2017-2021 Texas HIV Plan

A Public Health Blueprint for Fighting HIV in Texas

The 2017-2021 Texas HIV Plan, A Public Health Blueprint for Fighting HIV in Texas, is a road map for preventing new HIV infections in Texas and ensuring that individuals living with HIV have access to systems of care. Health departments funded by the Centers for Disease Control and Prevention (CDC), through the Comprehensive HIV Prevention Programs for Health Departments Funding Opportunity Announcement, are required to have an HIV prevention planning process that includes the establishment of an HIV prevention planning group (HPG) and the development of a jurisdictional HIV prevention plan. The Division of State HIV/AIDS Programs within the Health Resources and Services Administration (HRSA) HIV/AIDS Bureau (HAB) requires Ryan White HIV/AIDS Program Part B Grantees to convene a planning advisory group and to submit a Statewide Coordinated Statement of Need (SCSN), a requirement of the Ryan White HIV/AIDS Treatment Modernization Act Extension of 2009.

In alignment with June 2015 guidance from the CDC and HRSA, the Texas HIV Syndicate serves as the Texas integrated HIV prevention and care planning group. The Texas HIV Syndicate includes representation from people living with HIV, community stakeholders, and HIV prevention and care organizational leaders. The 2017-2021 Texas HIV Plan was shaped by the input and direction of the Texas HIV Syndicate as well as more than 600 comments from individuals and communities impacted by HIV, people living with HIV, clinicians, and researchers. The Texas Department of State Health Services provides administrative support to the Texas HIV Syndicate.

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Introduction

At the end of 2014, more than 80,000 Texans were diagnosed and living with HIV. In that year alone, slightly more than 4,000 new diagnoses were made, a number very similar to the new diagnoses reported each year since 2005. Advances in treatment have increased the quality and length of life for people living with HIV. The decrease in deaths from HIV, coupled with the consistent number of new infections, results in a five to six percent annual increase in the number of Texans living with HIV.

Texans living with HIV and those who work to prevent new infections and provide treatment are aware of the day-to-day challenges associated with HIV. The Texas Department of State Health Services (DSHS) estimates that between 11 percent and 17 percent of those living with HIV have not yet been diagnosed. Meaning they are living without the life-extending benefits of treatment and increasing the risk of further transmission. In 2014, about one in four diagnoses were made late in the course of disease, which worsens the prognosis for these individuals and shortens life spans. About one in four Texans living with HIV in 2014 were not receiving HIV related medical care, and slightly less than half of those who were in care did not have a suppressed HIV viral load, a marker for optimal health and reduced infectiousness.

The profile of Texans with HIV shows stark disparities. More than two thirds of new infections, as well as more than half of persons living with HIV, are gay men. Between 2010 and 2014, Black and Hispanic Texans accounted for roughly 75 percent of new diagnoses. Hispanics continue to have a disproportionate number of late diagnoses. The rate of late diagnosis among Hispanics in 2014 was about 1.4 times higher than in Whites or Blacks.

The 2017-2021 Texas HIV Plan identifies five priority populations:
Black gay men
Hispanic gay men
White gay men
Black women
Transgender individuals

The continuing rise in the number of Texans living with HIV and the significant burden on sexual and racial/ethnic minorities make it possible to overlook the gains that have been made in the fight against HIV. As a case in point, consider perinatal HIV, the transmission of HIV from mother to child. The number of these cases has been significantly reduced through comprehensive strategies that reduce the number of undetected and untreated cases. Since treatment of mothers with HIV reduces the chance of transmission to the child, perinatal prevention strategies use the best medical and social science to ensure that the greatest number of women with HIV are identified as early in their pregnancies as possible.

This success offers an important pattern for other successes; it is now known that increasing the number of people who are virally suppressed reduces new HIV infections. Reducing the infectiousness of persons living with HIV at the individual level, and reducing the overall amount of HIV circulating in communities, reduces the chances of new persons becoming infected. This can be seen in Texas: the number of new diagnoses remaining steady despite increases in the overall number of persons living with HIV (PLWH) shows the effectiveness of prevention and treatment efforts. While these efforts hold new infections steady, reducing the annual number of new infections requires new and additional strategies.

The Texas HIV Plan offers a comprehensive approach to reducing HIV based on public health principles, advances in science and research, and the continuum of HIV care. The continuum provides the range of possible engagement, beginning with awareness of HIV status, spanning a range of engagement levels, and ending with people fully engaged in medical care and virally suppressed.

The overarching goal of the Texas HIV Plan is to reduce new HIV infections through the use of focused HIV prevention activities as well as ensure that Texans living with HIV are fully engaged in treatment and, to the extent medically possible, achieve maximal health outcomes. Reducing new infections in Texas requires these two lines of attack. First, focused prevention to decrease the risk of exposure to HIV among vulnerable populations. Second, ensured access to treatment and support for PLWH to decrease the amount of virus present in communities, which reduces the risk of infection when exposures do occur.

The Texas HIV Plan (the *Plan*) is structured around six broad goals:

- Increase HIV awareness among members of the general public, community leaders, and policy makers;

- Increase access to HIV prevention efforts for communities and groups at highest risk;

- Successfully diagnose all HIV infections;

- Increase timely linkage to HIV related treatment for those newly diagnosed with HIV;

- Increase continuous participation in systems of treatment among people living with HIV; and

- Increase viral suppression among people living with HIV.

The goals and accompanying strategies in this plan were developed with input from people living with HIV (PLWH) and other stakeholders across Texas. This plan is intended to prioritize actions and coordinate the use of resources across individuals and organizations in communities and groups affected by HIV, to identify common goals, and align strategies and evaluation. The *Plan* is meant to enrich local action rather than specifically direct it. By seeing specific actions and programs as part of this broad spectrum of HIV engagement, organizations and programs can amplify the effects of their response by connecting with others whose work may be up or down stream from theirs. Linked arms bridge gaps and form strong barricades against viral encroachment.

Epidemiologic Overview

This overview presents information on known cases of HIV infection in Texas diagnosed through December 31, 2014, and reported as of June 30, 2015, focusing on the years 2010-2014. It also presents information on estimated incident and undiagnosed infections as well as information on participation in treatment and on health outcomes for Texans living with HIV. This was the latest data available for analysis and publication at the time this section was prepared. More information on the trends highlighted in this section and the data sources used in the report can be found in Appendix G attached to this *Plan*. This overview will be updated annually for use by community stakeholders to monitor and improve *Plan* implementation. *At a glance* summaries on trends of HIV and on disparities and inequities are available at the end of this overview.

Over the past ten years, the number of Texans diagnosed with HIV each year has not increased, with roughly four to five thousand new diagnoses each year. During the same time period, the number of Texans living with HIV has increased by four to five percent per year, with more than 80,000 Texans living with HIV by the end of 2014. The number of Texans living with HIV has increased because highly effective treatment has improved their health and lengthened their lives – people with HIV who get early treatment (and stay on treatment) now have lifespans nearly comparable with people with HIV. As more Texans living with HIV experience longer, healthier lives and a constant number of new diagnoses are made each year, the total number of PLWH increases (Figure 1).

Figure 1: Texans living with diagnosed HIV infections, new diagnoses, and deaths
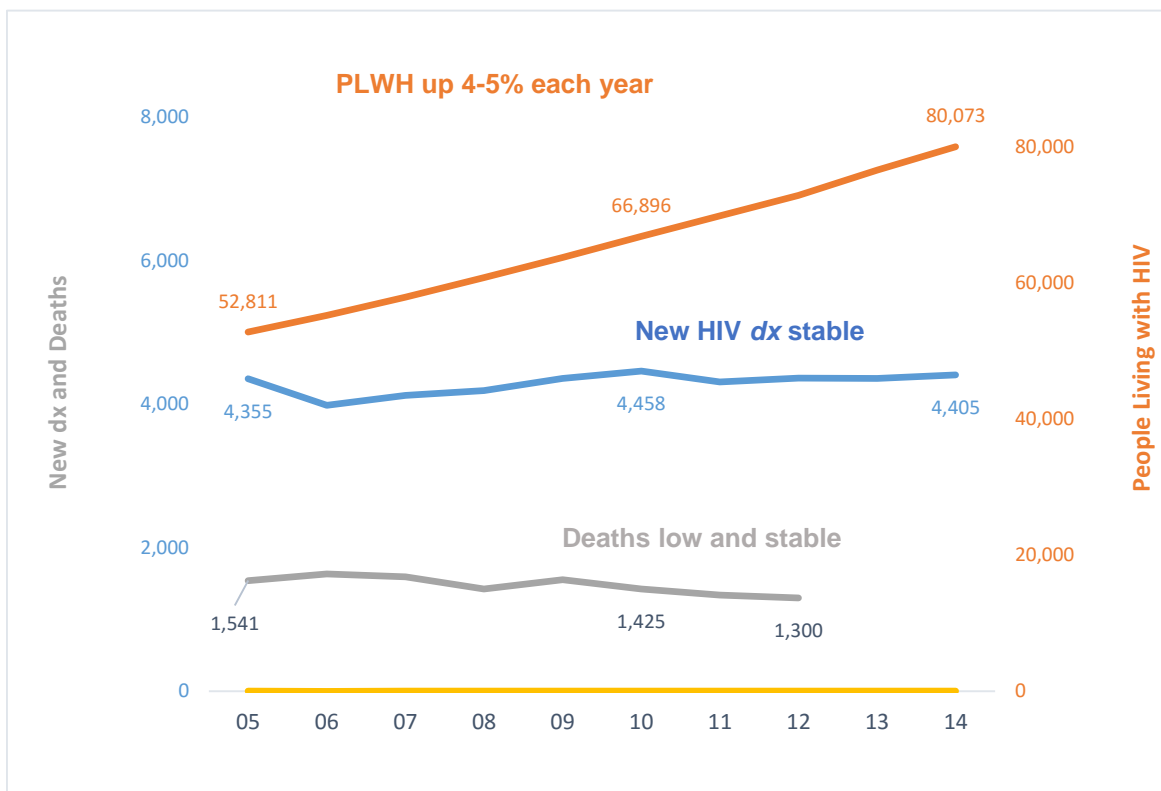
Geography of HIV in Texas

Three of every four Texans living with HIV reside in a major metropolitan area in 2014 – more than half live in the Dallas or Houston areas. A little more than one in ten lived on the US-Mexico border or in the East Texas area. The remaining 12 percent were spread across the remaining areas of the state, including facilities of the Texas Department of Criminal Justice. The distribution of HIV has been stable for the past five years, with each area maintaining its share of residents living with HIV or newly diagnosed with an infection (Table 1, Figure 2).

Table 1: Texans with HIV by area of residence, 2010-2014

	PLWH 2014		New dx 2010-2014	
Texas	80,073		21,909	
Austin TGA	5,480	7%	1,403	6%
Dallas EMA	19,389	24%	5,143	24%
Fort Worth TGA	5,143	6%	1,371	6%
Houston EMA	24,979	31%	6,861	31%
San Antonio TGA	5,814	7%	1,769	8%
US-Mexico Border	4,896	6%	1,634	8%
East Texas area	5,167	7%	1,530	7%

Figure 2: Areas of epidemiologic interest, Texas

EMA – Eligible Metropolitan Area

TGA – Transitional Grant Area
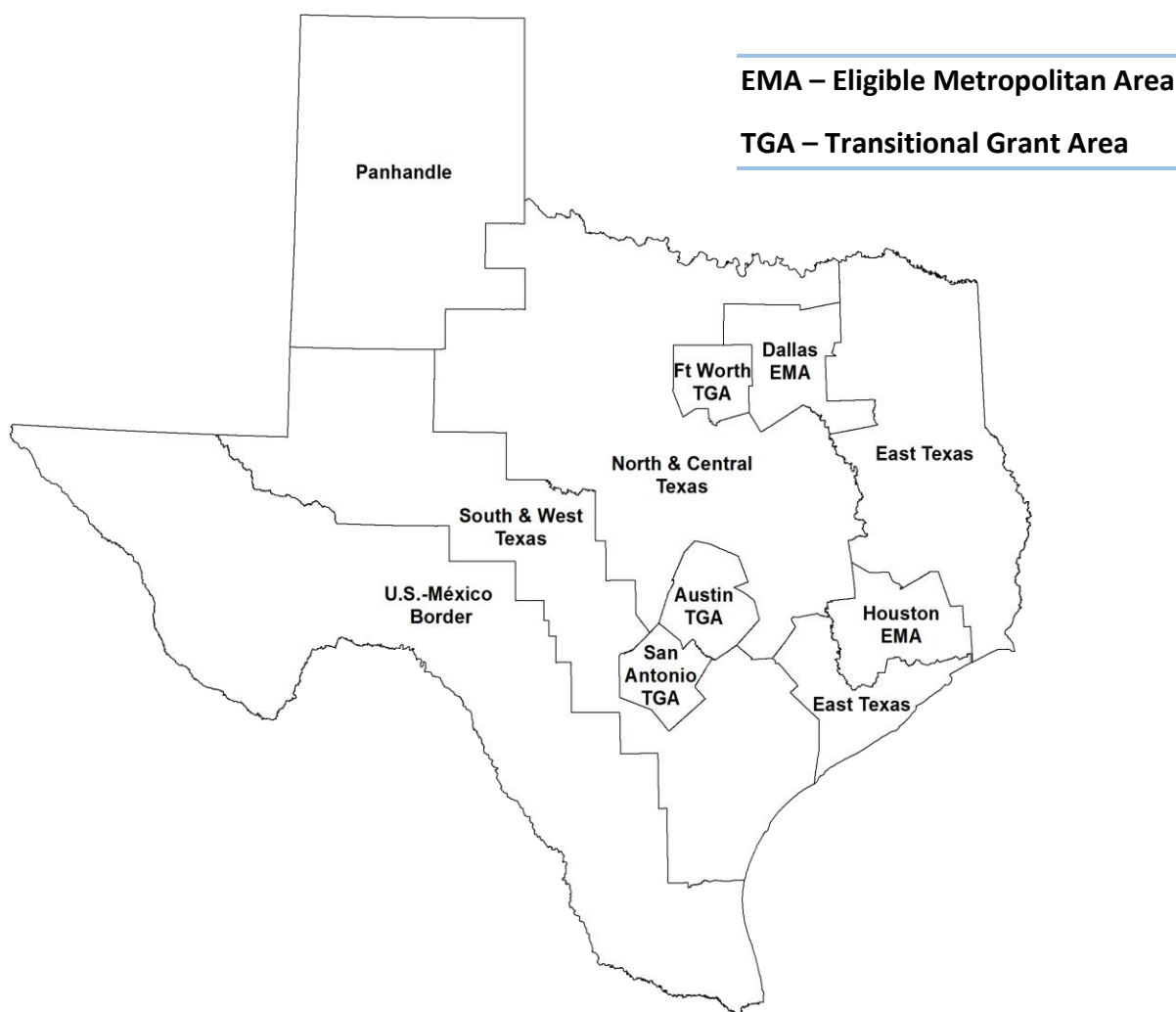
The basics: the profile of Texans living with HIV

As in years past, in 2014 more than three quarters of Texans living with HIV were men. Gay, bisexual, and other men who have sex with men (MSM) made up more than half of Texans living with HIV. Black Texans comprised almost two in five PLWH, with the rest equally distributed between Hispanic and White Texans. More than half were 45 years old or older (Figure 3).

The profile of Texans newly diagnosed with HIV is different. MSM have an even larger presence, making up two in three Texans diagnosed between 2010-2014. Hispanics made up a larger share of the newly diagnosed. More than half of all Texans newly diagnosed were younger than 35. These shifts in the risk, race/ethnicity and age profiles are attributed to increased diagnoses in MSM, especially young MSM. Table 12 and Table 13 at the end of this summary provide additional details regarding Texans living with HIV and those newly diagnosed with HIV.

Figure 3: Profile of Texans with HIV infections, 2010-2014
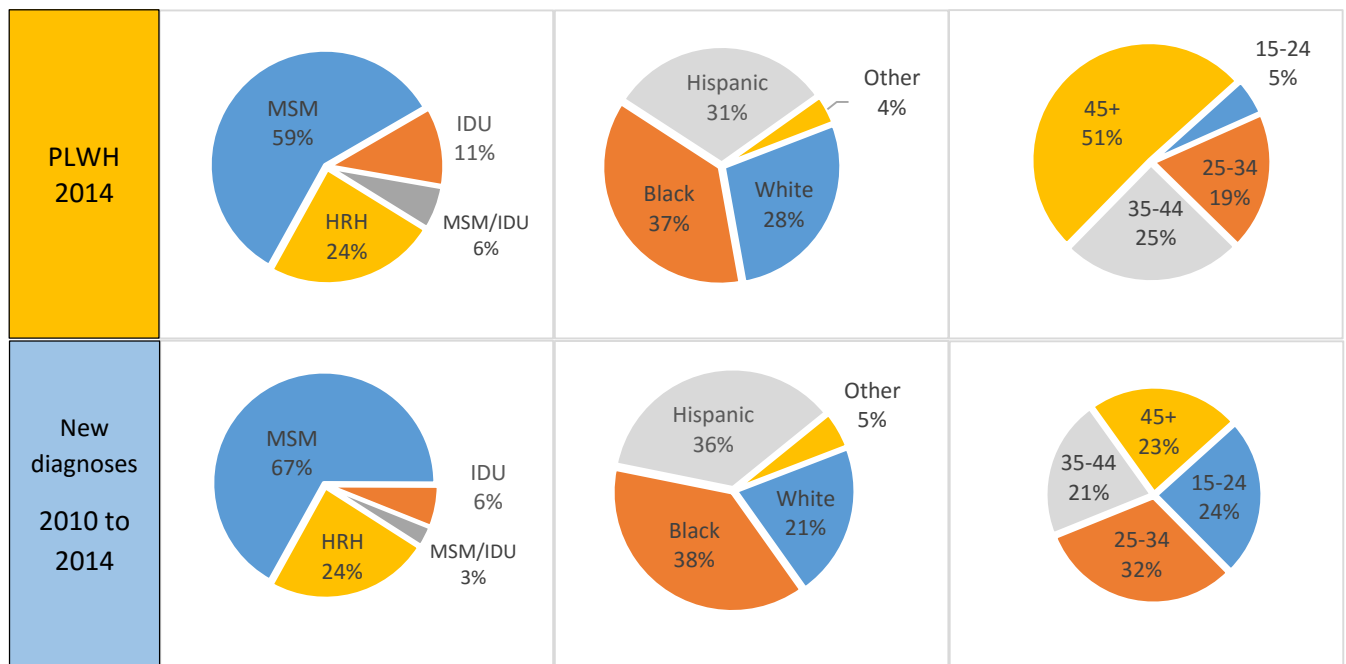
A closer look at Texans living with HIV, 2014

Two out of three Texans living with a diagnosed HIV infection in 2014 belonged to just four groups: Hispanic MSM, White MSM, Black MSM, and Black heterosexual women (Table 2). These four groups are four of the five priority populations in the *Texas HIV Plan*.

Table 2: Texans living with diagnosed HIV infections by mode of transmission, sex, race, and age, 2014

		Number	% of PLWH			Number	% of PLWH
1	Hispanic MSM	*16,172*	*20%*	1	White MSM 45+	10,900	14%
2	White MSM	*16,056*	*20%*	2	Hispanic MSM 45+	6,773	8%
3	Black MSM	*12,699*	*16%*	3	Black MSM 45+	4,744	6%
4	Black heterosexual women	*7,915*	*10%*	4	Hispanic MSM 35-44	4,468	6%
5	Hispanic heterosexual women	3,233	4%	5	Black MSM 25-34	3,900	5%
6	Black heterosexual men	2,943	4%	6	Hispanic MSM 25-34	3,892	5%
7	Black IDU men	2,621	3%	7	Black heterosexual women 45+	3,126	4%
8	Hispanic heterosexual men	1,910	2%	8	White MSM 35-44	3,052	4%
9	Black IDU women	1,806	2%	9	Black MSM 35-44	2,725	3%
10	White MSM/IDU	1,688	2%	10	Black heterosexual women 35-44	2,707	3%

Texans 45 and older made up about half of all PLWH. However, the age profiles of PLWH in the four populations show important differences. Two out of three White MSM were 45 or older in 2014. In contrast, Black MSM have the most youthful profile – almost two in five are 34 or younger.

Some trends attract attention because they *don't* show change. The number of IDU and MSM/IDU living with HIV was virtually unchanged from 2010 to 2014 (Figure 5) there were small numbers of new infections in these groups as well as a higher rate of death from all causes. Very little changed in the number of Whites living with diagnosed HIV infection – growing only 8 percent from 2010 to 2014 (Figure 6)

Figure 4: Current age in PLWH in the Plan priority groups 2014
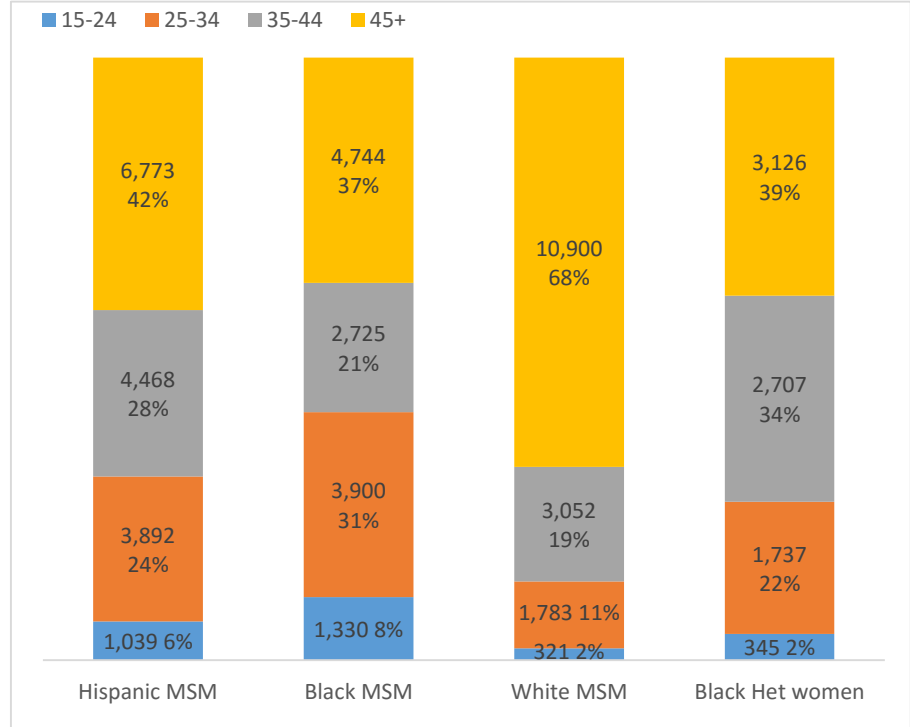
Figure 5: Changes in prevalence by mode of transmission, Texas 2010-2014

25% increase
in gay men/MSM
living with HIV

46,842

37,478

19% increase
in PLWH
who were
infected through
heterosexual sex

No increase in
IDU and MSM/IDU
living with HIV

19,059

8,731   8,828

4,411   4,410

16,040

MSM   IDU   MSM/IDU   Het
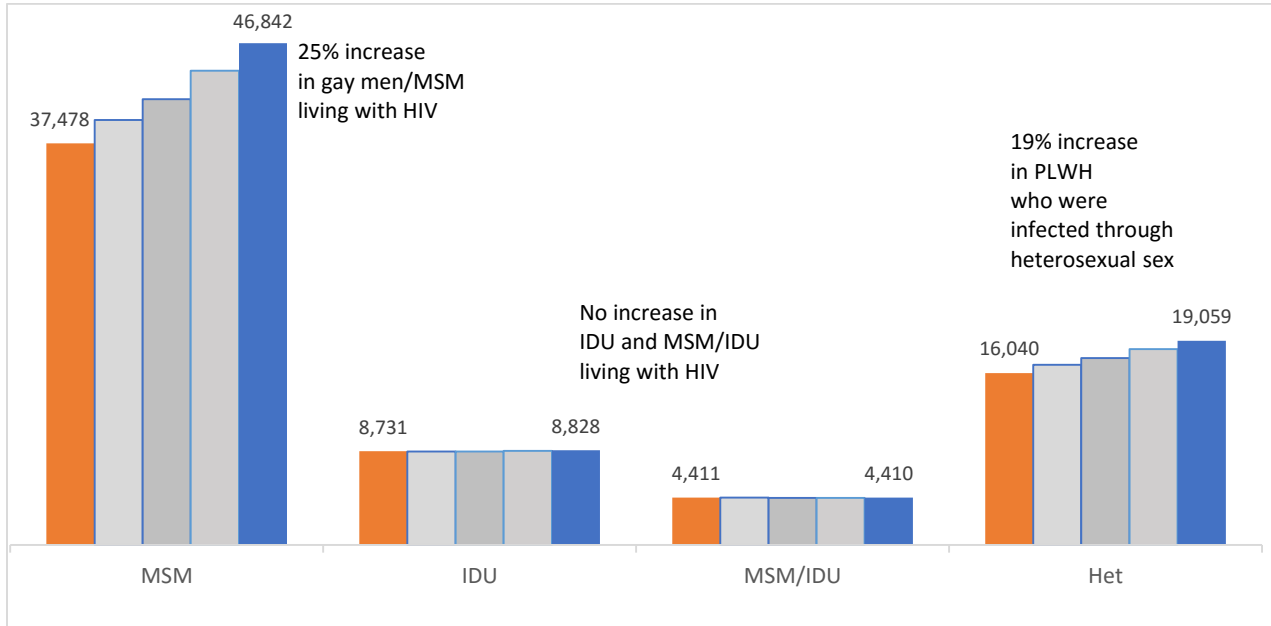
This comparison also shows the difference in the burden of HIV carried by Black communities. Prevalence rates for Blacks are four times higher than rates for Hispanics and five times higher than rates for Whites.

Stark disparities are also seen for MSM. DSHS estimates that 1 in 14 Texas MSM were living with a diagnosed HIV infection in 2013, a rate that is 24 times higher than the rate for Texas overall. The prevalence rates for Texas MSM are staggering – 1 in 5 Black MSM, 1 in 15 Hispanic MSM, and 1 in 20 White MSM were living with diagnosed infections (Figure 7).

Figure 6: Number of PLWH and prevalence rates in Texas by race/ethnicity

24,918   29,895
B
20,687   24,607
W
H   19,213   22,184

2010 2011 2012 2013 2014

920.1
839.2
B

H   203.1   236.3
W   178.3   185.8

2010 2011 2012 2013 2014

Figure 7: Prevalence rates for Texas MSM, 2013

7% of all Texas MSM are living with HIV.

MSM rate 23X higher than overall rate for Blacks

20,347

MSM rate 24X higher than rate for all Texans

MSM rate 26X higher than overall rate for Whites

MSM rate 29X higher than overall rate for Hispanics

7,181

4,919

6,758

290.0

184.0

904.0

227.0

| All PLWH | White | Black | Hispanic |

Rates are per 100,000   ■ Overall   ■ MSM

A closer look at trends in new diagnoses

There were 21,909 new diagnoses in Texas between 2010 and 2014. The priority populations accounted for about three of every four diagnoses in these years (Table 3).

Table 3: New HIV diagnoses in Texas by sex, race/ethnicity, mode of transmission and age, 2010-2014

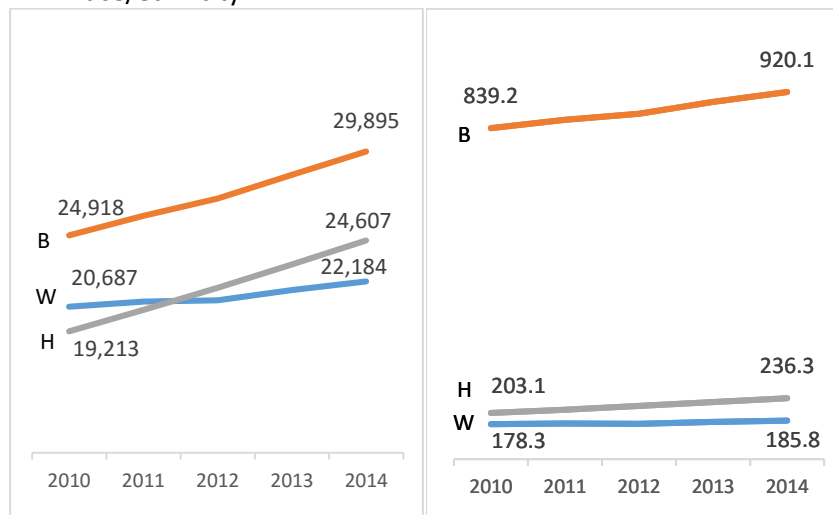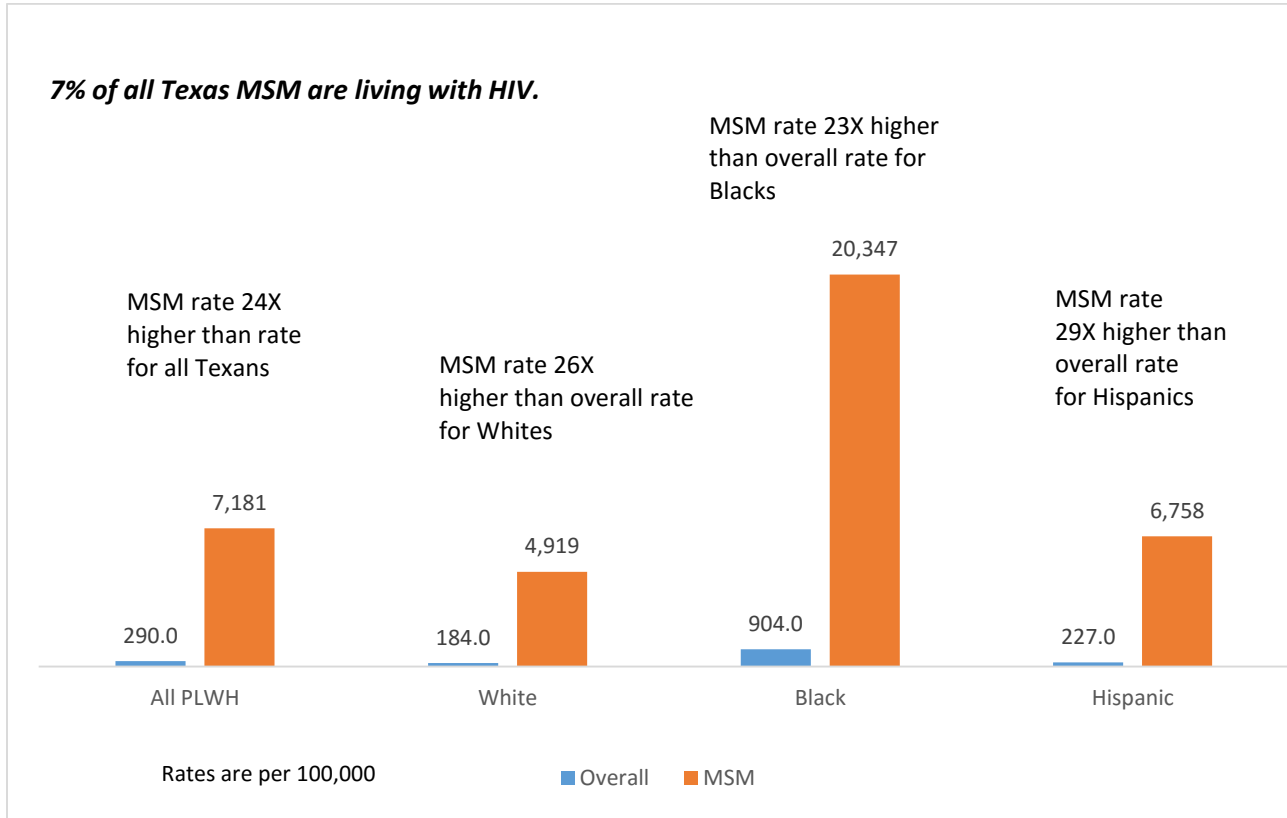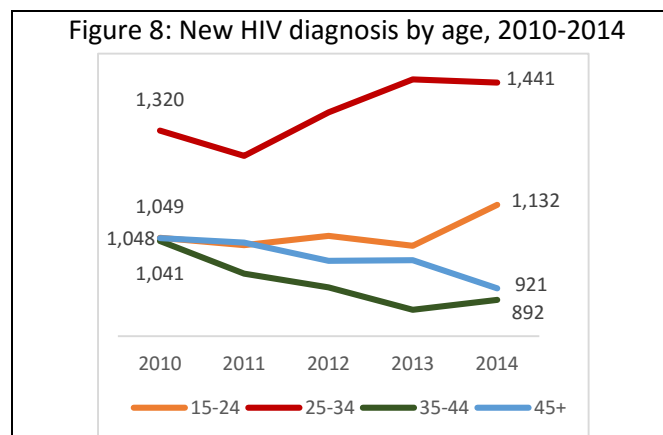|		Number	%			Number	%
1	Hispanic MSM	5,937	27%	1	Hispanic MSM 25-34	2,190	10%
2	Black MSM	4,545	21%	2	Black MSM 15-24	1,865	9%
3	White MSM	3,469	16%	3	Hispanic MSM 15-24	1593	7%
4	Black heterosexual women	2,205	10%	4	Black MSM 25-34	1418	6%
5	Hispanic heterosexual women	901	4%	5	Hispanic MSM 35-44	1243	6%
6	Black heterosexual men	737	3%	6	White MSM 45+	1122	5%
7	Hispanic heterosexual men	552	3%	7	White MSM 25-34	993	5%
8	White heterosexual women	379	2%	8	Hispanic MSM 45+	906	4%
9	Black IDU men	294	1%	9	White MSM 35-44	820	4%
10	Black IDU women	268	1%	10	Black heterosexual women 25-34	688	3%

Figure 8: New HIV diagnosis by age, 2010-2014

Understanding changes in HIV trends in Texas requires a close look at how the number of new diagnoses have changed among MSM. MSM were the only group to show increases in new diagnoses, rising 10 percent from 2010 to 2014. Since the increases in MSM diagnoses were driven by rises among young Hispanic and Black men, these changes are reflected in trends for race/ethnicity and age. The change in the age profile of newly-diagnosed Texans is clear: the number of Texans who were younger than 35 years of age at the time of their diagnosis increased by almost 10 percent, and new diagnoses in Texans 35 and older decreased at about the same rate (Figure 8).

The overall rise in diagnosis in younger Texans is driven by increases in diagnoses among young MSM. More than six in ten MSM were 34 or younger at the time of diagnosis; about three in ten MSM were between 15 and 24 at the time of their diagnosis. In contrast, only about three in ten IDU or heterosexuals were 34 or younger at the time of their diagnosis. The younger age of MSM are also seen in the listing of groups with the greatest number of new diagnoses; seven of these groups are under the age of 35 (Figure 9).

Figure 9: Age at diagnosis by mode of transmission, 2010-2014
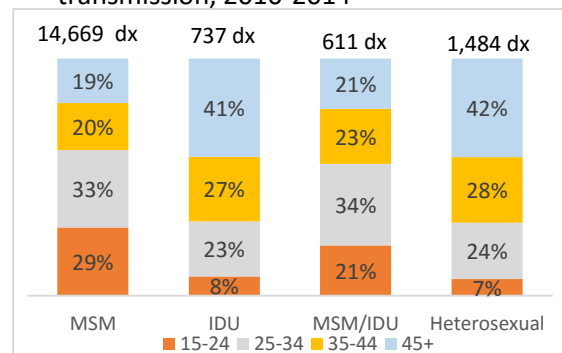
Trends in new diagnoses for race/ethnicity are much easier to see when separated by mode of transmission and sex. The three graphs below show trends in new diagnoses for MSM, men with other modes of transmission, and women of all risk groups (Figure 10). These graphs clearly show that in contrast to trends in MSM, the number of new diagnoses in other groups were flat or declining. The declines were most noticeable among Black men and women who acquired HIV through heterosexual sex.

Figure 10: New HIV diagnoses in Texas by mode of transmission, race/ethnicity and sex
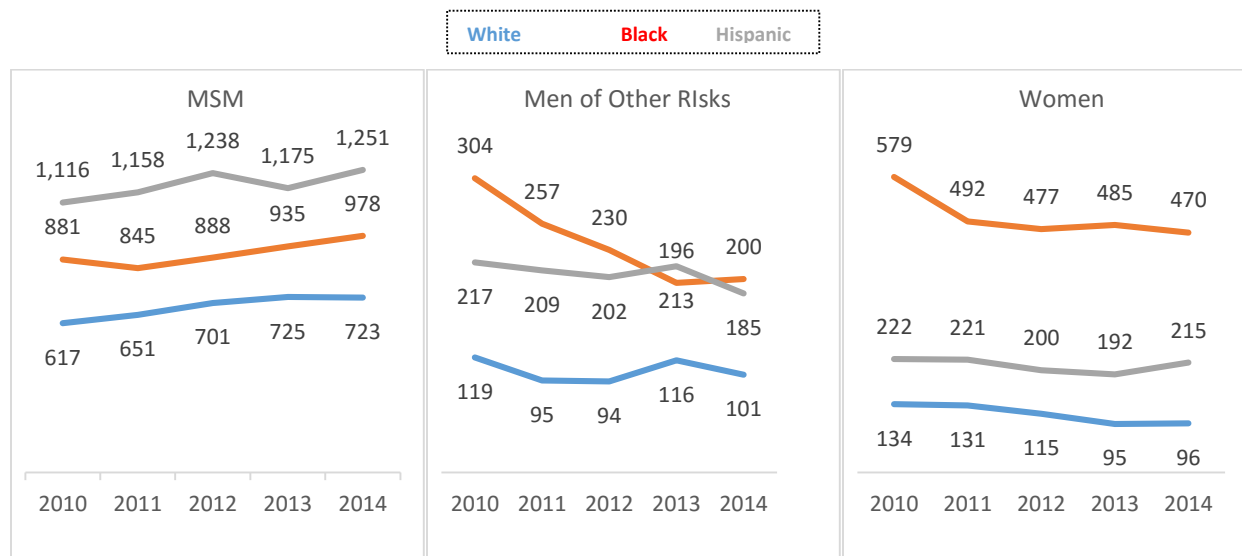
	2010	2014	Change		2010	2014	Change		2010	2014	Change
W	671	723	8%	W IDU	36	34		W IDU	47	31	
B	881	978	11%	W MSM/IDU	52	46		W Het	85	64	-25%
H	1,116	1251	12%	W Het	31	19		B IDU	72	48	
				B IDU	77	53	-31%	B Het	501	415	-17%
				B MSM/IDU	34	28		H IDU	29	23	
				B Het	189	116	-39%	H Het	191	187	-2%
				H IDU	53	44					
				H MSM/IDU	46	38					
				H Het	114	102	-11%				
If there are fewer than 50 cases in any year, we have not included the rates of change. Such small numbers do not provide stable change scores.											

Diagnosis rates show the same race/ethnic disparities that were seen in prevalence rates: the diagnosis rates for Black Texans were two times higher than the rates for Hispanics and six to seven times higher than the rates for White Texans (Figure 11). The diagnosis rates for all Texans have been declining for the past five years, as the state population increases and the number of new diagnoses stay flat.

Figure 11: Diagnosis rates by race/ethnicity, 2010-2014

	2010	2011	2012	2013	2014
B	59.4	52.5	51.3	51.4	50.8
H	16.4	16.3	16.4	15.5	15.8
W	8	7.5	7.7	7.9	7.7
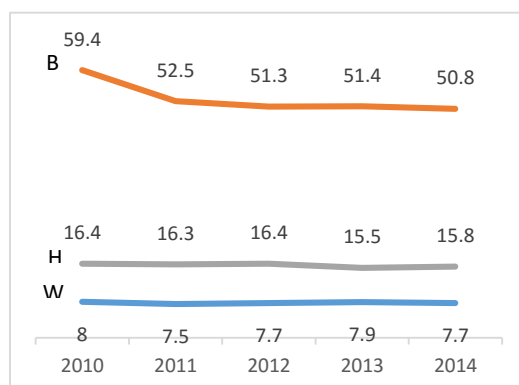
Deaths in Texans with HIV

The development of effective anti-retroviral (ARV) medications has allowed PLWH to live longer, and deaths are less frequently attributed to HIV. Black men's age-adjusted rate of death due to HIV is 4.9 times higher than the rate for White men and 3.3 times higher than the rate for Hispanic men (Table 4). Black men, especially MSM, have lower levels of participation in HIV treatment which contributes to this higher rate of death.

The rate for Black women is half the rate of Black men, but the disparities with women of other races/ethnicities is starker: the death rate due to HIV in Black women is 5.5 times higher than the rate for Hispanic women and 13.8 times higher than the rate for White women (Table 4). Black women have lower proportions of suppressed viral load than would be expected given their relatively high levels of participation in treatment. Better understanding of how to improve participation in treatment and clinical outcomes for Black Texans with HIV could lessen these disparities.

Table 4: Rates of death due to HIV in Texas, 2012

Race/Ethnicity	Male	Female	Total
Total	4.5	1.3	2.9
White	2.7	0.4	0.8
Black	13.2	5.5	4.6
Hispanic	4.0	1.0	1.2

Rates are per 100,000 members of the population

Table 5: Death rates due to all causes in Texas PLWH, 2012

	Male Rate	Female Rate	Total Rate
Total	19.3	*25.5*	20.5
White	26.5	27.2	25.4
Black	20.7	24.1	19.9
Hispanic	17.0	25.4	19.3
MSM	16.2	N/A	16.2
IDU	25.3	25.3	25.0
MSM/IDU	30.9	N/A	30.9
Heterosexual	22.9	24.6	22.4

Rates are per 100,000 PLWH

We must also look at deaths from all causes since PLWH deaths are often due to factors other than their HIV, including diseases associated with older age. In contrast to deaths attributed to HIV infections, overall death rates among PLWH do not show the same race/ethnic differences. The highest rates of death in PLWH are in individuals who acquired their infections though injection drug use, including MSM/IDU; age adjusted all cause death rates for IDU and MSM/IDU were 25 and 30.9 per 100,000 PLWH, respectively. This may be due to comorbidities associated with injection drug use, such as Hepatitis B and C

Incidence, Undiagnosed, and Late Diagnosed HIV Infections

Incidence (new infections)

So far, this summary has focused on Texans with diagnosed HIV infections. However, not all Texans currently living with HIV have received a diagnosis. Most people live with HIV for years before receiving a diagnosis. If we want to understand the number of Texans who acquire HIV infections, we must look at incidence (new infections, not new diagnoses).

DSHS calculated incidence estimates for 2009-2013. For that five-year period, incidence was flat. In 2013, there were between 4,480 and 6,130 new infections, which is similar to the annual estimates for 2009-2012.

Table 6 and Figure 12 show the profile of Texans with recently acquired HIV infections between 2009 and 2013. Based on these estimates, each week in the five years between 2009-2013 there were:

   25 new infections in Hispanic MSM;
   21 new infections in Black MSM;
   19 new infections in White MSM; and
   10 new infections in Black heterosexual women.

Table 6: Estimates of Texas HIV incidence from 2009 to 2013 by sex, race/ethnicity, and mode of transmission

Men											
	MSM			IDU			MSM/IDU			Het		
	Est #	95% CI		Est #	95% CI		Est #	95% CI		Est #	95% CI	
White	4,921	4,117	5,725	171	58	284	318	164	471	125	27	223
Black	5,379	4,530	6,229	298	141	454	128	25	231	748	497	999
Hispanic	6,532	5,575	7,489	177	54	301	210	88	331	330	170	490

Women						
	IDU			Het		
	Est #	95% CI		Est #	95% CI	
White	274	126	421	455	263	647
Black	355	181	529	2,553	2,035	3,070
Hispanic	181	62	300	972	691	1,253

Figure 12: Estimates of new HIV infections in Texas by selected characteristics, 2009-2013
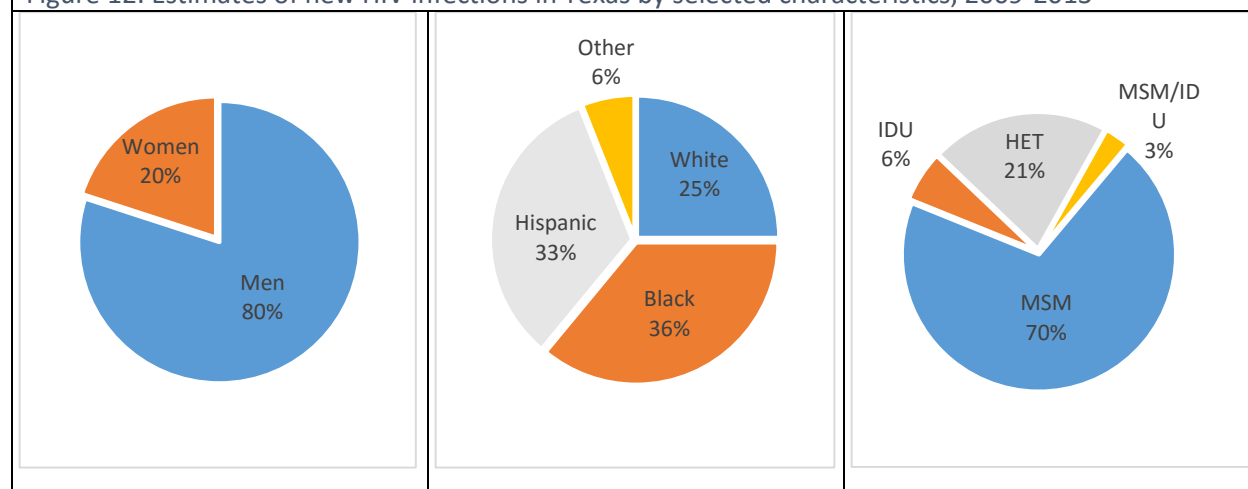
What drives incidence?

Over the past few years, there has been an explosion of research and modeling on the factors that reduce or facilitate HIV transmission, including knowledge of HIV status and HIV viral load in individuals and communities. Scientists recently published a paper that calculated the probability of HIV transmission at each stage of the continuum of HIV care. Transmissions occur when people are 'between the bars' or stages, and the odds of transmission become lower the further we go on the continuum (Figure 13).

Figure 13: Chances of HIV transmission along the HIV treatment cascade
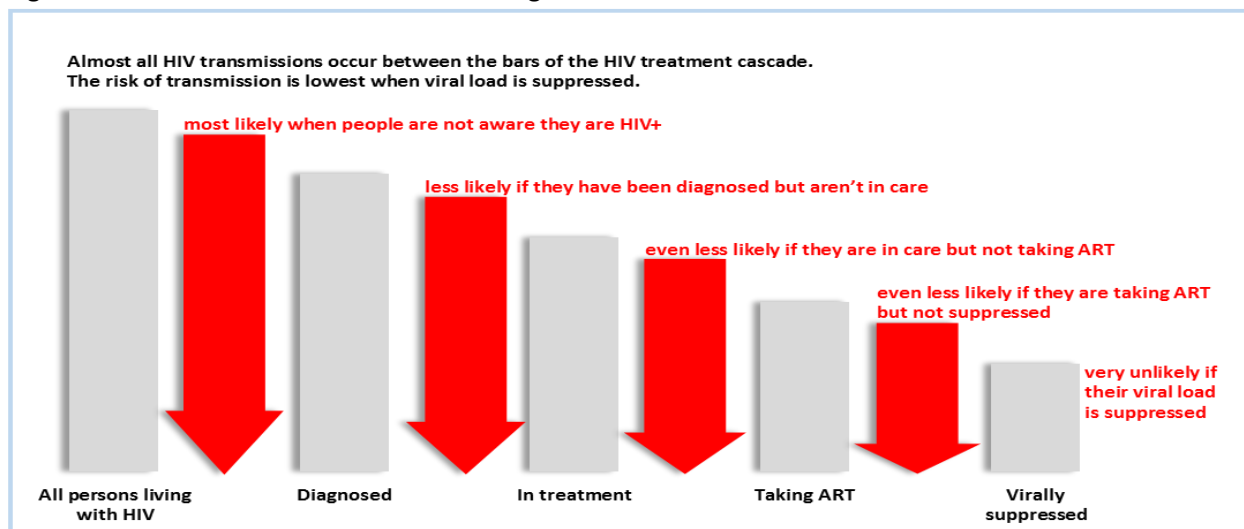
The Center for Disease Control and Prevention (CDC) used the staged odds of transmission to estimate the number of transmissions from each of the stages in the United States.[1][2] DSHS applied the same approach to Texas using information from 2013. DSHS estimated that about 30 percent of transmissions in 2013 were from Texans with undiagnosed HIV infections; 55 percent were from people with diagnosed infections who were not in care; 5 percent from Texans in care but not on ART; 5 percent from Texans on ART with unsuppressed viral load; and 5 percent from Texans with suppressed viral load (Figure

Figure 14: Texas HIV transmissions at each stage of the treatment cascade

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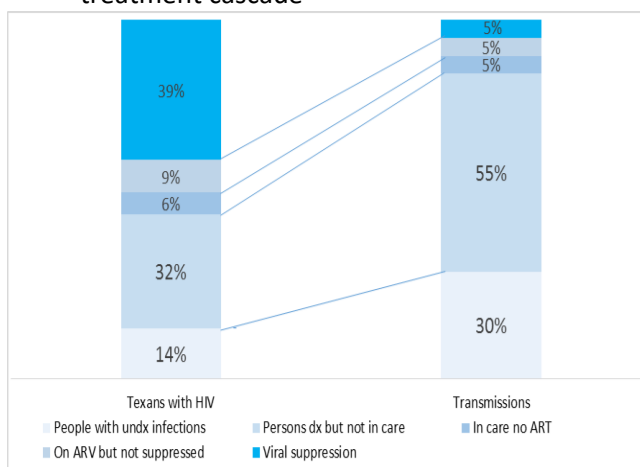
[1] Skarbinski J, Rosenberg E, Paz-Bailey G, et al. Human immunodeficiency virus transmission at each step of the care continuum in the United States. *JAMA Intern Med* 2015; 175: 588-96.

[2] Frieden, MD, Foti, KE, and Mermin, J. Applying public health principles to the HIV epidemic – how are we doing? *N England J Med* 2015; 373: 2281-2288.

14). At this time, we cannot model transmissions for local areas, or for the priority populations.

Estimates of undiagnosed HIV infections in Texas

DSHS has estimated the proportions of the total number of PLWH with undiagnosed infections for 2009-2013. DSHS based these estimates on complex algorthims developed by the CDC. We estimate that in 2013, 11 percent to 17 percent of Texas PLWH had undiagnosed infections.

Table 7 and Figure 15 show information about Texans with undiagnosed infections. The greatest number of estimated undiagnosed infections are in MSM- they make up two out of three Texans with undiagnosed infections, and we estimate that about 13 percent to 18 percent of Texas MSM living with HIV have not yet been diagnosed. Hispanics are the race/ethnic group with the highest proportion of undiagnosed infections: about 17 percent to 23 percent of Hispanic PLWH have undiagnosed infections. Hispanics made up two out of every five undiagnosed PLWH in 2013. As previously noted, most new infections in Hispanics are among MSM.

Table 7: Estimates of proportion of Texans living with undiagnosed HIV infections, 2013

	Estimated proportion of undiagnosed infections		
	Est %	95% CI	
TOTAL	14.1%	11.2%	16.8%
Men	14.7%	12.9%	16.9%
Women	12.8%	8.3%	15.9%
White	9.7%	6.6%	13.0%
Hispanic	19.6%	16.6%	22.8%
Black	12.8%	10.4%	15.5%
MSM	15.9%	13.0%	18.0%
IDU	6.6%	2.5%	10.5%
MSM/IDU	4.2%	0.1%	9.6%
Het	15.2%	11.6%	18.8%

Figure 15: The profile of Texans estimated to be living with undiagnosed HIV infections, 2013
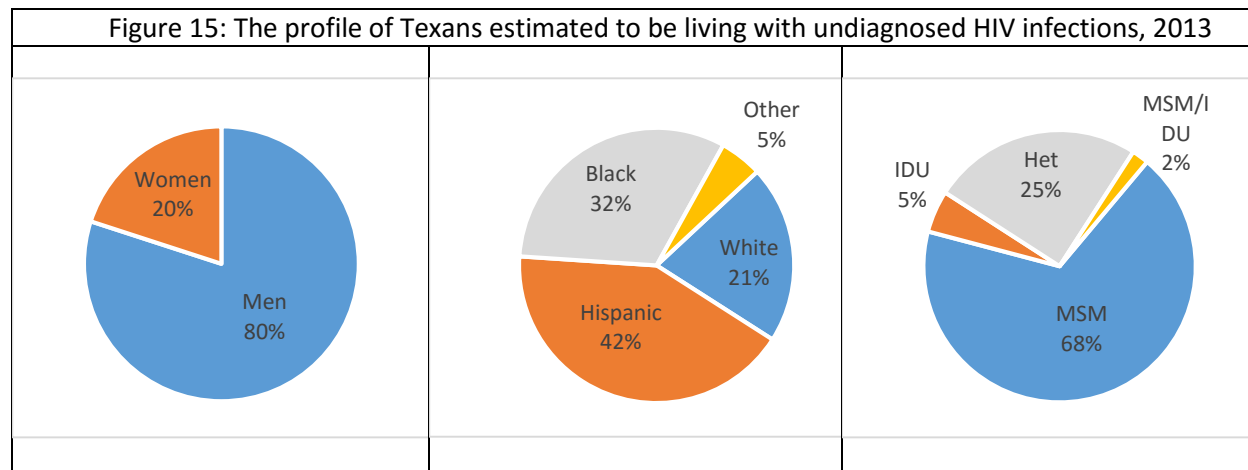
Late diagnosis

Late diagnosis of infection is associated with poor treatment outcomes and increased HIV transmission. In 2014, about one in four newly diagnosed Texans received a late diagnosis. This is lower than the proportion of late diagnoses in 2010, when about 29 percent were diagnosed late. Hispanic Texans have the highest proportions of late diagnosed infections-- about three in ten new diagnoses in 2014 were late diagnoses. Rates of late diagnosis are about 1.4 times higher in Hispanics than in Whites or Blacks (Figure 16).

Figure 16: Proportion of late diagnoses in Texas by race/ethnicity, 2010-2013
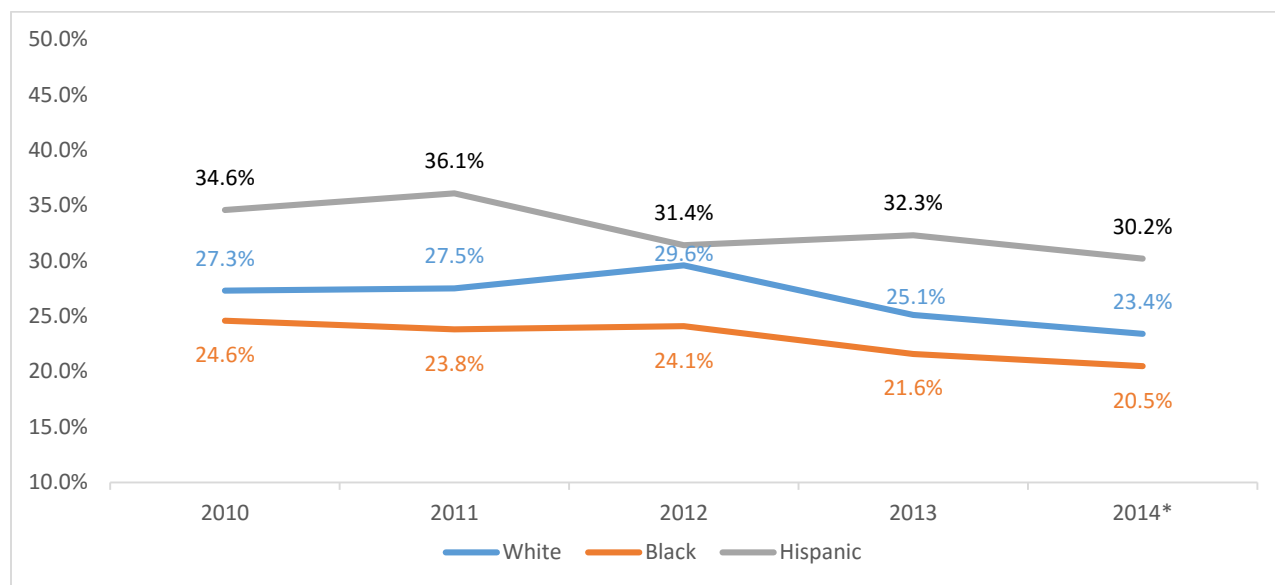
*provisional

Increased risk for HIV acquisition and transmission

Co-Infection with sexually transmitted infections

While there are many factors that may increase the vulnerability of Texans to HIV or the odds of transmitting HIV to others, sexually transmitted infections (STI) are common intensifiers of risk, and one for which we have statewide data. About 1.7 percent of Texas PLWH were diagnosed with chlamydia in 2014, 2 percent with gonorrhea, 0.6 percent with primary and secondary syphilis (P&S), and 1.6 percent with early latent syphilis (EL). Some STI rates are much higher for MSM, especially Black and Hispanic men (Table 8).

Table 8: STI cases and incidence among Texas MSM living with diagnosed HIV infections, 2014

	Chlamydia		Gonorrhea		P&S Syphilis		EL Syphilis	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
MSM	886	2,194.1	1,266	3,135.1	462	1,144.1	683	1,691.4
Black MSM	336	3,213.8	507	4,849.4	162	1,549.5	210	2,008.6
Hispanic MSM	331	2,407.1	394	2,865.2	156	1,134.5	268	1,948.9
White MSM	178	1,220.7	297	2,036.8	120	822.9	176	1,207.0

HIV risk behaviors in PLWH currently in care

Data in this section come from the Texas and Houston Medical Monitoring Project (MMP) and are representative of PLWH receiving care in Texas. A large proportion of sexually active MSM living with HIV report having condomless anal sex with a male partner over the past 12 months. However, most of these reported acts were with another person living with HIV. This may be an indication of serosorting, a practice of selecting sexual partners of the same HIV status. The proportion of MSM reporting high-risk behavior did not decrease with age.

Sexually active heterosexual PLWH also reported high levels of risk behavior in the past 12 months. While they reported fewer sexual partners on average, a higher proportion of heterosexual persons living with HIV reported sex with an HIV-negative or status unknown partner compared to MSM living with HIV. Unlike MSM living with HIV, the proportion of heterosexual persons living with HIV who engage in high-risk behavior decreased with age (Table 9).

Table 9: Indicators of HIV risk in the last 12 months among MSM and Heterosexual patients in treatment for HIV infection, 2013-2014

	Questions about	Average number of partners	Condomless sex with partner	Condomless sex with partner whose HIV status was discordant or unknown
MSM	Male partners	5	Anal sex - 45%	Anal sex - 14%
Het	Opposite sex partners	2	Vaginal or anal sex-36%	Vaginal or anal sex -23%

Additional information on risk behaviors and co-infections with Hepatitis C and tuberculosis is available in the expanded overview found in Appendix G.

Involvement in treatment

Modeling estimates that approximately half of the HIV transmission in Texas each year are from persons with diagnosed infections, but who have had no HIV-related care during that year.[3]

Linkage to HIV treatment for persons newly diagnosed in 2012 -2014

Linkage to medical care after an HIV diagnosis is the first step toward getting the treatment needed to live a long, healthy, and productive life, and it is important that care not be delayed. To evaluate timely linkage in Texas, we looked for evidence of care within three months of first reported diagnosis for Texans diagnosed in 2012-2014 and still alive as of the end of the year of their diagnosis. Figure 17 shows that 80 percent Texans diagnosed in 2014 were linked to care within three months of their diagnosis, up from 75 percent in 2012.

Figure 17: Timely linkage to HIV care for Texans with new HIV diagnoses, 2012-2014

Because the *Plan*'s priority populations represent three out of four Texans diagnosed in the past five years, linkage outcomes will be driven by these groups; results for them are shown below (Figure 18). Black MSM linkage rates, while much improved between 2012 and 2014, are consistently lower than those of other priority groups. Linkage rates for Black women are high – more than four in five newly diagnosed Black women had timely linkage in 2014.

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[3] The 'at least one-visit' criterion is based on the definition used in the model of transmissions. It may be more familiar as the 'met need' criterion that DSHS includes in its treatment cascades.

Figure 18: Linkage rates for priority populations in Texas, 2012-2014

Hispanic MSM

	2012	2013	2014
Total	78%	83%	82%
Linked in 2-3 months	22%	19%	19%
Linked in 1 month	56%	64%	63%

■ Linked in 1 month ■ Linked in 2-3 months

Black MSM

	2012	2013	2014
Total	64%	70%	76%
Linked in 2-3 months	20%	19%	21%
Linked in 1 month	44%	51%	55%

■ Linked in 1 month ■ Linked in 2-3 months

White MSM

	2012	2013	2014
Total	78%	81%	80%
Linked in 2-3 months	18%	19%	17%
Linked in 1 month	60%	62%	63%

■ Linked in 1 month ■ Linked in 2-3 months

Black Heterosexual women

	2012	2013	2014
Total	78%	83%	86%
Linked in 2-3 months	23%	17%	16%
Linked in 1 month	55%	66%	70%

■ Linked in 1 month ■ Linked in 2-3 months

Participation in treatment

Rather than looking only at the 4,000 Texans diagnosed each year, we now turn to participation in treatment for all Texans living with HIV, which in 2014 was about 80,000 individuals. HIV care can be thought of as a continuum: from diagnosis to linkage to care, initiation of antiretroviral treatment (ART), retention in care, and eventual viral suppression. The Texas Treatment Cascade is a way to visualize the number of Texans with HIV at each step of the continuum and better understand where Texans 'fall off' the continuum. Diagnosis and linkage to treatment have been described in earlier sections; this section contains information on retention in treatment, prescription of antiviral medication (ART), and viral suppression.

The 2014 Texas HIV Treatment Cascade produced by DSHS has five bars (Figure 19). The first is the number of people living with diagnosed HIV infections as of the end of 2014.[4] The second bar represents

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[4] The 2014 Texas HIV Treatment Cascade is based on reported cases of people diagnosed with HIV infection and living as of the end of 2014 rather than total prevalence (diagnosed + undiagnosed PLWH) while DSHS validates the CDC's methods of calculating point estimates of total prevalence.

the number of diagnosed PLWH who had at least one episode of HIV-related medical care. The third bar represents the number of diagnosed PLWH who were retained in care, defined as having two or more visits at least 90 days apart or being virally suppressed at the end of the year regardless of how many visits. The next bar represents an estimate of the number of diagnosed PLWH who were prescribed ART. The final bar represents the number of diagnosed PLWH with a suppressed viral load at the end of calendar 2014.[5]

The 2014 Cascade shows that 77 in 100 Texans diagnosed with HIV had at least one episode in care, that 70 in 100 were retained in care, approximately 68 were on ART, and that more than half had a suppressed viral load in 2014.

Figure 19: 2014 Texas HIV Treatment Cascade
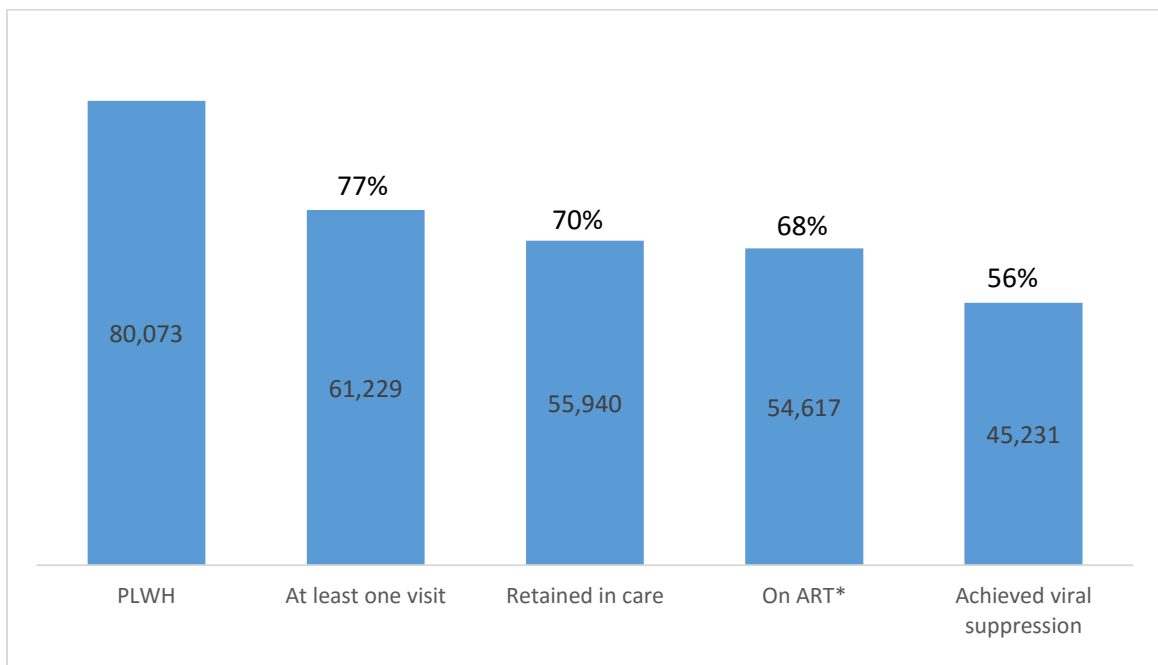
* ART use is estimated

More than three out of four PLWH had at least one episode of care, and more than 90 percent of those were retained in care. Nine out of ten people with *any* care were prescribed ART, and seven in ten had a suppressed viral load.[6] Cascades for four of the *Plan* priority populations are shown in Figure 20.

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[5] A bar for linkage to care is not shown because it is based on new diagnoses rather than diagnosed PLWH.

[6] Using those retained in care as the reference point, almost all the people who were retained in care were prescribed ART, and 81% of those retained in care achieved viral suppression.

Figure 20: HIV Treatment Cascades for HIV Plan priority populations, 2014

Hispanic MSM
- PLWH: 16,174
- At least one visit: 76% (12,214)
- Retained in care: 69% (11,199)
- On ARV*: 64% (10,333)
- Achieved viral suppression: 59% (9,471)

Black MSM
- PLWH: 12,698
- At least one visit: 74% (9,381)
- Retained in care: 64% (8,158)
- On ARV*: 54% (6,858)
- Achieved viral suppression: 49% (6,217)

White MSM
- PLWH: 16,055
- At least one visit: 82% (13,174)
- Retained in care: 77% (12,317)
- On ARV*: 76% (12,199)
- Achieved viral suppression: 68% (10,892)

Black Heterosexual women
- PLWH: 9,964
- At least one visit: 77% (7,688)
- Retained in care: 69% (6,877)
- On ARV: 70% (7,019)
- Achieved viral suppression: 52% (5,226)

* ART prescription information is estimated

White MSM have the best care outcomes, with approximately two out of three achieving viral suppression. Only half of Black MSM and Black heterosexual women living with HIV had suppressed viral load in 2014. The lower rates of suppression for Black MSM is logically related to the lower rates of ART use, but the low suppression rate for Black heterosexual women is more difficult to explain. The proportions of Hispanic MSM, Black MSM, and Black heterosexual women with at least one visit and retention in care are similar. Hispanic MSM and Black heterosexual women have similar rates of ART use, but only half of Black heterosexual women achieved viral suppression compared to about three in five Hispanic MSM. This difference is further highlighted in Table 10.

Table 10: Retention, ART prescriptions, and viral suppression in PLWH with any care, Texas 2014

Of PLWH with any HIV care	% retained in treatment	% with ART prescriptions*	% with viral suppression
All PLWH	91%	89%	74%
White MSM	93%	93%	83%
Hispanic MSM	92%	85%	78%
Black MSM	87%	73%	66%
Black Het women	90%	92%	68%
All other groups	93%	97%	71%

* Estimated

The continuum also shows that almost one in four Texans with HIV had no HIV-related treatment in 2014; earlier discussion of estimates of HIV transmissions indicate that the greatest proportion of HIV transmissions are from persons diagnosed but not in care. Blacks and Hispanics are over-represented in the segment of Texans with no care (data not shown). Table 11 shows 2014 cascade outcomes for different groups of PLWH. Youth (15-24) have similar proportions of PLWH with any care as other groups, but their retention and viral suppression rates are much lower, especially for young Black MSM. While the absolute numbers of young PLWH are small, studies suggest that late participation in care predicts later patterns of care, and starting treatment with low CD4 counts (which would be more likely the longer care is delayed) places an upper bound on immune system health for the remainder of the life span. Strategies to improve the outcomes of young MSM are important to explore, especially for the major urban areas where most youth with HIV reside.

Table 11: Treatment Cascades for Texas PLWH, 2014

	PLWH	At least one visit		Retained in care		Prescribed ART		Viral suppression	
		#	%	#	%	#	%	#	%
All PLWH	**80,073**	**61,299**	**77%**	**55,940**	**70%**	**54,617**	**68%**	**45,231**	**56%**
Males	62,723	47,818	76%	43,688	70%	41,889	67%	35,714	57%
Females	17,350	13,481	78%	12,252	71%	13,238	76%	9,517	55%
Whites	22,184	17,907	81%	16,694	75%	16,582	75%	14,327	65%
Blacks	29,895	22,285	75%	19,802	66%	19,121	64%	14,862	50%
Hispanics	24,607	18,273	74%	16,850	68%	16,336	66%	13,998	57%
15-24- Youth	*3,945*	*3,056*	*77%*	*2,344*	*59%*	*NA*	*NA*	*1,624*	*41%*
Black MSM	*1,330*	*998*	*75%*	*701*	*53%*	*NA*	*NA*	*459*	*35%*
Hispanic MSM	*1,039*	*848*	*82%*	*681*	*66%*	*NA*	*NA*	*506*	*49%*
Black women	*496*	*384*	*77%*	*306*	*62%*	*NA*	*NA*	*196*	*40%*
White MSM	*321*	*260*	*81%*	*19*	*62%*	*NA*	*NA*	*158*	*49%*
25-34	14,917	11,120	75%	9,526	64%	NA	NA	7,140	48%
35-44	19,763	14,840	75%	13,486	68%	NA	NA	10,652	54%
45-54	24,976	19,616	79%	18,477	74%	NA	NA	15,319	61%
55+	16,144	12,410	77%	11,859	73%	NA	NA	10,295	64%
MSM	46,842	36,373	78%	33,146	71%	31,681	68%	27,773	59%
IDU or MSM-IDU	13,239	9,829	74%	9,034	68%	NA	NA	6,600	50%
Heterosexual	19,059	14,409	76%	13,113	69%	13,026	68%	10,373	54%

Table 12: Texans living with HIV, 2010-2014

	2010			2011			2012			2013			2014		
	#	%	Rate	#	%	Rate	#	%	Rate	#	%	Rate	#	%	Rate
Total	67,509	100%	268.5	70,464	100%	274.6	73,034	100%	284.6	76,638	100%	293.7	80,073	100%	302.1
Female	14,911	22%	117.7	15,503	22%	119.9	16,023	22%	121.9	16,722	22%	125.3	17,350	22%	127.8
Male	52,598	78%	421.7	54,961	78%	431.9	57,011	78%	440.2	59,916	78%	455.4	62,723	78%	468.7
White	20,687	31%	178.3	20,980	30%	179.4	21,059	29%	178.6	21,672	28%	182.8	22,184	28%	185.8
Black	24,918	37%	839.2	26,070	37%	857.7	27,108	37%	871.6	28,520	37%	898.0	29,895	37%	920.1
Hispanic	19,213	28%	203.1	20,482	29%	210.2	21,799	30%	218.9	23,187	30%	227.7	24,607	31%	236.3
Other	558	1%	50.0	628	1%	53.2	672	1%	54.4	746	1%	57.7	836	1%	61.7
Unknown	2,133	3%		2,304	3%	.	2,396	3%	.	2,513	3%	.	2,551	3%	.
MSM	37,478	56%		39,646	56%		41,614	57%		44,248	58%		46,842	58%	
IDU	8,731	13%		8,727	12%		8,728	12%		8,787	11%		8,828	11%	
MSM/IDU	4,411	7%		4,413	6%		4,371	6%		4,394	6%		4,410	6%	
Het	16,040	24%		16,802	24%		17,422	24%		18,285	24%		19,059	24%	
Pediatric	715	1%		748	1%		776	1%		801	1%		819	1%	
Other	134	0%		128	0%		124	0%		123	0%		115	0%	
0-14	334	0%	5.8	325	0%	5.6	315	0%	5.4	300	0%	5.1	290	0%	4.9
15-24	3,436	5%	92.9	3,652	5%	97.2	3,852	5%	100.9	3,905	5%	101.1	3,983	5%	102.0
25-34	12,279	18%	339.8	12,736	18%	344.5	13,160	18%	348.9	13,989	18%	364.3	14,917	19%	380.0
35-44	20,004	30%	578.4	19,722	28%	563.6	19,576	27%	552.1	19,725	26%	550.1	19,763	25%	543.7
45+	31,456	47%	364.3	34,029	48%	382.4	36,131	49%	396.8	38,719	51%	415.8	41,120	51%	431.3

Table 13: Texans newly diagnosed with HIV, 2010-2014

	2010			2011			2012			2013			2014		
	Cases	%	Rate	Cases	%	Rate	Cases		Rate	Cases		Rate	Cases		Rate
Total	4,477		17.8	4,310		16.8	4,360		16.7	4,357		16.4	4,405		16.3
Female	992	22%	8	888	21%	7	840	19%	6	816	19%	6	823	19%	6
Male	3,485	78%	28	3,422	79%	27	3,520	81%	27	3,541	81%	27	3,582	81%	27
White	923	21%	8	879	20%	8	909	21%	8	935	21%	8	919	21%	8
Black	1,764	39%	59	1,595	37%	52	1,595	37%	51	1,634	38%	51	1,649	37%	51
Hispanic	1,555	35%	16	1,585	37%	16	1,638	38%	16	1,581	36%	16	1,650	37%	16
Other	58	1%	5	73	2%	6	64	1%	5	78	2%	6	83	2%	6
Unknown	177	4%	0	178	4%	0	154	4%	0	129	3%	0	104	2%	0
MSM	2,802	63%		2824	66%		2965	68%		2989	69%		3078	70%	
IDU	328	7%		273	3%		279	6%		232	5%		240	5%	
MSM/IDU	143	3%		127	3%		106	2%		118	3%		116	3%	
Het	1177	26%		1059	25%		987	23%		1001	23%		952	22%	
Other	27	1%		27	1%		23	1%		17	<1%		19	<1%	
0 - 9	14	0%	0.36	24	1%	0.62	16	0%	0.41	14	0%	0.36	12	0%	0.3
10-14	5	0%	0.27	5	0%	0.26	9	0%	0.46	6	0%	0.31	7	0%	0.35
15 - 19	252	6%	13.38	230	5%	12.23	242	6%	12.86	206	5%	10.89	215	5%	11.29
20 - 24	797	18%	43.86	800	19%	42.64	812	19%	41.94	823	19%	41.71	917	21%	45.84
25 - 29	676	15%	36.48	692	16%	36.85	734	17%	38.6	810	19%	42.13	847	19%	43.04
30 - 34	644	14%	36.58	564	13%	31	632	14%	33.8	639	15%	33.32	594	13%	30.34
35 - 39	532	12%	30.17	494	11%	28.22	466	11%	26.5	450	10%	25.34	488	11%	26.96
40 - 44	509	11%	30.03	464	11%	26.53	458	11%	25.62	417	10%	23.04	404	9%	22.14
45+	1048	23%	12.14	1037	24%	11.65	991	23%	10.88	992	23%	10.65	921	21%	9.66

Priority Populations

Achieving the goals of the *National HIV/AIDS Strategy* (NHAS) and the *Texas HIV Plan* requires a common focus on the groups at highest risk of acquiring or transmitting HIV – the priority populations for the Texas plan. These groups have the greatest number of PLWH and new diagnoses. We also looked at information from a variety of sources on service access and health outcomes.

The five priority populations in this plan are Hispanic MSM, Black MSM, White MSM, Black heterosexual women, and Transgender individuals. The table below shows that, of these groups, the first four made up two out of three PLWH in Texas in 2014 and three out of four new diagnoses in 2010-2014[7]. Furthermore, these populations bear the greatest burden of disease in Texas. Using DSHS estimates of the number of MSM in Texas, we estimate that about 20 percent of Black MSM in Texas in 2013 were living with HIV, as were almost 7 percent of Hispanic MSM and 5 percent of White MSM. The prevalence rate for Black women is 594 per 100,000 Black women living in Texas, or 0.59 percent.

When age is added to comparisons, we can see the bulk of *new* infections occurred in young Hispanic and Black MSM, while the largest number of PLWH are MSM 45 years old or older (

Table 14). All public health strategies for reducing new infections or improving outcomes must include actions for these groups. Although communities differ in the relative burden borne by these priority groups, they account for at least six out of ten Texans living with diagnosed HIV infections and seven out of ten newly diagnosed HIV infections (Table 14).

Table 14: Groups with the greatest number of Texans living with diagnosed HIV infections and newly diagnosed HIV infections

		PLWH 2014 80,073			New Diagnoses 2010 -2014 21,909			
		#	%			#	%	Change 2010-14
1	Hispanic MSM	*16,172*	*20%*	*1*	Hispanic MSM	*5,937*	*27%*	*12%*
2	White MSM	*16,056*	*20%*	*2*	Black MSM	*4,545*	*21%*	*11%*
3	Black MSM	*12,699*	*16%*	*3*	White MSM	*3,469*	*16%*	*8%*
4	Black Het women	*7,915*	*10%*	*4*	Black Het women	*2,205*	*10%*	*-17%*
5	Hispanic Het women	3,233	4%	5	Hispanic Het women	901	4%	-2%
6	Black Het men	2,943	4%	6	Black Het men	737	3%	-39%
7	Black IDU men	2,621	3%	7	Hispanic Het men	552	3%	-11%
8	Hispanic Het men	1,910	2%	8	White Het women	379	2%	-9%
9	Black IDU women	1,806	2%	9	Black IDU men	294	1%	-31%
10	White MSM/IDU	1,688	2%	10	Black IDU women	268	1%	-33%

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[7] Data for transgender communities are incomplete and could not be included in discussion of the priority populations. More information on efforts to improve the accuracy of gender identity in data collection are included in the section on transgender individuals.

Table 15: Age divisions in groups with the greatest number of PLWH and new diagnoses, 2010-2014

		PLWH 2014 80,073				New diagnoses from 2010-2014 21,909			
		#	%			#	%	Change 2010-14
1	White MSM 45+	10,900	14%	1	Hispanic MSM 25-34	2,190	10%	14%
2	Hispanic MSM 45+	6,773	8%	2	Black MSM 15-24	1,865	9%	-1%
3	Black MSM 45+	4,744	6%	3	Hispanic MSM 15-24	1,593	7%	32%
4	Hispanic MSM 35-44	4,468	6%	4	Black MSM 25-34	1,418	6%	46%
5	Black MSM 25-34	3,900	5%	5	Hispanic MSM 35-44	1,243	6%	-9%
6	Hispanic MSM 25-34	3,892	5%	6	White MSM 45+	1,122	5%	-11%
7	Black Het F 45+	3,126	4%	7	White MSM 25-34	993	5%	27%
8	White MSM 35-44	3,052	4%	8	Hispanic MSM 45+	906	4%	7%
9	Black MSM 35-44	2,725	3%	9	White MSM 35-44	820	4%	-11%
10	Black Het Women 35-44	2,707	3%	10	Black Het Women 25-34	688	3%	-26%
	Total	46,287			Total	12,838		

Table 16: Texans living with diagnosed HIV infections in *Plan* priority populations by area of residence, 2014

	Austin		Dallas		Fort Worth		Houston		San Antonio		East Texas		US-Mexico Border	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Total	5,480	100%	19,389	100%	5,143	100%	24,979	100%	5,814	100%	5,167	100%	4,896	100%
Hispanic MSM	1,212	22%	3,192	16%	613	12%	4,308	17%	2,461	42%	354	7%	2,731	56%
Black MSM	464	8%	4,052	21%	839	16%	4,940	20%	427	7%	798	15%	73	1%
White MSM	1,895	35%	5,282	27%	1,109	22%	4,006	16%	968	17%	1,083	21%	241	5%
Black Het women	276	5%	2,167	11%	547	11%	3,526	14%	197	3%	695	13%	23	0%
Population Total	9,327	70%	34,082	76%	8,251	60%	41,759	67%	9,867	70%	8,097	57%	7,964	63%

Table 17: Newly diagnosed Texans in *Plan* priority populations by geographic area, 2010-2014

	Austin		Dallas		Fort Worth		Houston		San Antonio		East Texas		US-Mexico Border	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Total	1,403	100%	5,143	100%	1,371	100%	6,861	100%	1,769	100%	1,530	100%	1,634	100%
Hispanic MSM	422	30%	1,092	21%	220	16%	1,659	24%	864	49%	141	9%	1,030	63%
Black MSM	139	10%	1,415	28%	335	24%	1,764	26%	146	8%	360	24%	27	2%
White MSM	459	33%	1,054	20%	249	18%	761	11%	266	15%	238	16%	65	4%
Black Het women	65	5%	624	12%	158	12%	951	14%	51	3%	184	12%	40	2%
Population Total	2,488	77%	9,328	81%	2,333	70%	11,996	75%	3,096	75%	2,453	60%	2,796	71%

Gay men, bisexual men, and other men who have sex with men (MSM)

DSHS estimates that MSM comprised 70 percent of the new HIV infections in Texas between 2009 and 2013, and that about 13 percent to 18 percent of MSM living with HIV in 2013 were not aware of their infections. MSM made up almost three out of five Texans living with diagnosed HIV infections in 2014 and were two out of three Texans newly diagnosed between 2010 and 2014. MSM were the only group of Texans to experience increases in new diagnoses.

For the first 30 years of the HIV epidemic, over half of HIV cases in MSM were among White MSM; men of color now account for a majority of new MSM diagnoses (Figure 21). A greater proportion of new HIV diagnoses in MSM are now among 15-24 year olds compared to past years (Figure 22).

We estimate that about seven percent of MSM in 2013 were living with diagnosed HIV infections. For that same year, we estimate that 1 in 192 Texas MSM were newly diagnosed with HIV infections. Because diagnoses do not reflect all infections within a population, the rate of new infections is likely higher (Table 18).

Around 1 percent of MSM age 18-34 were diagnosed with an HIV infection
2 percent of Black MSM were diagnosed with an HIV infection
4.2 percent of the Black MSM aged 18-24 were diagnosed with an HIV infection

Figure 21: Changes in race/ethnicity of MSM newly diagnosed with HIV infections, Texas
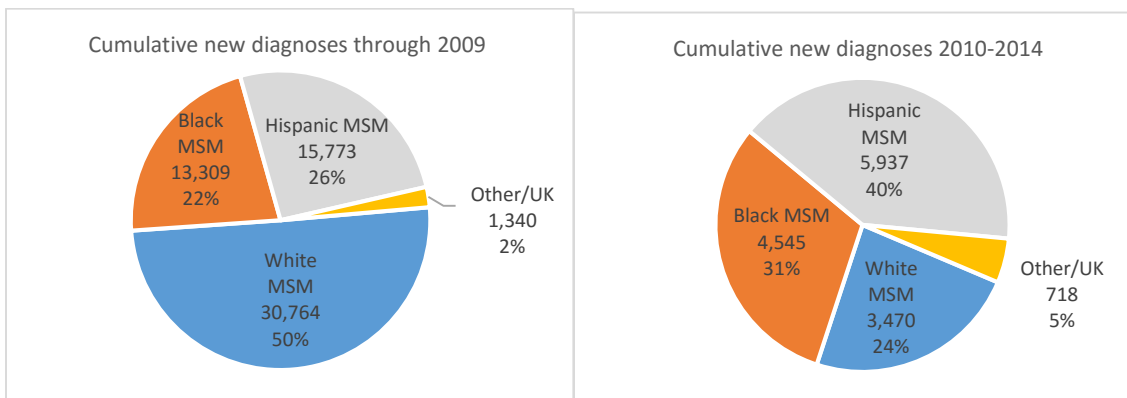
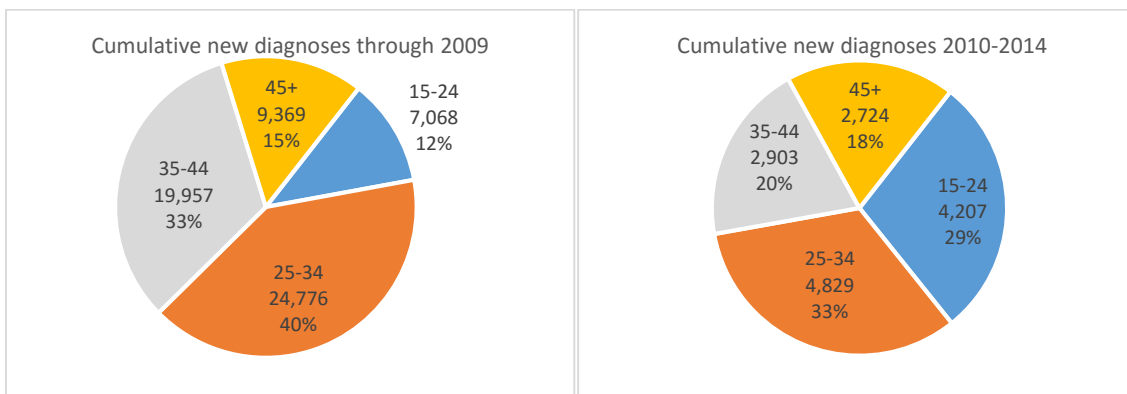*Figure 22: Changes in age at first diagnosis in Texas MSM*

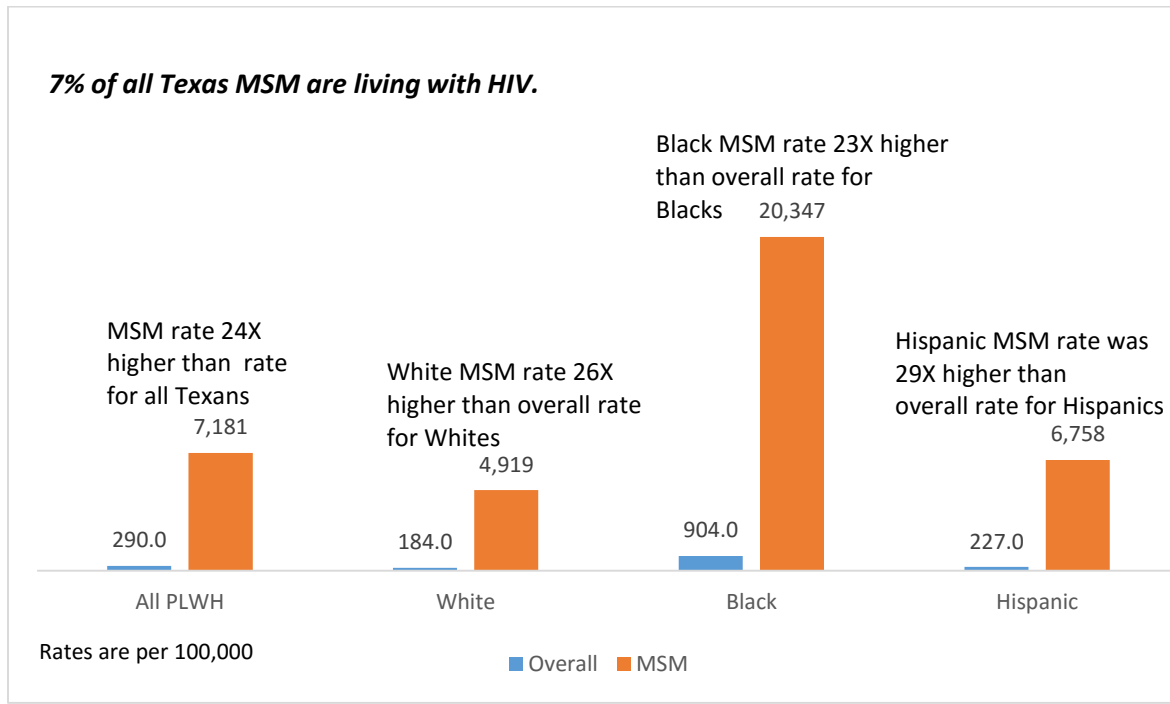Figure 23: Estimated HIV prevalence rates in Texas MSM, 2013

7% of all Texas MSM are living with HIV.

Black MSM rate 23X higher than overall rate for Blacks 20,347

MSM rate 24X higher than rate for all Texans 7,181

White MSM rate 26X higher than overall rate for Whites 4,919

Hispanic MSM rate was 29X higher than overall rate for Hispanics 6,758

290.0 184.0 904.0 227.0

All PLWH White Black Hispanic

Rates are per 100,000

■ Overall ■ MSM

Table 18: New diagnoses in MSM by race/ethnicity, Texas 2013

	White		Black		Hispanic		All MSM	
	N	Rate	N	Rate	N	Rate	N	Rate
18-24	121	336.2	368	4,229.3	277	702.4	801	922.2
25-34	205	395.9	332	3,588.6	455	897.7	1,050	1049.7
35-44	153	319.3	117	1,399.8	244	573.4	542	525.7
45+	243	146.5	117	576.8	176	244.1	552	601.8
Total	721	240.5	934	2004.6	1,152	562.5	2,945	522.4

In 2014, about 2.1 percent of MSM living with HIV were diagnosed with a Chlamydia infection, 3.1 percent were diagnosed with a gonorrhea infection, and 1.1 percent received a diagnosis of primary and secondary syphilis and about 1.7 percent with an early latent syphilis infection.

Table 19: STI cases and incidence among Texas MSM living with diagnosed HIV infections, 2014

	Chlamydia			Gonorrhea		P&S Syphilis		EL Syphilis	
	PLWH	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
MSM	40,381	886	2,194.1	1,266	3,135.1	462	1,144.1	683	1,691.4

* The number of MSM PLWH differs from other reports because we did not adjust cases to assign mode of exposure to persons with no reported risk.

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Hispanic MSM

Between 2009 and 2013, there were between 5,575 and 7,489 (est.) new infections in Hispanic MSM – about 25 a week. Hispanic MSM represented one in five Texans living with a diagnosed HIV infection, and about one in four of Texans newly diagnosed with HIV between 2010 and 2014. The number of Hispanic MSM living with a diagnosed HIV infection increased by 36 percent between 2010 and 2014; the annual number of new diagnoses increased by 12 percent. The number of new diagnoses in young Hispanic MSM (15-24 years old) increased by about a third from 2010 to 2014 (Figure 24).

Figure 24: Hispanic MSM and HIV in Texas
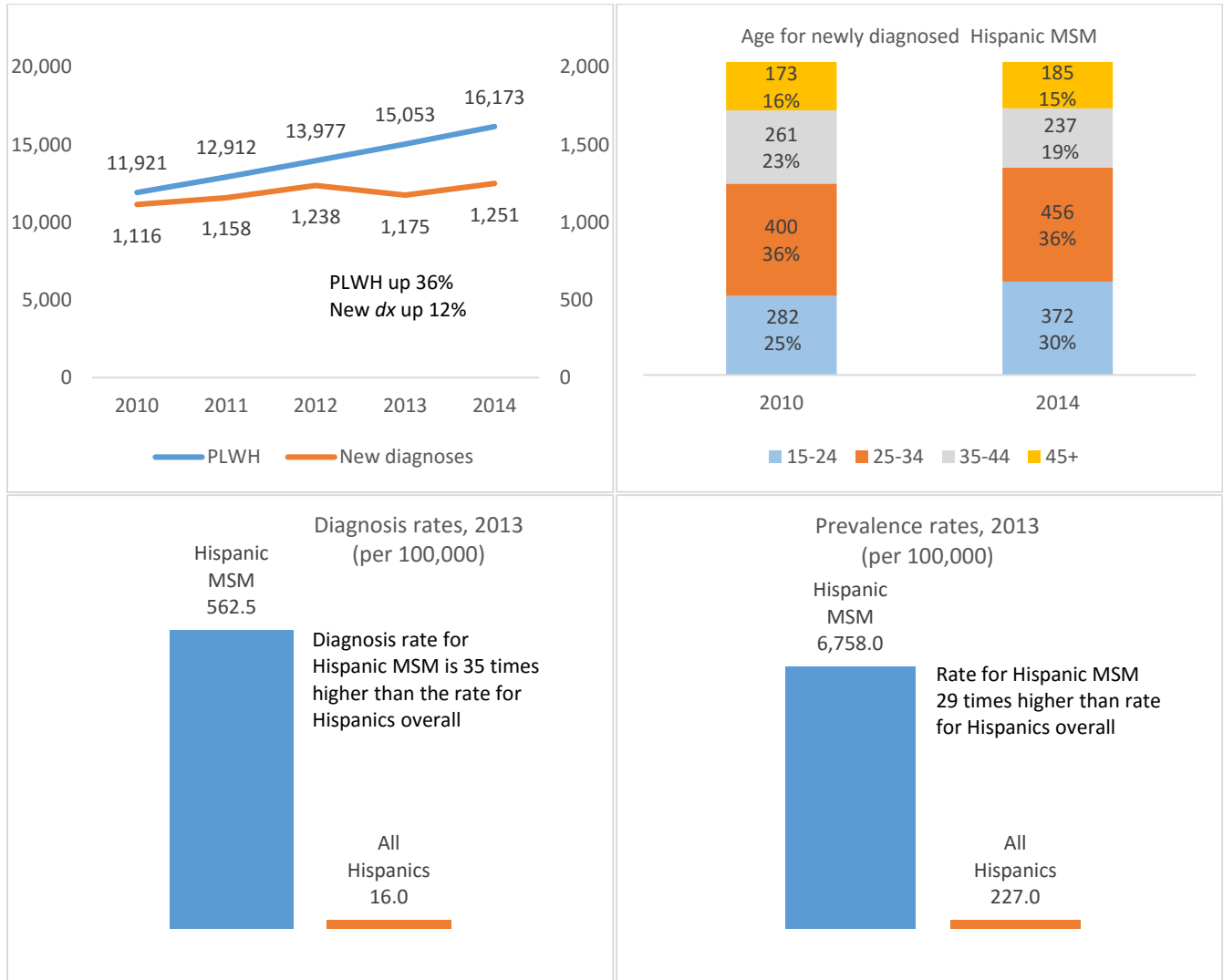
Of the Hispanic MSM PLWH in 2014, between one percent and four percent were diagnosed with an STI in during that year (Table 20).

Table 20: STI cases and incidence among MSM and Hispanic MSM living with diagnosed HIV infections, 2014

		Chlamydia		Gonorrhea		P&S Syphilis		EL Syphilis	
	PLWH	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
MSM	40,381	886	2,194.1	1,266	3,135.1	462	1,144.1	683	1,691.4
Hispanic MSM	13,751	331	2,407.1	394	2,865.2	156	1,134.5	268	1,948.9

* The number of MSM PLWH differs from other reports because we did not adjust cases to assign mode of exposure to persons with no reported risk.

Of the Hispanic MSM newly diagnosed in 2012-2014, about four out of five were linked to HIV treatment within three months, three out of five within one month. Of the more than 16,000 Hispanic MSM living with HIV in 2014, three-quarters had at least one HIV-related medical visit. About three in five were retained in care, had an ART prescription, and were virally suppressed at the end of that year. Looking only at those men with any HIV-related care, about 92 percent were retained in treatment across the year, 85 percent had an ART prescription, and almost four in five had suppressed virus. For young Hispanic MSM, four in five received some HIV-related care, but less than half had suppressed virus at the end of the year (Figure 25).
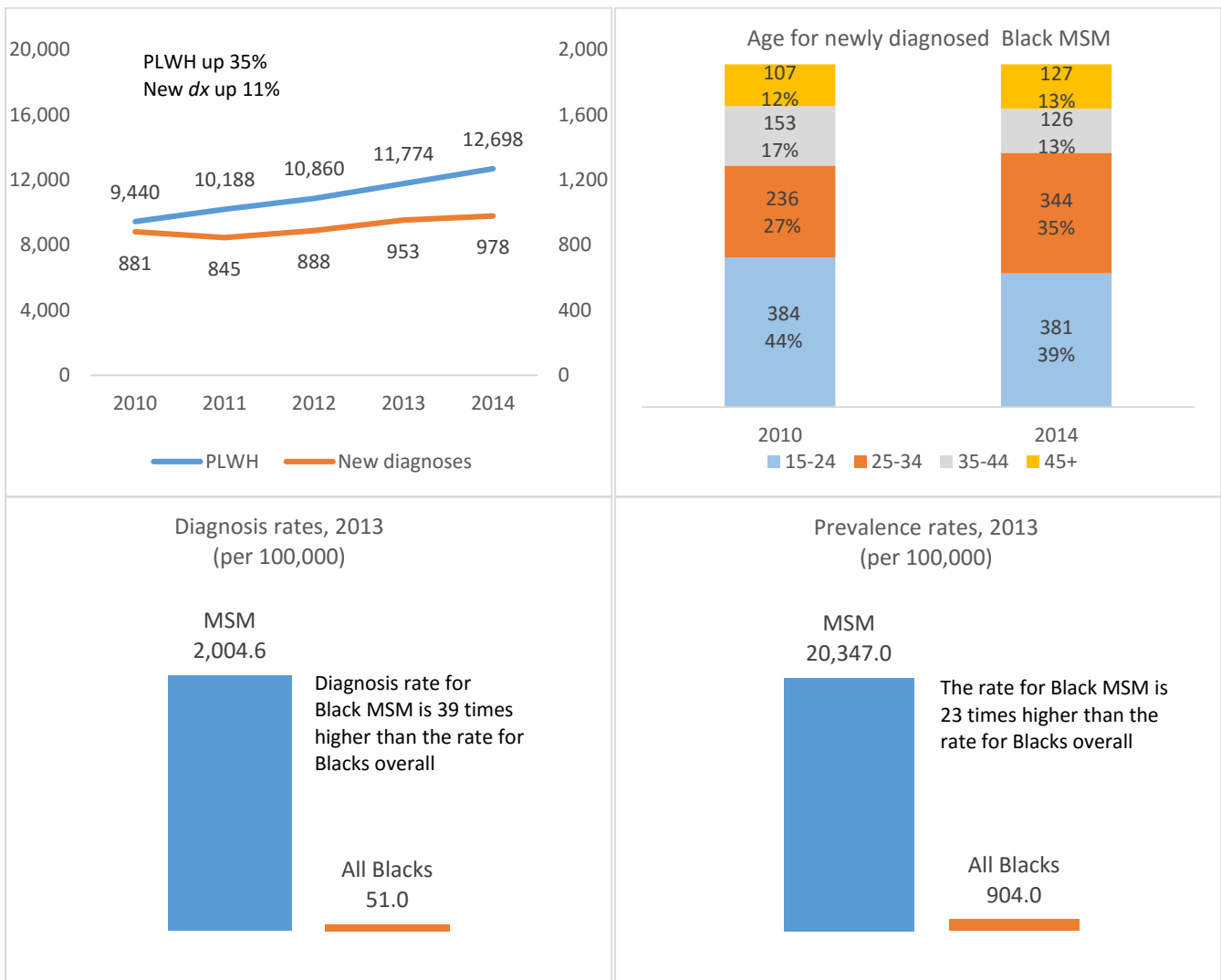
Figure 25: Linkage to treatment and continuum of care outcomes for Hispanic MSM, 2012-2014
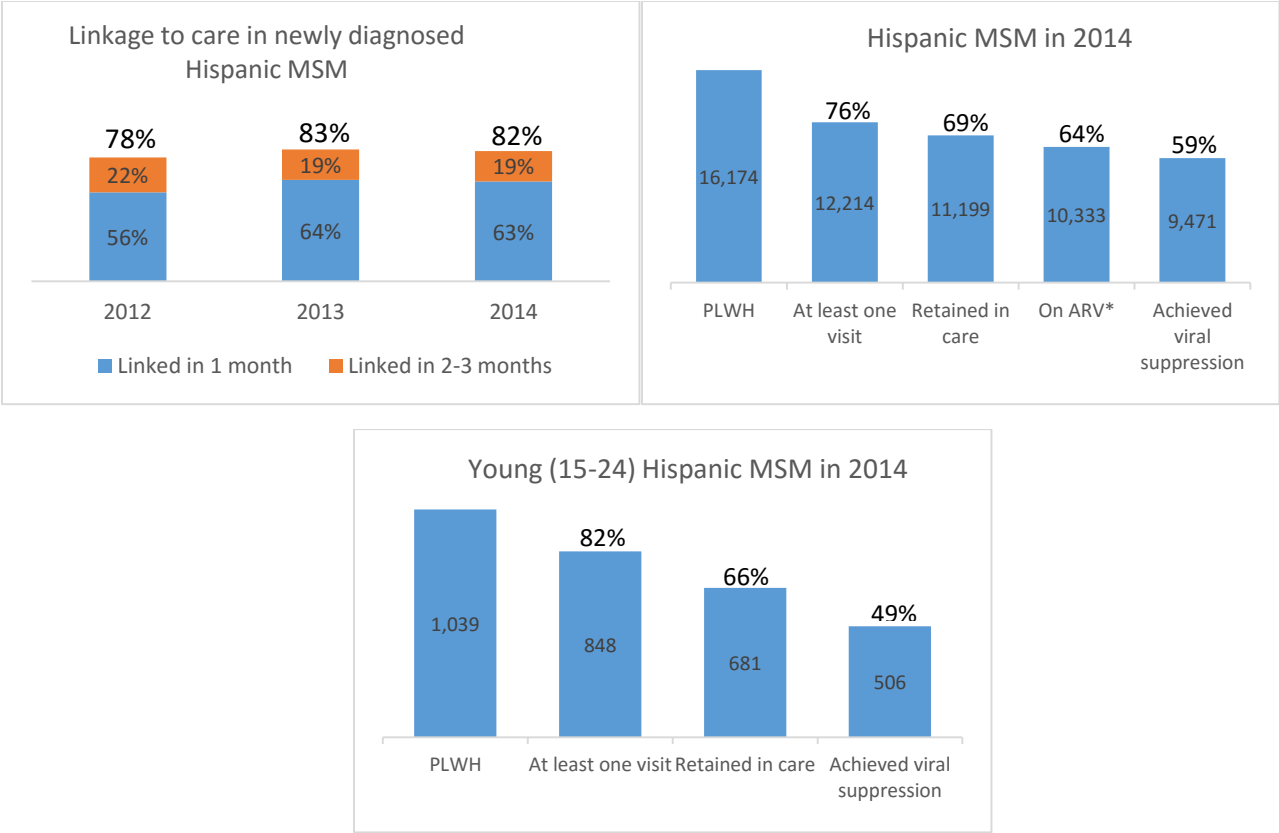
Black MSM

Between 2009 and 2013, we estimate that there were between 4,530 and 6,229 new infections in Black MSM – about 21 a week. Black MSM made up about 16 percent of Texans living with a diagnosed HIV infection in 2014, and about one in five of Texans newly diagnosed with HIV between 2010 and 2014. The number of Black MSM living with a diagnosed HIV infection increased by 35 percent between 2010 and 2014, and the annual number of new diagnoses increased by 11 percent. Black MSM newly diagnosed with HIV have a youthful profile: about two in five were 24 or younger, and three in four were 34 or younger. Rates for 2013 indicate that 2 percent of all Black MSM were diagnosed with an HIV infection in that year, and that 20 percent of Black MSM were living with a diagnosed HIV infection (Figure 26).

Figure 26: Black MSM and HIV in Texas

PLWH up 35%
New *dx* up 11%

PLWH: 9,440, 10,188, 10,860, 11,774, 12,698
New diagnoses: 881, 845, 888, 953, 978
2010, 2011, 2012, 2013, 2014
— PLWH — New diagnoses

Age for newly diagnosed Black MSM
2010: 107 (12%), 153 (17%), 236 (27%), 384 (44%)
2014: 127 (13%), 126 (13%), 344 (35%), 381 (39%)
■15-24 ■25-34 ■35-44 ■45+

Diagnosis rates, 2013
(per 100,000)
MSM 2,004.6
All Blacks 51.0
Diagnosis rate for Black MSM is 39 times higher than the rate for Blacks overall

Prevalence rates, 2013
(per 100,000)
MSM 20,347.0
All Blacks 904.0
The rate for Black MSM is 23 times higher than the rate for Blacks overall

Of the Black MSM PLWH in 2014, almost 5 percent were diagnosed with gonorrhea – a rate significantly higher than for PLWH overall, and higher than MSM overall. About 3 percent received a chlamydia diagnoses and between one and two percent received a syphilis diagnosis (Table 21).

Table 21: STI cases and incidence among MSM and Black MSM living with diagnosed HIV infections, 2014

		Chlamydia		Gonorrhea		P&S Syphilis		EL Syphilis	
	PLWH	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
MSM	40,381	886	2,194.1	1,266	3,135.1	462	1,144.1	683	1,691.4
Black MSM	10,455	336	3,213.8	507	4,849.4	162	1,549.5	210	2,008.6

* The number of MSM PLWH differs from other reports because we did not adjust cases to assign mode of exposure to persons with no reported risk.

Between 2012 to 2014, the one-month linkage rate for Black MSM increased by about 25 percent, and three out of four were linked to treatment within three months. Of the more than 12,000 Black MSM living with HIV in 2014, three-quarters had at least one HIV-related medical visit, but only around half had ART prescriptions or were virally suppressed at the end of the year. Looking only at those men with any HIV-related care, almost 90 percent were retained in care, but only three-quarters had an ART prescription and three out of five had suppressed virus. The reasons for the lower levels of prescription are not well understood at a state level. Young Black MSM also have depressed outcomes. While three quarters have at least some care, one in three of these men had suppressed viral load (Figure 27).

Figure 27: Linkage to treatment and continuum of care outcomes for Black MSM, 2012-2014
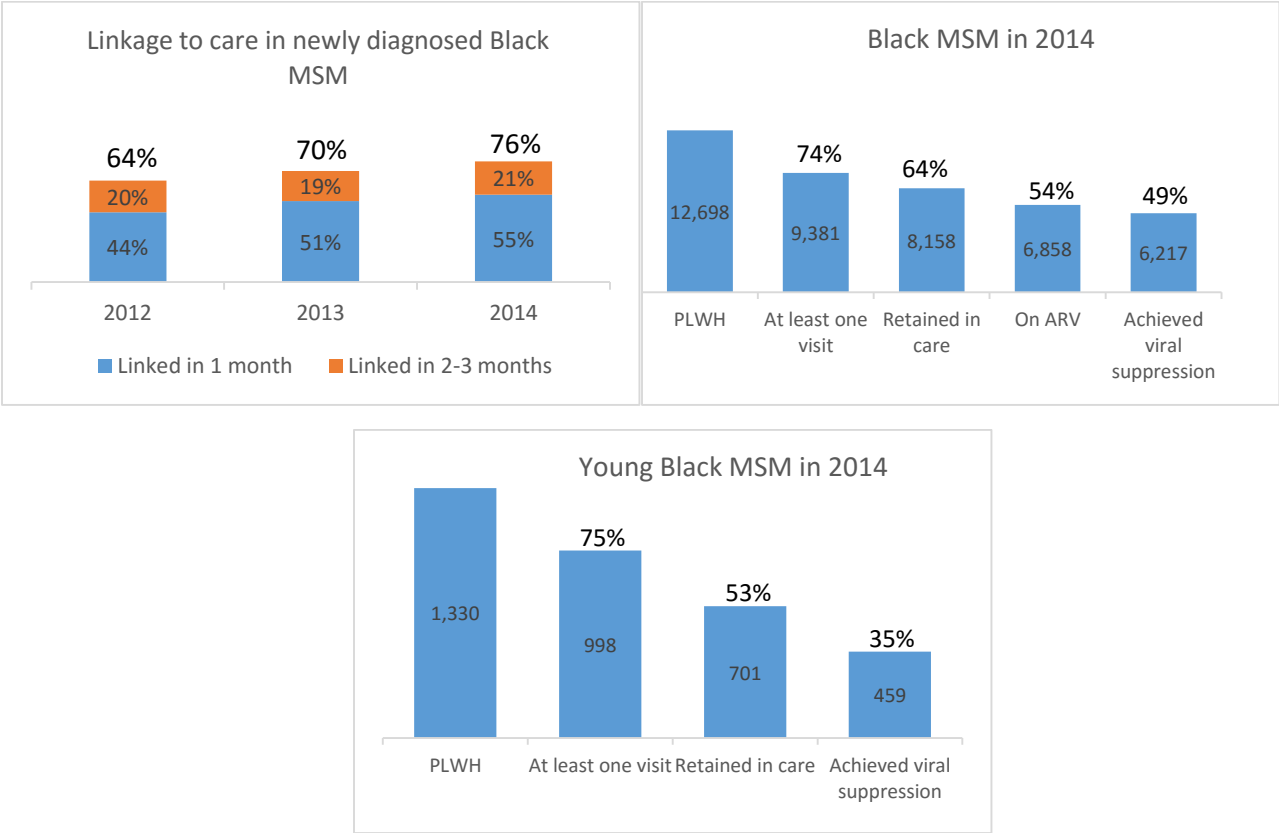
White MSM

Between 2009 and 2013, we estimate that there were between 4,117 and 5,725 new infections among White MSM – about 19 a week. White MSM made up one in five Texans living with a diagnosed HIV infection, and about 16 percent of the new diagnoses made in Texas from 2010 to 2014. The number of White MSM living with a diagnosed HIV infection was flat, as was the annual number of new diagnoses. The number of new diagnoses in young White MSM (15-24 years old) increased by almost 50 percent from 2010 to 2014 (Figure 28).

Figure 28: White MSM and HIV in Texas
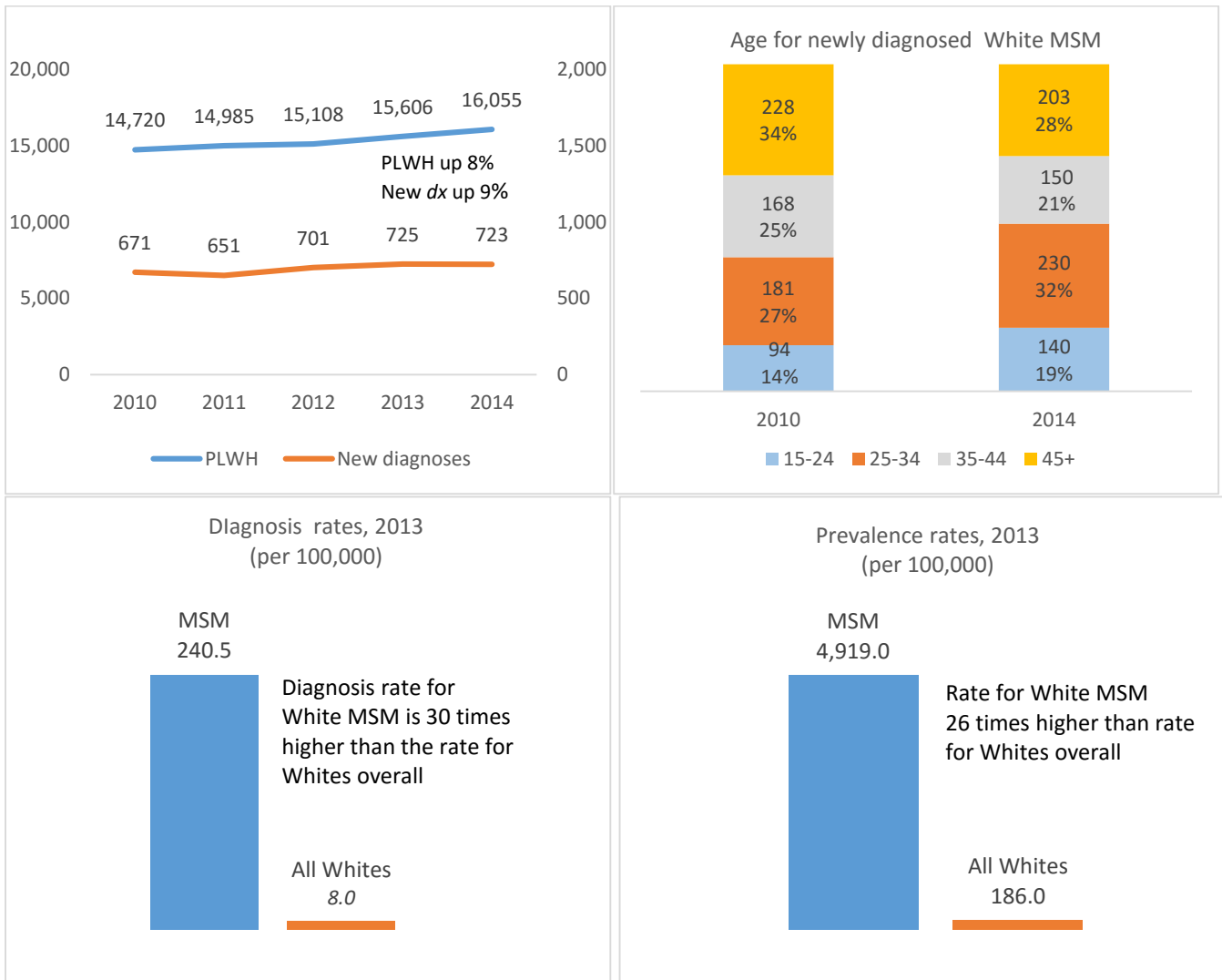
Of the White MSM PLWH in 2014, fewer than 300 were diagnosed with a reportable STI. The highest rate of infection was for gonorrhea, with about two percent of White MSM living with HIV receiving a diagnosis in 2014 (Table 22).

Table 22: STI cases and incidence among MSM and White MSM living with diagnosed HIV infections, 2014

		Chlamydia		Gonorrhea		P&S Syphilis		EL Syphilis	
	PLWH	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
MSM	40,381	886	2,194.1	1,266	3,135.1	462	1,144.1	683	1,691.4
White MSM	14,582	178	1,220.7	297	2,036.8	120	822.9	176	1,207.0

* The number of MSM PLWH differs from other reports because we did not adjust cases to assign mode of exposure to persons with no reported risk.

Between 2012 to 2014, about four out of five newly-diagnosed White MSM were linked to treatment within three months, with three out of five linked within one month. Of the more than 16,000 White MSM living with HIV in 2014, more than four out of five had at least one HIV-related medical visit, three-quarters were retained in care and had ART prescriptions, and about two in three had suppressed virus at the end of 2014. Of the men with at least some care, almost all were retained and had prescriptions for ART, and more than four in five had suppressed virus at the end of the year. Young White MSM have depressed outcomes. While four out of five have at least some care, only half had suppressed viral load (Figure 29).

Figure 29: Linkage to treatment and continuum of care outcomes for White MSM, 2012-2014
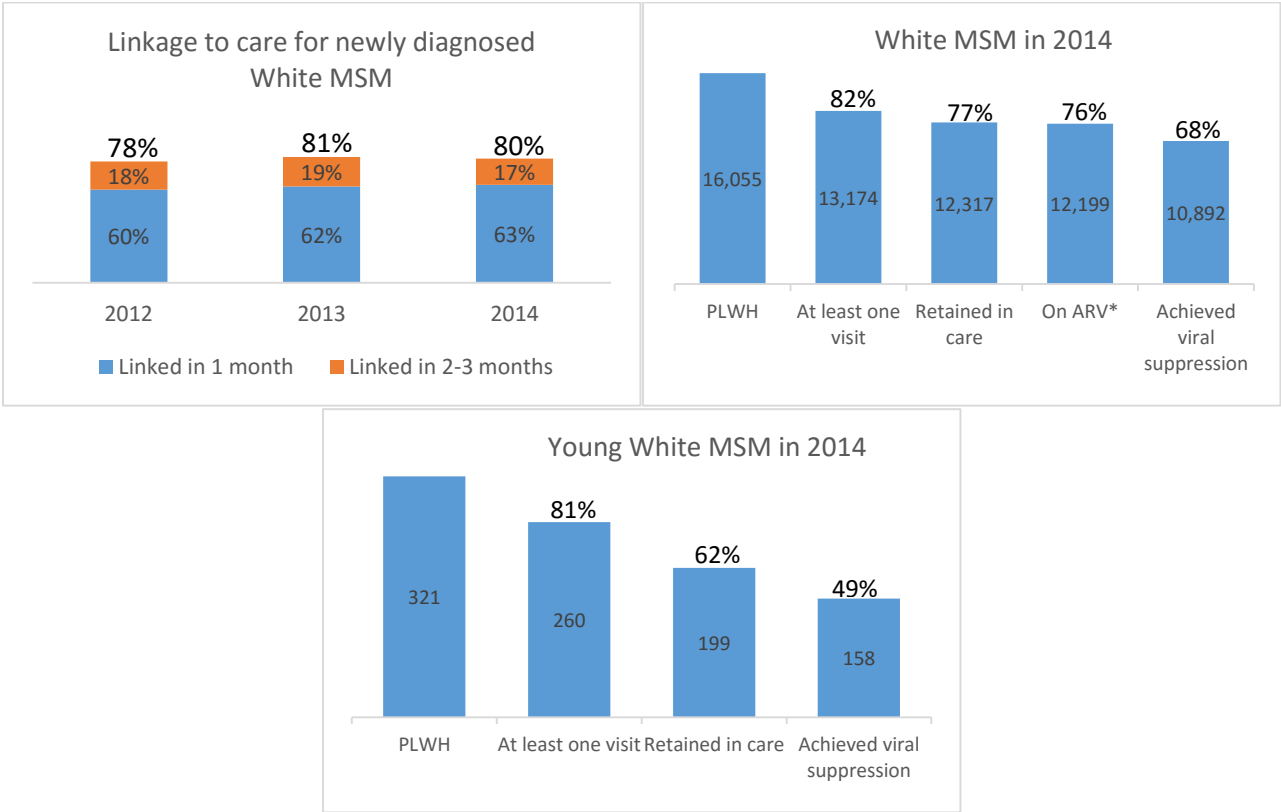
Black heterosexual women

Between 2009 and 2013, we estimate that there were between 2,035 and 3,070 new infections among Black heterosexual women - about 10 a week. This group accounted for about one in ten Texans living with diagnosed HIV infections in 2014, and about one in ten Texans newly diagnosed between 2010-2014. The number of Black women living with a diagnosed HIV infection rose about 19 percent - about the same rate as overall increases in PLWH. The annual number of new diagnoses, however, decreased by 17 percent. The decreases were greatest in women under 35- falling more than 25 percent (Figure 30).

Figure 30: Black heterosexual women and HIV in Texas
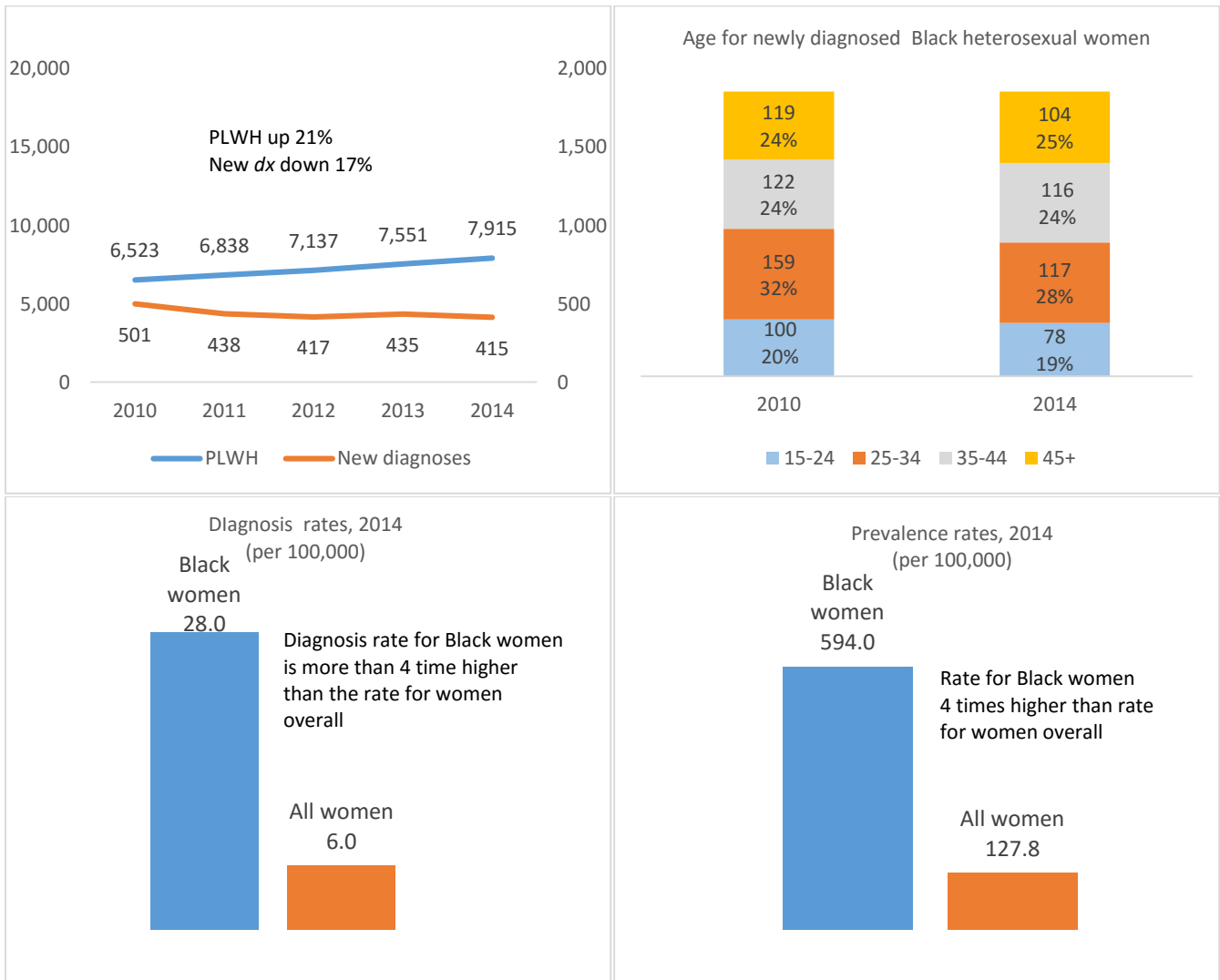
Between 2012 to 2014, more than four out of five newly-diagnosed Black women were linked to treatment within three months, with a 30 percent increase in the one-month linkage rate from 2010 to 2012. Of the 10,000 Black women living with HIV in 2014, more than three quarters had at least one HIV-related medical visit; seven out of ten were retained in care and had ART prescriptions. Despite the high proportion of PLWH on treatment, only half of these women had suppressed virus. Note also that the age-adjusted rate of death due to HIV was five times higher for Black women than for Hispanic women, and 10 times higher than the rate for White women. Of those women with any HIV-related care in 2014, 90 percent were retained in care and had ART prescriptions, but only four out of five had suppressed virus. Young Black women have depressed outcomes. While three out of four have at least some care (which is the same proportion as Texas PLWH overall), only two out of five had suppressed viral load (Figure 31).

Figure 31: Linkage to treatment and continuum of care outcomes for Black Heterosexual women, 2012-2014
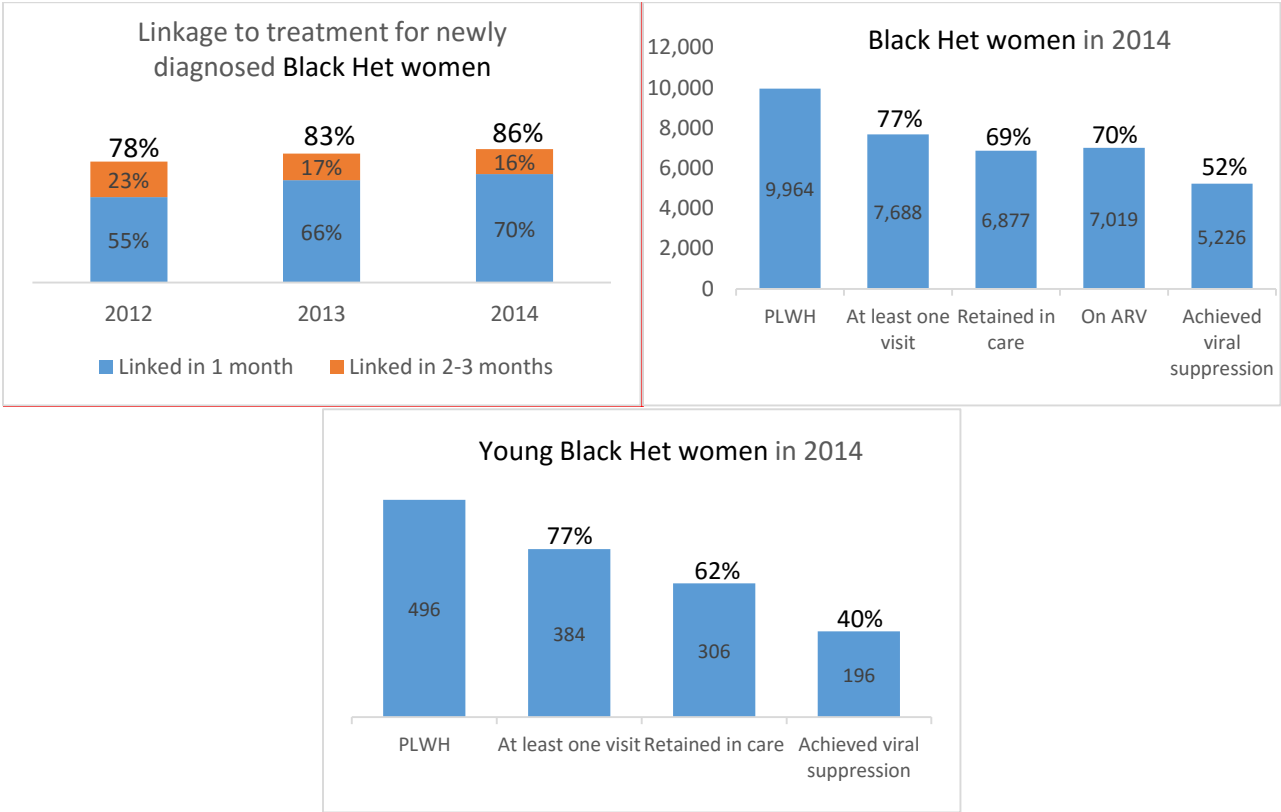
Transgender individuals

Roughly 125,000 transgender individuals live in Texas, the third largest population of transgender people in the United States.[8] Transgender individuals face considerable societal marginalization which amplifies vulnerability to HIV infection. Similar to other priority populations, transgender communities may have high rates of substance use, unmet mental health needs, lack of familial support, stigma and discrimination. Additionally, transgender communities face significant barriers to employment, high rates of homelessness and violence. A particular challenge for transgender individuals is access to appropriate health care, with many individuals encountering negative experiences when trying to access health care. Access to culturally relevant health care presents a significant barrier when considering the diagnosis and treatment of HIV in transgender populations.

Currently, data regarding HIV in transgender communities in Texas is incomplete. However, national estimates of HIV prevalence for transgender communities are as high as 22 percent.[9] Additionally, among HIV tests reported to the CDC in 2013, transgender individuals accounted for the highest percentage of newly identified HIV positive people.[10] These data suggest that transgender communities shoulder a disproportionate disease burden and should be included in targeted efforts to identify HIV infection through testing programs, to link newly diagnosed transgender individuals into care, and to increase the capacity of care systems to retain transgender individuals in treatment.

According to national estimates, as many as 1 in 5 transgender individuals may be living with HIV

Black transgender women are more likely than transgender women of other races/ethnicities to be living with HIV

As noted, transgender specific data is currently incomplete due to the lack of availability of accurate gender identity reporting in medical records. HIV reporting systems currently allow for gender specific data to be captured, and rely on accurate gender identity information being collected at the time of diagnosis and through public health follow up programs. The Texas Department of State Health Services HIV/STD programs have made necessary changes to reporting systems and processes to improve the collection and accurate reporting of gender identity. The programs are exploring additional ways to increase gender identity reporting and are evaluating alternative data sources.

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[8] Flores A, Herman J, Gates G, and Brown T. How Many Adults Identify as Transgender in the United States? The Williams Institute 2016.

[9] Baral S, Poteat T, et al. Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. Lancet Infect Dis 2013; 13(3):214-22.

[10] Centers for Disease Control and Prevention. CDC-Funded HIV Testing: United States, Puerto Rico and the U.S. Virgin Islands, 2013. http://www.cdc.gov/hiv/library/reports/index.html .

# The Texas HIV Plan and the National HIV/AIDS Strategy

The Texas HIV Plan (THP) and National HIV/AIDS Strategy (NHAS) provide a path forward. The aim of the Texas HIV Plan is to reduce new HIV infections using a comprehensive approach based on public health principles, new science, and approaches to reducing HIV that are field-tested and effective.

Both plans address the full range of possible HIV engagement. The NHAS focuses on four goals: reducing new HIV infections; increasing access to care and improving health outcomes; reducing HIV-related disparities; and achieving a more coordinated national response to the HIV epidemic. The Texas HIV Plan addresses these through six goals arranged across the HIV continuum (Figure 32).

- **Increase HIV awareness among members of the general public, community leaders, and policy makers.**

- **Increase access to HIV prevention efforts for communities and groups at highest risk.**

- **Successfully diagnose all HIV infections.**

- **Increase timely linkage to treatment for those newly diagnosed with HIV.**

- **Increase continuous participation in systems of treatment among people living with HIV.**

- **Increase viral suppression among people living with HIV.**

The THP emphasizes both prevention and effective treatment as critical lines of attack. The prevention goals, strategies and objectives outlined in the *Plan* will address and, when implemented, decrease actions that put individuals at risk of exposure to HIV and the treatment goals, strategies and objectives, when implemented, will reduce community viral levels (the amount of virus present in communities) which decreases the likelihood of infection if an individual is exposed to HIV.

Figure 32: The Texas HIV Plan domains
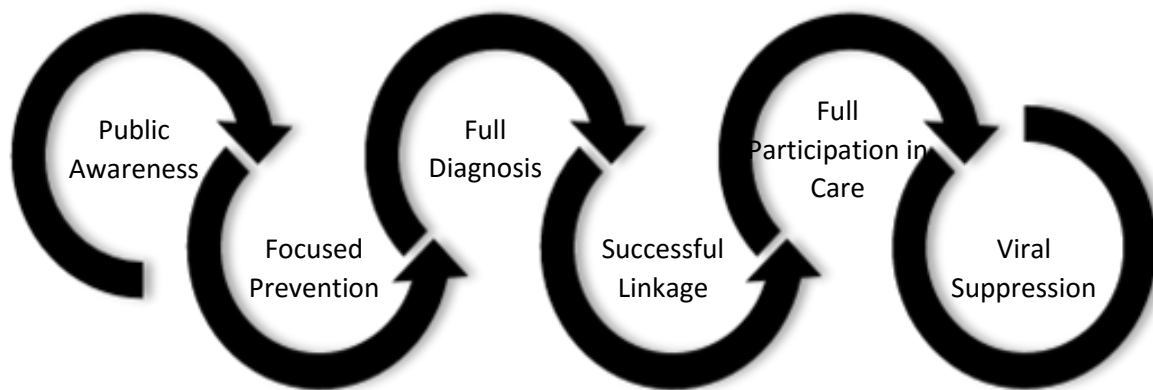
Cross-Cutting Approaches

Comprehensive and coordinated approach

To reduce HIV infections in Texas, organizations that are charged with preventing HIV infections or treating people living with HIV must 'link arms' to enhance coordination and boost each other's effectiveness. Reduction in new HIV cases depends on improvement in every link of the continuum.

Multiple levels of action: individuals, environments, systems

Reducing HIV infections in Texas also requires engaging issues that do not appear directly associated with HIV on the surface. Issues like poverty, family rejection, unstable housing, and lack of access to treatment promote risk behaviors and concentrate HIV in vulnerable populations. HIV prevention and treatment programs have traditionally focused on individual behaviors, but an individual's decisions and actions are influenced by their social networks, the cities and towns in which they live, the institutions and people they come in contact with, and the policies and systems that apply to their lives. [11] To reduce HIV, action is required at all levels. Individual behaviors will continue to be addressed, but they must be understood in terms of the environments and systems that influence or restrict them.

HIV stigma

Stigma associated with HIV often prevents individuals from accessing prevention programs and is a barrier to PLWH entering and maintaining care. HIV disproportionately affects already marginalized populations. Stigma further marginalizes individuals, creating isolation from social supports and fear of disclosure. To fully realize the strategies outlined, stigma must be addressed through increasing public awareness while also working with impacted individuals to develop coping skills, social supports, and resilience.

HIV health disparities

HIV does not affect all populations equally. The Texas HIV Plan prioritizes Black gay men, Hispanic gay men, White gay men, Black heterosexual women, and Transgender individuals as populations most impacted by HIV. Disparities across these populations also exist, particularly in access to treatment and health outcomes for PLWH. Hispanic gay men have higher levels of late HIV diagnosis while Black women and Black gay men have lower viral suppression rates.

Many HIV programs were developed in the early days of the HIV epidemic - when White gay men were the primary population - and may not be culturally relevant for other populations. Ensuring that both prevention and treatment services are culturally appropriate is critical to addressing disparities.

Health literacy is another critical issue for reducing health disparities. Nearly 9 out of 10 adults have difficulty using everyday health care information.[12] It affects access and utilization of health care, relationships with providers and the ability to understand and follow medical instructions.[13][14] Increasing providers' ability to communicate vital information in ways that are linguistically and culturally appropriate and accessible to

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[11] Green L., Richard L., Potvin L. Ecologic foundations of health promotion. American Journal of Health Promotion. 1996;10(4):270-281.

[12] National Action Plan to Improve Health Literacy

[13] Paasche-Orlow, MK. Wolf, MS. The causal pathways linking health literacy to health outcomes. American Journal of Health Behavior. 2007;31 (Suppl 1):S19-S26(8).

[14] Kalichman SC, Rompa D. Functional health literacy is associated with health status and health-related knowledge in people living with HIV-AIDS. Journal of Acquired Immune Deficiency Syndrome 2000;25(4):337-344.

consumers, while also educating consumers on health information to improve their understanding, will result in improved outcomes.

Most domains have objectives to reduce disparity rates seen for that domain. Disparity rates will be presented in terms of undesirable outcomes, such as rates of late diagnosis or late linkage, or the proportions of groups who are not retained in treatment or who do not have a suppressed viral load. The disparity rate is calculated by dividing the proportion of PLWH with the negative outcomes by the proportion of all Texas PLWH with that outcome. For example, in 2014, 44 percent of Texans living with a diagnosed HIV infection did not have suppressed viral load; 59 percent of youth had unsuppressed viral load. Dividing .59 by .44 gives a disparity ratio of 1.3. You can also think about the disparity rate showing the magnitude of the disparity – a disparity rate of 1.4 shows that the rate for the disadvantaged group is 40 percent higher than the overall rate.

HIV Goals, Objectives and Strategies

Increase HIV awareness among members of the general public, community leaders, and policy makers

HIV has been a public health issue in the United States for more than three decades. Over that time, public support and interest in HIV has waxed and waned. During the height of the epidemic in the late 1980s, nearly 70 percent of Americans felt HIV was an urgent health problem, but in the most recent surveys, only 10 percent expressed urgency related to HIV. Increasingly, young people express less concern about HIV and their risk of infection.[15]

The result of this decline in information and urgency is problematic and has implications for both transmission and the treatment those living with HIV. Roughly one in four Americans continue to believe that HIV can be transmitted by sharing a drinking glass, a figure that has not changed since 1987. Attitudes and ignorance about transmission continue to foster HIV-related stigma and discrimination against people living with HIV.

Objectives

Currently, methods and systems for collecting population-based data on public opinion and awareness of HIV do not exist in Texas. As a result, state level measurable objectives cannot be developed. However, the strategies outlined are critical to addressing HIV. Improvement and success related to these strategies must be evaluated in terms of activities developed to achieve the strategies.

Strategies

Promote science-based sexual education, including HIV education, in schools. Community input into this Plan overwhelmingly included the need to provide clear, fact-based sexual health education to increase general knowledge of how HIV is transmitted and reduce sexually transmitted infections among young people. Sexual health education content should be adjusted to be appropriate for the students' age group.

Raise HIV awareness and promote the level of importance and urgency with local leaders and policy makers. HIV has been a health issue in the United States for over 3 decades. As time has passed, and treatments have improved, advocacy of HIV as a public health issue has decreased. To successfully reduce infections, HIV advocacy must focus on educating leaders and policy makers on the continuing impact of HIV in their communities and the opportunities to impact infections.

Address the issues that intensify HIV risk in vulnerable populations. HIV is a social disease, and new infections are related to not only individual behavior, but also the environments and communities in which people at risk live. Issues such as access to education, work, and safe housing impact individuals' ability to make healthy decisions. Addressing these social determinants of health will have downstream consequences for reducing HIV infections.

Increase awareness and understanding of HIV in the general public. Over the last three decades, efforts to educate the public about HIV have waned. Currently, PLWH indicate that stigma continues to impact their ability to maintain their care and live full, productive lives. Educating the general public on the facts of HIV will reduce individual risk as well as reduce public fear and ignorance which fuels stigma.

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[15] Kaiser Family Foundation. 2012 Survey of Americans on HIV/AIDS. July 2012. http://kff.org/hivaids/poll-finding/2012-survey-of-americans-on-hivaids/. Accessed Aug. 2016.

Increase access to HIV prevention efforts for communities and groups at highest risk

Treatment alone cannot reduce the number of new infections. We must intensify actions to reduce the risks of becoming infected for the populations and communities most vulnerable to HIV. Traditional behavioral approaches to HIV prevention blended with a cutting edge biomedical approach could significantly reduce new infections in the groups most heavily impacted by HIV. Research proves that taking specific HIV treatment drugs before infection significantly decreases a person's chances of becoming infected. This approach is known as pre-exposure HIV prophylaxis- PrEP for short- and can reduce the chance of contracting HIV by 92 percent.[16] This approach is only cost effective when focused on people with very high risk of getting HIV and when combined with more traditional methods of reducing risk of infection, such as one-on-one counseling, increased access to and use of condoms, increased screening for other sexually transmitted diseases, and regular HIV testing.

Texas is at a crucial time in scaling up the use of PrEP, which will require extensive work with community partners on raising awareness and capacity to provide PrEP through prevention and clinical providers, and with Texans at very high risk for HIV, who would be the best candidates for PrEP. Therefore, our objectives are limited to monitoring PrEP activities. The baseline measures are still under construction. After more consultation with community stakeholders and PrEP providers, the baselines can be set and objectives possibly changed or refined.

Objectives

By 2021, increase the number of Texans at high risk who receive a referral to PrEP services. The baseline and magnitude of desired change is currently under development.

By 2021, increase the number of Texans at high risk who receive at least one prescription for PrEP medication. The baseline and magnitude of desired change is currently under development.

By 2021, 85 percent of HIV prevention funds, across all funding streams, will focus on at least one of the priority populations outlined in the Texas HIV Plan.

Strategies

Focus HIV prevention on communities and groups where HIV is most heavily concentrated. In Texas, HIV disproportionately affects Black gay men, Latino gay men, White gay men, Black heterosexual women, and Transgender individuals. Any efforts to significantly address new infections must focus on these groups.

Bring the use of pre-exposure prophylaxis (PrEP) to scale in communities and groups where HIV is most heavily concentrated. PrEP represents a breakthrough opportunity to help end HIV. However, there are significant obstacles to accessing PrEP for the individuals and communities that would most benefit from its use. To fully implement PrEP, Texas must find ways to make the necessary medical care and medication available to every individual in these communities that desires access.

Increase access to housing, mental health, and substance use treatment for people and communities at highest risk. To fully impact the spread of HIV, the environmental and systems issues that influence or drive risk must be addressed. Working within communities to increase access to safe housing, culturally appropriate mental health services, and substance use treatment as factors of risk will lead to fewer infections.

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[16] See http://www.cdc.gov/hiv/risk/prep/index.html for more information on PrEP, including guidelines for clinicians.

Increase knowledge and sense of urgency to act in communities and groups where HIV is most heavily concentrated. As HIV has become normalized in heavily impacted communities, feelings of apathy or inability to effectively stop transmission have increased. To reduce new infections, we must find community appropriate and non-stigmatizing strategies to increase urgency and the self-efficacy of communities to address HIV and issues that create vulnerability.

Successfully diagnose all HIV infections

Although many people have signs or symptoms immediately following their infection with HIV, these symptoms and signs are often mild and very general (e.g., fever, body aches). Newly infected people rarely seek medical attention for these symptoms or report them to their doctor during medical visits.[17] [18] As a result, people may live with an HIV infection for many years before receiving a diagnosis. During this time they are not getting the treatment and care they need to protect and improve their health. From a public health perspective, lowering the number of Texans with undiagnosed infection will also dampen transmission of HIV and reduce new infections both because of lower community viral load and because studies show that people who know their status are likely to adopt a variety of behaviors that make it less likely that they will transmit HIV to uninfected partners. [19] [20] [21] [22] DSHS estimates that about 30 percent of the annual HIV transmissions are due to undiagnosed HIV infections.

Timing of the diagnosis is also important. A person has a late diagnosis when they have a stage 3/AIDS classification within three months of first diagnosis. Actions to reduce undiagnosed cases could also reduce the number of Texans with late diagnoses. Studies have linked late HIV diagnosis to slower CD4 gains, faster disease progression, and higher mortality.[23] [24] [25] [26]

As discussed in the epidemiologic overview, DSHS estimates that about 11 percent to 17 percent of PLWH in Texas are living with undiagnosed infections (midpoint about 14 percent). Most of the undiagnosed Texans are MSM (almost seven in ten of the undiagnosed Texans), and Hispanics have the greatest proportion of

[17] Sullivan PS, Fideli U, Wall KM, et al. Prevalence of seroconversion symptoms and relationship to set-point viral load: findings from a subtype C epidemic, 1995-2009. *AIDS* 2012; 26: 175-84.

[18] Robb ML, Eller LA, Kibuuka H, et al. Prospective study of acute HIV-1 infection in adults in East Africa and Thailand. *New England Journal of Medicine* 2016; 374 (21). DOI: 10.1056/NEJMoa1508952 accessed May 25, 2016.

[19] Dombrowski JC1, Harrington RD, Golden MR. Evidence for the long-term stability of HIV transmission-associated sexual behavior after HIV diagnosis. *Sex Transm Dis*. 2013 Jan;40(1):41-5. doi: 10.1097/OLQ.0b013e3182753327.

[20] McFarland W, Chen Y, Nguyen B et al. Behavior, Intention or Chance? A Longitudinal Study of HIV Seroadaptive Behaviors, Abstinence and Condom Use. *AIDS Behav*. 2012 Jan; 16(1): 121–131. doi: 10.1007/s10461-011-9936-8.

[21] Parsons JT, Schrimshaw EW, Wolitski RJ, Halkitis PN, Purcell DW, Hoff CC, Gomez CA. Sexual harm reduction practices of HIV-seropositive gay and bisexual men: serosorting, strategic positioning, and withdrawal before ejaculation. AIDS. 2005;19 Suppl 1:S13-25.

[22] Weinhardt LS, Kelly JA, Brondino MJ, et al. HIV transmission risk behavior among men and women living with HIV in 4 cities in the United States. *J Acquir Immune Defic Syndr*. 2004; 36:1057-66.

[23] Chadborn TR, Delpech VC, Sabin CA, Sinka K, Evans BG. The late diagnosis and consequent short-term mortality of HIV-infected heterosexuals (England and Wales, 2000-2004). *AIDS*. 2006; 20: 2371-2379.

[24] Gras L, van Sighem A, Bezemer D, Smit C, Wit F, de Wolf F, on behalf of the ATHENA national observational cohort study. Lower mortality and earlier start of combination antiretroviral therapy in patients tested repeatedly for HIV than in those with a positive first test. *AIDS*. 2011; 25:813-818.

[25] Waters L, Fisher M, Anderson J, et al. Responses to highly active antiretroviral therapy and clinical events in patients with a low CD4 cell count: late presenters vs. late starters. *HIV Med*. 2010; 12:289-298.

[26] Kazak M, Zinski A, Leeper C et al. Late diagnosis, delayed presentation and late presentation in HIV. *Antiviral Therapy* 2013; 17-23.

undiagnosed cases – about 17 percent to 23 percent of Hispanic PLWH have not yet been been diagnosed (midpoint 19.6).

While late diagnoses have been reduced by about a quarter from 2010 to 2014, Hispanics are more likely to have a late diagnosis; Hispanics were two out of every five Texans with a late diagnosis between 2012 and 2014, and 26 percent of Hispanics had a late diagnosis compared to 22 percent for Texans overall. Hispanic MSM age 25 and older made up almost two out of every five Texans with a late diagnosis in 2012 to 2014.

Objectives

By 2021, reduce the proportion of Texans living with undiagnosed HIV infections from 14 percent to no more than 10 percent.

By 2021, reduce the proportion of Texans with late diagnosis of their HIV infection from 24 percent to 20 percent.

By 2021, reduce disparities in the rate of late diagnosed and undiagnosed infections for Hispanics by 15 percent. The current disparity rates for Hispanics are 1.4 for undiagnosed infections and 1.2 for late diagnosis.

Strategies

Focus HIV testing on communities and groups where HIV is most heavily concentrated. In Texas, HIV most heavily affects Black gay men, Latino gay men, White gay men, Black heterosexual women, and Transgender individuals. HIV testing programs intended to reduce the number of people living with undiagnosed HIV must focus efforts within these communities. To be successful, these programs must be able to identify communities and individuals at highest vulnerability and work to not only test for HIV, but also work to normalize HIV testing.

Ensure that social and sexual networks of people diagnosed with and/or living with HIV are offered testing and counseling. People newly diagnosed with HIV are likely to socialize with others who are vulnerable to becoming infected with HIV. Social networking strategies identify, counsel and test these individuals.

Expand adoption of routine HIV testing as part of medical care. Many people who are vulnerable to HIV infection do not consider themselves at risk or are unwilling to acknowledge their risk. As a result, these people do not seek out HIV testing. Routine testing programs conduct HIV testing as part of regular medical care and are more likely to identify these people when they access care for other health issues. Routine HIV testing programs also offer opportunities to normalize HIV and HIV testing among clinicians and the public which reduces HIV-related stigma.

Promote models and innovative practices that effectively reach and test high risk individuals in communities and groups where HIV is most heavily concentrated. Advances in HIV testing practices and technologies continue to evolve. Fourth generation tests that identify infection earlier, easier to use rapid testing and new methods of confirmatory testing all have implications for diagnosing HIV infections. Identifying new technologies such as these and effectively pairing them with testing strategies where they will be most effective will increase the success of HIV testing.

Increase timely linkage to HIV-related treatment for those newly diagnosed with HIV

We know that treatment for HIV infection keeps people with HIV healthier longer and reduces deaths, but it is most effective if treatment starts soon after the diagnosis is made.[27] [28] Linkage refers to the time it takes from the person's diagnosis to when they have their first episode of HIV medical care.
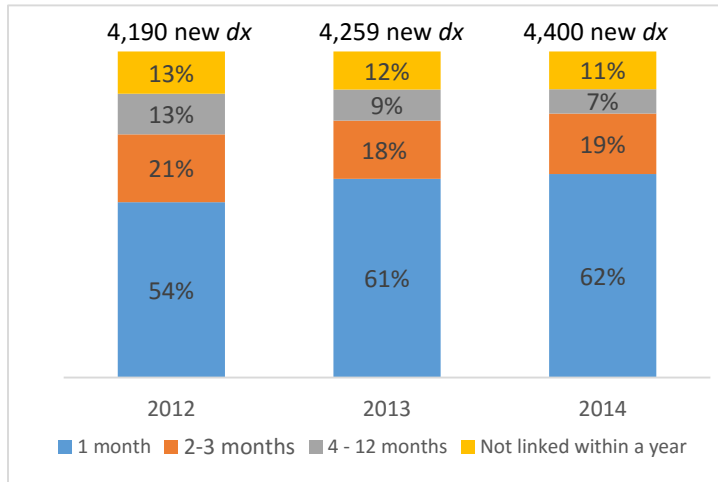
In 2014, more than 80 percent of Texans newly diagnosed were linked to HIV treatment and care within three months, up from 75 percent in 2012. More than three in five were linked within one month in 2014.

As described in the epidemiologic overview, Black MSM and young people are least likely to have timely linkage – more than one in four had either a late linkage (also called a delayed presentation) or no care at all within the first year of diagnosis.

Objectives

By 2021, increase the proportion of newly diagnosed Texans who are linked to treatment and care within three months of their diagnosis to 90 percent.

By 2021, reduce disparities in rates of timely linkage for Black MSM and those between 15-34 years old by 15 percent. In 2014, the disparity rate for Black MSM was 1.2, and the disparity rate for youth was 1.4.

Strategies

Create linkage pathways that span healthcare systems. The majority of positive HIV tests in Texas occur outside of HIV specific testing and care systems. Successfully linking people to HIV care requires creating pathways between general health care systems and HIV care, which is predominately not integrated in general health care systems. These pathways must be built by educating clinicians and clinical care sites that diagnose high numbers of HIV positive individuals, and HIV care systems.

Assure linkage systems are client-centered and address the acute needs of clients at the time of diagnosis. Successful linkage systems not only create access to medical care for people newly diagnosed with HIV, but also help to quickly identify and address barriers that may prevent people from following through with their HIV medical care. People are less likely to prioritize medical care, even HIV care, if they are struggling with meeting basic needs, such as food or housing.

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[27] Hall HI, Tang T, Westfall AO, Mugavero MJ. HIV Care Visits and Time to Viral Suppression, 19 U.S. Jurisdictions, and Implications for Treatment, Prevention and the National HIV/AIDS Strategy. PLoS ONE 2013 8(12): e84318. doi:10.1371/journal.pone.0084318

[28] Kazak M, Zinski A, Leeper C et al. Late diagnosis, delayed presentation and late presentation in HIV. Antiviral Therapy 2013; 17-23.

Promote models and innovative practices that shorten the time between diagnosis and use of anti-retrovirus (ARV) treatment. Current HIV clinical care guidelines recommend everyone diagnosed with HIV start immediate ARV treatment. Early ARV treatment improves long term health outcomes for PLWH. Linkage to care systems should be designed to quickly assess newly diagnosed individuals, address barriers to entry to care, and provide medical assessments in order to expedite treatment. Existing system models that accomplish this should be identified and disseminated as best practices to be adapted to local systems.

Increase continuous participation in systems of treatment among people living with HIV

Maintaining consistent engagement in care is vital to the success of HIV treatment. Disruptions in treatment and missed appointments are associated with poor prognosis, un-sustained viral load suppression, increased mortality, and greater prevalence of co-morbid conditions. These disruptions appear to be especially critical when establishing treatment.[29] [30] [31] [32] [33] [34] [35]

HIV affects the most vulnerable and disenfranchised individuals and communities. Up to a quarter of people living with HIV may also have untreated mental health or substance use issues, both of which are associated with unmet need for HIV in medical care. For people living with HIV, higher unmet support service needs, such as unstable housing, are also associated with falling out of care.

Out of the 80,000 Texans living with a diagnosed HIV infection in 2014, about 7 in 10 were retained in continuous care and treatment in that year. These levels of retention represent improvement over 2011 levels, when only 51 out of 100 were retained in care. Another way of looking at participation focuses on the *space between the bars* in the continuum of care (Figure 13). The space between the bars indicates where improvement*s may be made. A*lmost one in four Texans with a diagnosed HIV infection had no HIV-related treatment in 2014 and about seven in ten had only one episode of HIV care. As outlined in the epidemiologic overview section, retention rates are lowest for Black MSM and persons between 15 and 24 years old. Only around 50 percent to 60 percent of Texans in these groups were retained in care across 2014. Prior analyses of multiyear retention also indicate that these groups were likely to show patterns of inconsistent care across years (data not shown).

[29] Crawford, TN. Poor retention in care one year after viral suppression: a significant predictor of viral rebound. *AIDS Care*. 2014;26(11):1393-9. doi: 10.1080/09540121.2014.920076.

[30] Ulett KB, Willig JH, Lin H-Y, et al. The therapeutic implications of timely linkage and early retention in HIV care. *AIDS Patient Care STDS*. 2009;23:41-49.

[31] Christopoulos KA, Das M, Colfax GN. Linkage and retention in HIV care among men who have sex with men in the United States. *Clin Infect Dis*. 2011;52(Suppl 2):S214-S222.

[32] Mugavero, MJ, Westfall AO, Cole SR et al. Beyond core indicators of retention in HIV care: missed clinic visits are independently associated with all-cause mortality. *Clinical Infectious Diseases* 2014;59(10):1471–9

[33] Mugavero MJ, Amico KR, Westfall AO, et al. Early retention in HIV care and viral load suppression: implications for a test and treat approach to HIV prevention. J Acquir Immune Defic Syndr. 2012 Jan 1;59(1):86-93. doi: 10.1097/QAI.0b013e318236f7d2.

[34] Crawford TN, Sanderson WT, Thornton A. Impact of Poor Retention in HIV Medical Care on Time to Viral Load Suppression. Jn Int Assoc Provid AIDS Care. 2014;13(3):242-248.

[35] Tedaldi EM[1], Richardson JT, Debes R, et al. Retention in care within 1 year of initial HIV care visit in a multisite US cohort: who's in and who's out? *Ann Intern Med*. 2012; 156:817-833.

Figure 32: The Texas HIV treatment continuum
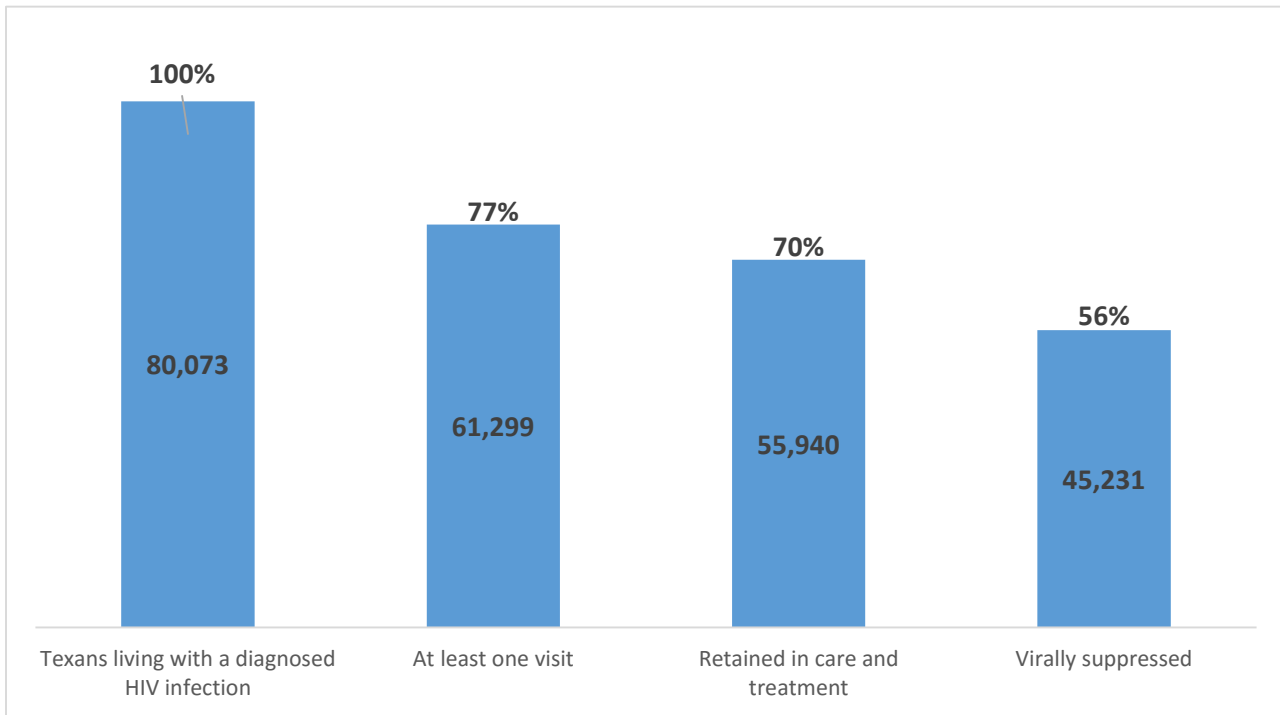
Objectives

By 2021, increase annual retention in care to 85 percent of all persons living with diagnosed HIV infections. In 2014, 70 percent of PLWH were retained in care.

By 2021, decrease the annual proportion of PLWH with no HIV care to 20 percent. In 2014, 23 percent had no HIV related care.

By 2021, reduce disparities in retention rates for Black MSM and youth aged 15-24 by 15 percent. In 2014, 30 percent of all Texas PLWH were not retained in care, compared to non-retention rates of 36 percent in Black MSM (disparity rate of 1.2) and 41 percent of youth (disparity of 1.4).

Strategies

Identify and explore approaches to locate and return to care HIV infected individuals who know their status but are not in care. Almost one in four Texans diagnosed and living with HIV was not in medical care in 2014. Successful strategies using data to identify, locate and support these individuals as they re-engage in care are currently being utilized across the state. While these models are showing success, additional approaches will amplify these efforts. Approaches that include consideration of cultural competency and health literacy should be explored.

Promote models and innovative practices that improve retention. PLWH may struggle with maintaining HIV treatment due to HIV stigma, lack of culturally-relevant care, poor health literacy or poor health literacy practices as well as difficulty navigating health care systems. Best practices among HIV and non-HIV treatment systems that support retention should be identified, studied and disseminated.

Promote HIV clinicians' understanding and use of current treatment guidelines, especially in relation to anti-retrovirus (ARV) treatment initiation. Current HIV clinical care guidelines recommend everyone diagnosed with HIV start immediate ARV treatment. Early ARV treatment improves long-term health outcomes for PLWH. Identifying current treatment practices by HIV clinicians and promoting adoption of early treatment will improve the lives of Texans living with HIV and greatly reduce the possibility of further HIV transmission.

Ensure that treatment systems include access to an array of services, especially mental health and substance use treatment. PLWH often have competing issues which may take precedence over their HIV treatment. Untreated mental health and/or substance use, which are higher in PLWH than in the general public, create challenges when trying to maintain treatment. Access to these and other services such as housing assistance, transportation assistance, and medical case management/system navigation ensure that these needs are addressed. Systems should be structured to provide support for PLWH struggling with mental health or substance use issues and ensure easy access to quality treatment that is culturally and linguistically appropriate.

Increase focus and training on retention in care. Fully supporting PLWH in systems of care requires access to multiple systems for support. Organizations and individuals providing these support services should understand their role in helping PLWH maintain their medical care.

Create mechanisms to identify and respond to individuals and groups at highest risk of dropping out of care. Being a member of a marginalized community, having an untreated mental health or substance use issue, or being under the age of 25 are a few characteristics that increase the likelihood that a PLWH will leave medical care for a significant amount of time. Systems designed to identify these markers risks such as these provide the opportunity to intervene before a person leaves care.

Increase viral suppression among people living with HIV

There are two very good reasons to focus on increasing the number of Texas PLWH who have suppressed (very low) HIV viral loads. Low viral load allows PLWH to live long, healthy and productive lives. But increasing the number of Texans with suppressed viral loads also prevents new transmissions of HIV. In Texas, we estimate that about 13 of every 20 transmissions in recent years are from people with diagnosed HIV infections whose viral load is not suppressed - about 55 percent from people who have diagnosed infection but are not in care, and about 10 percent from people in care whose viral load is not suppressed. Studies have shown that when PLWH are on treatment that is sufficient to consistently suppress their viral load (to HIV-1 RNA load less than 200 copies/mL for at least six months), the risk of transmission to others is extremely low.[36] [37] Maximizing the number of PLWH with suppressed viral load to decrease HIV transmissions is known as treatment as prevention (TasP).

For a TasP strategy to be effective, most people with HIV have to be on treatment. Modeling suggests that at least 85 percent of people with diagnosed infections would need to be in treatment and about 70 percent of diagnosed PLWH would have to have suppressed viral load for transmission to decrease. These actions must go hand-in-hand with reducing the number of persons with undiagnosed infections or the community viral load will not decrease.[38] [39] [40]

Table 23: Proportion of diagnosed Texas PLWH with suppressed viral load, 2014

	All PLWH*	PLWH in HIV care
Texas	56%	74%
Black MSM	49%	66%
Black Het women	52%	68%
IDU + MSM/IDU	50%	67%
Youth	41%	53%

Out of the 80,000 Texans living with a diagnosed HIV infection in 2014, about 56 percent had suppressed viral load, an improvement over 2011 levels where about 47 percent were virally suppressed (Table 23). As discussed in the Epidemiologic Overview, the proportion of PLWH who had suppressed viral load in 2014 was lowest in Black MSM, Black heterosexual women, youth (15-24 years old) and people who inject drugs (IDU and MSM/IDU). The disparities in outcomes persist even when analysis is limited to only those PLWH with at least one medical visit. For all Texas PLWH who were in care in 2014, almost three in four had suppressed viral load. Only two out of three Black MSM, Black women, or IDU and MSM/IDU who were in care had a suppressed viral load at the end of 2014, and only about half of the youth in HIV care had suppressed viral load. Increasing the number of Texans with suppressed viral load requires action to reduce disparities, not only levels of participation in treatment, but also improving treatment outcomes for these groups.

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[36] Rodger, A. J., Cambiano, V., Bruun, T., et al. Sexual activity without condoms and risk of HIV transmission in serodifferent couples when the HIV-positive partner is using suppressive antiretroviral therapy. *JAMA*, 2016, *316*(2), 171-181.

[37] Cohen M Et al. *Final results of the HPTN 052 randomized controlled trial: antiretroviral therapy prevents HIV transmission.* 8th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Vancouver, abstract MOAC0101LB, 2015.

[38] Holtgrave DR, Hall HI, Wehrmeyer L, Maulsby C. Costs, consequences and feasibility of strategies for achieving the goals of the National HIV/AIDS strategy in the United States: a closing window for success? *AIDS Behav*. 2012;16(6):1365–72.

[39] Holtgrave DR. Achieving and advancing the goals of the National HIV/AIDS strategy for the United States. *AIDS Behav*. 2015;19(2):211–3.

[40] Holtgrave DR. Development of year 2020 goals for the National HIV/AIDS Strategy for the United States. *AIDS Behav.*2014;18(4):638–43.

Objectives

By 2021, increase viral suppression to 80 percent of all persons with diagnosed HIV infection. In 2014, 56 percent of Texans with diagnosed HIV infection were virally suppressed.

By 2021, reduce disparities in viral suppression rates for people who inject drugs (IDU and MSM/IDU), Black MSM, Black women and youth (15-24) by 15 percent. The 2014 disparity rate for youth is 1.3, for Black MSM it is 1.2, and for Black women and people who inject drugs the disparity rate is 1.1. A 15 percent reduction in disparities would eliminate suppression disparities in Black MSM, Black women, and people who inject drugs; it would lower the disparity rate for youth to 1.1.

Strategies

Increase use of viral suppression as a key health indicator. The goal of HIV treatment is to, when possible, achieve viral suppression to improve health outcomes and reduce transmission risk. Public health and community stakeholders should ensure that individuals treating and supporting PLWH understand the importance of viral suppression and use approaches and tools to help PLWH monitor their viral load. Equally important, public and private health plans and other payers need to monitor viral suppression as a key quality outcome.

Expand access to HIV clinical care, including treatment drugs. Currently, nearly one in four Texans living with diagnosed HIV are not in medical care. At the same time, most systems of HIV care are operating at capacity. To ensure access to quality medical care, we must expand the capacity of current providers, identify new providers and expand access to ARV medications.

Expand access to medication and treatment for co-occurring and co-morbid conditions. PLWH often struggle with health concerns such as mental health and substance use conditions[41], chronic conditions associated with advancing age[42], risk behaviors such as smoking, and medication side effects[43]. Ensuring access to treatment for these conditions improves HIV treatment adherence and outcomes, as well as improving the quality of life and reducing mortality in PLWH due to causes other than HIV.

Create a focus on adherence that includes clients, clinicians, and supportive service providers. Maintaining medical adherence requires multiple support systems. Organizations and individuals responsible for the care and support of PLWH must understand the importance of adherence and their unique role in supporting adherence.

Promote models and innovative practices that increase viral suppression. Viral suppression requires adherence to medical regimens, including adherence to clinical visits. PLWH may struggle with adherence due to many issues. These include HIV stigma, lack of culturally relevant care, poor health literacy or poor health literacy practices as well as difficulty navigating health care systems. Best practices among HIV and non-HIV treatment systems that support medical adherence should be identified, disseminated, and integrated into care.

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[41] A good review of the literature on how mental health and substance abuse affect risk for HIV acquisition and treatment adherence and outcomes can be found here on the American Psychological Association's website. http://www.apa.org/pi/aids/resources/exchange/2013/01/comorbidities.aspx

[42] The University of California, San Francisco maintains a collection of journal articles, policy reports, and conference reports as well as provider support tools to promote excellence in delivery of HIV care to aging populations. The National Resource Center on LGBT Aging is also a good place to learn more about aging and HIV.

[43] AIDS.gov is a good place to start learning more about the most common short and long-term side effects of HIV treatment drugs and ways to cope with them.

Monitoring goals and objectives

Monitoring Progress

Monitoring of progress on objectives described in the Texas HIV Plan is a shared responsibility of the various individuals, organizations, and communities responsible for the development and realization of the strategies identified to meet the objectives. The DSHS HIV/STD responsibilities, goals, and strategies are guided by Texas statute, federal law, and programmatic and grant requirements. The DSHS HIV/STD program updates HIV data annually. These data can be used for setting baseline measures across the HIV continuum, describing relevant health disparities, and monitoring progress on objectives over time by the various participants in this plan. DSHS will annually review each goal and objective related to its programming performance objectives, and updated data to determine if progress is being made or if changes are necessary. DSHS uses work plans and implementation plans that guide implementation of objectives for which it is responsible. Additionally, management above the HIV/STD program will be updated quarterly with progress made on the work plan to determine if activities are occurring appropriately and achieving the proposed outcomes.

Involving stakeholders

The Texas HIV Syndicate serves as the formal statewide stakeholder body for Texas. The purpose of the Texas HIV Syndicate is to explore HIV related issues across the state and develop strategies to reduce HIV infections and improve the health outcomes of Texans living with HIV. The Texas HIV Syndicate meets in person twice a year with workgroups meeting as needed throughout the year.

DSHS will provide available data to the Texas HIV Syndicate each year to assist the group in analyzing progress on goals and objectives, and determine improvements over time.

Improving health outcomes

Annually, DSHS publishes regional level data summaries which include updates on HIV prevalence, new HIV diagnoses, and continuum data including health outcome data for priority populations. These summaries are provided for each of the twenty-six HIV Service Delivery Areas (HSDA) in the state.

Stakeholders and planning bodies across the state use the data summaries in discussion and exploration of health outcomes, health disparities and strategies for system improvements specific to each region. Additionally, DSHS uses these data summaries for entry points to further explore statewide health outcomes to identify possible best practices and the need for further exploration through data and stakeholder engagement.

Appendices

Appendix A – DSHS HIV/STD Program Implementation Plan

Appendix B – Integrated Statewide Coordinated Statement of Need

Appendix C – PLWH and Stakeholder Engagement

Appendix D – Texas HIV Workforce Resources and Needs

Appendix E – Data Access, Sources, and Systems

Appendix F – Texas Financial Resource Information

Appendix G – Expanded Epidemiologic Overview