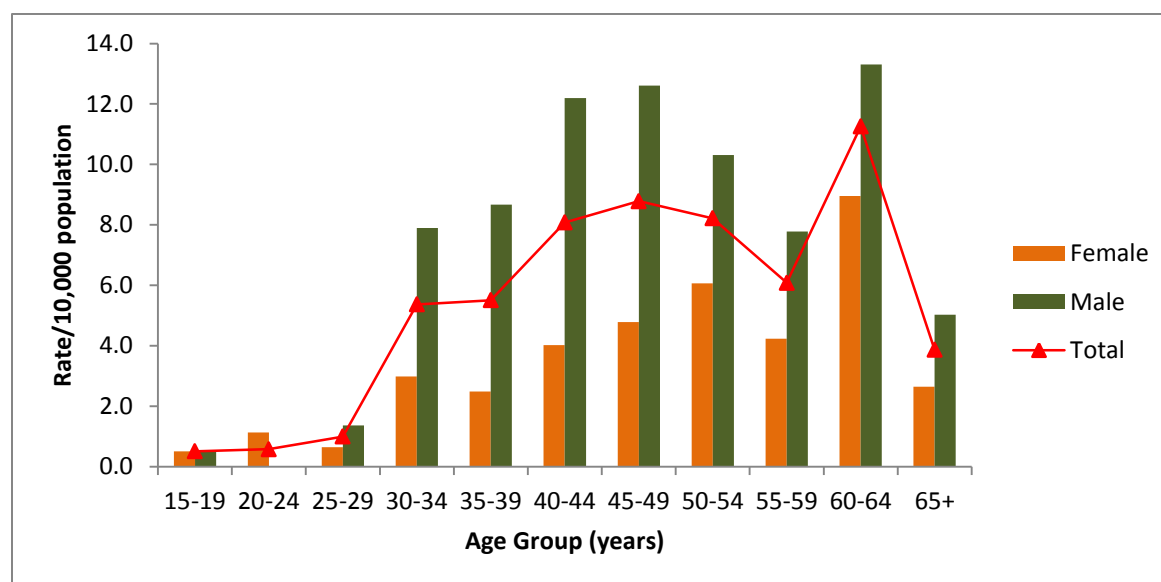
Newly HIV Diagnosed	239
Enrolled in Care	239
Received CD4 (counts)	136
> 350	57
200-350	29
<200	50
Opportunistic Infection	69
Placed on ART	123
Pending ART readiness	107
Deceased	23
Alive and on ART	104

Source: Epidemiology Unit, Ministry of Health

Of 239 newly diagnosed HIV cases for 2015, 57% (136) had received a CD4 cell count of which 58% (79) had a CD4 count less than 350cells/mm³. This can be an indication that access to health care and HIV testing continues to be in the late stages of infection. Based on clinical evaluation and patient readiness of newly diagnosed HIV cases, 52% (123) patients that met the criteria were placed on ART while 45% (107) patients did not meet current criteria for ART. At the end of 2015, 44% (104) of patients that were newly diagnosed were alive and on ART; and 10% (23) of those newly diagnosed had deceased. (Table 5)

Section 4. HIV Related Deaths

Graph 5. HIV related deaths by Age Group and Sex, Belize 2015



Source: Epidemiology Unit, Ministry of Health

There is a trend of higher mortality rates related to HIV in males versus females across all age groups. . The overall HIV related death rate is 3.1/10,000 population with men dying at twice the rate of women at 4.1/10,000 population vs 2.0 for females and surpassing the total national rate. (Graph 5)

Table 6. Distribution of HIV related Deaths by District of Residence and Sex, Belize 2015

District	Female		Male		Grand Total	
	N	Rate	N	Rate	N	Rate
Corozal	1	0.4	4	1.8	5	1.1
Orange Walk	2	0.8	3	1.2	5	1.0
Belize	19	3.5	42	7.9	61	5.7
Cayo	6	1.4	14	3.3	20	2.3
Stann Creek	8	4.3	10	5.0	18	4.6
Toledo	0	-	1	0.6	1	0.3
Grand Total	36	2.0	74	4.1	110	3.1

Source: Epidemiology Unit, Ministry of Health

In regards to the 3 districts reporting the higher numbers of newly detected HIV infections (Table 6) the pattern of HIV related deaths are found to be in the same Belize, Cayo and Stann Creek districts. The Belize District reporting the most HIV related deaths followed by Stann Creek District with 5.7 and 4.6/10,000 population respectively.

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

Table 8. Summary of Prevention of Mother to Child Transmission of HIV (PMTCT), Belize 2015

	2013		2014		2015	
	N	%	N	%	N	%
Total Pregnant Women Registered	6948		6893		6681	
Pregnant Women Tested for HIV	6383	91.9	6328	91.8	6526	97.7
New HIV cases	11	0.2	17	0.3	14	0.2
Old HIV cases	39	0.6	34	0.5	40	0.6
HIV Positive Pregnant Women	50	0.8	51	0.8	56	0.9
HIV positive Pregnant Women on ARV	50	100.0	49	96.1	53	94.6
Deliveries to HIV Positive Women	46		45		57	
Infants received ARVs	46	100.0	45	100.0	53	93.0
HIV MTCT	3	6.5	1	2.2	4	7.0
1st PCR Coverage*	47/47	100.0	56/56	100.0	58/58	100.0
2nd PCR Coverage*	41/49	83.7	44/57	77.2	46/53	86.8
3rd PCR Coverage*	31/47	66.0	31/49	63.3	49/60	81.7

*Coverage=Total done/Total due for the respective year

There is an increase in HIV testing tendency in pregnant women since 2013. For 2015, there has been a decrease in the number of newly diagnosed HIV infections in women in comparison to 2014. At the end of 2015, there were a total of 56 HIV positive pregnant women, of these 95% (53) of all HIV positive women were receiving ARV's. In this same year, 57 deliveries were to HIV positive women, and 93% (53) of these infants had received ARV's. One of the women was diagnosed after delivery thus the reason for not receiving ARVs. For 2015, similarly to 2013 the number of HIV mother to child transmission was 7% of total of infants born to HIV positive women. Numbers of repeated PCR coverage in these HIV infected infants showed a slightly higher adherence to testing. There is 100% coverage in the first PCR reducing by almost 18% by the end of the third PCR.

There continues to be non-compliance to care and treatment among pregnant women. During 2015, three (3) of the positive pregnant women did not access and receive treatment even though they were aware of their HIV status.

Table 9: Impact indicator – Percentage of young men and women age 15-24 who are HIV infected, Belize 2015

	Age group (years)	2010	2011	2012	2013	2014	2015
Number of pregnancies	15-19	1559	1656	1594	1610	1527	1612
	20-24	2144	2419	2275	2282	2321	2210
	15-24	3703	4075	3869	3892	3848	3822
Number of HIV+ pregnant women	15-19	8	9	3	5	7	6
	20-24	17	17	9	16	16	13
	15-24	25	26	12	21	23	19
Number of HIV+ pregnant women	New case	13	21	6	8	11	7
New cases versus known cases	Known case	12	5	6	13	12	12
Percentage of HIV+ pregnant women (15-19y):		0.5	0.5	0.2	0.3	0.5	0.4
Percentage of HIV+ pregnant women (20-24y):		0.8	0.7	0.4	0.7	0.7	0.6
Percentage of HIV+ pregnant women (15-24y):		0.7	0.6	0.3	0.5	0.6	0.5

Source: Epidemiology Unit, Ministry of Health

The proxy indicator for incidence which is represented in Table 9 as the *percentage of HIV positive pregnant women 15-24 years*, identifies a decrease at 0.5% as compared to 2014 with 0.6%. This rate has remained fairly stable over the last 5 years except for 2012 when it was lower and could be related to data quality issues.

Although the majority of the pregnancies occur in the 20-24 age group, there is a significant number of pregnancies among those 15-19 years. Added to this, 0.4% of these young women are also infected with HIV indicating the need for prevention strategies to minimize these risky behaviors.

Of the 19 HIV positive pregnant women 15-24 years, 7 were newly diagnosed cases while 12 were repeated cases. A known case refers to women who had been diagnosed during a previous pregnancy.

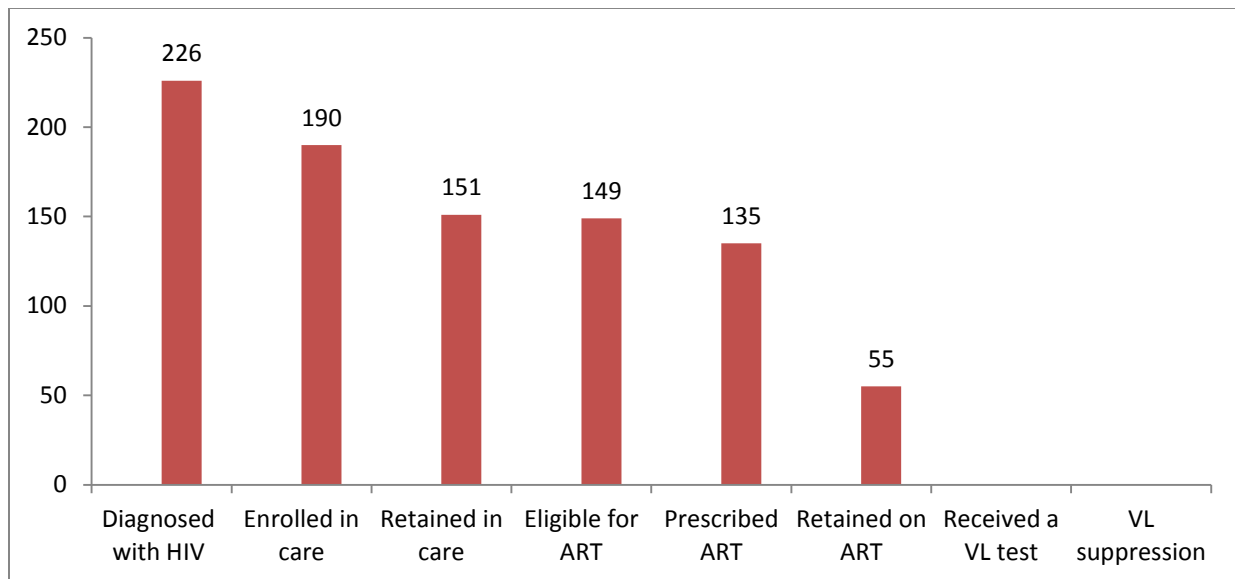
Section 6. HIV Continuum of Care Cascade

This is the first time that the HIV program has been able to use the available data to generate this portion of the report. 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.

The definitions for the cascade 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)

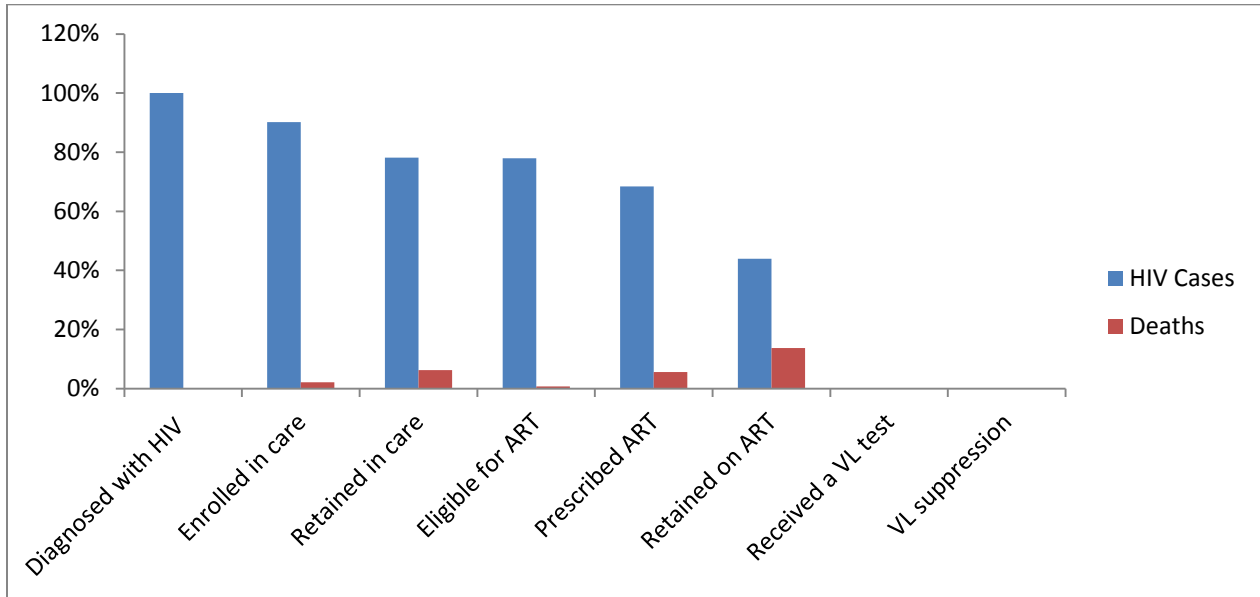
Graph 7. HIV Continuum of care cascade for the 2014 cohort for 12 months, Belize 2015



Source: Epidemiology Unit, Ministry of Health

In 2014, 226 patients were diagnosed with HIV and at the end of 2015, 40% (55) of patients prescribed ART were retained on ART. Viral load testing begun on a regular basis for all active patients in the latter part of 2015 and as such the data is not presented in this cascade. Considering that adherence to treatment has a direct effect on viral suppression, the last bar, *Retained on ART*, can be a proxy for patients with viral suppression. Viral load data will be available at the end of 2016.

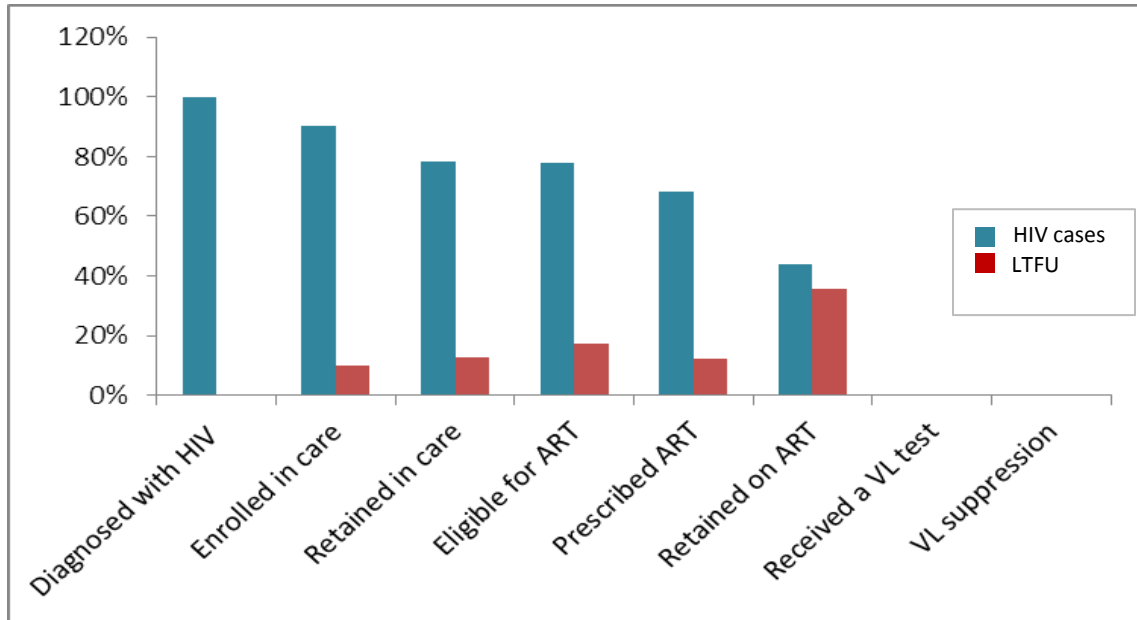
Graph 8. National-Level cohort cascade with patients Lost-to-follow-up (LTFU) and deaths at December 31, Belize 2015



Source: Epidemiology Unit, Ministry of Health

The national data (Graph 8) starts with the total cases diagnosed up to December 2015, 3,275 (100%) and illustrates that at the end of 2015 only 44% of patients are retained in care. Most patients die shortly after being enrolled in care (6.2%) and after initiating ART (13.7%) which can be due to late diagnosis. Most patients are diagnosed when they present to the health services with an opportunistic infection which already indicates advanced HIV infection. The strategies that the Ministry of Health and others in the national response have undertaken, includes targeted testing of at risk groups, mainly men. It is imperative that strategies are directed at early diagnosis to minimize the HIV mortality rate.

Graph 9. National-Level cohort cascade including Lost-to-follow-up (LFTU) at December 31, Belize 2015



Source: Epidemiology Unit, Ministry of Health

Graph 9 identifies patients' are lost-to-follow-up before and after starting ART. Many patients start to feel better after initiating ART and after a period of time might not see the importance of adhering to treatment and discontinue accessing services. In an effort to address this urgent gap in health services the Ministry of Health has hired additional adherence counselors that will ultimately improve care and treatment retention rate.