DRAFT

Houston Area HIV Services Ryan White Planning Council

Comprehensive HIV Planning Committee

2:00 p.m., Thursday, October 10, 2019
Meeting Location: 2223 W. Loop South, Room 532
Houston, Texas 77027

AGENDA

I. Call to Order
   A. Welcome — Daphne L. Jones, Chair
   B. Moment of Reflection
   C. Adoption of the Agenda
   D. Approval of the Minutes

II. Public Comment and Announcements
(NOTE: If you wish to speak during the Public Comment portion of the meeting, please sign up on the clipboard at the front of the room. No one is required to give his or her name or HIV status. All meetings are audio taped by the Office of Support for use in creating the meeting minutes. The audiotape and the minutes are public record. If you state your name or HIV status it will be on public record. If you would like your health status known, but do not wish to state your name, you can simply say: "I am a person living with HIV", before stating your opinion. If you represent an organization, please state that you are representing an agency and give the name of the organization.

III. Epidemiological Profile
   A. Content feedback on Chapter 6 — Amber Harbolt, Office of Support
   B. Content feedback on National HIV Behavioral Surveillance (NHBS) Chapter — Dr. Imran Shaikh, HHD
   C. Content feedback on Houston Medical Monitoring Project (HMMP) Chapter

IV. Needs Assessment Progress Update

V. Announcements — Daphne L. Jones, Co-Chair

VI. Adjourn

Houston Area HIV Services Ryan White Planning Council

Comprehensive HIV Planning Committee
2:00 p.m., Thursday, September 12, 2019
Meeting Location: 2223 West Loop South, Room 532; Houston, Texas 77027

Minutes

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Daphne L. Jones, Co-Chair	Ted Artiaga, excused	Angela Marks, Goodwill Houston
Dawn Jenkins	Matilda Padilla, excused	Krupa Bhakta, Feik School of Pharmacy
Denis Kelly	Faye Robinson, excused	Camden Hallmark, HHD
Holly McLean	Datonye Charles, excused	Sha'Terra Johnson-Fairley, TRG
Rodney Mills	Ryan Clark, excused	Samantha Bowen, RWGA
Shital Patel	Elizabeth Drayden	Amber Harbolt, Office of Support
Imran Shaikh	Steven Nazarenus, excused	Diane Beck, Office of Support
Isis Torrente	Anthony Williams, excused	
Dominique Brewster		
Bianca Burley, phone		
Nancy Miertschin		
Steven Vargas		
Larry Woods		

Call to Order: Daphne L. Jones, Chair, called the meeting to order at 2:13 p.m. and asked for a moment of reflection.

Adoption of Agenda: ***Motion #1:*** *it was moved and seconded (Kelly, Torrente) to adopt the agenda.* **Motion carried.**

Approval of the Minutes: ***Motion #2:*** *it was moved and seconded (Torrente, Miertschin) to approve the August 8, 2019 minutes.* **Motion carried.** Abstentions: Burley, McLean, Patel, Woods

Public Comment and Announcements: None.

HHD Community Health Improvement Plan (CHIP) Update: Camden Hallmark, Houston Health Department, presented the attached PowerPoint.

Epidemiological Profile Content Feedback on Chapter 5: See attached. Harbolt reviewed the document and the committee made a few suggested changes to the text.

2019 Needs Assessment Progress: Harbolt said that as of this week, 569 surveys have been completed which is 97% of the minimum sample size. We need to get at least 588 surveys to be statistically significant which we did not get last time. We are currently working to set up a community survey site to reach out to individuals who are not Ryan White clients or may be out of care.

Announcements: Vargas mentioned the HIV Molecular Surveillance flyer in the meeting packet. Harbolt noted the letter from HHS also in the meeting packet. Kelly said that this Sunday the HIV and Aging Coalition will host a free 70's jazz and dance social event at Neon Boots from 5pm-9pm. See the flyer for more information.

Adjournment: The meeting was adjourned at 3:08 p.m.

Submitted by: Approved by:

_____ _____

Amber Harbolt, Office of Support Date Chair of Committee Date

JA = Just arrived at meeting
LR = Left room temporarily
LM = Left the meeting
C = Chaired the meeting

2019 Voting Record for Meeting Date September 12, 2019

MEMBERS	Motion #1: Agenda				Motion #2: Minutes			
	ABSENT	YES	NO	ABSTAIN	ABSENT	YES	NO	ABSTAIN
Daphne L. Jones, Chair				C				C
Dawn Jenkins		X				X		
Denis Kelly		X				X		
Holly McLean		X						X
Rodney Mills		X				X		
Matilda Padilla	X				X			
Shital Patel		X						X
Faye Robinson	X				X			
Imran Shaikh		X				X		
Isis Torrente		X				X		
Dominique Brewster		X				X		
Bianca Burley		X						X
Datonye Charles	X				X			
Ryan Clark	X				X			
Elizabeth Drayden	X				X			
Nancy Miertschin		X				X		
Steven Nazarenus	X				X			
Steven Vargas		X				X		
Anthony Williams	X				X			
Larry Woods		X						X

Chapter 6: Special Topics in HIV Epidemiology in the Houston Area

What is the HIV burden among specific populations in the Houston Area?

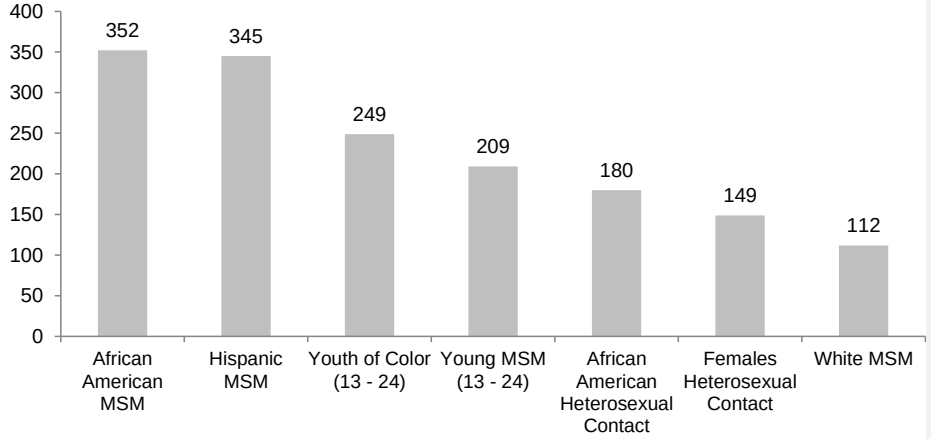
"HIV does not impact all Americans equally. While anyone can [acquire HIV], the HIV epidemic is concentrated in key populations and geographic areas."

National HIV/AIDS Strategy, Updated to 2020
July 2015

While all people are equally at risk for HIV transmission, some populations bear a disproportionate burden of new HIV transmissions and HIV prevalence.[1] Nationally, gay, bisexual and other men who have sex with men (MSM), transgender individuals, Black/African American individuals, Hispanics/Latinos individuals, and communities in the southern United States are the most disproportionately affected by the HIV epidemic.[1] Moreover, the number of new HIV transmissions increased nationally between 2010 and 2016 among 25-34 year olds and among Hispanic/Latino MSM, and remained stable yet high among all MSM, particularly among Black/African American MSM.[1]

(**Graph 1**) In the Houston Area, MSM, Black/African Americans, and Hispanic/Latinos had the largest numbers of new HIV diagnoses in 2017. At the subpopulation level, Black/African American MSM, Hispanic/Latino MSM, youth of color, and young MSM (13 – 24) were diagnosed in highest numbers.

GRAPH 1-Subpopulations with the Largest Numbers of New HIV Diagnoses in the Houston Eligible Metropolitan Area (EMA), 2017



Source: Texas eHARS. New diagnoses as of 12/31/17

[1]Centers for Disease Control and Prevention. *HIV Prevention Progress Report, 2019*, Revised July 2019.

Epidemiological profiles include information about HIV in populations that have been historically disproportionately impacted in the local community, so that the needs of these groups can be considered in HIV prevention and care planning. In this chapter, we will present data on new HIV diagnoses and people living with HIV for the following disproportionately impacted groups in the Houston Area:

1. African American/Black
2. Hispanic/Latinos
3. Homeless
4. Incarcerated
5. Person who injects drugs (PWID)
6. Male-male Sexual Contact (MSM), including MSM of Color (MSMOC) and Young MSM (MSM age 13 to 24) (YMSM)
7. Rural
8. Seniors (age 55+)
9. Transgender
10. Women of Childbearing Age (age 13 to 44)
11. Youth (age 13 to 24), including Adolescents (age 13 to 17)
12. Perinatal HIV Exposure in Infants

We also present data on co-occurring condition between HIV and two non-HIV conditions of epidemiologic significance:

1. HIV and Active TB Disease
2. HIV and Hepatitis B and C
3. HIV and Infectious Syphilis

African American/Black

(**Table 1 and Table 2**) In 2017, 533 African American/Black individuals were newly diagnosed with HIV in Houston/Harris County. When the jurisdiction of analysis was expanded to the Houston EMA, there were an additional 48 African American/Black persons newly diagnosed in 2017 for a total of 581.For both jurisdictions, African American/Black individuals made up roughly half of all new HIV diagnoses in that year. When compared to all new HIV diagnoses in Houston/Harris County in 2017 regardless of race, larger proportions of newly diagnosed African American/Black were (1) female (24.4% v. 18.2%) and (2) sex with male/sex with female transmission risk (31.0% v. 23.2%).

AFRICAN AMERICAN/BLACK TABLE 1- New Diagnoses of HIV and Persons Living with HIV in Houston/Harris County by Sex assigned at birth, Age, and Risk[a]

	New HIV[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total: All Races/Ethnicities	1,120	100.0%	23.9	25,132	100.0%	544.08
Total: African American/Black	533	100.0%	59.4	12,424	100.0%	1392.9
Sex at birth						
Male	403	75.6%	95.9	8,132	65.5%	1937.3
Female	130	24.4%	27.2	4,292	34.5%	908.92
Age						
0 - 12	0	0.0%	0.0	183	1.5%	*
13 - 24	127	23.8%	38.9	3,409	27.4%	1025.5[e]
25 - 34	195	36.6%	128.9	4,233	34.1%	2846.8
35 - 44	107	20.1%	85.8	2,843	22.9%	2291.6
45 - 54	64	12.0%	57.5	1,291	10.4%	1178.0
55 - 64	35	6.6%	35.4	399	3.2%	410.04
65+	5	0.9%	5.8	66	0.5%	82.613
Transmission Risk[f]						
Male-male sexual contact (MSM)	341	64.0%	*	5,412	43.6%	*
Person who injects drugs (PWID)	22	4.1%	*	1,509	12.1%	*
MSM/PWID	5	0.9%	*	442	3.6%	*
Sex with Male/Sex with Female	165	31.0%	*	4,866	39.2%	*
Perinatal transmission	0	0.0%		172	1.4%	
Other	0	0.0%	*	23	0.2%	*

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016

[d]Rate per 100,000 population. Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates and 2016 American Community Survey 1-Year Estimates

[e]Rate was calculated for age group 0-24 years

[f] People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

*Population data are not available for 0-12 age group and transmission risks; therefore, it is not possible to calculate rate by risk

Roughly half of all people *living* with HIV in Houston/Harris County and in the Houston EMA is also African American at 12,424 and 13,830 persons, respectively. When compared to all people living with HIV in the Houston EMA in 2017 regardless of race, larger proportions of HIV positive African Americans were again (1) female at birth (34.8% v. 25.0%) and (2) with heterosexual transmission risk (39.3% v. 29.3%). However, prevalence rates remain higher among African males at birth at 1,841 for every 100,000 population.

AFRICAN AMERICANS/BLACK TABLE 2-New Diagnoses of HIV and Persons Living with HIV in the Houston EMA by Sex at Birth, Age, and Risk[a]

	New HIV Diagnoses[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total PLWH	1,234	100%	20.0	28,225	100%	457.8
Total African American PLWH	581	100%	47.1	13,830	100%	1265.1
Sex at birth						
Male	434	74.7%	88.5	9,023	65.2%	1840.7
Female	147	25.3%	26.6	4,807	34.8%	870.5
Age						
0 - 12	N	N	N	36	0.3%	19.1
13 - 24	141	24.3%	26.8	720	5.2%	136.7
25 - 34	211	36.3%	140.2	3,170	22.9%	2106.2
35 - 44	115	19.8%	76.4	1,932	14.0%	1283.6
45 - 54	68	11.7%	49.5	3,554	25.7%	2586.6
55 - 64	39	6.7%	31.7	2,378	17.2%	1932.1
65+	7	1.2%	7.0	719	5.2%	719.1
Transmission Risk[e,f]						
Male-male sexual contact (MSM)	352	60.6%	*	6,121	44.3%	*
Person who injects drugs (PWID)	26	4.5%	*	1,585	11.5%	*
MSM/PWID	5	0.9%	*	471	3.4%	*
Sex with Male/Sex with Female	180	31.0%	*	5,432	39.3%	*
Perinatal transmission	N	N	*	214	0.8%	*
Other	N	N	*	7	0.1%	*

[a]Sources: Texas eHARS. New Diagnoses and Diagnosed PLWH as of 12/31/17.

[b]HIV = People diagnosed with HIV with residence at diagnosis in the Houston EMA

[d]PLWH at end of 2017 = People living with HIV in the Houston EMA at the end of 2017

[e]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2017 Population Projection.

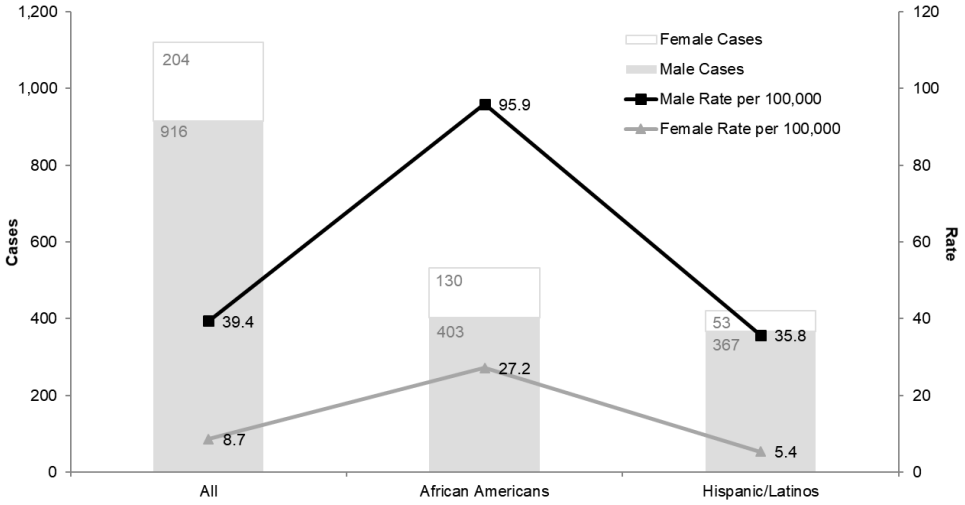
[f]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

[f]Cases for new diagnoses data by transmission risk do not comprise the total African American new diagnoses case number.

(**Graph 1**) A subpopulation analysis of new HIV diagnoses by race/ethnicity and sex assigned at birth in Houston/Harris County in 2017 reveals that the highest rate of new HIV cases occurred in African American/Black males. In 2017, their rate of new HIV diagnoses in Houston/Harris County was 100 cases for every 100,000 African American/Black males in the jurisdiction compared to 39 per 100,000 for all males in Houston/Harris County and 29 per 100,000 for African American/Black females in Houston/Harris County.

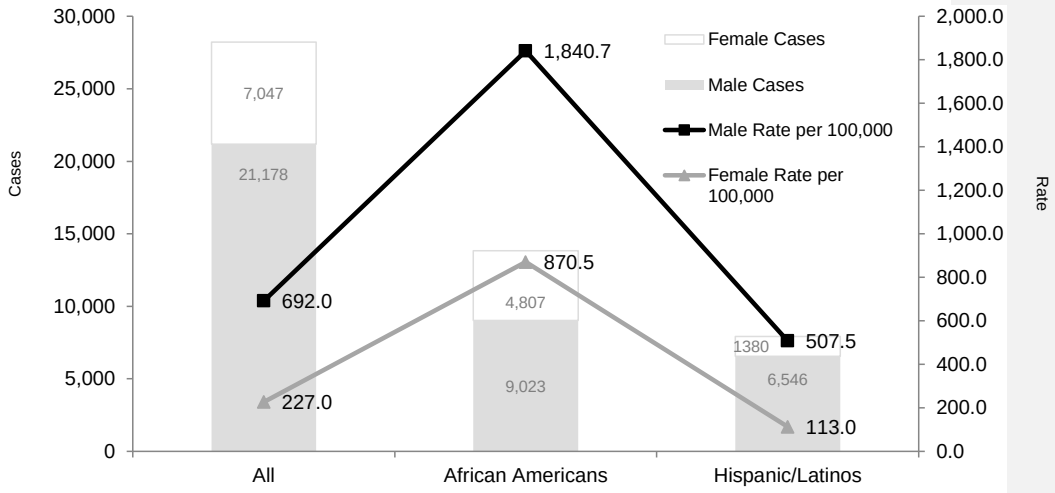
(**Graph 2**) A race/ethnicity and sex at birth subpopulation analysis of people living with HIV in the Houston EMA in 2017 reveals that just under third (32%) of all people living with HIV are African American males at birth and 17% of all people living with HIV in the Houston EMA are African American females at birth.

AFRICAN AMERICAN/BLACK GRAPH 1- Number of Cases and Rates of New HIV Diagnoses in *Houston/Harris County* by Sex assigned at birth and Race/Ethnicity, 2017



Source: Texas eHARS, analyzed by the Houston Health Department

AFRICAN AMERICANS GRAPH 2-Number of Cases and Rates of People Living with HIV in the *Houston EMA* by Sex at birth and Race/Ethnicity, 2017



Source: Texas eHARS. Diagnosed PLWH as of 12/31/17.

Hispanic/Latinos

(**Table 1 and Table 2**) In 2017, 420 Hispanic/Latinos were diagnosed with HIV in Houston/Harris County. When the jurisdiction of analysis is expanded to the Houston EMA, there were an additional 40 Hispanic/Latinos newly diagnosed in 2017 for a total of 460. For both jurisdictions, Hispanic/Latinos were roughly 37% of all new HIV diagnoses in that year. When compared to all new HIV diagnoses in Houston/Harris County in 2017 regardless of race, larger proportions of newly diagnosed Hispanic/Latinos were (1) male (87.4% v. 81.8%) and (2) MSM (79.8% v. 71.7%).

HISPANIC/LATINOS TABLE 1- New Diagnoses of HIV and Persons Living with HIV in Houston/Harris County by Sex assigned at birth, Age, and Risk[a]

	New HIV[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total: All Races/Ethnicities	1,120	100.0%	23.9	25,132	100.0%	544.1
Total: Hispanic/Latino	420	100.0%	20.9	7,132	100.0%	364.6
Sex assigned at birth						
Male	367	87.4%	35.8	5,921	83.0%	593.3
Female	53	12.6%	5.4	1,211	17.0%	126.4
Age						
0 - 24[e]	98	23.3%	10.9	1,514	21.2%	*
25 - 34	173	41.2%	53.4	3,004	42.1%	165.3
35 - 44	82	19.5%	26.9	1,731	24.3%	942.8
45 - 54	50	11.9%	21.2	658	9.2%	582.1
55 - 64	13	3.1%	8.6	186	2.6%	289.8
65+	4	1.0%	3.7	39	0.5%	129.3
Transmission Risk[f]						
MSM	335	79.8%	*	4,766	66.8%	*
PWID	8	1.9%	*	313	4.4%	*
MSM/PWID	5	1.2%	*	230	3.2%	*
Sex with Male/Sex with Female	71	16.9%	*	1,743	24.4%	*
Perinatal transmission/Other	1	0.2%	*	80	1.1%	*

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]New HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016

[d]Rate per 100,000 population. Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates and 2016 American Community Survey 1-Year Estimates

[e]Age group 0-12 years was combined with 13-24 years since 0-12 years category had less than 5 individuals and could not be reported

[f]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

*Population data are not available for 0-12 age group and transmission risk; therefore, it is not possible to calculate rate by risk

Roughly 28% of all people *living* with HIV in Houston/Harris County and in the Houston EMA is also Hispanic/Latino at 7,132 and 7,926 persons, respectively. This is an increase of 22%, up from 23% in 2011. When compared to all people living with HIV in the EMA in 2017 regardless of race, larger proportions of HIV positive Hispanic/Latinos were again (1) male (82.6% v. 75.0%) and (2) MSM (66.8% v. 57.2%).

HISPANIC/LATINOS TABLE 2-New Diagnoses of HIV and Persons Living with HIV in the Houston EMA by Sex at Birth, Age, and Risk[a]

	New HIV Diagnoses[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total PLWH	1,234	100%	20.0	28,225	100%	457.8
Total Hispanic/Latino	460	100.0%	18.3	7,926	100.0%	315.6
Sex at birth						
Male	400	87.0%	31.0	6,546	82.6%	507.5
Female	60	13.0%	4.9	1,380	17.4%	113.0
Age						
0 - 12	N	N	N	17	0.1%	3.0
13 - 24	108	23.5%	21.1	366	4.6%	71.3
25 - 34	190	41.3%	42.7	1,731	21.8%	389.2
35 - 44	85	18.5%	21.8	2,243	28.3%	574.6
45 - 54	56	12.2%	19.5	2,166	27.3%	753.6
55 - 64	18	3.9%	10.0	1,056	13.3%	584.6
65+	N	N	N	346	4.4%	279.7
Transmission Risk[e,f]						
Male-male sexual contact (MSM)	345	75.0%	*	5,295	66.8%	*
Person who injects drugs (PWID)	11	2.4%	*	352	4.4%	*
MSM/PWID	10	2.2%	*	247	3.1%	*
Sex with Male/Sex with Female	77	16.7%	*	1,943	24.5%	*
Perinatal transmission	N	N	*	82	0.3%	*
Other	N	N	*	7	0.1%	*

[a]Sources: Texas eHARS. New Diagnoses and Diagnosed PLWH as of 12/31/17.

[b]HIV = People diagnosed with HIV with residence at diagnosis in the Houston EMA

[d]PLWH at end of 2017 = People living with HIV in the Houston EMA at the end of 2017

[e]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2017 Population Projection.

[f]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

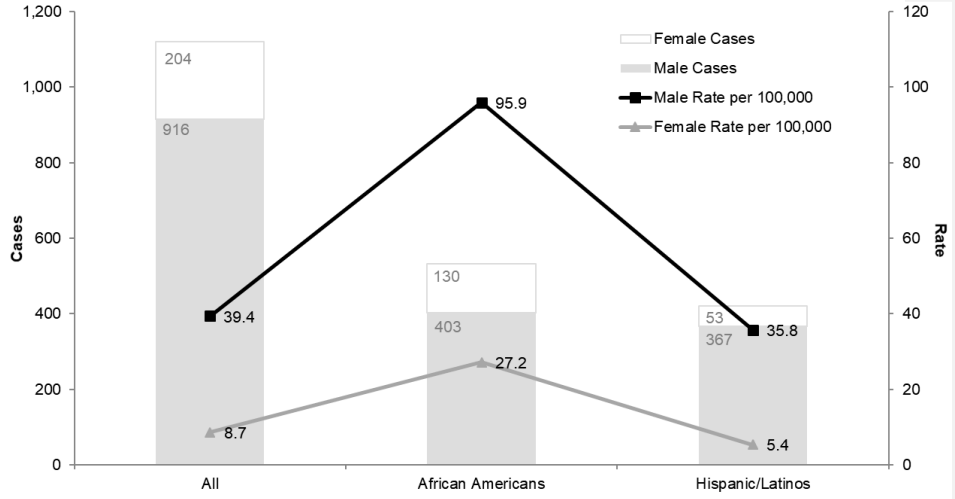
[f]Cases for new diagnoses data by transmission risk do not comprise the total Hispanic/Latino new diagnoses case number.

[N]Data has been suppressed to meet cell size limit of 5

(**Graph 1**) A subpopulation analysis of new HIV diagnoses by race/ethnicity and sex assigned at birth in Houston/Harris County in 2017 reveals that the highest rate of new HIV cases occurred in African American/Black males at birth. In 2017, Hispanic/Latino males at birth had a rate of new HIV diagnoses of 36 cases for every 100,000 Hispanic/Latino males in Houston/Harris County compared to 100 per 100,000 for African American/Black males, 39 per 100,000 for all males, and 5 per 100,000 for Hispanic/Latino females.

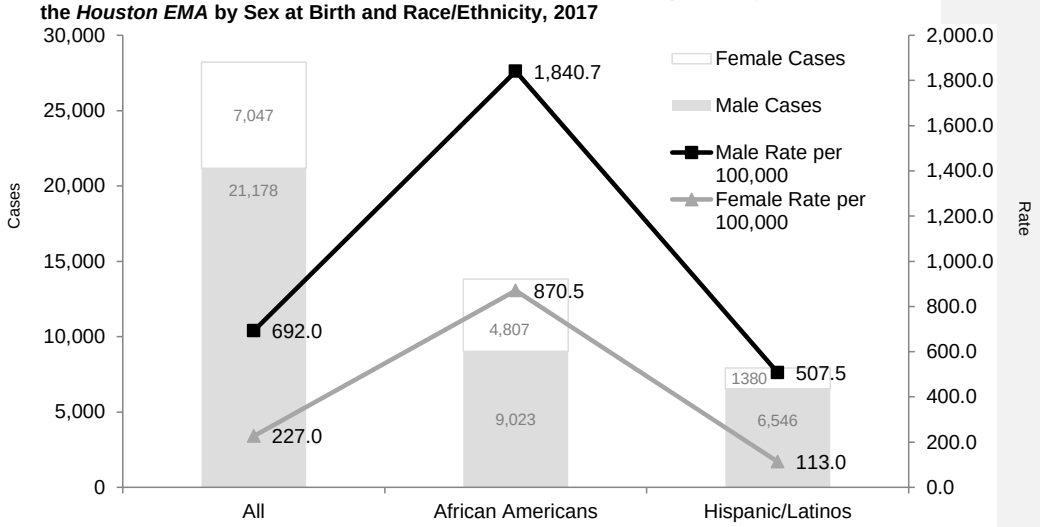
(**Graph 2**) A race/ethnicity and sex at birth subpopulation analysis of people living with HIV in the Houston EMA in 2017 reveals that 23% of all people living with HIV are Hispanic/Latino males. Almost 5% of all people living with HIV in the Houston EMA are Hispanic/Latino females. The highest single proportion of people living with HIV in the Houston EMA is African American males at 32%.

HISPANIC/LATINOS GRAPH 1- Number of Cases and Rates of New HIV Diagnoses in *Houston/Harris County* by Sex assigned at birth and Race/Ethnicity, 2017



Source: Texas eHARS, analyzed by the Houston Health Department

HISPANIC/LATINOS GRAPH 2-Number of Cases and Rates of People Living with HIV in the *Houston EMA* by Sex at Birth and Race/Ethnicity, 2017



Source: Texas eHARS. Diagnosed PLWH as of 12/31/17.

Homeless

A point-in-time (PIT) count of sheltered and unsheltered people experiencing homelessness is conducted annually in most major cities and towns across the country.[1] The purpose of the count is to approximate the number of homeless individuals in a defined geographic area according to the Department of Housing and Urban Development (HUD) definition of homelessness, which is: those staying in emergency shelter, transitional housing, or safe haven programs with beds dedicated for homeless persons or those persons who are unsheltered (i.e., staying in a place not meant for human habitation)] on a single night.[1] Commonly referred to as a homeless enumeration or count, the last PIT count for the Houston Area took place in January 2019 in Houston and Pasadena in Harris County, along with Fort Bend and Montgomery Counties.[1]

According to the PIT count, there were 3,938 people experiencing homelessness in the enumeration area in 2019. [1] This calculates into 0.065% of the total population in the area, or one out of every 1,541 residents, experiencing homelessness in 2019. [1] By comparison, the PIT count found one out of every 1,446 area residents experienced homelessness in 2018. [1]

Of those currently homeless in PIT count area, it is estimated that one out of every 35, or 2.9%, has been diagnosed with HIV.[1]

(**Table 1**) In 2017, 2,124 persons who received HIV care through the Ryan White HIV/AIDS Program in the Houston EMA were indicated as homeless. Of these, 79.5% were male at birth, 20.5% were female at birth, and 1.2% were transgender. In addition, 17.4% were White, 57.1% were Black/African American, and 23.4% were Hispanic/Latino. Two-thirds (66.9%) were age 35 and over while 4.9% were age 13 to 24. Forty percent (40.1%) indicated male-to-male sexual contact (MSM), 34.0% indicated sex with male/sex with female contact, and 22.3% reported no known risk or other risk.

Compared to the proportions of all people in HIV medical care in the Houston EMA in 2017, higher proportions of homeless individuals in care were male at birth (+4.9%), more Black/African American (+8.8%), and younger (+7.8% more persons under age 35) than in the general in care population in the EMA. Due to differences in data calculation methodology, reported risk cannot be compared.

(**Table 2**) In 2017, the proportion of out of care homeless people living with HIV in the Houston EMA was 2.6 times the proportion of non-homeless persons living with HIV. Fifty-one percent (51%) of homeless persons living with HIV in the EMA were not in HIV care in 2017. This is a 17% than for the state as a whole at 43% of homeless people living with HIV in Texas.

[1]Houston, Pasadena, Harris, Fort Bend, and Montgomery Counties 2019 Point-In-Time Homeless Count & Survey Independent Analysis 2019. Prepared by Catherine Troisi, Ph.D., UTHealth School of Public Health and the Coalition for the Homeless of Houston/Harris County for the Way Home Continuum of Care, April 2019

HOMELESS TABLE 1-People Receiving HIV Care in the Houston EMA by Sex at Birth and Transgender, Race/Ethnicity, Age, Risk, and Homeless Status, 2017

	Homeless Persons in the Ryan White HIV/AIDS Program[a]		All People in HIV Care[b]
	Cases	%	%
Total	2,124	100.0%	100.0%
Sex at Birth and Transgender			
Male (at birth)	1,688	79.5%	74.6%
Female (at birth)	436	20.5%	25.4%
Transgender[c]	25	1.2%	1.2%
Race/Ethnicity			
White	369	17.4%	19.4%
Black/African American	1,212	57.1%	48.3%
Hispanic/Latino	498	23.4%	27.9%
Other/Multiracial	45	2.1%	4.4%
Age			
0 - 12	9	0.4%	0.3%
13 - 24	104	4.9%	4.5%
25 - 34	588	27.7%	20.4%
35 - 44	538	25.3%	23.1%
45 - 54	505	23.8%	27.5%
55 - 64	332	15.6%	18.6%
65+	48	2.3%	5.6%
Transmission Risk[c]			
Male-male sexual contact (MSM)	869	40.1%	57.7%
Person who injects drugs (PWID)	43	2.0%	8.1%
MSM/PWID	12	0.6%	3.9%
Sex with Male/Sex with Female	736	34.0%	29.1%
Perinatal transmission	23	1.1%	1.2%
Other	483	22.3%	0.1%

[a]Source: Harris County Public Health, Ryan White Grant Administration. Centralized Patient Care Data Management System (CPCDMS) Reporting Period: January 1, 2018 - December 31, 2018

[b]Source: Texas Department of State Health Services, Unmet Need, 2017. Data reflect persons in HIV care not limited to the Ryan White HIV/AIDS Program.

[c]Homeless program clients who are transgender was calculated using the total proportion of all RW transgender clients in 2018.

[c]Total case number does not add to 2,124 due to multiple transmission risk factors.

HOMELESS TABLE 2-Percent of People Living with HIV in the Houston EMA with Unmet Need for HIV Care by Type of Residence, 2017

	Houston EMA	Texas
Total Unmet Need	24.6%	23.4%
All Housed (house, apartment, etc.)	24.0%	22.3%
Homeless	50.7%	43.4%
In Jail	49.2%	39.1%
In Temporary Housing	90.0%	80.0%

Source: Texas Department of State Health Services, Homeless, Insurance, and Poverty, 2017.

Incarcerated

(**Table 1**) The average number of people incarcerated in public jail facilities in the Houston EMA in between October 2018 and September 2019 was 10,914. This equates to a rate of incarceration of 1.74 persons incarcerated for every 1,000 persons residing in the EMA, a rate lower than the statewide rate of 2.12 persons incarcerated for every 1,000 Texas residents. Within counties in the EMA, the incarceration rate is highest in Chambers County at 2.94 persons incarcerated for every 1,000 residents while the volume of incarcerated persons is highest in Houston/Harris County at 8,793 total persons incarcerated.

INCARCERATION TABLE 1-Number and Rate of Incarcerated Persons in the Houston EMA by County, 2019[a]

County	Total Population	Average Daily Incarcerated Population	Incarceration Rate[b]
Chambers	42,454	125	2.94
Fort Bend	787,858	765	0.97
Harris	4,698,619	8,793	1.87
Liberty	86,323	216	2.50
Montgomery	590,925	940	1.59
Waller	53,126	75	1.41
EMA Total	6,259,305	10,914	1.74
Texas Total	28,737,131	60,947	2.12

[a]Source: Texas Commission on Jail Standards, Incarceration Rate Report - Highest to Lowest, September 1, 2019
[b]Rate is per 1,000 population

(**Table 2**) In 2017, 43 persons were incarcerated at the time of their HIV diagnosis in Houston/Harris County. This represents 3.8% of all new HIV diagnoses reported in the jurisdiction in that year and 0.5% of the average daily incarcerated population in Houston/Harris County.

Of those incarcerated at the time of HIV diagnosis, 81.4% were male, 62.8% were African American/Black, and 58.1% reported male-male sexual contact (MSM). When compared to all new HIV diagnoses in Houston/Harris County in 2017, larger proportions of newly diagnosed inmates were African American/Black (62.8% v. 47.6%), and of younger age.

INCARCERATED TABLE 2- New Diagnoses of HIV in Houston/Harris County by Sex assigned at birth, Race/Ethnicity, Age, Risk, and Incarceration Status, 2017[a]

	New HIV, Incarcerated[b]		New HIV, All Persons	
	Cases	%	Cases	%
Total	43	100.0%	1,120	100.0%
Sex assigned at birth				
Male	35	81.4%	916	81.8%
Female	8	18.6%	204	18.2%
Race/Ethnicity				
White	5	11.6%	125	11.2%
African American/Black	27	62.8%	533	47.6%
Hispanic/Latino	11	25.6%	420	37.5%
Multiple Races	0	0	19	1.7%
Other	0	0	23	2.1%
Age				
0 - 12	0	0.0%	1	0.1%
13 - 24	11	25.6%	252	22.5%
25 - 34	18	41.9%	420	37.5%
35 - 44	10	23.3%	221	19.7%
45+	4	9.3%	221	19.7%
Transmission Risk[c]				
MSM	25	58.1%	803	71.7%
Sex with Male/Sex with Female	10	23.3%	260	23.2%
Other adult risk	8	18.6%	57	5.1%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017. This dataset reflects individuals who were incarcerated at the time of their HIV diagnosis.

[c]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

(**Table 3**) The Ryan White HIV/AIDS Program in the Houston EMA supports pre-discharge planning services to people living with HIV who are incarcerated at the Harris County Jail. These services connect individuals living with HIV who are leaving incarceration to community-based HIV care, treatment, and support services at reentry. In 2018, 789 individuals received this service while incarcerated at the Harris County Jail.

Of these, 84.5% were male, 15.5% were female, and 1.9% were transgender. In addition, 15.7% were White, 70.3% were Black/African American, and 13.1% were Hispanic/Latino. Just under two-thirds (60.4%) were age 35 and over, and 7.1% were age 13 to 24. Most (44.9%) reported sex with male/sex with female contact, and 20.9% reported no known risk or other risk.

INCARCERATED TABLE 3-Persons Receiving HIV Care in the Houston EMA by Sex at Birth and Transgender, Race/Ethnicity, Age, Risk, and Incarceration Status, 2018

	Incarcerated Persons in the Ryan White HIV/AIDS Programa		All People in HIV Careb
	Cases	%	%
Total	789	100.0%	100.0%
Sex at Birth and Transgender			
Male (at birth)	667	84.5%	74.6%
Female (at birth)	122	15.5%	25.4%
Transgender	15	1.9%	1.2%
Race/Ethnicity			
White	124	15.7%	19.4%
African American	555	70.3%	48.3%
Hispanic/Latino	103	13.1%	27.9%
Other/Multiple Races	7	0.9%	4.4%
Age			
0 - 12	0	0.0%	0.3%
13 - 24	56	7.1%	4.5%
25 - 34	256	32.4%	20.4%
35 - 44	193	24.5%	23.1%
45 - 54	190	24.1%	27.5%
55 - 64	84	10.6%	18.6%
65+	10	1.3%	5.6%
Transmission Riskc			
Male-male sexual contact (MSM)	233	29.5%	57.7%
Person who injects drugs (PWID)	31	3.9%	8.1%
MSM/PWID	6	0.8%	3.9%
Heterosexual contact	354	44.9%	29.1%
Perinatal transmission	8	1.0%	1.2%
Other/unknown	165	20.9%	0.1%

aSource: Harris County Public Health, Ryan White Grant Administration. Centralized Patient Care Data Management Sysytem (CPCDMS) Reporting Period: January 1, 2018 - December 31, 2018. The incarceration location for this dataset is the Harris County Jail. The service received is Early Intervention Services for pre-discharge planning and linkage to HIV primary medical care post-release. HIV primary medical care while incarcerated is provided by another funding source.

bSource: Texas Department of State Health Services, Unmet Need, 2017. Data reflect persons in HIV care not limited to the Ryan White HIV/AIDS Program.

cCases with unknown risk have been redistributed for the denominator of all persons in HIV care only

(**Table 4**) In 2017, 49.2% of people living with HIV who were incarcerated in jail in the Houston EMA had no record of HIV medical care. This is 26% higher than the state as a whole at 39.1% of incarcerated people living with HIV with no record of HIV medical care. The unmet need percentage for incarcerated individuals is nearly two times higher than the general EMA population.

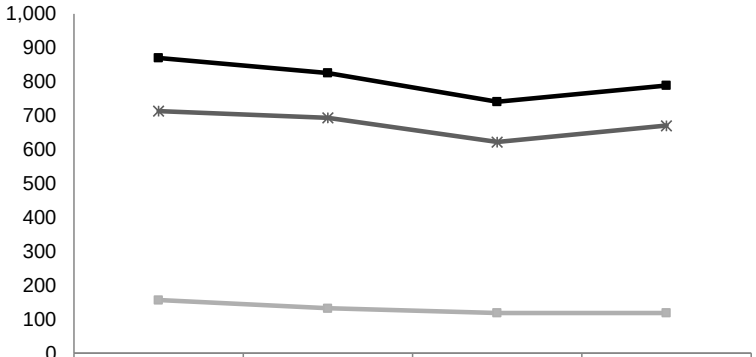
INCARCERATED TABLE 4-Percent of People Living with HIV in the Houston EMA with Unmet Need for HIV Care by Type of Residence, 2017

	Houston EMA	Texas
Total Unmet Need	24.6%	23.4%
All Housed (house, apartment, etc.)	24.0%	22.3%
Homeless	50.7%	43.4%
In Jail	49.2%	39.1%
In Temporary Housing	90.0%	80.0%

Source: Texas Department of State Health Services, Homeless, Insurance, and Poverty, 2017.

(**Graph 1**) The number of people living with HIV receiving pre-discharge planning in the Harris County Jail through the Ryan White HIV/AIDS Program has remained stable over a four year period at an average of 807 clients served per year. The number of male at birth clients has consistently exceeded the number of female at birth clients. In total, 3,226 clients were provided pre-discharge planning during this four year period.

INCARCERATED GRAPH 1-Number of People Receiving Pre-Discharge Planning Services through the Ryan White HIV/AIDS Program in the Harris County Jail by Sex at Birth, 2015 to 2018



	2015	2016	2017	2018
Male	713	694	622	671
Female	157	132	119	118
Total	870	826	741	789

Source: The Houston Regional HIV/AIDS Resource Group, AIDS Regional Information and Evaluation System (ARIES), 2015-2018

People Who Injects Drugs (PWID)

(**Table 1 and Table 2**) In 2017, there were 37 cases of new HIV and 38 new cases of stage 3 HIV diagnosed in individuals with a history of injection drug use in Houston/Harris County. When the jurisdiction of analysis is expanded to the Houston EMA, there were an additional 37 new cases of HIV in PWIDs and an additional 33 new cases of stage 3 HIV in PWIDs. PWID risk were the only group in both jurisdictions with more new cases of stage 3 HIV than new cases of HIV diagnosed in 2017. In general, when PWIDs were newly diagnosed with HIV in Houston/Harris County and in the EMA in 2017, they were male, African American/Black, and over age 25.

Commented [HA(JO1]: Data is incorrect for newly diagnosed PWID and PWID prevalence by age. Submitting request to DSHS for updated data.

The same general demographic trends are observed in the total numbers of PWIDs living with HIV in both jurisdictions. In Houston/Harris County, males comprise 55.8% of all PWIDs living with HIV, Africans Americans are 69.0%, and people over age 25 are 85.2%. In the EMA, males are 70.7% of all PWIDs living with HIV, Africans Americans are 62.0%, and people over age 35 are 87.8%. Again, in general, PWIDs living with HIV in Houston/Harris County and in the EMA are male, African American/Black, and over age 35.

Commented [HA(JO2]: Data is incorrect for newly diagnosed PWID and PWID prevalence by age. Submitting request to DSHS for updated data.

PWID TABLE 1- New Diagnoses of HIV and Persons Living with HIV in Houston/Harris County by Sex assigned at birth, Race/Ethnicity, and Age[a]

	New HIV[b]		New Stage 3 HIV[c]		Persons Living with HIV[d]	
	Cases	%	Cases	%	Cases	%
Total: PWID[e]	37	100.0%	38	100.0%	2,186	100.0%
Sex assigned at birth						
Male	20	54.1%	21	55.3%	1,220	55.8%
Female	17	45.9%	17	44.7%	966	44.2%
Race/Ethnicity						
White	6	16.2%	3	7.9%	292	13.4%
African American/Black	22	59.5%	29	76.3%	1,509	69.0%
Hispanic/Latino	8	21.6%	5	13.2%	313	14.3%
Other/Multiple Race	1	2.7%	1	2.6%	72	3.3%
Age						
0 - 12	0	0.0%	0	0.0%	0	0.0%
13 - 24	4	10.8%	5	13.2%	321	14.7%
25 - 34	12	32.4%	9	23.7%	719	32.9%
35 - 44	8	21.6%	8	21.1%	722	33.0%
45 - 54	7	18.9%	10	26.3%	318	14.5%
55+	6	16.2%	6	15.8%	106	4.8%
Total: All Persons	1,120	100.0%	591	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

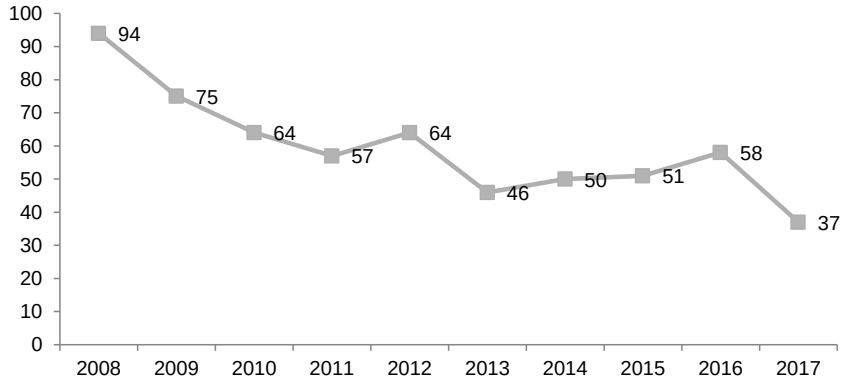
[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017
[c]Stage 3 HIV = People diagnosed with stage 3 HIV with residence at diagnosis in Houston/Harris County in 2017

[d]PLWH at end of 2016= People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016
[e]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

IDU TABLE 2-New Diagnoses of HIV and People Living with HIV in the Houston EMA by Sex at Birth, Race/Ethnicity, and Age[a], 2017						
	New HIV[b]		New Stage 3 HIV[c]		People Living with HIV[d]	
	Cases	%	Cases	%	Cases	%
Total PWID[e]	46	100.0%	48	100.0%	2,368	100.0%
Sex						
Male	76	165.2%	78	162.5%	1,290	54.5%
Female	27	58.7%	34	70.8%	1,078	45.5%
Race/Ethnicity						
White	15	32.6%	20	41.7%	343	14.5%
African American	54	117.4%	68	141.7%	1,585	66.9%
Hispanic/Latino	29	63.0%	23	47.9%	352	14.9%
Other/Multiple Race	N	N	N	N	88	3.7%
Age						
0 - 12	N	N	N	N	N	N
13 - 24	11	23.9%	N	N	37	1.6%
25 - 34	18	39.1%	N	N	265	11.2%
35 - 44	26	56.5%	29	60.4%	916	38.7%
45 - 54	28	60.9%	36	75.0%	1,357	57.3%
55 - 64	17	#VALUE!	15	#VALUE!	769	#VALUE!
55+	17	37.0%	15	31.3%	769	32.5%
Total All Persons	1,234	100.0%	578	100.0%	28,225	100.0%

(**Graph 1**) Over time, the number of PWIDs newly diagnosed with HIV in Houston/Harris County has declined, from a high of 94 in 2008 to the current low of 37 for 2017.

PWID GRAPH 1- Number of New HIV Diagnoses in Persons Who Inject Drugs in Houston/Harris County, 2008 to 2017



Source: Texas eHARS, analyzed by the Houston Health Department

MSM

Male-Male Sexual Contact (MSM), including MSM of Color (MSMOC)

(**Table 1**) In 2017, 803 persons newly diagnosed with HIV in Houston/Harris County were identified as having male-male sexual contact (MSM). Of these, a majority (87.8%) was MSM of color (MSMOC), with 42.5% African American/Black, 41.7% Hispanic/Latino, and 3.6% Other/Multiple Races. White MSM made up 12.2% of new HIV diagnoses among MSM that year. In total, MSM were 71.7% of all new HIV diagnoses in Houston/Harris County in 2017, and African American/Black MSM were 30.4% of all new diagnoses. Most newly diagnosed MSM in Houston/Harris County were under age 35 (67.4%), and 26.2% were young MSM (MSM between the ages of 13 and 24).

When HIV prevalence among MSM is analyzed, there are demographic differences. For example, of all MSM living with HIV in Houston/Harris County, a smaller percentage is MSMOC (75.1%) than are newly diagnosed MSM. Although 24.9% of people living with HIV are White, new HIV diagnoses have increasingly been concentrated among people of color. A similar age distribution is seen in prevalent cases in MSM, with 63.8% of PLWH are MSM in Houston/Harris County under age 35.

MSM TABLE 1- New Diagnoses of HIV and Persons Living with HIV in Houston/Harris County by Race/Ethnicity and Age[a]

	New HIV[b]		Persons Living with HIV[c]	
	Cases	%	Cases	%
Total: MSM[d]	803	100.0%	14,307	100.0%
Race/Ethnicity				
White	98	12.2%	3,558	24.9%
African American/Black	341	42.5%	5,412	37.8%
Hispanic/Latino	335	41.7%	4,766	33.3%
Multiple Race	12	1.5%	351	2.5%
Other	17	2.1%	220	1.5%
Age				
0 - 12	0	0.0%	0	0.0%
13 - 24	210	26.2%	3,532	24.7%
25 - 34	331	41.2%	5,594	39.1%
35 - 44	141	17.6%	3,450	24.1%
45 - 54	81	10.1%	1,347	9.4%
55 - 64	34	4.2%	331	2.3%
65+	6	0.7%	53	0.4%
Total: All Persons	1,120	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]New HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH = People living with HIV, including stage 3 HIV, in Houston/Harris County in 2016

[d]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

(**Table 2**) Similar trends are seen when the jurisdiction of analysis is expanded to the Houston EMA. In 2017, 870 people newly diagnosed with HIV were identified as MSM (an increase of 67 cases from the number in Houston/Harris County). Of these, a majority (79.7%) was also MSM of color (MSMOC), with White MSM comprising 20.3% of new HIV diagnoses among MSM in that year. In total, MSM were 62.7% of all new HIV diagnoses in the EMA in 2011, and African American MSM were 25.6% of all new HIV diagnoses in the EMA in 2011. Most newly diagnosed MSM in the EMA were under age 35 (57.1%), and 25.6% were young MSM (MSM between the ages of 13 and 24).

Again, demographic differences are seen between prevalence of HIV among MSM and newly diagnosed MSM in the EMA. For example, a smaller proportion of all MSM living with HIV in the EMA is MSMOC (65.0% vs. 79.7%), and half the proportion is under age 35 (24.8% vs. 57.1%). Also, young MSM are 6.0% of prevalent cases compared to 25.6% of newly diagnosed MSM in the EMA.

Commented [HA(JO3]: Data is incorrect for newly diagnosed MSM. Submitting request to DSHS for updated data.

MSM TABLE 2-New Diagnoses of HIV and Persons Living with HIV (2017) in the *Houston EMA* by Race/Ethnicity and Age[a], 2017

	New Diagnoses[b]		Persons Living with HIV[c]	
	Cases	%	Cases	%
Total MSM[d]	870	100.0%	16,133	100.0%
Race/Ethnicity				
White	149	17.1%	4,054	25.1%
African American	381	43.8%	6,121	37.9%
Hispanic/Latino	377	43.3%	5,294	32.8%
Other/Multiple Race	47	5.4%	663	4.1%
Age				
0 - 12	0	0.0%	0	0.0%
13 - 24	214	24.6%	821	5.1%
25 - 34	263	30.2%	4,228	26.2%
35 - 44	183	21.0%	3,486	21.6%
45 - 54	107	12.3%	4,072	25.2%
55 - 64	42	4.8%	2,708	16.8%
65+	42	4.8%	817	5.1%
Total All Persons	1,234	100.0%	28,225	100.0%

[a]Source: Texas eHARS. New diagnoses and diagnosed PLWH as of 12/31/17

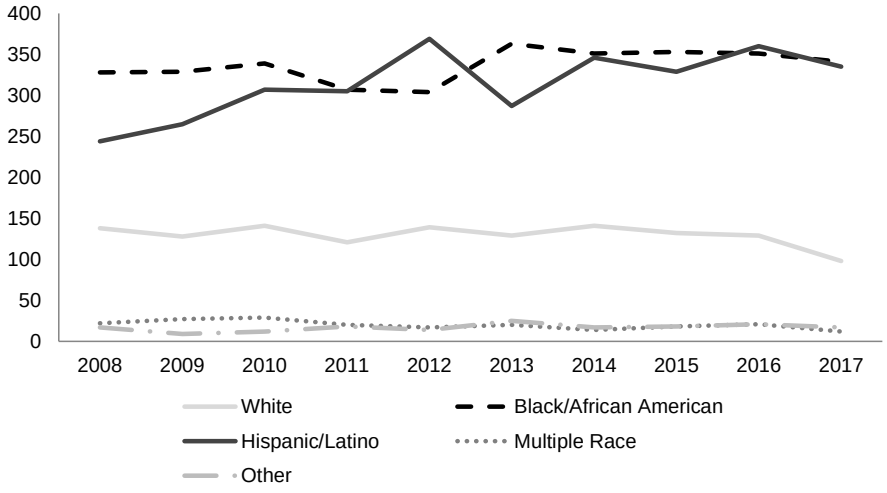
[b]New Diagnoses = People newly diagnosed with HIV, regardless of stage with residence at diagnosis in the Houston EMA in 2017

[c]PLWH = People living with HIV disease, regardless of stage with residence at diagnosis in the Houston EMA in 2017

[d]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

(**Graph 1**) Over a ten year period, an average of 689 MSM of color (MSMOC) were diagnosed with HIV in Houston/Harris County each year compared to an average of 130 White MSM annually. This breaks down to 337 African American/Black MSM and 315 Hispanic/Latino MSM diagnosed each year on average. In 2017, there were 341 and 335 cases in these groups, respectively.

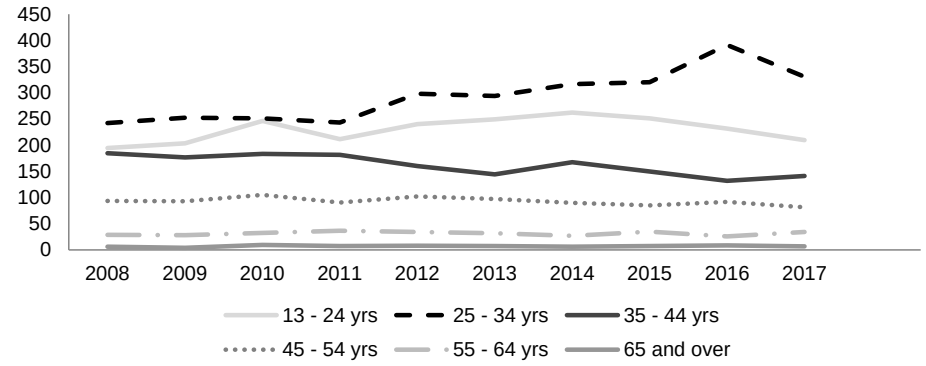
MSM GRAPH 1- Number of New HIV Diagnoses in MSM in Houston/Harris County by Race/Ethnicity, 2008 to 2017



Source: Texas eHARS, analyzed by the Houston Health Department

(**Graph 2**) When analyzed by age, the numbers of newly diagnosed MSM in Houston/Harris County in each age range have remained relatively stable over a ten year period. However, the numbers of new HIV cases in young MSM ages 25 to 34 have increased each year (from 2008 to 2016) while, in the case of MSM ages 35 to 44, the numbers of new HIV cases have mostly declined since 2008. Overall, the most new cases among MSM are diagnosed in the age group of 25 to 34 years.

MSM GRAPH 2- Number of New HIV Diagnoses in MSM in Houston/Harris County by Age, 2008 to 2017



Source: Texas eHARS, analyzed by the Houston Health Department

Young MSM (MSM age 13 to 24) (YMSM)

(**Table 3**) Young MSM (MSM ages 13 to 24) (YMSM) were 18.8% of all new HIV diagnoses in Houston/Harris County in 2017. Of these, the majority (90.0%) was African American/Black or Hispanic/Latino. Young MSMOC still make up the majority of people living with HIV (84.5%), but there are more White YMSM living with HIV (11.0%) when compared to the proportion newly diagnosed. By proportion, YMSM are 14.1% of all people living with HIV in Houston/Harris County.

YMSM (MSM ages 13 to 24) TABLE 3 - New Diagnoses of HIV and Persons Living with HIV in Houston/Harris County by Race/Ethnicity[a]

	New HIV[b]		Persons Living with HIV[c]	
	Cases	%	Cases	%
Total YMSM[d]	210	100.0%	3,532	100.0%
Race/Ethnicity				
White	12	5.7%	390	11.0%
African American/Black	102	48.6%	1,953	55.3%
Hispanic/Latino	87	41.4%	1,031	29.2%
Other/Multiple Race	9	4.3%	158	4.5%
Total All Persons	1,120	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH at end of 2016 = People living with HIV disease, including stage 3 HIV, in Houston/Harris County at the end of 2016

[d]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

(**Table 4**) The same trends are observed when the jurisdiction of analysis is expanded to the Houston EMA. In 2017, 214 cases of HIV were newly diagnosed in YMSM, which represents 17.1% of all new HIV diagnoses in the EMA in that year. Again, a majority of newly diagnosed YMSM (88.3%) was African American or Hispanic/Latino. Among all persons living with HIV in the Houston EMA, YMSM were 2.9%, down from 3.4% in 2011. Again, the majority of these (88.9%) were Black/African American or Hispanic/Latino.

Commented [HA(JO4]: Data is incorrect for newly diagnosed YMSM. Submitting request to DSHS for updated data.

YMSM (MSM age 13 to 24) TABLE 2-New Diagnoses of HIV and People Living with HIV in the Houston EMA by Race/Ethnicity[a]				
	New Diagnoses[b]		People Living with HIV[c]	
	Cases	%	Cases	%
Total YMSM[d]	214	100.0%	821	100.0%
Race/Ethnicity				
White	21	9.8%	55	6.7%
African American	125	58.4%	466	56.8%
Hispanic/Latino	64	29.9%	264	32.2%
Other/Multiple Race	N	N	36	4.4%
Total All Persons	1,234	100.0%	28,225	100.0%

[a]Source: Texas eHARS. New diagnoses and diagnosed PLWH as of 12/31/17

[b]New Diagnoses = People newly diagnosed with HIV, regardless of stage with residence at diagnosis in the Houston EMA in 2017

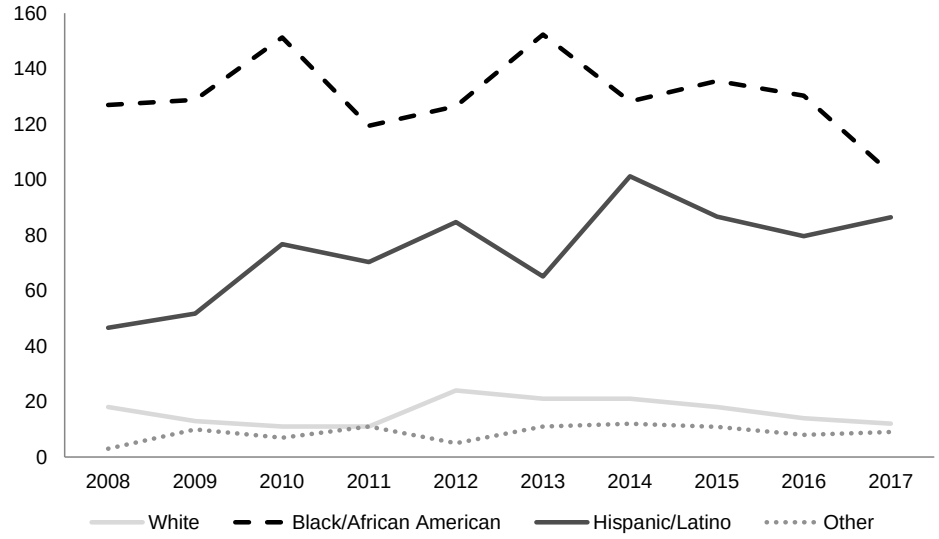
[c]PLWH = People living with HIV disease, regardless of stage with residence at diagnosis in the Houston EMA in 2017

[d]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

[N]Data has been suppressed to meet cell size limit of 5

(**Graph 3**) Over a ten-year period, the numbers of YMSM diagnosed with HIV in Houston/Harris County have been highest in those who are African American/Black. Between 2008 and 2017, the number of African American/Black YMSM newly diagnosed with HIV in Houston/Harris County decreased by 19.7%. During this same time period, the number of new HIV diagnoses among Hispanic/Latino YMSM increased by 83.0%. On average, 130 African American/Black YMSM are diagnosed with HIV each year in Houston/Harris County, 75 Hispanic/Latino YMSM are diagnosed, and 16 White YMSM are diagnosed. In 2017, there was a decline in the number of new HIV cases for African American/Black YMSM by 28 cases, while the number of new cases in Hispanic/Latino YMSM increased by 6 cases.

YMSM (MSM age 13 to 24) GRAPH 3- Number of New HIV Diagnoses in YMSM in Houston/Harris County by Race/Ethnicity, 2008 to 2017



Source: Texas eHARS, analyzed by the Houston Health Department

Rural

Urban and Rural Population Distribution

(**Table 1**) The geographic service areas for HIV prevention and care planning in the Houston Area include a total of 10 counties. Six of these counties, including Houston/Harris County, form the Houston Eligible Metropolitan Area (EMA) defined federally by the Health Resources and Services Administration (HRSA). These six counties plus four additional counties form the Houston Health Services Delivery Area (HSDA) defined locally by the Texas Department of State Health Services (DSHS). The EMA has a total population of 5,800,581, and the HSDA has a total population of 5,961,783. Of these total populations, 5% and 7% are considered rural, respectively. This is compared to 15% of the total Texas population that is rural.

At the county level, four counties in the HSDA have a majority of the population that is rural (Austin, Colorado, Liberty, Waller). Houston/Harris County is the least rural at 1%, and Austin County is the most rural at 66%.

RURAL TABLE 1-Distribution of Urban and Rural Population in the Houston EMA and HSDA by County, 2016

County	Total Population	Percent of Population-Urban	Percent of Population-Rural
Chambers	38,072	54%	46%
Fort Bend	683,756	94%	6%
Harris (incl. Houston)	4,434,257	99%	1%
Liberty	78,598	37%	63%
Montgomery	518,849	77%	23%
Waller	47,049	38%	62%
EMA Total	5,800,581	95%	5%
Austin	29,107	34%	66%
Colorado	20,792	37%	63%
Walker	69,926	54%	46%
Wharton	41,377	50%	50%
HSDA Total	5,961,783	93%	7%
Texas Total	26,959,435	85%	15%

[a]Source: Population - U.S. Census (2016). Urban and Rural - U.S. Census (2010).

Population Density

(**Table 2**) Population density is a measure of the number of people living per square mile in a defined geographic area. It is commonly used as a measure of proximity of people to each other and to various resources. Rural areas tend to have lower population density (or fewer people per square mile), while urban areas tend to have higher population density (or more people per square mile).

In the Houston Area, population density mirrors urban and rural population distribution above. Houston/Harris County is the most densely populated at 2,495 people per square mile while Colorado is the least densely populated at 21 people per square mile. Overall, population density increased in both the EMA (3.0%) and HSDA (4.8%) between 2010 and 2016.

RURAL TABLE 2-Population Density in the Houston EMA and HSDA by County, 2010 and 2016

County	Population Density-2010a	Population Density-2016b
Chambers	58.6	43.7
Fort Bend	669.3	772.6
Harris (incl. Houston)	2,367.2	2,495.4
Liberty	65.2	66.8
Montgomery	436.5	481.8
Waller	84.1	90.8
EMA Total	893.1	920.1
Austin	43.5	44.4
Colorado	21.7	21.3
Walker	86.2	87.2
Wharton	37.9	37.8
HSDA Total	578.5	606.5
Texas Total	96.0	100.4

aSource: U.S. Census (2010). Geographic Identifiers. Census 2000 Summary File 1 (SF 1) 100-Percent Data. Retrieved on 2/26/13

bSource: Calculated using U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates (Retrieved on 02/16/2018) and total county land area

Distribution of Total Population in the Rural Counties of the Houston EMA

(**Table 3**) Between 2010 and 2016, the population in the rural counties of the Houston EMA grew by 14.3%, compared to a 9.7% growth for the EMA as a whole and a 7.2% growth for the state of Texas. Over 170,000 more people lived in the rural counties of the EMA in 2016 than in 2010. The largest percent change in population occurred in Fort Bend and Montgomery Counties, with 16.8% and 13.8% more people in 2016 than in 2010, respectively. Liberty County grew the least with a 3.9% increase between 2010 and 2016.

RURAL TABLE 3-Distribution of Total Rural[a] Population and Population Change in the Houston EMA by County, 2010 and 2016

County	Total-2010[a]	Total-2016[b]	Change in Population	
			#	%
Chambers	35,096	38,072	2,976	8.5%
Fort Bend	585,375	683,756	98,381	16.8%
Harris	4,092,459	4,434,257	341,798	8.4%
Liberty	75,643	78,598	2,955	3.9%
Montgomery	455,746	518,849	63,103	13.8%
Waller	43,205	47,049	3,844	8.9%
Rural EMA Total	1,195,065	1,366,324	171,259	14.3%
EMA Total	5,287,524	5,800,581	513,057	9.7%
Texas Total	25,145,561	26,959,435	1,813,874	7.2%

[a]Source: U.S. Census (2010). Profile of General Population and Housing Characteristics. 2010 Census Summary File 1. Retrieved on 1/31/13

[b]Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates. Retrieved on 02/16/2018

(**Table 4**) In 2016, the population of the rural counties in the Houston EMA was 47.7% White (non-Hispanic), 25.7% Hispanic/Latino, 13.9% Black/African American, and 12.5% all other races. This is *dissimilar* when the urban county of Harris is included in the analysis and racial/ethnic minorities comprise the majority of the population. In rural EMA counties, Whites (non-Hispanics) remain the population majority.

RURAL TABLE 4-Distribution of Total Rural Population in the Houston EMA by Sex at Birth, Race/Ethnicity, and Age, 2016[a]		
	Number	Percent of Total Population
Total Rural[b] EMA Population	1,502,448	100.0%
Sex at Birth		
Male	735,086	48.9%
Female	767,362	51.1%
Race/Ethnicity		
White	716,779	47.7%
Black/African American	209,094	13.9%
Hispanic/Latino	385,534	25.7%
Other	188,041	12.5%
Age		
Under 2	35,481	2.4%
2 - 12	229,695	15.3%
13 - 24	276,253	18.4%
25 - 34	161,375	10.7%
35 - 44	217,804	14.5%
45 - 54	222,787	14.8%
55 - 64	188,618	12.6%
65+	170,435	11.3%

[a]Source: DSHS Center for Health Statistics 2016 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm

[a]For the purpose of this analysis, "rural" has been defined as all counties in the Houston EMA except Harris County. Total Rural EMA population differs from previous tables due to different data source (US Census v. DSHS)

Comparison of Total Rural Population to the Population Living with HIV

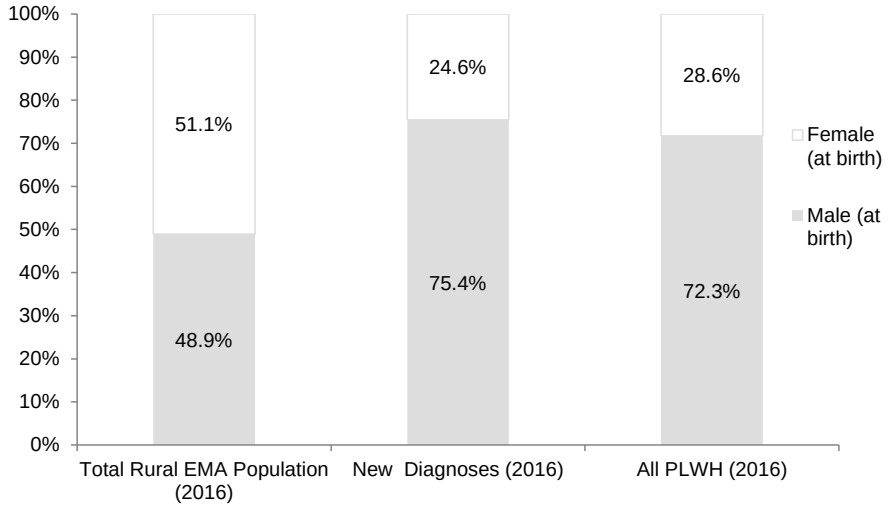
(**Graph 1**) The population of the rural counties in the Houston EMA is fairly evenly divided between males and females at 48.9% and 51.1%, respectively. However, more males than females were newly-diagnosed with HIV in 2016 (75.4% vs. 24.6%) and more males than females are currently living with HIV (72.3% vs. 28.6%). These differences are comparable when the urban county of Harris is included in the analysis.

(**Graph 2**) The populations in the rural counties in the Houston EMA that are newly-diagnosed with HIV and living with HIV are more racially diverse than the general population of the rural counties. While African Americans and Hispanics account for 36.4% of the total population in the rural counties, they are 69.0% of all new HIV diagnoses and 63.4% of all people living with HIV in the rural counties. These differences are *more* than when the urban county of Harris is included in the analysis. In other words, in the

rural counties, the proportion of the HIV burden by race/ethnicity and the demographic distribution of the population by race/ethnicity are *less* analogous.

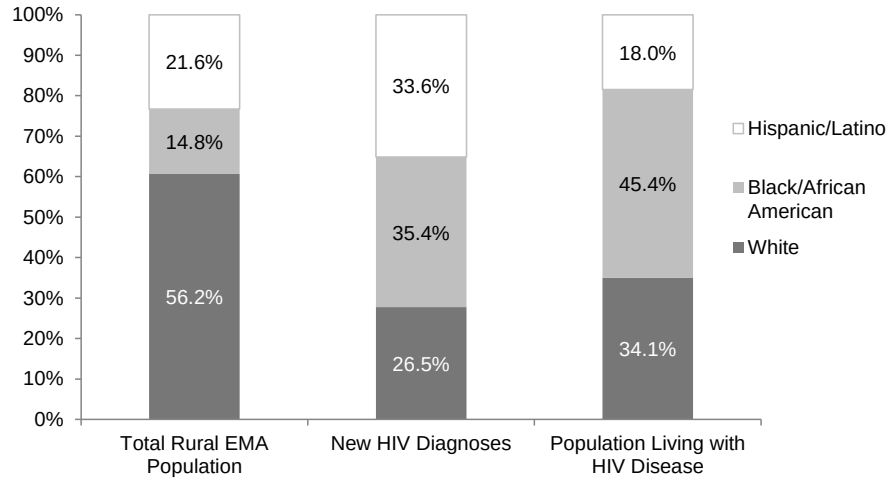
Commented [HA(JO5]: Data are suppressed for rural EMA county new diagnoses and prevalence by race/ethnicity and age. Submitting request to DSHS for either unsuppressed data, or aggregate for rural counties.

RURAL GRAPH 1-Comparison of Total Rural Population[a] in the Houston EMA to the Rural Population Living with HIV[b] by Sex at Birth, 2016



[a]Source: DSHS Center for Health Statistics 2016 Population Projection
For the purpose of this analysis, "rural" is defined as all counties in the Houston EMA *except* Harris County. This definition is consistent with how HIV care services are currently targeted in the EMA.
[b]Source: Texas eHARS. New diagnoses and diagnosed PLWH as of 12/31/16

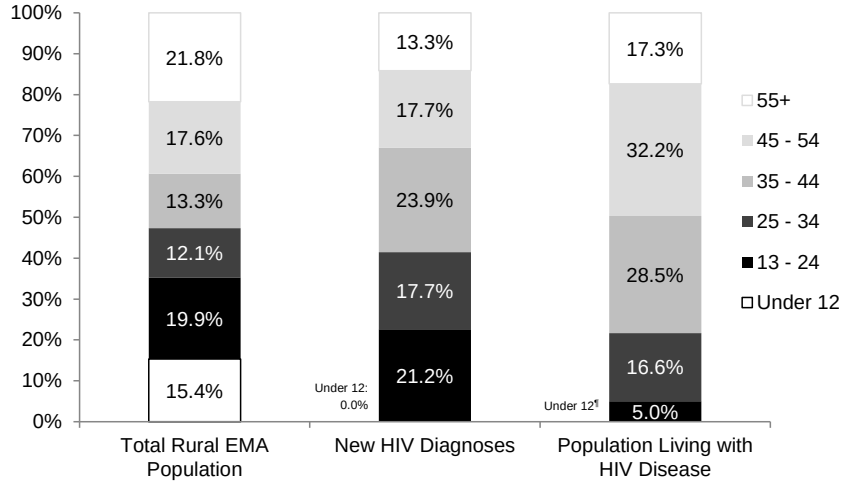
RURAL GRAPH 2-Comparison of Total Rural Population[a] in the Houston EMA to the Rural PLWH Population[b] by Race/Ethnicity, 2011



[a]Source: DSHS Center for Health Statistics 2011 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm
For the purpose of this analysis, "rural" is defined as all counties in the Houston EMA *except* Harris County. This definition is consistent with how HIV care services are currently targeted in the EMA.
[b]Source: Texas eHARS. Living HIV cases as of 12/31/11

(**Graph 3**) When analyzed by age, people age 35 to 44 account for a larger proportion of new HIV diagnoses (23.9%) than their share of the general population in the rural counties of the Houston EMA (13.3%). Similarly, people age 45 to 54 account for a larger proportion of those living with HIV (32.2%) than their share of the total rural population (17.6%). This is comparable to when the urban county of Harris is included in the analysis.

RURAL GRAPH 3-Comparison of Total Rural Population[a] in the Houston EMA to the Rural PLWH Population[b] by Age (Descending), 2011



[a]Source: DSHS Center for Health Statistics 2011 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm
For the purpose of this analysis, "rural" is defined as all counties in the Houston EMA *except* Harris County. This definition is consistent with how HIV care services are currently targeted in the EMA.
[b]Source: Texas eHARS. Living HIV cases as of 12/31/11
[¶]Data has been suppressed to meet cell size limit of 5

Commented [HA(JO6]: Data are suppressed for rural EMA county new diagnoses and prevalence by race/ethnicity and age. Submitting request to DSHS for either unsuppressed data, or aggregate for rural counties.

HIV in the Rural Counties of the Houston EMA

New Diagnoses

(**Table 5**) In 2011, 113 new diagnoses of HIV (regardless of stage 3 HIV status) and 97 new diagnoses of stage 3 HIV were reported in the rural counties of the Houston EMA. This is a rate of 8 new HIV diagnoses for every 100,000 people in the rural counties, and 7 new stage 3 HIV diagnoses for every 100,000 people in the rural counties. The majority of new HIV diagnoses (70.8%) and of new stage 3 HIV diagnoses (77.3%) in the rural counties were among men. African Americans had the highest rate of both new HIV and stage 3 HIV diagnoses in the rural counties with 19 new HIV diagnoses per 100,000 African Americans and 18 new stage 3 HIV diagnoses per 100,000 African Americans. The age distribution of new diagnoses in the rural counties mirrors a bell curve that peaks with 35 to 44 year olds for HIV (14.2% of new diagnoses) and for stage 3 HIV (17.4% of new

diagnoses). Male-to-male sexual activity or MSM was reported most often in 2011 for both new HIV and new stage 3 HIV diagnoses, followed by heterosexual contact.

RURAL TABLE 5-New Diagnoses of HIV and AIDS in the Rural Counties of the Houston EMA by Sex, Race/Ethnicity, Age, and Risk Category, 2011[a]

	New HIV Disease[b]			New AIDS[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total Rural EMA Counties	113	100%	7.9	97	100%	6.8
Sex						
Male	80	70.8%	11.1	75	77.3%	10.4
Female	33	29.2%	4.7	22	22.7%	3.1
Race/Ethnicity						
White	30	26.5%	3.7	29	29.9%	3.6
Black/African American	40	35.4%	18.9	38	39.2%	17.9
Hispanic/Latino	38	33.6%	12.3	27	27.8%	8.8
Other/Multiple Races	5	4.4%	4.8	¶	¶	¶
Age at Diagnosis						
0 - 12	0	0.0%	0.0	0	0.0%	0.0
13 - 24	24	21.2%	8.4	7	7.2%	2.5
25 - 34	20	17.7%	11.6	16	16.5%	9.3
35 - 44	27	23.9%	14.2	33	34.0%	17.4
45 - 54	20	17.7%	8.0	20	20.6%	8.0
55+	15	13.3%	4.8	13	13.4%	4.2
Transmission Risk[e]						
Male-to-male sexual activity (MSM)	66	58.4%	*	55	56.7%	*
Injection drug use (IDU)	6	5.3%	*	9	9.3%	*
MSM/IDU	¶	¶	*	¶	¶	*
Heterosexual contact	40	35.4%	*	30	30.9%	*
Perinatal transmission	0	0.0%	*	0	0.0%	*
Adult other risk	¶	¶	*	¶	¶	*

[a]Source: Texas eHARS. Living HIV cases as of 12/31/11. For the purpose of this analysis, "rural" is defined as all counties in the Houston EMA *except* Harris County. This definition is consistent with how HIV care services are currently targeted in the EMA.
[b]HIV Disease = People diagnosed with HIV, regardless of AIDS status, with residence at diagnosis in Rural Houston EMA
[c]AIDS = People diagnosed with AIDS with residence at diagnosis in Rural Houston EMA
[d]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2011 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm
[e]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification
*Population data are not available for risk groups; therefore, it is not possible to calculate rate by risk
¶Data has been suppressed to meet the cell size minimum of 5. This ensures confidentiality of cases and reliability of data

Commented [HA(JO7]: Data are suppressed for rural EMA county new diagnoses and prevalence by race/ethnicity and age. Submitting request to DSHS for either unsuppressed data, or aggregate for rural counties.

Persons Living with HIV

(**Table 6**) At the end of 2011, there were 1,893 people living with HIV in the rural counties of the Houston EMA. This means that, for every 100,000 people residing in the rural counties, 133 are HIV positive. The majority of all people living with HIV (69.6%) in the rural counties are men. African Americans had the highest rate of living HIV cases in the rural counties with 406 HIV positive African Americans for every 100,000 African

Americans. People aged 35 to 44 had the highest HIV prevalence rate of all age groups (at 284 cases for every 100,000 people in that age range), but people aged 45 to 54 comprised the largest *percentage* of living HIV cases (32.2%). Male-to-male sexual activity or MSM was reported most often by people living with HIV in the rural counties, followed by heterosexual contact.

RURAL TABLE 6-People Living with HIV in the Rural Counties of the Houston EMA by Sex, Race/Ethnicity, Age, and Risk Category, 2011[a]

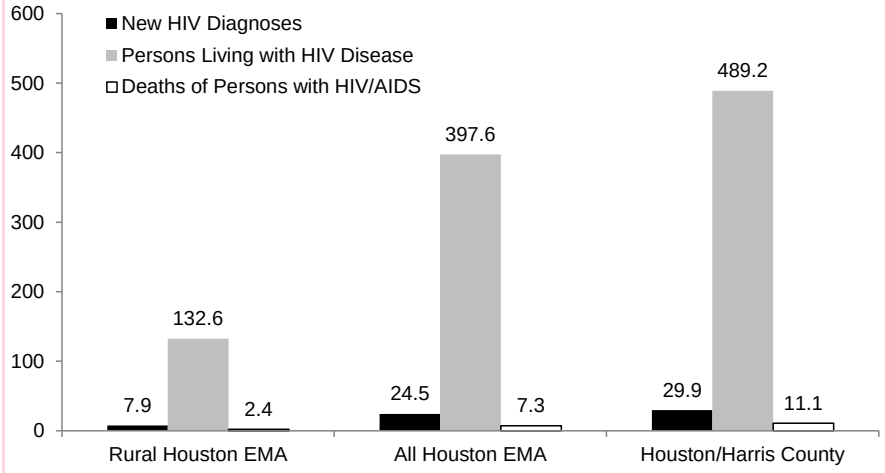
	Living with HIV Disease[b]		
	Cases	%	Rate[d]
Total Rural EMA Counties	1,893	100%	132.6
Sex			
Male	1,317	69.6%	183.1
Female	576	30.4%	81.3
Race/Ethnicity			
White	646	34.1%	80.5
Black/African American	859	45.4%	405.7
Hispanic/Latino	340	18.0%	110.4
Other/Multiple Races	48	2.5%	45.8
Age at Diagnosis			
0 - 1	¶	¶	¶
2 - 12	¶	¶	¶
13 - 24	95	5.0%	33.4
25 - 34	314	16.6%	182.1
35 - 44	539	28.5%	284.3
45 - 54	610	32.2%	242.8
55+	327	17.3%	105.2
Transmission Risk[e]			
Male-to-male sexual activity (MSM)	852	45.0%	*
Injection drug use (IDU)	247	13.0%	*
MSM/IDU	92	4.9%	*
Heterosexual contact	663	35.0%	*
Perinatal transmission	35	1.8%	*
Adult other risk	¶	¶	*

[a]Source: Texas eHARS. Living HIV cases as of 12/31/11. For the purpose of this analysis, "rural" is defined as all counties in the Houston EMA *except* Harris County. This definition is consistent with how HIV care services are currently targeted in the EMA.
[b]HIV Disease = People diagnosed with HIV, regardless of AIDS status, with residence at diagnosis in Rural Houston EMA
[c]AIDS = People diagnosed with AIDS with residence at diagnosis in Rural Houston EMA
[d]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2011 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm
[e]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification
*Population data are not available for risk groups; therefore, it is not possible to calculate rate by risk
¶Data has been suppressed to meet the cell size minimum of 5. This ensures confidentiality of cases and reliability of data

Summary of HIV Epidemiology by Rural and Urban Counties

(**Graph 4**) Overall, the urban county of Harris has the highest rates of core HIV indicators, which, in turn, increase the rates of the Houston EMA as a whole. In this comparison, the rural counties of the Houston EMA have the lowest rates of core HIV indicators.

RURAL GRAPH 4-Rates of New HIV Diagnoses, Persons Living with HIV, and Deaths among HIV Positive Individuals by Rural and Urban Jurisdiction



Sources:
Rural Houston EMA and All Houston EMA: Texas eHARS. For the purpose of this analysis, "rural" is defined as all counties in the Houston EMA *except* Harris County. This definition is consistent with how HIV care services are currently targeted in the EMA.
Houston/Harris County: Houston/Harris County eHARS. Diagnoses, 2011; Prevalence, 2010; Mortality, 2010

Commented [HA(JO8]: Data are suppressed for rural EMA county new diagnoses and prevalence by race/ethnicity and age. Submitting request to DSHS for either unsuppressed data, or aggregate for rural counties.

Seniors (age 50+)

(**Table 1 and Table 2**) In 2017, 155 people ages 50 and older were newly diagnosed with HIV in Houston/Harris County. This equates to 13.8% of all new HIV diagnoses in that year. When compared to all new HIV diagnoses in Houston/Harris County in 2017 regardless of age, larger proportions of newly diagnosed seniors were (1) female (27.1% v. 18.2%), (2) White (21.9% v. 11.2%), (3) person who injects drugs (PWID) (6.5% v. 3.3%). In addition, newly diagnosed seniors were more evenly distributed between MSM and sex with male/sex with female than were all new HIV diagnoses in 2017 in Houston/Harris County. The same demographic trends can be seen in new HIV diagnoses in seniors in the Houston EMA.

AGING/SENIORS (Age 50+) TABLE 1-New Diagnoses of HIV and Persons Living with HIV in *Houston/Harris County* by Sex assigned at birth, Race/Ethnicity, and Risk[a]

	New HIV[b]		Persons Living with HIV[c]	
	Cases	%	Cases	%
Total: Seniors	155	100.0%	1,980	100.0%
Sex assigned at birth				
Male	113	72.9%	1,411	71.3%
Female	42	27.1%	569	28.7%
Race/Ethnicity				
White	34	21.9%	482	24.3%
African American/Black	80	51.6%	957	48.3%
Hispanic/Latino	35	22.6%	476	24.0%
Other/Multiple Races	6	3.8%	65	3.3%
Transmission Risk[d]				
MSM	82	52.9%	856	43.2%
PWID	10	6.5%	225	11.4%
MSM/PWID	3	1.9%	47	2.4%
Sex with Male/Sex with Female	60	38.7%	851	43.0%
Perinatal transmission/other	0	0.0%	1	0.1%
Total: All Ages	1,120	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department
[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017
[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016
[d]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

Of all persons living with HIV in the Houston EMA, people age 55 and older comprise 24.5% at 6,916 diagnosed individuals. When compared to all people living with HIV in the Houston EMA in 2017 regardless of age, larger proportions of seniors living with HIV (1) were again White (31.9% v. 18.9%) and (2) reported injection drug use risk, either IDU

alone or in combination with MSM (19.4% v. 8.4%). However, prevalence rates among seniors remain highest in African Americans at 1386 per 100,000 population.

Commented [HA(JO9]: Transmission risk data is incorrect for newly diagnosed seniors. Submitting request to DSHS for updated data

AGING/SENIORS (Age 55+) TABLE 2-New Diagnoses and People Living with HIV in the *Houston EMA* by Sex at Birth, Race/Ethnicity, and Risk[a,] 2017

	New HIV Diagnoses[b]			People Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total Seniors	94	100.0%	7.1	6,916	100.0%	519.4
Sex at Birth						
Male	66	70.2%	10.6	5,348	77.3%	857.5
Female	28	29.8%	4.0	1,561	22.6%	220.5
Race/Ethnicity						
White	23	24.5%	3.4	2,207	31.9%	326.2
Black/African American	46	48.9%	20.6	3,095	44.8%	1387.5
Hispanic/Latino	20	21.3%	6.6	1,399	20.2%	459.7
Other/Multiracial	N	N	N	215	3.1%	168.5
Transmission Risk[ef]						
Male-male sexual contact (MSM)	41	43.6%	*	3,525	51.0%	*
Person who injects drugs (PWID)	16	17.0%	*	f	f	f
Person who injects drugs (PWID) or MSM/PWID		0.0%		1,341	19.4%	
Heterosexual contact	46	48.9%	*	2,043	29.5%	*
Adult other risk	N	N	N	N	N	*
Total All Ages	1,234	100.0%	20	28,225	100.0%	457.8

[a]Sources: Texas eHARS. New Diagnoses and Diagnosed PLWH as of 12/31/17.

[b]HIV = People diagnosed with HIV with residence at diagnosis in the Houston EMA

cPLWH at end of 2017 = People living with HIV in the Houston EMA at the end of 2017

cRate per 100,000 population. Source: DSHS Center for Health Statistics 2017 Population Projection

dCases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

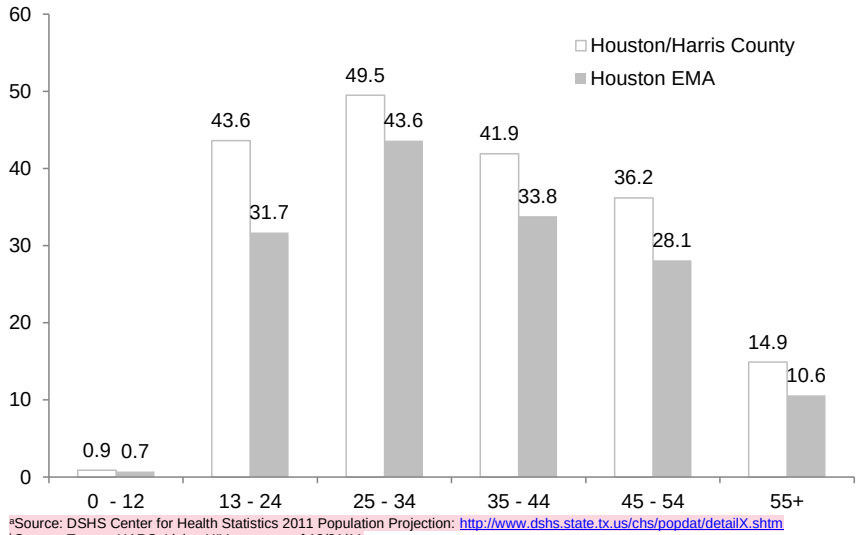
fDataset merged PWID and MSM/PWID

*Population data are not available for risk groups; therefore, it is not possible to calculate rate by transmission risk

[N]Data has been suppressed to meet cell size limit of 5

(**Graph 1**) Rates of new HIV diagnoses by age in Houston/Harris County and in the Houston EMA follow a general bell curve, with a peak among people age 25 to 34 in both jurisdictions. For people age 55 and older, the rate of new HIV diagnoses is highest in Houston/Harris County at 15 new HIV cases for every 100,000 seniors in the jurisdiction. In the Houston EMA, there are 11 new HIV cases for every 100,000 seniors.

SENIORS (age 55+) GRAPH 1-Rate[a] of New HIV Diagnoses in the Houston EMA[b] and Houston/Harris County[c] by Age as of December 31, 2011



[a]Source: DSHS Center for Health Statistics 2011 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm
[b]Source: Texas eHARS. Living HIV cases as of 12/31/11
[c]Source: Houston/Harris County eHARS

Commented [HA(JO10]: H/HC and EMA data are divided into incompatible age ranges. Submitting request to DSHS to align age ranges across jurisdictions.

Transgender

HIV surveillance data on transgender people is not uniformly collected by HIV surveillance systems.[1] As a result, minimal epidemiological data are available on new HIV diagnoses and persons living with HIV among transgender individuals both nationally and in the Houston Area.[1] The epidemiological data that are available are presented below. Discrepancies exist between these two data sources due to data collection differences between surveillance and care data management systems.

(**Table 1**) In 2017, 18 new HIV diagnoses and four new stage 3 HIV diagnoses were reported among transgender persons in Houston/Harris County. This equates to 1.6% of all new HIV diagnoses and 0.8% of all new stage 3 HIV diagnoses made in the jurisdiction in that year. In addition, transgender persons were 0.7% of all persons living with HIV in Houston/Harris County at the end of 2016.

TRANSGENDER TABLE 1- New Diagnoses of HIV and Stage 3 HIV and People Living with HIV in Houston/Harris County[a]

	Cases of New HIV, 2017[b]	Cases of New Stage 3 HIV, 2017[c]	Persons Living with HIV, 2016[d]
Total: Transgender	18	4	177
Total: All Persons	1,120	497	25,132

[a]Source: Texas eHARS, analyzed by the Houston Health Department
[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017
[c]New Stage 3 HIV = People diagnosed with stage 3 HIV with residence at diagnosis in Houston/Harris County in 2017
[d]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016

(**Table 2**) In 2017, 146 transgender individuals living with HIV were served by the Ryan White HIV/AIDS Program in the Houston EMA. This equates to 1.1% of all Ryan White clients served in that year. Of the 146 transgender clients documented, 21.9% were new to care.

TRANSGENDER TABLE 2-Number of Clients Served by the Ryan White HIV/AIDS Program Part A, B, MAI, and State Services in the Houston EMA/HSDA, 2017

	Total Clients Served	New Clients Served
Total Transgender	146	32
Total All Persons Served	13,641	2,965

Source: Ryan White Grant Administration and The Resource Group. All Services/All Grants. Presented 4/01/18

[1]Centers for Disease Control and Prevention, "HIV and Transgender People." https://www.cdc.gov/hiv/group/gender/transgender/index.html

Women of Childbearing Age (age 13 to 44)

(**Table 1 and Table 2**) In 2017, 144 women of childbearing age (ages 13 to 44) were newly diagnosed with HIV in Houston/Harris County. This equates to 12.9% of all new HIV diagnoses in Houston/Harris County in that year. In the Houston EMA of 2017, 165 persons newly diagnosed with HIV were women of childbearing (21 more cases than in Houston/Harris County in 2017). In both jurisdictions, the majority of new diagnoses in women age 13 to 44 were African American/Black (at 60.4% and 59.4% respectively). In addition, almost all newly diagnosed women of this age range reported sex with male(s).

WOMEN OF CHILDBEARING AGE (ages 13 to 44) TABLE 1- New Diagnoses of HIV and Persons Living with HIV in *Houston/Harris County* by Race/Ethnicity, Age, and Risk[a]

	New HIV[b]		Persons Living with HIV[c]	
	Counts	%	Counts	%
Total: Women (ages 13 to 44)	144	100.0%	5,030	100.0%
Race/Ethnicity				
White	8	5.6%	330	6.6%
African American/Black	87	60.4%	3,557	70.7%
Hispanic/Latino	43	29.9%	961	19.1%
Multiple Races	3	2.1%	138	2.7%
Other	3	2.1%	44	0.9%
Age				
13 -17	0	0	224	4.5%
18 - 24	33	22.9%	1,323	26.3%
25 - 34	60	41.7%	2,109	41.9%
35 - 44	51	35.4%	1,374	27.3%
Transmission Risk[e]				
PWID	11	7.6%	806	16.0%
Sex with male	132	91.7%	4,215	83.8%
Perinatal transmission/other	1	9.0%	9	0.2%
Total: All Persons	1,120	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016
[e]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

Women of childbearing age (ages 13 to 44) are about 20% of all persons living with HIV in Houston/Harris County and about 12% of all persons living with HIV in the Houston EMA. Again, the majority of women living with HIV in this age range are African American/Black and have heterosexual transmission risk in both jurisdictions. However, the proportion of women living with HIV who reported injection drug use is slightly higher than for all persons living with HIV regardless of sexual contact (12.7% v. 8.7%).

Commented [HA(JO11]: Transmission risk data is incorrect for newly diagnosed women of childbearing age. Submitting request to DSHS for updated data

WOMEN OF CHILDBEARING AGE (age 13 to 44) TABLE 2-New Diagnoses of HIV and Persons Living with HIV in the *Houston EMA* by Race/Ethnicity, Age, and Risk[a]

	New HIV Diagnoses[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total Women Age (age 13 to 44)	165	100.0%	11.6	3,498	100.0%	245.1
Race/Ethnicity						
White	13	7.9%	3.4	191	5.5%	50.2
Black/African American	98	59.4%	38.0	2,418	69.1%	937.8
Hispanic/Latino	47	28.5%	7.3	733	21.0%	114.5
Other/Multiple Races	7	4.2%	4.7	156	4.5%	105.0
Age						
13 - 24	40	24.2%	7.8	277	7.9%	54.1
25 - 34	66	40.0%	14.5	1,090	31.2%	239.1
35 - 44	59	35.8%	12.8	2,131	60.9%	463.6
Transmission Risk[e]						
Person who injects drugs (PWID)	13	7.9%	*	352	10.1%	*
Sex with Male/Sex with Female	206	124.8%	*	3,000	85.8%	*
Perinatal transmission / Adult other	¶	¶	¶	146	4.2%	*
Total All Persons	1,234	100.0%	20	28,225	100.0%	457.8

[a]Sources: Texas eHARS. New Diagnoses and Diagnosed PLWH as of 12/31/17.

[b]HIV = People diagnosed with HIV with residence at diagnosis in the Houston EMA

[d]PLWH at end of 2017 = People living with HIV in the Houston EMA at the end of 2017

[e]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2017 Population Projection.

[f]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

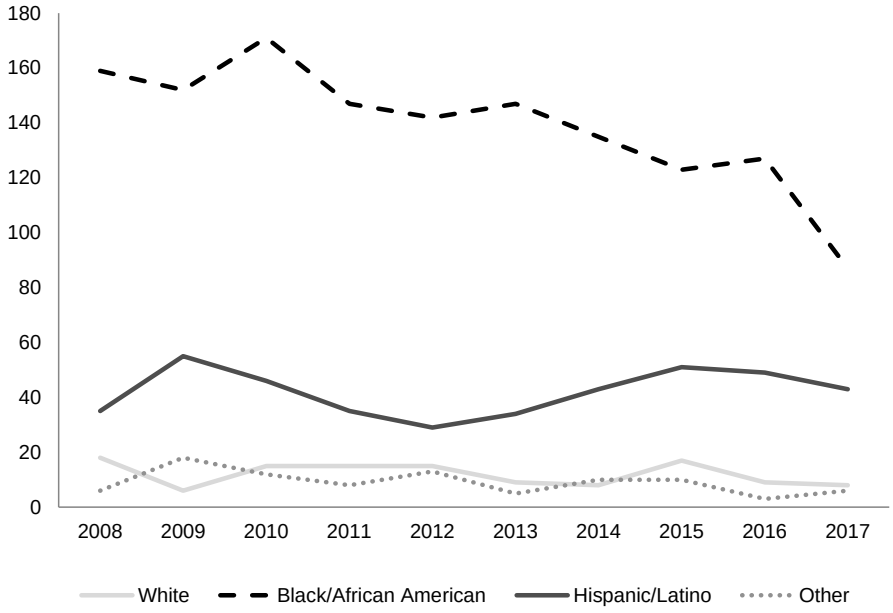
*Population data are not available for risk groups; therefore, it is not possible to calculate rate by risk

[N]Data has been suppressed to meet cell size limit of 5

(**Graph 1**) From 2008 to 2017, the numbers of new HIV diagnoses in women of childbearing age (ages 13 to 44) in Houston/Harris County have declined. For example, in 2008, there were 218 new HIV diagnoses in women of this age range while, in 2017, there were 144. On average, there were 7 fewer new HIV diagnoses per year in women of this age range during this ten year period.

African American/Black women comprised the majority of new HIV diagnoses among women of childbearing age (ages 13 to 44) during this ten-year period. On average, during this period, there have been 139 new HIV diagnoses among African American/Black women of childbearing age (ages 13 to 44), 42 new HIV diagnoses among Hispanic/Latino women of childbearing age (ages 13 to 44), and 12 new HIV diagnoses among White women of childbearing age (ages 13 to 44). For all groups, the numbers of new HIV diagnoses have been on the decline.

WOMEN OF CHILDBEARING AGE (ages 13 to 44) GRAPH 1- Number of New HIV Diagnoses in Women of Childbearing Age in Houston/Harris County by Race/Ethnicity, 2008 to 2017



Source: Texas eHARS, analyzed by the Houston Health Department

Youth (age 13 to 24)

Youth (age 13 to 24)

(**Table 1 and Table 2**) In 2017, 252 youth (people age 13 to 24) were diagnosed with HIV in Houston/Harris County. This equates to 22.5% of all new HIV diagnoses in Houston/Harris County in that year. Most were persons of color and MSM. When compared to all new HIV diagnoses in Houston/Harris County in 2017 regardless of age, larger proportions of newly diagnosed youth were (1) African American/Black (50.4% v. 47.6%) and (2) MSM (83.3% v. 71.7%). The same demographic trends are seen when the jurisdiction of analysis is expanded to the Houston EMA. People age 13 to 24 in the EMA were 22.0% of all new HIV diagnoses in 2017. Again, larger proportions of newly diagnosed youth in the EMA were (1) African American/Black (51.6% v. 47.1%) and (2) MSM (72.8% v. 70.5%) compared to all new HIV diagnoses in that year regardless of age.

Commented [HA(JO12]: Transmission risk data is incorrect for newly diagnosed youth. Submitting request to DSHS for updated data

YOUTH (age 13 to 24) TABLE 1- New Diagnoses of HIV and Persons Living with HIV in *Houston/Harris County* by Sex assigned at birth, Race/Ethnicity, and Risk[a]

	New HIV[b]		Persons Living with HIV[c]	
	Counts	%	Counts	%
Total: Youth (age 13 to 24)	252	100.0%	5,660	100.0%
Sex assigned at birth				
Male	219	86.9%	4,113	72.7%
Female	33	13.1%	1,547	27.3%
Race/Ethnicity				
White	18	7.1%	558	9.9%
African American/Black	127	50.4%	3,409	60.2%
Hispanic/Latino	97	38.5%	1,440	25.4%
Multiple Races	6	2.4%	213	3.8%
Other	4	1.6%	40	0.7%
Transmission Risk[d]				
MSM	210	83.3%	3,532	62.4%
PWID	4	1.6%	321	5.7%
Sex with Male/Sex with Female	32	12.7%	1,585	28.0%
Perinatal/MSM-PWID/other	6	2.4%	222	3.9%
Total: All Ages	1,120	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016

[d]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

The people ages 13 to 24 living with HIV in Houston/Harris County reflect the number of new diagnoses, with this group making up about 20% of all new diagnoses and prevalent HIV. However, the number of prevalent cases of HIV in people age 13 to 24 is only 4.3% of all people living with HIV in the Houston EMA in 2017. Prevalent cases in youth in both jurisdictions also tend to be African American/Black or Hispanic/Latino and MSM. About 15% of people age 13 to 24 living with HIV in the Houston EMA were perinatally exposed.

YOUTH (age 13 to 24) TABLE 2-New Diagnoses of HIV and Persons Living with HIV in the *Houston EMA* by Sex at Birth, Race/Ethnicity, and Risk[a], 2017

	New HIV Diagnoses[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total Youth (age 13 to 24)	273	100.0%	25.8	1,229	100.0%	116.0
Sex at birth						
Male	233	85.3%	42.5	950	77.3%	173.5
Female	40	14.7%	7.8	279	22.7%	54.5
Race/Ethnicity						
White	19	7.0%	7.4	80	6.5%	31.1
Black/African American	141	51.6%	73.1	720	58.6%	373.4
Hispanic/Latino	108	39.6%	21.1	366	29.8%	71.3
Other/Multiple Races	N	N	N	56	4.6%	58.3
Transmission Risk[e]						
Male-male sexual contact (MSM)	209	76.6%	*	821	66.8%	*
Person who injects drugs (PWID)[f]	6	2.2%	*	13	1.1%	*
MSM/PWID	¶	¶	¶	26	2.1%	*
Sex with Male/Sex with Female	66	24.2%	*	182	14.8%	*
Perinatal transmission	¶	¶	¶	187	15.2%	*
Total All Ages	1,234	100.0%	20	28,225	100.0%	487.8

[a]Sources: Texas eHARS. New Diagnoses and Diagnosed PLWH as of 12/31/17.

[b]HIV = People diagnosed with HIV with residence at diagnosis in the Houston EMA

[c]PLWH at end of 2017 = People living with HIV in the Houston EMA at the end of 2017

[d]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2017 Population Projection.

[e]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

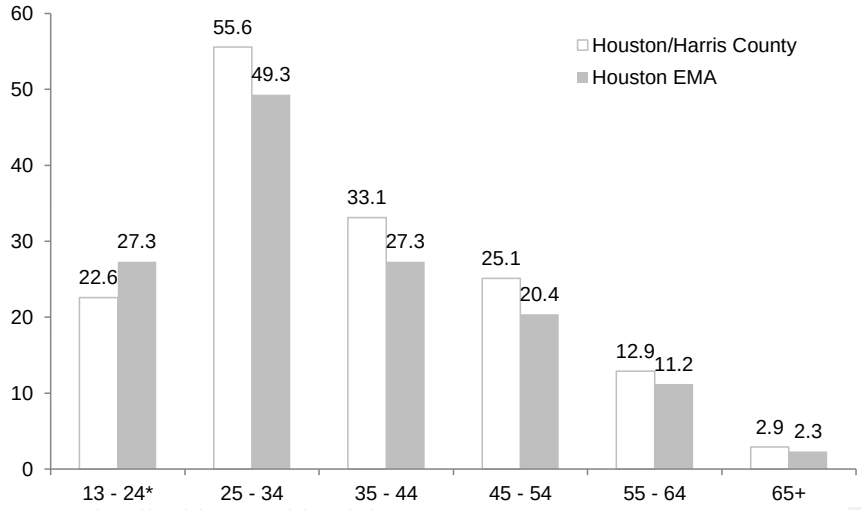
[f]PWID transmission risk for PLWH reflects only females at birth. Dataset combined male PWID and MSM/PWID.

*Population data are not available for risk groups; therefore, it is not possible to calculate rate by risk

[N]Data has been suppressed to meet cell size limit of 5

(**Graph 1**) Rates of new HIV diagnoses by age in Houston/Harris County and in the Houston EMA follow a general bell curve, with a peak among people age 25 to 34 in both jurisdictions. For people age 0 to 24, the rate of new HIV diagnoses in Houston/Harris County at 23 new HIV diagnoses for every 100,000 child and youth in the jurisdiction. People age 13 - 24 comprise *second* highest rate of new HIV diagnoses by age group in Houston (behind people age 25 to 34, and tied with 35 to 44). In the Houston EMA, there were 27 new HIV diagnoses for every 100,000 youth in 2017

YOUTH (age 13 to 24) GRAPH 1-Rate[a] of New HIV Diagnoses in the Houston EMA[b] and Houston/Harris County[c] by Age as of December 31, 2017



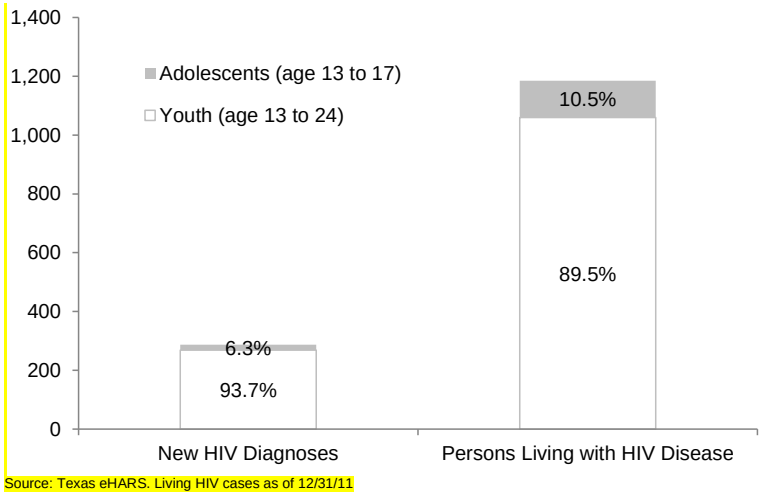
[a]Source: DSHS Center for Health Statistics 2016 Population Projection
[b]Source: Texas eHARS. New diagnoses as of 12/31/17
[c]Source: Texas eHARS, analyzed by Houston Health Department
*Age range 13-24 for Houston/Harris County reflects the diagnosis rate for age range 0-24 due to data suppression.

Adolescents (age 13 to 17)

(**Graph 2**) In 2011, adolescents (people age 13 to 17) were 6.3% of all new HIV diagnoses that occurred in youth (people age 13 to 24) and 10.5% of all youth living with HIV in the Houston EMA.

ADOLESCENTS (age 13 to 17) GRAPH 2-Number and Proportion of New HIV Diagnoses and Persons Living with HIV in the Houston EMA, Adolescents and Youth, 2011

Commented [HA(JO13]: EMA data is in incompatible age ranges. Submitting request to DSHS for compatible age ranges.



Source: Texas eHARS. Living HIV cases as of 12/31/11

(**Table 3 and Table 4**) In 2017, 14 adolescents (people ages 13 to 17) were diagnosed with HIV in both Houston/Harris County. Of those newly diagnosed, 92.9% were African American/Black or Hispanic/Latino. The majority were also identified as MSM (92.9%). This is divergent from persons living with HIV in this age group in Houston/Harris County, for which more people were heterosexual (46.8%) than MSM (40.0%).

ADOLESCENTS (age 13 to 17) TABLE 3- New Diagnoses of HIV and Persons Living with HIV in *Houston/Harris County* by Sex assigned at birth, Race/Ethnicity, and Risk[a]

	New HIV[b]		Persons Living with HIV[c]	
	Counts	%	Counts	%
Total: Adolescents (ages 13 to 17)	14	100.0%	432	100.0%
Sex assigned at birth				
Male	14	100.0%	208	48.1%
Female	0	0.0%	224	51.9%
Race/Ethnicity				
White	1	7.1%	30	6.9%
African American/Black	9	64.3%	293	67.8%
Hispanic/Latino	4	28.6%	95	22.0%
Multiple Races	0	0.0%	13	3.0%
Other	0	0.0%	1	0.2%
Transmission Risk[d]				
MSM	13	92.9%	173	40.0%
PWID	0	0.0%	34	7.9%
Sex with Male/Sex with Female	0	0.0%	202	46.8%
Perinatal/MSM-PWID/other	1	7.1%	23	5.3%
Total: All Ages	1,120	100.0%	25,132	100.0%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

[b]HIV = People diagnosed with HIV, including stage 3 HIV, with residence at diagnosis in Houston/Harris County in 2017

[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016

[d]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

A total of 125 adolescents (people age 13 to 17) are living with HIV in the Houston EMA. Almost all (92.8%) are African American or Hispanic/Latino. The majority were also perinatally exposed (79.2%). However, small percentages also reported MSM (12.1%) and heterosexual contact (12.2%) as their primary risk factor. This is divergent from *new* HIV diagnoses in this age group in the EMA, for which the majority were either MSM or heterosexual (88.8%).

Commented [HA(JO14]: EMA data is in incompatible age ranges. Submitting request to DSHS for compatible age ranges.

ADOLESCENTS (age 13 to 17) TABLE 4-New Diagnoses of HIV and Persons Living with HIV in the *Houston EMA* by Sex, Race/Ethnicity, and Risk[a]

	New HIV Disease[b]			Persons Living with HIV[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total Adolescents (age 13 to 17)	18	100.0%	1.3	125	100.0%	8.8
Sex						
Male	9	50.0%	1.2	63	50.4%	8.7
Female	9	50.0%	1.3	62	49.6%	9.0
Race/Ethnicity						
White	0	0.0%	0.0	¶	¶	¶
Black/African American	12	66.7%	4.9	86	68.8%	34.9
Hispanic/Latino	6	33.3%	0.9	30	24.0%	4.5
Other/Multiple Races	0	0.0%	0.0	¶	¶	¶
Transmission Risk[e]						
Male-to-male sexual activity (MSM)	8	44.4%	*	12	9.6%	*
Injection drug use (IDU)	0	0.0%	*	0	0.0%	*
MSM/IDU	¶	¶	¶	0	0.0%	*
Heterosexual contact	8	44.4%	*	14	11.2%	*
Perinatal transmission	¶	¶	¶	99	79.2%	*
Total All Ages	1,334	100.0%	24.5	21,664	100.0%	397.6

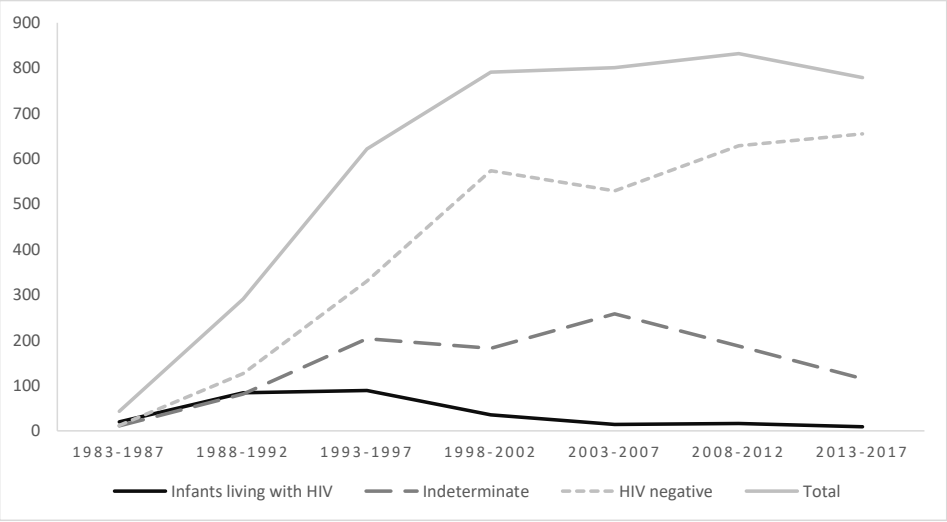
[a]Source: Texas eHARS. Living HIV cases as of 12/31/11
[b]HIV Disease = People diagnosed with HIV, regardless of AIDS status, with residence at diagnosis in the Houston EMA
[c]PLWH at end of 2010 = People living with HIV disease, regardless of AIDS status, in the Houston EMA at the end of 2010
[d]Rate per 100,000 population. Source: DSHS Center for Health Statistics 2011 Population Projection: http://www.dshs.state.tx.us/chs/popdat/detailX.shtm
[e]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification
*Population data are not available for risk groups; therefore, it is not possible to calculate rate by risk
¶Data has been suppressed to meet the cell size minimum of 5. This ensures confidentiality of cases and reliability of data

Perinatal HIV Exposure in Infants

Perinatal HIV Exposure in Infants Graph 1 shows the number of infants born to mothers living with HIV by the year of birth, stratified by the HIV status of the infants. The data were reported through 2017. Infants proven to have HIV are classified as “Infants living with HIV”. Infants who have been proven not have HIV are classified as “HIV negative”. Infants whose final HIV status has not been determined or has not been reported to the Health Department are classified as “Indeterminate”.

Graph 1 shows that the number of perinatal HIV-exposed infants increased from 1983 as the number of women living with HIV of childbearing age was increasing. It appeared to have reached a steady state of about 800 perinatal-exposed infants born every 5 years from 1998 through 2017. The number of infants living with HIV decreased from 1993 and reached a steady state of about 15 cases every 5 years from 2003 to 2012; the trend has decreased to 9 cases within 5 year-period of 2013-2017. During 2013-2017, the percentage of infants living with HIV, Indeterminate, and HIV negative were 1%, 15%, and 84%, respectively. The frequency of infants with perinatal HIV exposure has decreased over time due to early diagnoses of HIV during pregnancy

PERINATAL HIV EXPOSURE IN INFANTS, GRAPH 1- Transmission Status in Houston/Harris County, 1983-2017



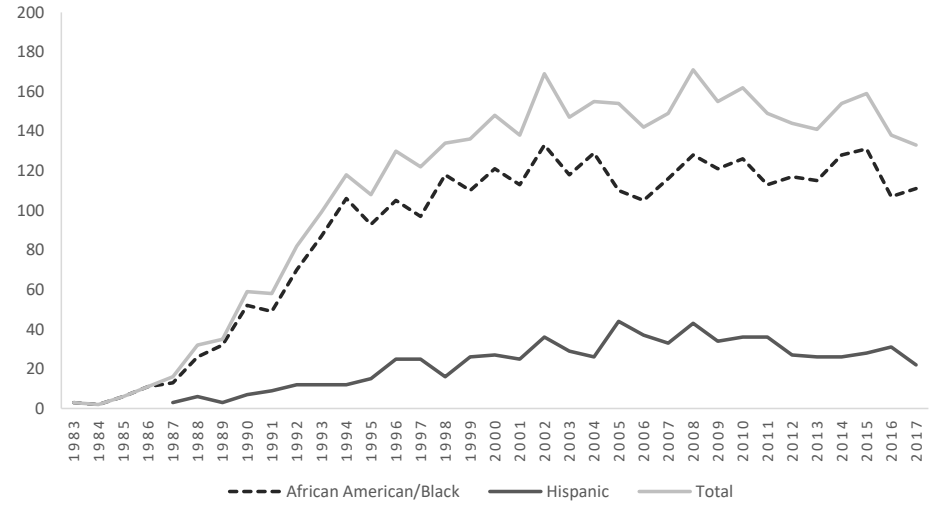
Source: Texas eHARS, 2018, analyzed by the Houston Health Department

Graph 2 shows the number of infants born to mothers living with HIV by the year of birth, stratified by race/ethnicity. In African Americans, the number of perinatal HIV exposures increased from 1983 to 2002 and has remained relatively stable. In Hispanic/Latinos, the

number of perinatal HIV exposures showed a slight increase from 1987 to 2008 followed by a decrease.

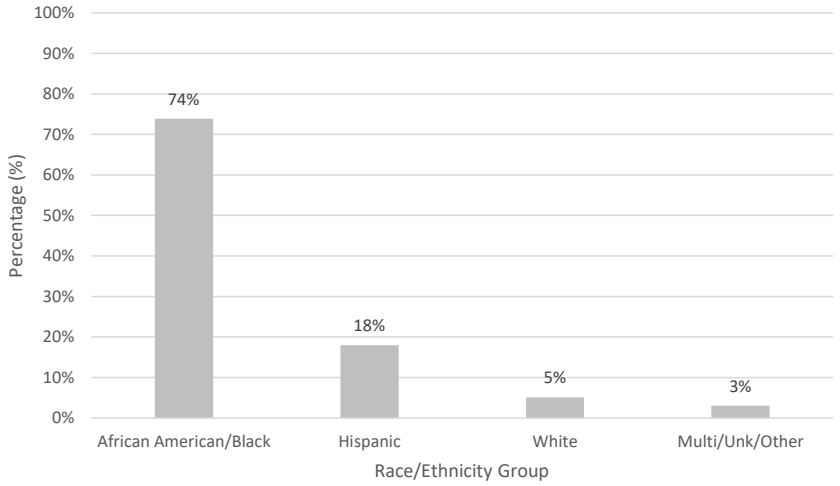
Averaging perinatal exposures for 2015 and 2016, 74% of the perinatal exposures were in African Americans, 18% in Hispanic/Latinos, and 5% in Whites. This roughly reflected the race proportions of women of child bearing age living with HIV (Graph 3).

PERINATAL HIV EXPOSURE IN INFANTS, GRAPH 2- by Race/Ethnicity in Houston/Harris County, 1983-2017



Source: Texas eHARS, 2018, analyzed by the Houston Health Department

PERINATAL HIV EXPOSURE IN INFANTS, GRAPH 3- by Race/Ethnicity in Houston/Harris County, 2016-2017



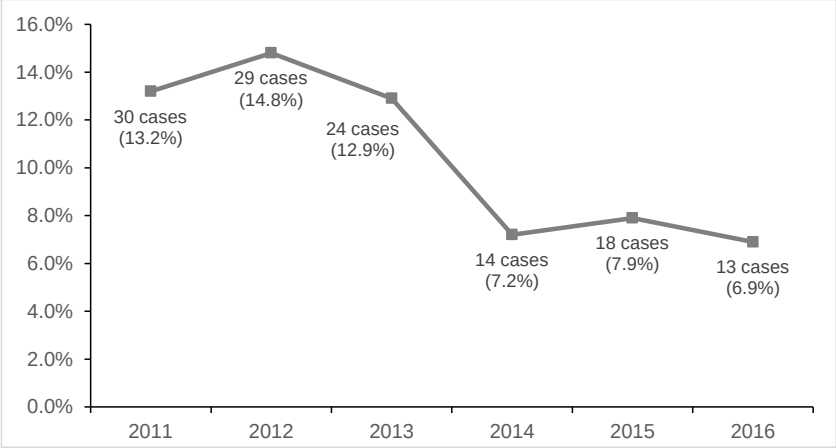
Source: Texas eHARS, 2018, analyzed by the Houston Health Department

Co-Occurring Condition:
HIV and Active TB Disease

There are two types of tuberculosis (TB): (1) active TB disease and (2) latent TB infection. Active TB disease occurs when the TB bacteria are multiplying in the body and cause illness. Latent TB infection occurs when the TB bacteria do not multiply because the immune system has suppressed them; there are no symptoms, and the individual is not infectious. People living with HIV are at greater risk for developing active TB disease than people not living with HIV due to their weakened immune systems.1 An individual who has co-occurring HIV and active TB disease is considered to have stage 3 HIV-defining condition.1 Moreover, a person who is living with HIV and has latent TB infection can progress to active TB disease more easily than a person not living with HIV. 1 Data on co-occurring HIV and active TB disease are presented here.

(**Graph 1**) On average, about 21 cases of active TB disease diagnosed in the city of Houston are also co-occurred with HIV each year. In 2016, HIV co-occurring conditions were 6.9% of all persons diagnosed with active TB disease in the city of Houston in that year.

TB GRAPH 1- Percent and Number of Person with TB who are Co-occurred with HIV in Houston (excluding Harris County), 2011 to 2016



Source: Bureau of Tuberculosis, Houston Health Department

Only includes cases within City of Houston. Any cases within Harris County, but outside of Houston are not included in this analysis.

[1]Centers for Disease Control and Prevention, "TB and HIV Coinfection." Last Reviewed: March 15, 2016. Located at https://www.cdc.gov/tb/topic/basics/tbhivcoinfection.htm

(**Table 1**) In 2017, 8 persons newly diagnosed with stage 3 HIV in Houston were also co-occurred with active TB disease. Of all persons living with HIV in the jurisdiction in 2017, 627 cases were co-occurred with active TB disease. In general, the majority of people with co-occurring HIV and TB in Houston are male, African American/Black or Hispanic/Latino, and ages 25 and older. Most people with co-occurring conditions report the transmission risk of MSM, followed by sex with male/sex with female.

TB TABLE 1- HIV Cases with a TB Diagnosis in Houston by Sex assigned at birth, Race/Ethnicity, Age, and Risk[a]

	New Stage 3 HIV Diagnoses[b]		Persons Living with HIV[c]	
	Cases	%	Cases	%
Total Cases with TB[d]	8	100.0%	627	100.0%
Sex assigned at birth				
Male	6	75.0%	487	77.7%
Female	1	12.5%	140	22.3%
Race/Ethnicity				
White	1	12.5%	57	9.1%
African American/Black	3	37.5%	302	48.2%
Hispanic/Latino	4	50.0%	237	37.8%
Multiple Races	0	0.0%	11	1.8%
Other	0	0.0%	20	1.8%
Age				
0 - 12	0	0.0%	7	1.1%
13 - 24	0	0.0%	74	11.8%
25 - 34	4	50.0%	272	43.4%
35 - 44	0	0.0%	191	30.5%
45 - 54	3	37.5%	67	10.7%
55 - 64	0	0.0%	13	2.1%
65+	1	12.5%	3	0.5%
Transmission Risk				
MSM	6	75.0%	247	39.4%
PWID	0	0.0%	105	16.7%
Adult MSM & PWID	0	0.0%	62	9.9%
Sex with Male/Sex with Female	2	25.0%	204	32.5%
Perinatal exposure	0	0	7	1.1%

[a]Source: Texas eHARS, analyzed by the Houston Health Department

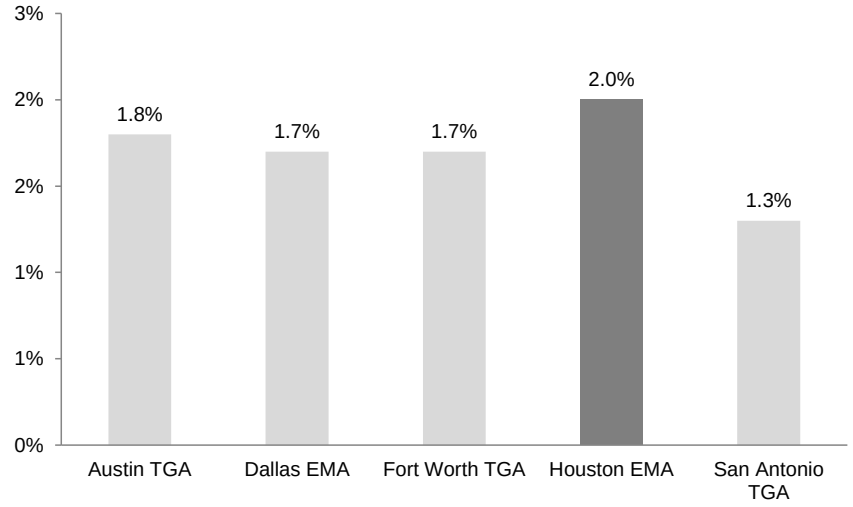
[b]Stage 3 HIV = People diagnosed with stage 3 HIV with residence at diagnosis in Houston/Harris County in 2017
[c]PLWH at end of 2016 = People living with HIV, including stage 3 HIV, in Houston/Harris County at the end of 2016

[d]Analysis includes pulmonary and extrapulmonary mycobacterium tuberculosis (TB). TB, of any site, pulmonary (among people age 13 or older), disseminated, or extrapulmonary is a stage 3 HIV-defining condition
[e]People with no risk reported were recategorized into standard categories using the multiple imputation or risk program of the Centers for Disease Control and Prevention (CDC)

Only includes cases within City of Houston. Any cases within Harris County, but outside of Houston are not included in this analysis.

(**Graph 2**) The Houston EMA is highest among the federally-designated geographic service areas in Texas (i.e., other EMAs or Transitional Grant Areas/TGA) in terms of the percent of people living with HIV who have also ever been diagnosed with active TB disease. Currently, the Houston EMA is at 2.0% of all people living with HIV and TB comorbidity.

TB GRAPH 2- Percent of People Living with HIV/PLWH) with TB Comorbidity by HRSA Geographic Service Area in Texas, 2017



Source: Texas Department of State Health Services, HIV TB Comorbidity**.** PLWH reported through Dec 31, 2017 with a diagnosis of M. tuberculosis or pulmonary TB (excluding "unknown" diagnoses).

Co-Occurring Condition:
HIV and Hepatitis B and C

Hepatitis refers to a group of viral infections that affect the liver. The most common types are hepatitis A, hepatitis B, and hepatitis C. Hepatitis A is an acute disease with no long-term health implications once it is treated whereas hepatitis B and C can be both acute and chronic.[1] Chronic untreated hepatitis B or C can lead to serious liver problems, including liver damage, cirrhosis, liver failure, or liver cancer.[1] Hepatitis infections tend to progress more rapidly to liver damage in people living with HIV, and people living with HIV who are co-occurred with hepatitis have an increased risk for liver-related morbidity and mortality.[2] In addition, hepatitis C infection may impact the course of HIV treatment in persons with co-occurring conditions.[2]

In Texas, it is mandatory for providers and laboratories to report acute hepatitis B and C.[3] While reporting of chronic hepatitis is not mandatory, voluntary reporting continues to occur in Houston/Harris County on a limited basis.

(**Table 1**) In 2016, 1373 persons living with HIV in Houston/Harris County had been diagnosed with hepatitis B or C. This translates into 5.4% of all persons living with HIV in the jurisdiction at that time having been co-occurred with either hepatitis B or C. In general, people with co-occurring HIV and hepatitis B or C tend to be male, African American, and age 25 and older. The most co-occurring cases have the transmission risk category of MSM followed by PWID.

[1]Centers for Disease Control and Prevention, "Viral Hepatitis." Last Modified: April 8, 2019. Located at http://www.cdc.gov/hepatitis/
[2]Centers for Disease Control and Prevention, "Epidemiology and Prevention of HIV and Viral Hepatitis Co-Infections." Last Modified: January 23, 2019. Located at http://www.cdc.gov/hepatitis/Populations/HIV.htm
[3]Texas Department of State Health Services, "Notifiable Conditions." Last Modified: March 27, 2019. Located at: https://dshs.texas.gov/IDCU/investigation/Notifiable-Conditions.aspx

HEPATITIS TABLE 1- HIV Cases with Hepatitis B or C in Houston/Harris County by Sex assigned at birth, Race/Ethnicity, Age, and Risk, 2016

	HIV[a] and Hepatitis B or C[b]	
	Cases	%
Total Co-Occurring Conditons[c]	1373	100.0%
Sex assigned at birth		
Male	1147	83.5%
Female	226	16.5%
Race/Ethnicity		
White	248	18.1%
African American/Black	685	49.9%
Hispanic/Latino	351	25.6%
Multiple race	38	2.8%
Other/Unknown	51	3.7%
Age at Diagnosis		
0 - 12	9	0.7%
13 - 24	254	18.5%
25 - 34	530	38.6%
35 - 44	362	26.4%
45 - 54	171	12.5%
55 - 64	42	3.1%
65+	5	0.4%
HIV Transmission Risk[d]		
Male-to-Male Sexual Contact (MSM)	797	58.1%
Person who inject drugs (PWID)	176	12.8%
MSM/PWID	100	7.3%
Sex with Male/Sex with Female /other risk	300	21.8%

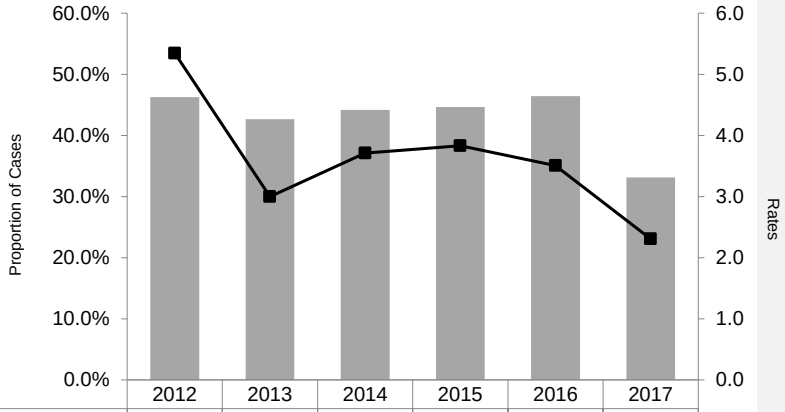
[a]Source: Texas eHARS, analyzed by the Houston Health Department
[b]Source: The data were obtained from Houston Electronic Disease Surveillance System (HEDSS). HEDSS cannot differentiate acute HCV from chronic HCV and only a few cases will meet the clinical case definition.
[c]People living with HIV as of 2016 in Houston/Harris County with Hepatitis B and/or C diagnoses
[d]Cases with unknown risk have been redistributed based on historical patterns of risk ascertainment and reclassification

Co-Occurring Condition:
HIV and Infectious Syphilis

There are four general stages of syphilis: (1) primary, (2) secondary, (3) latent, and (4) tertiary. The primary and secondary stages are of most concern epidemiologically as this is when syphilis is most communicable, or infectious, to others. Therefore, primary and secondary syphilis, taken together, are commonly referred to as *infectious syphilis*. Co-occurring of syphilis and HIV is also of concern because of the implications co-occurring condition has for both HIV transmission and syphilis treatment. For example, when a person living with HIV has co-occurring syphilis, the syphilis infection increases the infectiousness of the HIV to sex partners.[1] Moreover, research has shown that HIV-infected persons may experience a more rapid course of illness associated with syphilis, including a greater risk of neurological complications.[2] Data on co-occurring condition between HIV and infectious syphilis, all syphilis stages, and early latent syphilis are described here

(**Graph 1**) On average, about 43% of individuals diagnosed with infectious syphilis in Houston/Harris County each year also have co-occurring HIV. The current rate of co-occurring HIV and infectious syphilis in Houston/Harris County is 2.3 persons for every 100,000 persons in the jurisdiction. The co-occurring condition rate has been on a downward trend since 2015, when the rate was 3.8 people for every 100,000 population and the proportion of syphilis cases co-occurred with HIV was 44.6%.

SYPHILIS GRAPH 1- Proportion and Rate of Co-Occurring HIV and Infectious Syphilis in Houston/Harris County, 2012 to 2017



	2012	2013	2014	2015	2016	2017
Proportion of Infectious Syphilis Cases with HIV	46.3%	42.7%	44.1%	44.6%	46.4%	33.1%
Comorbidity Rate	5.3	3.0	3.7	3.8	3.5	2.3

Source: Houston/Harris County STD*MIS as of October 2018. Rate per 100,000 population.
Population Source: Harris County population projections from U.S. Census Bureau, American Community Survey 1-Year Estimates; Census tracts outside of Harris where at least 50% of the population reside in Houston (census tracts: 48157670101, 48157670102, 48157670200, 48157670300, 48157670400, 48157670602) from U.S. Census

[1]Centers for Disease Control and Prevention, "Syphilis & MSM (Men Who Have Sex With Men) - CDC Fact Sheet." Last Modified: September 1, 2010. Located at http://www.cdc.gov/std/syphilis/STDFact-MSM-Syphilis.htm
[2]Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2010, MMWR 2010; 59. Diseases Characterized by Genital, Anal, or Perianal Ulcers

(**Table 1**) In 2017, 108 cases of infectious syphilis were also co-occurred with HIV in Houston/Harris County. Of these, the majority was African American (56.5.0%), between the ages of 25 and 34 (45.4%), and MSM (88.0%). When all syphilis stages are included in the analysis, 1,051 cases were co-occurred with HIV in 2017 for a rate of 22.4 persons for every 100,000 persons living in Houston/Harris County.

SYPHILIS TABLE 1- Syphilis Cases Co-Occurred with HIV in Houston/Harris County by Sex assigned at birth, Race/Ethnicity, Age, and Risk, 2017[a]

	HIV and Infectious Syphilis[b]			HIV and All Syphilis[c]		
	Cases	%	Rate[d]	Cases	%	Rate[d]
Total Co-Occurring Conditions[e]	108	100.0%	2.3	1,051	100.0%	22.4
Sex assigned at birth						
Male	105	97.2%	4.5	1,034	98.4%	44.4
Female	3	2.8%	0.1	17	1.6%	0.7
Race/Ethnicity						
White				182	17.3%	13.2
Black/African American	61	56.5%	7.0	523	49.8%	59.6
Hispanic/Latino	25	23.1%	1.2	314	29.9%	15.6
Other/Unknown				32	3.0%	7.6
Age at Diagnosis						
0 - 14	0	0.0%	0.0	0	0.0%	0.0
15 - 24	22	20.4%	3.4	124	11.8%	19.4
25 - 34	49	45.4%	6.5	455	43.3%	60.3
35 - 44	22	20.4%	3.3	251	23.9%	37.6
45-54	12	11.1%	1.4	162	15.4%	27.6
55+	3	2.8%	0.9	59	5.6%	6.0
Syphilis Transmission Risk						
Male-to-male sexual activity (MSM)	95	88.0%	*	671	63.8%	*
Non-MSM sexual risk	13	12.0%	*	380	36.2%	*

[a]Source: STD*MIS Interview Records
[b]Infectious syphilis is primary and secondary syphilis only
[c]All syphilis includes primary, secondary, and latent syphilis, but not congenital syphilis
[d]Rate per 100,000 population. Population Source: Harris County population projections from U.S. Census Bureau, American Community Survey 1-Year Estimates; Census tracts outside of Harris where at least 50% of the population reside in Houston (census tracts: 48157670101, 48157670102, 48157670200, 48157670300, 48157670400, 48157670602) from U.S. Census Bureau
[e]HIV status will be unknown for those not interviewed
[f]For the purpose of this analysis, the rate for "other" race/ethnicity includes those for whom race/ethnicity s unknown.
*Population data are not available for transmission risk; therefore, it is not possible to calculate rate by risk

(**Table 2**) Though not as easily spread as *infectious syphilis*, early latent syphilis can still be transmitted to sex partners, and there are typically no symptoms.[3] Moreover, if latent syphilis remains untreated, it can result in damage to internal organs.[3]

In 2017, there were 290 persons in the Houston EMA who have co-occurring HIV and early latent syphilis. Of these, the majority was African American (6=50.0%), between the ages of 25 and 34 (43.8%), and MSM (69.0%).

[3]Centers for Disease Control and Prevention, "Syphilis & MSM (Men Who Have Sex With Men) - CDC Fact Sheet." Last Modified: January 31, 2017. Located at http://www.cdc.gov/std/syphilis/STDFact-MSM-Syphilis.htm

SYPHILIS TABLE 2- Early Latent Syphilis Cases Co-Occurred with HIV in Houston/Harris County by Sex assigned at birth, Race/Ethnicity, Age, and Risk, 2017[a]

	HIV and Early Latent Syphilis[b]	
	Cases	%
Total with HIV	290	100.0%
Sex assigned at birth		
Male	289	99.6%
Female	1	0.4%
Race/Ethnicity		
White	56	19.3%
Black/African American	145	50.0%
Hispanic/Latino	82	28.3%
Other/Unknown	7	2.4%
Age		
0 - 14	0	0.0%
15 - 24	32	11.0%
25 - 34	127	43.8%
35 - 44	73	25.2%
45 - 54	40	13.8%
55+	18	6.2%
Risk Category		
Male-to-male sexual contact (MSM)	201	69.3%
Non-MSM	89	30.7%

[a]Source: STD*MIS Interview Records

[b]Latent syphilis is syphilis detectable via testing but with no evidence of disease. Peoples who have latent syphilis and acquired it during the preceding year are classified as having early latent syphilis.

National HIV Behavioral Surveillance (NHBS)

Introduction

In 2002, as an initial step towards meeting one of the goals of the CDC HIV Prevention Strategic Plan, CDC awarded supplemental funds to state and local health departments to develop and implement the National HIV Behavioral Surveillance System (NHBS). The goal was to strengthen the national capacity to monitor the HIV epidemic to better direct and evaluate prevention efforts, which has been further highlighted in the 2015 National HIV/AIDS Strategy for the United States[1]. As a result, NHBS was established to monitor HIV-associated selected behaviors that put people at risk for HIV. NHBS targets three high-risk populations for HIV: men who have sex with men (MSM), people who inject drugs (PWID) - defined by CDC as the injection drug use or IDU cycle (PWID/IDU), and heterosexuals at increased risk of HIV (HET). NHBS project sites are comprised of state and local health departments in areas with the highest HIV prevalence[2]. Houston has been one of the NHBS participating sites since the project's inception in 2003. As of 2018, 22 jurisdictions with high HIV prevalence are funded to conduct NHBS.

Rationale for the Development of NHBS

NHBS resulted from the need to develop ongoing bio-behavioral surveillance to strengthen the national capacity to monitor the HIV epidemic. The goals of the project are to ascertain the prevalence and trends of HIV risk behaviors, develop an ongoing program to evaluate changes over time in behaviors, and to develop a mechanism to incorporate and utilize the behavioral data gathered during this project and other sources of HIV-related behavioral risk data to effectively summarize what is currently known about HIV risk taking behaviors, specially of those at highest risk for HIV . The overarching goal of NHBS is to help evaluate and direct local and national prevention efforts[2].

Survey Methodology

NHBS consists of an anonymous cross-sectional survey that utilizes the same standardized questionnaire in all project sites, including the Houston project area. The NHBS data collection focuses primarily on sexual and drug-use behaviors that place individuals at risk for HIV, as well as their use of HIV prevention services. Data on demographic characteristics, alcohol use, other health conditions, discrimination, intimate partner violence, HIV stigma, and HIV testing and incarceration history are also collected for each cycle. The NHBS activities are implemented in rotating annual cycles, primarily from three different populations at high risk for HIV so that data are collected from each risk group every three years. The NHBS cycles are referred to by the group of interest or at-risk group (NHBS-MSM, NHBS-PWID/IDU and NHBS-HET).

Data Collection

For each NHBS cycle, formative research is conducted to prepare for the recruitment of hard to reach populations. Formative research activities include ethnographic mapping, observations, interviews, review of secondary data sources, focus groups and other operational activities including identification of interview locations. During recruitment, eligible consenting participants are asked to complete a standardized anonymous questionnaire and HIV testing is offered to all study participants. NHBS data collection in Houston has been ongoing for approximately 16 years. Table 1 presents NHBS data collection periods in Houston since 2003.

TABLE 1 - Data Collection Periods – Completed and Upcoming* Cycles (from 2003-2019)

	NHBS Cycle		
NHBS Round	**MSM**	**PWID/IDU**	**HET**
1	Dec 2003-Dec 2004	Jan-Dec 2005	Jan 2006-Oct 2007
2	Jan-Dec 2008	Jan-Dec 2009	Jan-Dec 2010
3	Jan-Dec 2011	Jan-Dec 2012	Jan-Dec 2013
4	Jan-Dec 2014	Jan-Dec 2015	Jan-Dec 2016
5	Jan-Dec 2017	Jan-Dec 2018	Jan-Dec 2019*

Sampling Methodology

Two sampling methods are used in NHBS, namely Respondent Driven Sampling (RDS) and Venue based Sampling (VBS). The sampling method used during the PWID and HET cycles of NHBS is the RDS, a type of peer-driven chain-referral sampling. During the MSM cycle, a VBS is used. The VBS relies on a sampling frame and a two-stage sampling design.

RDS

RDS begins with the non-random selection of a small number of initial recruiters or “seeds.” These “seeds” recruit project participants who in turn recruit other participants. This chain of recruiters and recruits then continues for multiple “waves” of recruitment. Ongoing recruitment is fostered with a dual incentive system: one incentive for participating in the project and another incentive for each person recruited who participates. Recruiters are linked to their recruits by an encoded number on the recruitment coupons, who are limited to the number of people they can recruit, based on the number of recruitment coupons they are given. The NHBS protocol states that the maximum number of coupons that can be distributed to each participant is five, but it can range from 3 to 5 (Centers for Disease Control and Prevention, 2015).

VBS

- **Constructing sampling frames**

Before sampling can begin for VBS, two sampling frames need to be constructed: a venue frame and a day-time frame. The venue frame is a list of venues where recruitment could potentially take place during the upcoming month and the day-time frame is a list of day and time periods when recruitment could occur at each venue.

- **Stage 1 sampling: venue selection**

The selection of venues where recruitment will occur during the upcoming month is done by a random selection of venues from the venue frame that will correspond to the number of recruitment events planned for that particular month.

- **Stage 2 sampling: day-time period selection**

Starting with the venue with the fewest number of day-time periods, project staff will randomly select a day-time period and schedule it on the recruitment calendar for the upcoming month. The process of stage 2 sampling is repeated for each of the venues selected in stage 1 until all venues have been scheduled on the recruitment calendar.

Eligibility Criteria

An eligible NHBS participant is aged 18 years and above, lives in the participating project area, has not previously participated in the current cycle and is able to complete the interview in English or Spanish. Specific population eligibility criteria are presented in Table 2.

TABLE 2 - Eligibility Criteria for Specific NHBS Cycles per CDC Protocols

MSM	Were assigned male at birth and self-identifies as male Have ever had oral or anal sex with another man[a] Report having had sex with another man[a] in the past 12 months
PWID/IDU	Present a valid NHBS-PWID/IDU coupon Have injected drugs without a prescription in the past 12 months
HET	Present a valid NHBS-HET coupon Are between 18 and 60 years of age [b] Have had vaginal or anal sex with an opposite sex partner in the past 12 months Identifies themselves as cisgender man or cisgender woman Have not injected drugs without a prescription in the past 12 months Have low socioeconomic status (SES) [c]

[a] NBHS questionnaire does not capture sex at birth for partners

[b] The upper age limit for the NHBS-HET cycles is based on unpublished analyses of NHBS-HET1 data and information from CDC's Incidence Surveillance System; rates of new HIV diagnoses were higher in participants 25 years old and younger.

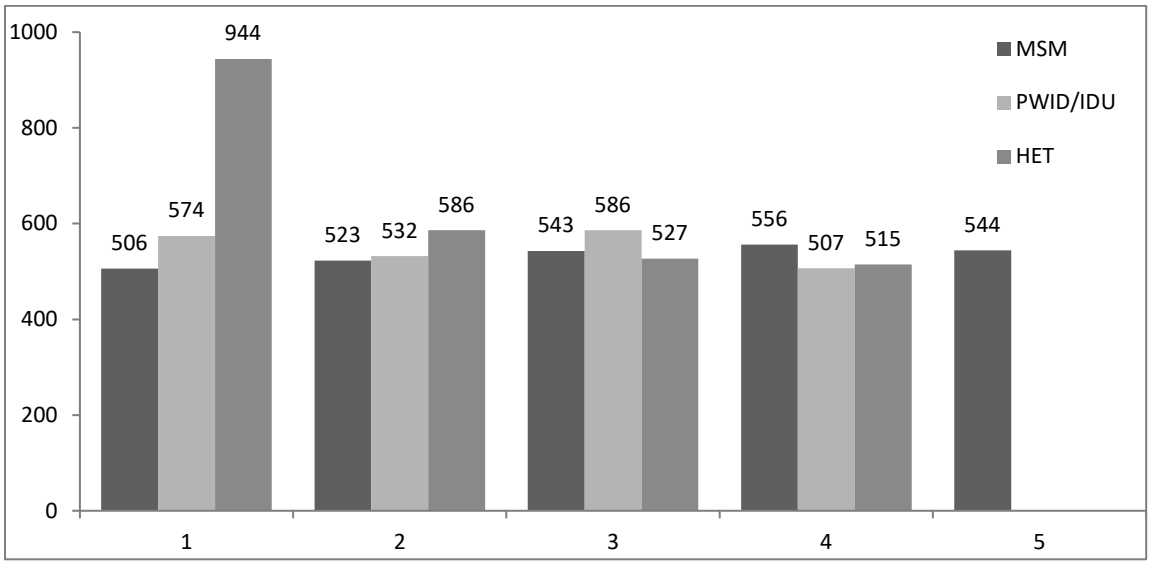
[c] Low SES is defined as having income that does not exceed Health and Human Services (HHS) poverty guidelines or educational attainment not greater than high school.

Note: cisgender refers to someone who is not transgender and whose current gender identity aligns with the sex they were assigned at birth.

Recruitment

Every NHBS project site must complete at least 500 interviews for each cycle period. Nationwide, data from approximately 10,000 interviews are collected each year for the NHBS. Figure 1 shows the total number of eligible participants recruited for each cycle period in the Houston project area.

FIGURE 1 - Recruitment of NHBS Eligible Participants



Source: NHBS project, Houston Health Department

*The number of eligible participants recruited for PWID5 is preliminary. The final data has not been released by CDC at the time of this report.

Survey Outcomes

The survey outcomes presented below are based on data analysis conducted using unweighted data. No statistical tests were performed, and no attempts were made to infer any causal relationships.

Demographic Characteristics

Figure 2 presents the race/ethnicity of MSM who participated in the NHBS by cycle periods. From MSM1 to MSM3, Whites represented more than 50% of the study participants (52%-58%); this percentage was lower for MSM4 (36%) and MSM5 (34.2%). The proportion of African Americans participants increased over the years from 15% (in 2004) to 38% (in 2014) although there was a decrease (27.8%) during 2017. During the MSM5 cycle (2017), the number of Hispanic/Latino participants increased (32.7%) when compared with the previous MSM4 cycle (21.0%).

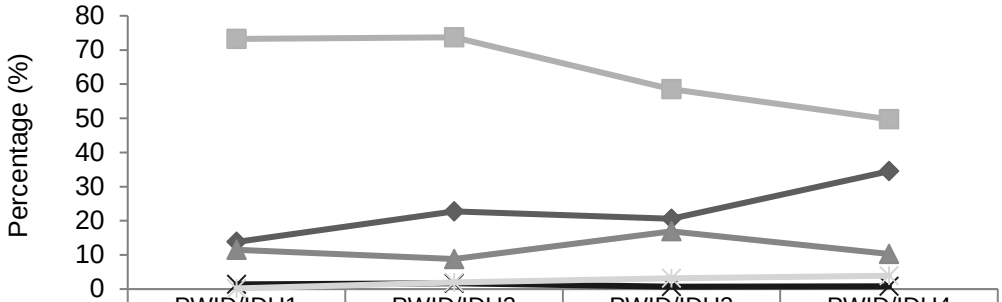
FIGURE 2 - Distribution of Eligible Survey Participants in NHBS-MSM Cycles by Race/Ethnicity

	MSM1 (2003-2004)	MSM2 (2008)	MSM3 (2011)	MSM4 (2014)	MSM5 (2017)
White	56.2	57.6	52.1	35.6	34.2
African American	14.5	21.4	21.0	37.9	27.8
Hispanic	22.1	15.1	21.2	20.7	32.7
Other	4.2	2.5	2.6	2.3	2.0
Multiple	3.0	3.4	3.1	3.4	3.3

Source: NHBS project, Houston Health Department

Figure 3 presents the race/ethnicity of PWID who participated in the NHBS by cycle periods. Consistently, participants have been predominantly African American, but this trend has decreased over time from 74.0% in 2009 to 49.7% in 2015. In 2015, the percentage of White participants increased (34.5%) in comparison with the previous cycle (21.0%).

FIGURE 3 - Distribution of Eligible Survey Participants during NHBS-PWID/IDU Cycles by Race/Ethnicity

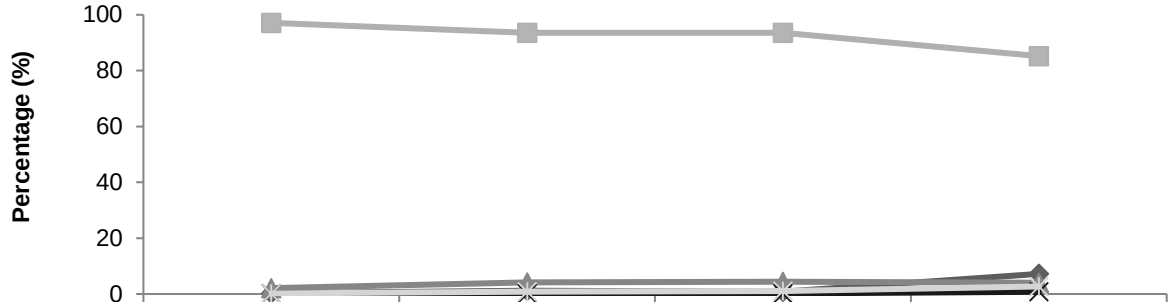


	PWID/IDU1 (2005)	PWID/IDU2 (2009)	PWID/IDU3 (2012)	PWID/IDU4 (2015)
White	13.8	22.7	20.6	34.5
African American	73.2	73.7	58.5	49.7
Hispanic	11.5	8.8	16.9	10.3
Other	1.4	1.7	0.7	0.8
Multiple	0.2	1.9	3.2	3.9

Source: NHBS project, Houston Health Department

Figure 4 presents the race/ethnicity of heterosexuals who participated in the NHBS by cycle periods. Overall, HET participants were primarily African American (more than 85% in all cycles). In 2016, the Houston project area, and 4 additional NHBS project areas in the nation, conducted the high-risk women (HRW) cycle during HET4. This cycle was focused on women who exchanged sex for money or drugs. Although 515 participants met general eligibility criteria for HET4, 331 (64%) participants exchanged sex (HRW) and were eligible to recruit. During this special cycle, although less than in previous HET cycles, the majority of the participants continued to be African American (85.2%) and there were more White (7.2%) participants than in previous cycles (range 0.3% - 1.0%).

FIGURE 4 - Distribution of Eligible Survey Participants during NHBS-HET Cycles by Race/Ethnicity



	HET1 (2006-2007)	HET2 (2010)	HET3 (2013)	HRW-HET4* (2016)
White	0.3	1.2	0.8	7.2
African American	97.1	93.6	93.5	85.2
Hispanic	2.1	4.2	4.4	4.1
Other	0.2	0.2	0.2	0.8
Multiple	0.2	0.8	1.1	2.7

*HRW, High Risk Women - High-Risk Heterosexuals Cycle, Round 4
Source: NHBS project, Houston Health Department

Risk Behaviors

Table 3 presents high risk behaviors reported by men who have sex with men (MSM) during five cycle periods conducted among MSM in Houston. The data shows that from MSM1 to MSM4, more than 25% (26.4% - 28.2%) of MSM had unprotected anal sex (UAS) with their main partner in the past 12 months, and more than 30% during MSM5. MSM participants showed higher rates of unprotected sex when they engaged in insertive sex (anal sex where participant puts his penis in his partner's anus) than when compared to receptive sex (anal sex where partner puts his penis in the participant's anus). In general, approximately a third of the MSM participants were unaware of the HIV status of their last sex partner. Almost half of the time in MSM1-4 cycles, alcohol and/or drugs were used during their most recent sexual encounter. Consistently throughout the years, very high rates (>90%) of ever being tested for HIV have been reported among MSM participants.

TABLE 3 MSM† High-Risk Behaviors by Survey Cycle					
	MSM1 2004	MSM2 2008	MSM3 2011	MSM4 2014	MSM5 2017
UAS* with main partner in past 12 months	26.7%	26.4%	28.2%	26.1%	32.5%
UAS with casual partner in past 12 months	0.6%	7.3%	5.0%	5.9%	7.9%
UAS with main partner at last sex (insertive)	24.3%	23.7%	23.8%	22.8%	31.3%
UAS with main partner at last sex (receptive)	18.2%	15.3%	18.8%	18.6%	24.8%
Use of alcohol and drugs during the last sex	--	45.3%	49.9%	47.3%	N/A
Did not know HIV status of last sex partner	---	28.7%	36.1%	34.2%	30.9%
Ever tested for HIV	95.8%	93.1%	90.8%	93.2%	96.0%

*UAS - unprotected anal sex

Note: A main partner is defined as a person the participant has sex with and feels committed to above anyone else. This is a partner he/she would call girlfriend/boyfriend, wife/husband, significant other, or life partner.

A casual partner is defined as a person the participant has sex with but does not feel committed to or doesn't know very well.

N/A, not applicable. This information was not collected during MSM5.

† NHBS does not capture transgender MSM in the MSM cycle.

Source: NHBS project, Houston Health Department

High risk behaviors reported among PWID during the four completed cycles of NHBS-PWID/IDU are displayed in Table 4. Sharing of injection equipment comprised one of the major drug-related risk behaviors for current injectors (people who have injected non-prescribed drugs in the past 12 months). When compared to the previous PWID/IDU2 cycle, in PWID/IDU3 sharing of injection drug use equipment decreased (57.2% and 35.3%, respectively) but increased again in PWID/IDU4 (39.6%). The proportions of non-awareness of the HIV status of the last injecting partner were considered high, ranging from 37.6% to 55.1%, with no clear pattern identified. However, the HIV testing rates increased consistently from 76.0% in PWID/IDU1 (2005) to 92.5% in PWID/IDU3-4 (2012-2015).

TABLE 4- PWID High-Risk Behaviors by Survey Cycle				
High Risk Behaviors	**PWID/IDU1 2005**	**PWID/IDU2 2009**	**PWID/IDU3 2012**	**PWID/IDU4 2015**
Shared cooker, cotton, or water - last time shared	33.7%	57.2%	35.3%	39.6%
Divided drugs with same syringe - last time shared	51.1%	28.3%	17.8%	18.5%
Used needle	45.5%	28.5%	17.8%	13.4%

after someone else - last time shared				
Did not know HIV status of last injecting partner	37.6%	55.1%	37.6%	44.8%
Ever tested for HIV	76.0%	89.6%	92.5%	92.5%

Source: NHBS project, Houston Health Department

Table 5 and 6 present high-risk behaviors among heterosexuals (HET). Table 5 presents high-risk behaviors among males in HET1 (2006), HET2 (2010) and HET3 (2013), and Table 6 presents high-risk behaviors among females for the same cycles and the HET4 (2016) cycle, which focused on high risk women (HRW), or women who exchanged sex for money or drugs.

Table 5 shows that over the cycle periods, there has been a decrease in males who had unprotected vaginal sex (UVS) with both main and casual partners in the past 12 months. The number of males who did not know the HIV status of their last sex partner has increased over the cycle periods, from 44.0% to 61.9%. Although showing a slight decrease, the use of alcohol and drugs during their most recent sexual encounter continues to be consistently high among study participants during the three cycles. Testing rates in this male population seem to be increasing over time, from 76.2% to 82.6%.

TABLE 5 - HET High-Risk Behaviors in Cisgender Males by Survey Cycle

High Risk Behaviors in Cisgender Males	HET1 2006	HET2 2010	HET3 2013
UVS* with main female partner in past 12 months	53.4%	45.5%	39.6%
UAS with main female partner in past 12 months**	4.5%s	9.0%	7.8%
UVS* with casual female partner in past 12 months	8.8%	7.6%	6.7%
UAS with casual female partner in past 12 months**	1.9%	6.9%	2.7%
Use of alcohol and drugs during the last sex	65.3%	55.9%	53.7%
Did not know HIV status of last sex partner	44.0%	55.2%	61.9%
Ever tested for HIV	76.2%	78.0%	82.6%

*UVS: Unprotected vaginal sex **UAS: Unprotected anal sex

Note: A main partner is defined as a person the participant has sex with and feels committed to above anyone else. This is a partner he/she would call girlfriend/boyfriend, wife/husband, significant other, or life partner.
A casual partner is defined as a person the participant has sex with but do not feel committed to or don't know very well.
Cisgender refers to someone who is not transgender and whose current gender identity aligns with the sex they were assigned at birth.
Source: NHBS project, Houston Health Department

High risk heterosexual cisgender females maintained high rates of UVS in the past 12 months with their main cisgender male partners. Although rates for ever being tested are increasingly high, ranging from 82.9% to 90.0%, the rates for not knowing the HIV status of the last sex partner are also high, ranging from 47.5% - 61.9%, and even higher for the HRW cycle (69.1%). The use of alcohol and drugs during their most recent sexual encounter is a high-risk behavior throughout the cycle periods (> 40%), although this information was not collected for the HRW cycle. Having unprotected vaginal or anal sex with any partner, main or casual, is substantially elevated in the HRW cycle which focused on sex workers, or women who exchange sex for money or drugs. This is the first time NHBS collected information on this highly HIV-impacted and at-risk population.

TABLE 6 - HET High-Risk Behaviors in Cisgender Females by Survey Cycle

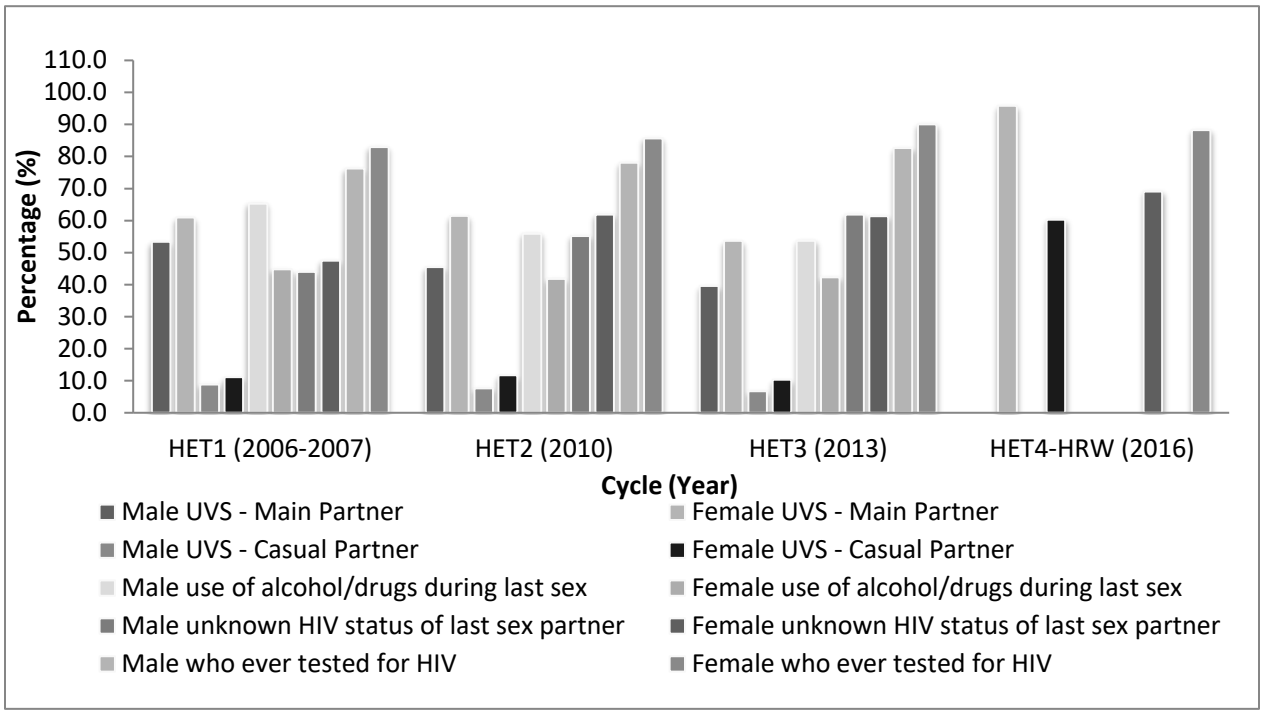
High Risk Behaviors in Cisgender Females	HET1 2006	HET2 2010	HET3 2013	HRW-HET4 2016
UVS* with main male partner in past 12 months	61.0%	61.5%	53.7%	95.8%
UAS with main male partner in past 12 months**	7.8%	17.7%	14.7%	90.3%
UVS* with casual male partner in past 12 months	11.1%	11.7%	10.3%	60.3%
UAS with casual male partner in past 12 months**	0.68%	6.4%	5.9%	66.7%
Use of alcohol and drugs during the last sex	44.8%	41.8%	42.3%	N/A
Did not know HIV status of last sex partner	47.5%	61.9%	61.4%	69.1%
Ever tested for HIV	82.9%	85.6%	90.0%	88.2%

*UVS: Unprotected vaginal sex **UAS: Unprotected anal sex

Note: A main partner is defined as a person the participant has sex with and feels committed to above anyone else. This is a partner he/she would call girlfriend/boyfriend, wife/husband, significant other, or life partner.
A casual partner is defined as a person the participant has sex with but do not feel committed to or don't know very well.
Cisgender refers to someone who is not transgender and whose current gender identity aligns with the sex they were assigned at birth.
Source: NHBS project, Houston Health Department

Figure 5 presents high risk behaviors reported by heterosexual cisgender males and cisgender females who participated in NHBS-HET (1, 2, 3 and 4). Overall, cisgender females maintained higher rates of UVS in the past 12 months with their main and casual partners when compared to cisgender males. The use of alcohol and drugs during their most recent sexual encounter was persistently higher in cisgender males. The proportions of cisgender females who were unaware of the HIV status of their last sex partner were slightly higher than that of cisgender males for the years 2007 and 2010, but lower in 2013. Although the rates for ever being tested among the HET cisgender males and cisgender females increased over time, cisgender females tend to get tested more often than cisgender males do.

FIGURE 5 - HET High-Risk Behaviors by Survey Cycle (Year)



Note: only reflects cisgender males and cisgender females. Transgender persons are excluded from participation in HET per CDC eligibility criteria

Source: NHBS project, Houston Health Department

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Data obtained from the NHBS project is used at the local, state, and federal levels to help direct and evaluate local and national HIV prevention efforts. Dissemination efforts are directed to inform prevention/treatment-utilization-services. Although HIV behavioral surveillance data cannot be used to evaluate the efficacy of specific interventions, they are important for monitoring whether HIV prevention efforts within the Houston/Harris County are reaching at-risk hard to reach populations and whether these efforts meet national and local prevention goals. At the individual level, NHBS participants may benefit directly from HIV prevention counseling, knowledge of their HIV status, and referrals for additional HIV care services.

References

1. 2015 NATIONAL HIV/AIDS STRATEGY for the UNITED STATES: UPDATED TO 2020 downloaded from https://www.hiv.gov/federal-response/national-hiv-aids-strategy/nhas-update
2. Centers for Disease Control and Prevention. National HIV Behavioral Surveillance: Round 5. Model Surveillance Protocol. Version Date: December 15, 2017.

Below is an alternate version of NHBS chapter - based on the most recent feedback from the project coordinator and the principal investigation. For your convenience, all changes to the original (above document) are listed as “tracked changes” in the document below.

This is an alternate version of NHBS - based on recent feedback from the project coordinator and the principal investigator.

National HIV Behavioral Surveillance (NHBS)

Introduction

In 2002, as an initial step towards meeting one of the goals of the CDC HIV Prevention Strategic Plan, CDC awarded supplemental funds to state and local health departments to develop and implement the National HIV Behavioral Surveillance System (NHBS). The goal was to strengthen the national capacity to monitor the HIV epidemic to better direct and evaluate prevention efforts, which has been further highlighted in the 2015 National HIV/AIDS Strategy for the United States[1]. As a result, NHBS was established to monitor HIV-associated selected behaviors that put people at risk for HIV. NHBS targets three high-risk populations for HIV: men who have sex with men, known as the (MSM cycle),; people who inject drugs (PWID), known - defined by CDC as the injection drug use or IDU cycle (PWID/IDU),; and heterosexuals at increased risk of HIV, known as the (HET) cycle. NHBS project sites are comprised of state and local health departments in areas with the highest HIV prevalence[2]. Houston has been one of the NHBS participating sites since the project's inception in 2003. As of 2018, 22 jurisdictions with high HIV prevalence are funded to conduct NHBS.

Rationale for the Development of NHBS

NHBS resulted from the need to develop ongoing bio-behavioral surveillance to strengthen the national capacity to monitor the HIV epidemic. The goals of the project are to ascertain the prevalence and trends of HIV risk behaviors, develop an ongoing program to evaluate changes over time in behaviors, and to develop a mechanism to incorporate and utilize the behavioral data gathered during this project and other sources of HIV-related behavioral risk data to effectively summarize what is currently known about HIV risk taking behaviors, specially of those at highest risk for HIV . The overarching goal of NHBS is to help evaluate and direct local and national prevention efforts[2].

Survey Methodology

NHBS consists of an anonymous cross-sectional survey that utilizes the same standardized questionnaire in all project sites, including the Houston project area. The NHBS data collection focuses primarily on sexual and drug-use behaviors that place individuals at risk for HIV, as well as their use of HIV prevention services. Data on demographic characteristics, alcohol use, other health conditions, discrimination, intimate partner violence, HIV stigma, and HIV testing and incarceration history are also collected for each cycle. The NHBS activities are implemented in rotating annual cycles, primarily from three different populations at high risk for HIV so that data are collected from each

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risk group every three years. The NHBS cycles are referred to by the group of interest or at-risk group, namely (NHBS-MSM, NHBS-PWID/IDU (among PWID) and NHBS-HET).

Data Collection

For each NHBS cycle, formative research is conducted to prepare for the recruitment of hard to reach populations. Formative research activities include ethnographic mapping, observations, interviews, review of secondary data sources, focus groups and other operational activities including identification of interview locations. During recruitment, eligible consenting participants are asked to complete a standardized anonymous questionnaire and HIV testing is offered to all study participants. NHBS data collection in Houston has been ongoing for approximately 16 years. Table 1 presents NHBS data collection periods in Houston since 2003.

TABLE 1 - Data Collection Periods – Completed and Upcoming* Cycles (from 2003-2019)

	NHBS Cycle		
NHBS Round	**MSM**	**PWID/IDU**	**HET**
1	Dec 2003-Dec 2004	Jan-Dec 2005	Jan 2006-Oct 2007
2	Jan-Dec 2008	Jan-Dec 2009	Jan-Dec 2010
3	Jan-Dec 2011	Jan-Dec 2012	Jan-Dec 2013
4	Jan-Dec 2014	Jan-Dec 2015	Jan-Dec 2016
5	Jan-Dec 2017	Jan-Dec 2018	Jan-Dec 2019*

Sampling Methodology

Two sampling methods are used in NHBS, namely Respondent Driven Sampling (RDS) and Venue based Sampling (VBS). The sampling method used during the PWIDU and HET cycles of NHBS is the RDS, a type of peer-driven chain-referral sampling. During the MSM cycle, a VBS is used. The VBS relies on a sampling frame and a two-stage sampling design.

RDS

RDS begins with the non-random selection of a small number of initial recruiters or “seeds.” These “seeds” recruit project participants who in turn recruit other participants. This chain of recruiters and recruits then continues for multiple “waves” of recruitment. Ongoing recruitment is fostered with a dual incentive system: one incentive for participating in the project and another incentive for each person recruited who participates. Recruiters are linked to their recruits by an encoded number on the recruitment coupons, who are limited to the number of people they can recruit, based on

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the number of recruitment coupons they are given. The NHBS protocol states that the maximum number of coupons that can be distributed to each participant is five, but it can range from 3 to 5 (Centers for Disease Control and Prevention, 2015).

VBS

- **Constructing sampling frames**

Before sampling can begin for VBS, two sampling frames need to be constructed: a venue frame and a day-time frame. The venue frame is a list of venues where recruitment could potentially take place during the upcoming month and the day-time frame is a list of day and time periods when recruitment could occur at each venue.

- **Stage 1 sampling: venue selection**

The selection of venues where recruitment will occur during the upcoming month is done by a random selection of venues from the venue frame that will correspond to the number of recruitment events planned for that particular month.

- **Stage 2 sampling: day-time period selection**

Starting with the venue with the fewest number of day-time periods, project staff will randomly select a day-time period and schedule it on the recruitment calendar for the upcoming month. The process of stage 2 sampling is repeated for each of the venues selected in stage 1 until all venues have been scheduled on the recruitment calendar.

Eligibility Criteria

An eligible NHBS participant is aged 18 years and above, lives in the participating project area, has not previously participated in the current cycle and is able to complete the interview in English or Spanish. Specific population eligibility criteria are presented in Table 2.

TABLE 2 - Eligibility Criteria for Specific NHBS Cycles per CDC Protocols

MSM	Were assigned male at birth and self-identifies as male Have ever had oral or anal sex with another man[a] Report having had sex with another man[a] in the past 12 months
~~PWID/~~IDU	Present a valid NHBS-~~PWID/~~IDU coupon Have injected drugs without a prescription in the past 12 months
HET	Present a valid NHBS-HET coupon Are between 18 and 60 years of age[b] Have had vaginal or anal sex with an opposite sex partner in the past 12 months ~~Are~~ Identifies themselves as cisgender man or cisgender woman Have not injected drugs without a prescription in the past 12 months Have low socioeconomic status (SES)[c]

[a] NBHS questionnaire does not capture sex at birth for partners

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[b] The upper age limit for the NHBS-HET cycles is based on unpublished analyses of NHBS-HET1 data and information from CDC's Incidence Surveillance System; rates of new HIV diagnoses were higher in participants 25 years old and younger.

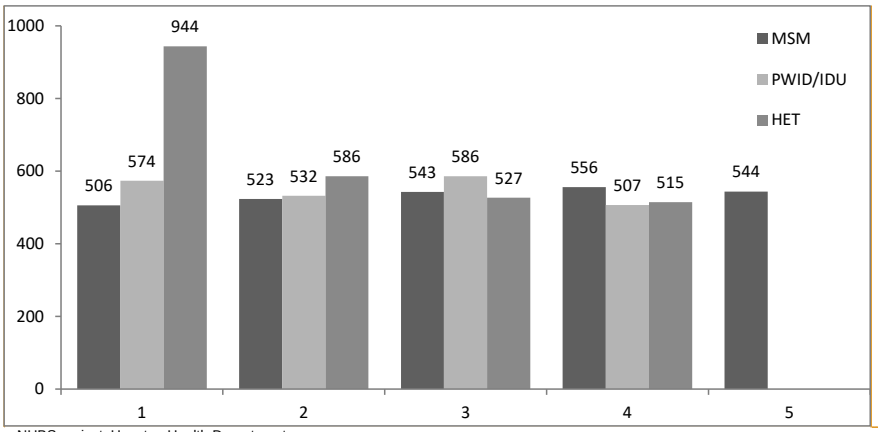
[c] Low SES is defined as having income that does not exceed Health and Human Services (HHS) poverty guidelines or educational attainment not greater than high school.

Note: cisgender refers to someone who is not transgender and whose current gender identity aligns with the sex they were assigned at birth.

Recruitment

Every NHBS project site must complete at least 500 interviews for each cycle period. Nationwide, data from approximately 10,000 interviews are collected each year for the NHBS. Figure 1 shows the total number of eligible participants recruited for each cycle period in the Houston project area.

FIGURE 1 - Recruitment of NHBS Eligible Participants



Source: NHBS project, Houston Health Department

*The number of eligible participants recruited for ~~PW~~IDU5 is preliminary. The final data has not been released by CDC at the time of this report.

Commented [A1]: Remove PWID in legend inside the graph and just leave IDU

Survey Outcomes

The survey outcomes presented below are based on data analysis conducted using unweighted data. No statistical tests were performed, and no attempts were made to infer any causal relationships.

Demographic Characteristics

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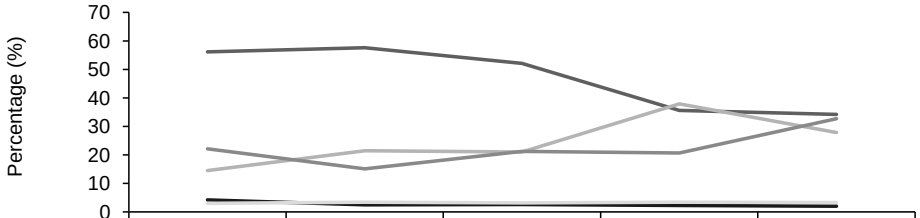
Figure 2 presents the race/ethnicity of MSM who participated in the NHBS by cycle periods. From MSM1 to MSM3, Whites represented more than 50% of the study participants (52%-58%); this percentage was lower for MSM4 (36%) and MSM5 (34.2%). The proportion of African Americans participants increased over the years from 15% (in 2004) to 38% (in 2014) although there was a decrease (27.8%) during 2017. During the MSM5 cycle (2017), the number of Hispanic/Latino participants increased (32.7%) when compared with the previous MSM4 cycle (21.0%).

FIGURE 2 - Distribution of Eligible Survey Participants in NHBS-MSM Cycles by Race/Ethnicity



	MSM1 (2003-2004)	MSM2 (2008)	MSM3 (2011)	MSM4 (2014)	MSM5 (2017)
White	56.2	57.6	52.1	35.6	34.2
African American	14.5	21.4	21.0	37.9	27.8
Hispanic	22.1	15.1	21.2	20.7	32.7
Other	4.2	2.5	2.6	2.3	2.0
Multiple	3.0	3.4	3.1	3.4	3.3

Source: NHBS project, Houston Health Department

Figure 3 presents the race/ethnicity of PWID who participated in the NHBS by cycle periods. Consistently, participants have been predominantly African American, but this trend has decreased over time from 74.0% in 2009 to 49.7% in 2015. In 2015, the percentage of White participants increased (34.5%) in comparison with the previous cycle (21.0%).

FIGURE 3 - Distribution of Eligible Survey Participants during NHBS-~~PWID/~~IDU Cycles by Race/Ethnicity

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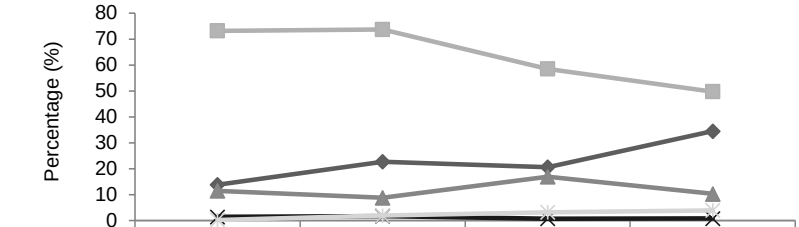

	IDU1 (2005)	IDU2 (2009)	IDU3 (2012)	IDU4 (2015)
White	13.8	22.7	20.6	34.5
African American	73.2	73.7	58.5	49.7
Hispanic	11.5	8.8	16.9	10.3
Other	1.4	1.7	0.7	0.8
Multiple	0.2	1.9	3.2	3.9

Source: NHBS project, Houston Health Department

Figure 4 presents the race/ethnicity of heterosexuals who participated in the NHBS by cycle periods. Overall, HET participants were primarily African American (more than 85% in all cycles). In 2016, the Houston project area, and 4 additional NHBS project areas in the nation, conducted the high-risk women (HRW) cycle during HET4. This cycle was focused on women who exchanged sex for money or drugs. Although 515 participants met general eligibility criteria for HET4, 331 (64%) participants exchanged sex (HRW) and were eligible to recruit. During this special cycle, although less than in previous HET cycles, the majority of the participants continued to be African American (85.2%) and there were more White (7.2%) participants than in previous cycles (range 0.3% - 1.0%).

FIGURE 4 - Distribution of Eligible Survey Participants during NHBS-HET Cycles by Race/Ethnicity

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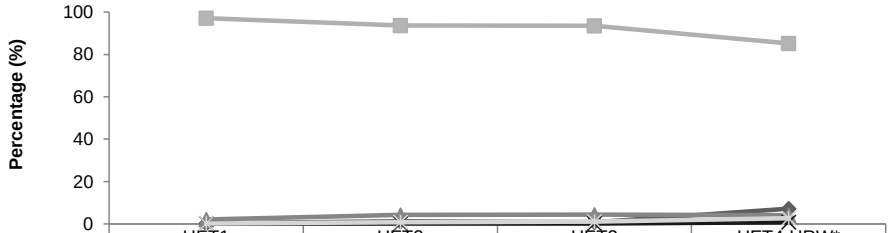

	HET1 (2006-2007)	HET2 (2010)	HET3 (2013)	HET4-HRW* (2016)
White	0.3	1.2	0.8	7.2
African American	97.1	93.6	93.5	85.2
Hispanic	2.1	4.2	4.4	4.1
Other	0.2	0.2	0.2	0.8
Multiple	0.2	0.8	1.1	2.7

*HRW, High Risk Women - High-Risk Heterosexuals Cycle, Round 4
Source: NHBS project, Houston Health Department

Risk Behaviors

Table 3 presents high risk behaviors reported by men who have sex with men (MSM) during five cycle periods conducted among MSM in Houston. The data shows that from MSM1 to MSM4, more than 25% (26.4% - 28.2%) of MSM had unprotected anal sex (UAS) with their main partner in the past 12 months, and more than 30% during MSM5. MSM participants showed higher rates of unprotected sex when they engaged in insertive sex (anal sex where participant puts his penis in his partner's anus) than when compared to receptive sex (anal sex where partner puts his penis in the participant's anus). In general, approximately a third of the MSM participants were unaware of the HIV status of their last sex partner. Almost half of the time in MSM1-4 cycles, alcohol and/or drugs were used during their most recent sexual encounter. Consistently throughout the years, very high rates (>90%) of ever being tested for HIV have been reported among MSM participants.

TABLE 3 MSM† High-Risk Behaviors by Survey Cycle

	MSM1 2004	MSM2 2008	MSM3 2011	MSM4 2014	MSM5 2017
UAS* with main partner in past 12 months	26.7%	26.4%	28.2%	26.1%	32.5%
UAS with casual partner in past 12 months	0.6%	7.3%	5.0%	5.9%	7.9%
UAS with main partner at last sex (insertive)	24.3%	23.7%	23.8%	22.8%	31.3%
UAS with main partner at last sex (receptive)	18.2%	15.3%	18.8%	18.6%	24.8%
Use of alcohol and drugs during the last sex	--	45.3%	49.9%	47.3%	N/A

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Did not know HIV status of last sex partner	---	28.7%	36.1%	34.2%	30.9%
Ever tested for HIV	95.8%	93.1%	90.8%	93.2%	96.0%

*UAS - unprotected anal sex

Note: A main partner is defined as a person the participant has sex with and feels committed to above anyone else. This is a partner he/she would call girlfriend/boyfriend, wife/husband, significant other, or life partner.

A casual partner is defined as a person the participant has sex with but does not feel committed to or doesn't know very well.

N/A, not applicable. This information was not collected during MSM5.

† NHBS does not capture transgender MSM in the MSM cycle.

Source: NHBS project, Houston Health Department

High risk behaviors reported among PWID during the four completed cycles of NHBS-~~PWID/~~IDU are displayed in Table 4. Sharing of injection equipment comprised one of the major drug-related risk behaviors for current injectors (people who have injected non-prescribed drugs in the past 12 months). When compared to the previous ~~PWID/~~IDU2 cycle, in ~~PWID/~~IDU3 sharing of injection drug use equipment decreased (57.2% and 35.3%, respectively) but increased again in ~~PWID/~~IDU4 (39.6%). The proportions of non-awareness of the HIV status of the last injecting partner were considered high, ranging from 37.6% to 55.1%, with no clear pattern identified. However, the HIV testing rates increased consistently from 76.0% in ~~PWID/~~IDU1 (2005) to 92.5% in ~~PWID/~~IDU3-4 (2012-2015).

TABLE 4- PWID High-Risk Behaviors by Survey Cycle

High Risk Behaviors	**~~PWID/~~IDU1 2005**	**~~PWID/~~IDU2 2009**	**~~PWID/~~IDU3 2012**	**~~PWID/~~IDU4 2015**
Shared cooker, cotton, or water - last time shared	33.7%	57.2%	35.3%	39.6%
Divided drugs with same syringe - last time shared	51.1%	28.3%	17.8%	18.5%
Used needle after someone else - last time shared	45.5%	28.5%	17.8%	13.4%
Did not know HIV status of last injecting partner	37.6%	55.1%	37.6%	44.8%
Ever tested for HIV	76.0%	89.6%	92.5%	92.5%

Source: NHBS project, Houston Health Department

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Table 5 and 6 present high-risk behaviors among heterosexuals (HET). Table 5 presents high-risk behaviors among males in HET1 (2006), HET2 (2010) and HET3 (2013), and Table 6 presents high-risk behaviors among females for the same cycles and the HET4 (2016) cycle, which focused on high risk women (HRW), or women who exchanged sex for money or drugs.

Table 5 shows that over the cycle periods, there has been a decrease in males who had unprotected vaginal sex (UVS) with both main and casual partners in the past 12 months. The number of males who did not know the HIV status of their last sex partner has increased over the cycle periods, from 44.0% to 61.9%. Although showing a slight decrease, the use of alcohol and drugs during their most recent sexual encounter continues to be consistently high among study participants during the three cycles. Testing rates in this male population seem to be increasing over time, from 76.2% to 82.6%.

TABLE 5 - HET High-Risk Behaviors in Cisgender Males by Survey Cycle

High Risk Behaviors in Cisgender Males	HET1 2006	HET2 2010	HET3 2013
UVS* with main female partner in past 12 months	53.4%	45.5%	39.6%
UAS with main female partner in past 12 months**	4.5%s	9.0%	7.8%
UVS* with casual female partner in past 12 months	8.8%	7.6%	6.7%
UAS with casual female partner in past 12 months**	1.9%	6.9%	2.7%
Use of alcohol and drugs during the last sex	65.3%	55.9%	53.7%
Did not know HIV status of last sex partner	44.0%	55.2%	61.9%
Ever tested for HIV	76.2%	78.0%	82.6%

*UVS: Unprotected vaginal sex **UAS: Unprotected anal sex

Note: A main partner is defined as a person the participant has sex with and feels committed to above anyone else. This is a partner he/she would call girlfriend/boyfriend, wife/husband, significant other, or life partner.

A casual partner is defined as a person the participant has sex with but do not feel committed to or don't know very well.

Cisgender refers to someone who is not transgender and whose current gender identity aligns with the sex they were assigned at birth.

Source: NHBS project, Houston Health Department

High risk heterosexual cisgender females maintained high rates of UVS in the past 12 months with their main cisgender male partners. Although rates for ever being tested are increasingly high, ranging from 82.9% to 90.0%, the rates for not knowing the HIV status of the last sex partner are also high, ranging from 47.5% - 61.9%, and even higher for the HRW cycle (69.1%). The use of alcohol and drugs during their most

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recent sexual encounter is a high-risk behavior throughout the cycle periods (> 40%), although this information was not collected for the HRW cycle. Having unprotected vaginal or anal sex with any partner, main or casual, is substantially elevated in the HRW cycle which focused on sex workers, or women who exchange sex for money or drugs. This is the first time NHBS collected information on this highly HIV-impacted and at-risk population.

TABLE 6 - HET High-Risk Behaviors in Cisgender Females by Survey Cycle

High Risk Behaviors in Cisgender Females	HET1 2006	HET2 2010	HET3 2013	HRW-HET4 2016
UVS* with main male partner in past 12 months	61.0%	61.5%	53.7%	95.8%
UAS with main male partner in past 12 months**	7.8%	17.7%	14.7%	90.3%
UVS* with casual malepartner in past 12 months	11.1%	11.7%	10.3%	60.3%
UAS with casual male partner in past 12 months**	0.68%	6.4%	5.9%	66.7%
Use of alcohol and drugs during the last sex	44.8%	41.8%	42.3%	N/A
Did not know HIV status of last sex partner	47.5%	61.9%	61.4%	69.1%
Ever tested for HIV	82.9%	85.6%	90.0%	88.2%

*UVS: Unprotected vaginal sex **UAS: Unprotected anal sex

Note: A main partner is defined as a person the participant has sex with and feels committed to above anyone else. This is a partner he/she would call girlfriend/boyfriend, wife/husband, significant other, or life partner.

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Source: NHBS project, Houston Health Department

Figure 5 presents high risk behaviors reported by heterosexual cisgender males and cisgender females who participated in NHBS-HET (1, 2, 3 and 4). Overall, cisgender females maintained higher rates of UVS in the past 12 months with their main and casual partners when compared to cisgender males. The use of alcohol and drugs during their most recent sexual encounter was persistently higher in cisgender males. The proportions of cisgender females who were unaware of the HIV status of their last sex partner were slightly higher than that of cisgender males for the years 2007 and 2010, but lower in 2013. Although the rates for ever being tested among the HET cisgender males and cisgender females increased over time, cisgender females tend to get tested more often than cisgender males do.

FIGURE 5 - HET High-Risk Behaviors by Survey Cycle (Year)

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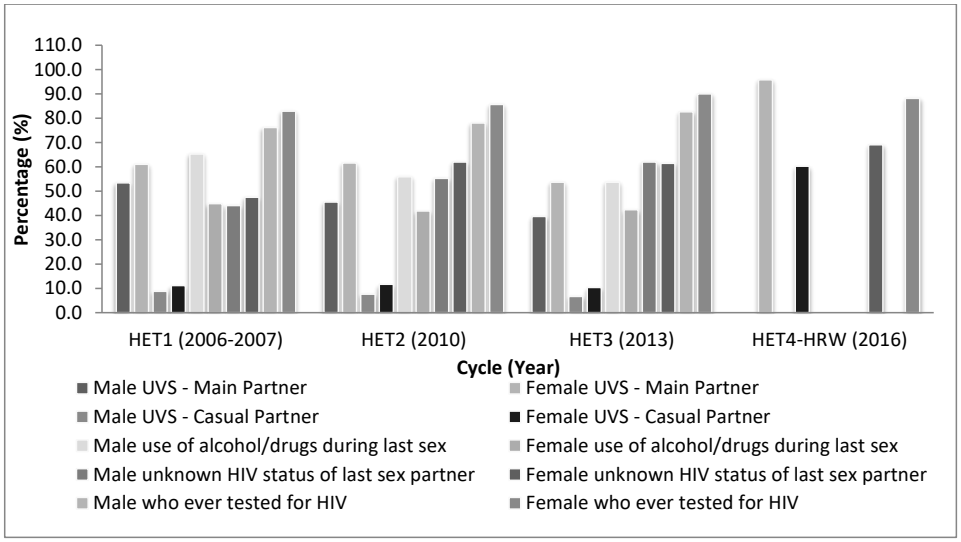

Note: only reflects cisgender males and cisgender females. Transgender persons are excluded from participation in HET per CDC eligibility criteria

Source: NHBS project, Houston Health Department

Data Dissemination and Use

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References

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Houston Medical Monitoring Project (HMMP)

Introduction

The Medical Monitoring Project (MMP) is a nationwide supplemental HIV surveillance system funded by CDC and designed to produce nationally representative estimates of behavioral and clinical characteristics of people living with HIV in the United States and Puerto Rico. It is supported by several government agencies and conducted by state and local health departments along with the Centers for Disease Control and Prevention (CDC). The Houston Health Department (HHD) is one of 23 city/state sites participating in the project. The purpose of the Houston Medical Monitoring Project (HMMP) is to produce population-based estimates of characteristics of persons living with HIV (PLWH) in Houston/Harris County. The MMP provides information on risk behaviors, clinical outcomes, use of prevention services, and identifies met and unmet needs for HIV care and prevention services. The MMP provides answers to questions such as: how many people living with HIV are receiving medical care for HIV? how easy is it to access medical care, prevention, and support services? what are the met and unmet needs of people living with HIV and how is treatment affecting people living with HIV?

Sampling Methodology

From 2005-2014, the MMP used a three-stage probability proportional to size (PPS) sampling design to obtain cross-sectional samples of PLWH receiving medical care in the United States and Puerto Rico. The first stage involved the selection of participating geographic areas based on HIV/AIDS prevalence at the end of 2002; the second stage involved the selection of outpatient facilities providing HIV medical care (i.e., providers who prescribe antiretroviral therapy [ART] or order CD4 or HIV viral load tests) within the participating project areas. Facilities of different sizes (i.e., small, medium, and large) were included based on the estimated patient loads (EPLs) to obtain optimal representativeness. The third sampling stage involved the selection of persons at least 18 years of age who were receiving care for HIV at the selected facilities. Persons in care were sampled from January through April of each data collection cycle. The annual sample of facilities participating in MMP in Houston/Harris County ranged from 20-25 healthcare facilities with a total of 400 persons sampled annually from the selected facilities. Through an informed consent process, selected persons were offered participation in a face-to-face or telephone interview by a trained interviewer with the understanding that their medical records would also be reviewed.

To improve the usefulness of MMP data, in 2015 it was expanded to include PLWH who are not receiving medical care, and thus, ensuring that all adults diagnosed with HIV in the United States are captured. This is accomplished by using a two-stage sampling strategy. The first stage, being the state level, in which all the 50 states, the District of Columbia and Puerto Rico were eligible. The second stage of the sampling process being the person level. Instead of sampling from within facilities as in the previous phase (2005-

2014), a sample of 400 PLWH from Houston/Harris County, Texas is selected each year from the National HIV Surveillance System.

Data Collection

The interviews, which generally take about 60 minutes, cover questions about demographics (e.g., age, gender, race/ethnicity and education level), access to care, HIV treatment and adherence to medications, drug and alcohol use, sexual behavior, met and unmet needs for social services, health insurance or medical coverage and receipt of prevention counseling in a clinical setting. MMP abstractors then collect additional information on clinical outcomes, prescription of antiretroviral therapy, and other healthcare services provided and the quality of these services from persons' medical charts. Special precautions are carried out to ensure the security and confidentiality of data collected throughout the entire process. Since 2009, 23 jurisdictions, which include over 80% of the total cases of HIV and AIDS in the United States, have been conducting MMP activities[1].

Since the project began in 2004, there have been 14 data collection cycles. Over 150 HIV Medical Care Providers in Houston/Harris County have participated in the project since data collection activities began in 2005. At the end of the 2017 cycle, a total of 1,961 interviews and 3,444 medical record abstractions have been completed since the project began. The success of the MMP is dependent upon high participation rates by the selected persons and the HIV care providing facilities willingness to cooperate with the project team by providing medical charts for survey participants. High participation rates help increase the likelihood of obtaining information that is truly representative of PLWH in Houston/Harris County, especially as those who participate represent PLWH like them who were not selected to participate. However, the project area has recorded increasing trends in participation rates with increased support from HIV care providers and community and provider advisory boards. These efforts have resulted in greater HMMP visibility in Houston/Harris County and led to a steady increase in provider and patient participation rates. During the 2009-2014 phase of the project, the participation rates among providers increased from 65% in the 2009 cycle to 85% in the 2014 cycle (Figure 1). However, with the change in methodology to two-stage sampling in 2015, providers were no longer part of the sampling process. Similarly, patients' participation rates, represented by the number of interviews completed increased from 166 in 2009 cycle to 240 during the 2014 cycle. However, the number of interviews completed decreased in 2015 following a change to a new sampling methodology and the associated logistical adjustments, before gradually increasing again (Figure 2). On the average, 99% of the medical records of sampled patients were completed between 2009 and 2014. Due to the change in methodology in 2015, it was required that interviews completed be directly matched with medical abstractions (Figure 3). Figure 4 displays the proportion of sampled patients during 2009-2017 that refused to participate in HMMP (11.3-20.8%), were ineligible (0.3-6.0%) or who were lost-to-follow-ups or moved out of the HMMP project area (24.5-39.5%).

FIGURE 1: Response Rate of Sampled Providers that Participated in HMMP, 2009-2014 Cycles

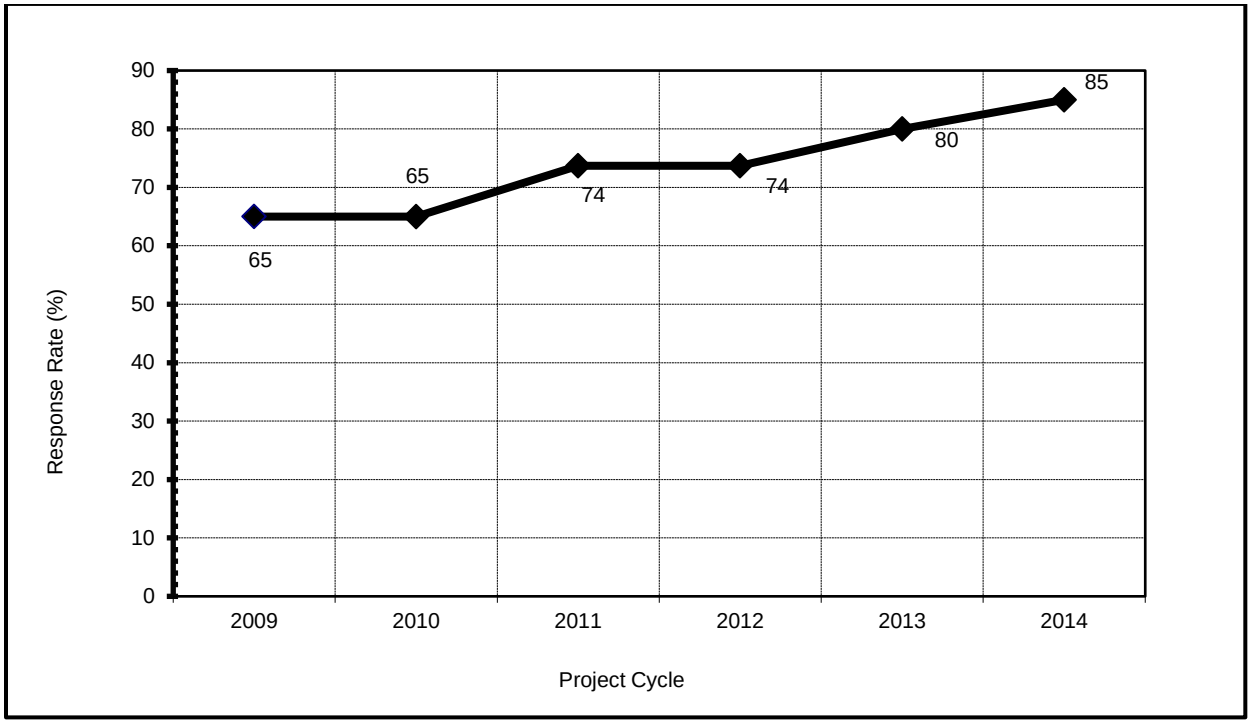


FIGURE 2 - Number of Interviews Completed, 2009-2017 Cycle Years

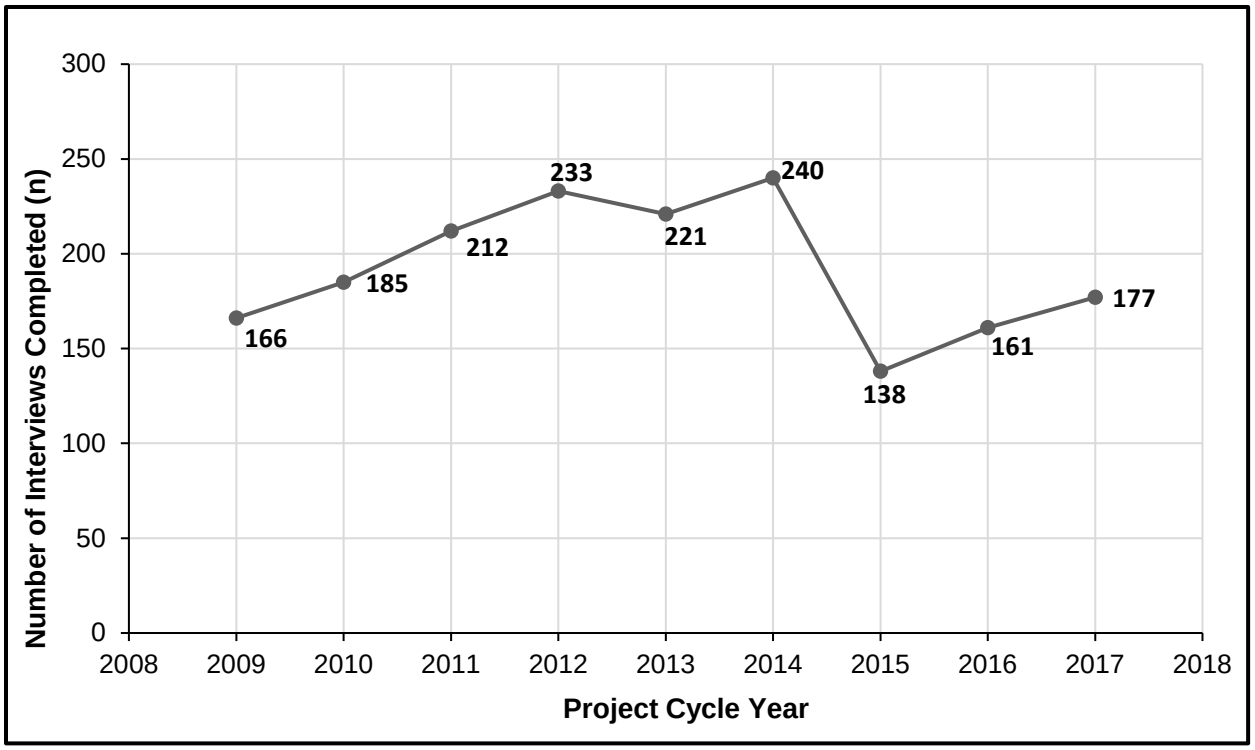


FIGURE 3 - Number of Medical Record Abstractions Completed, 2009-2017 Cycle Years

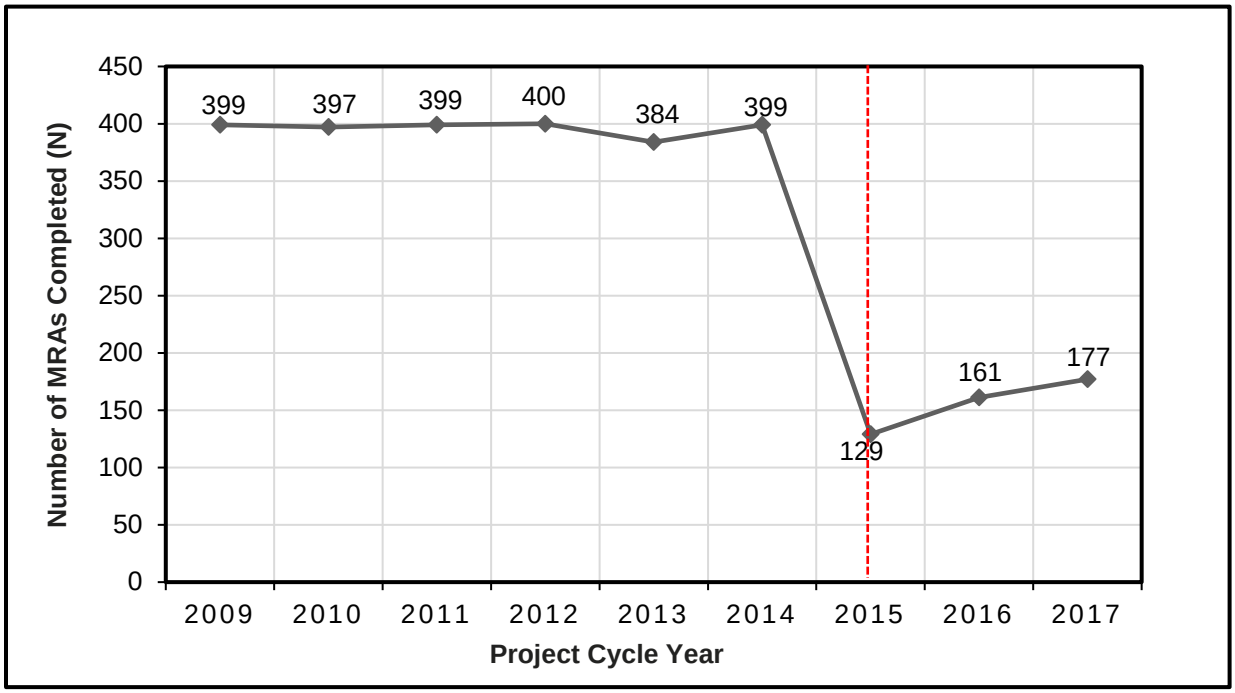
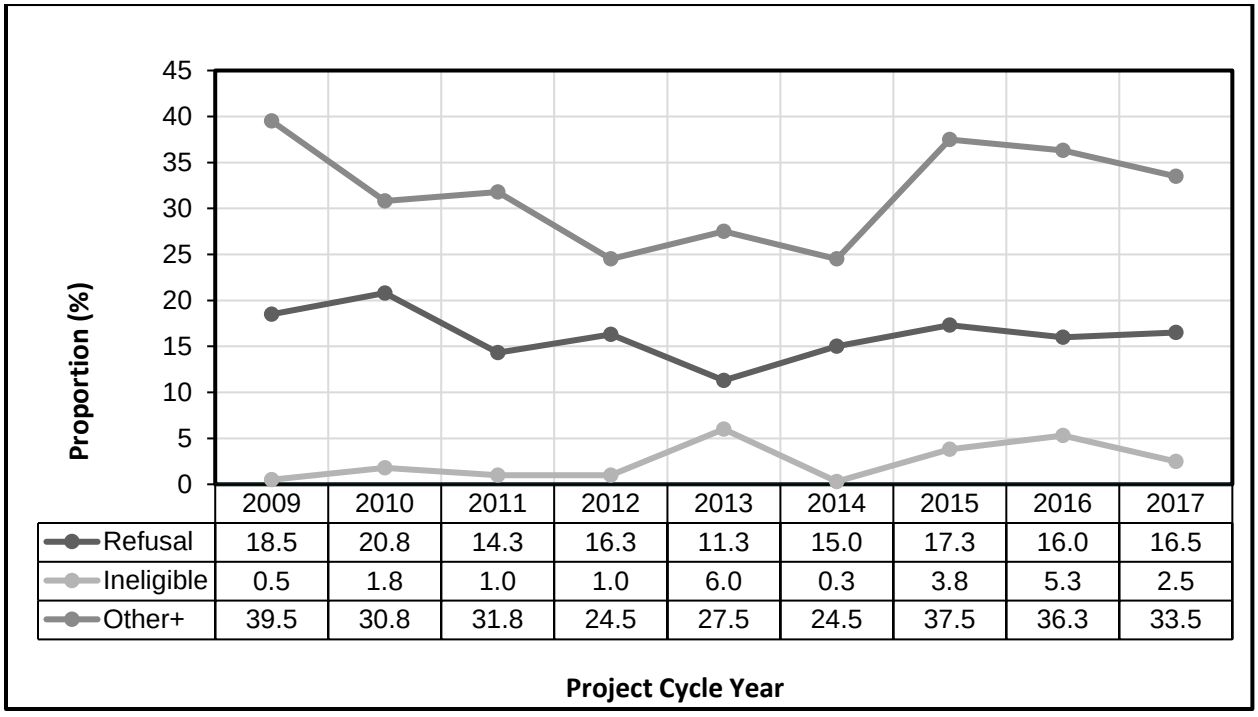


FIGURE 4 - Refusals, Ineligible Patients and Other Statuses+ 2009-2017 Cycle Years



	2009	2010	2011	2012	2013	2014	2015	2016	2017
Refusal	18.5	20.8	14.3	16.3	11.3	15.0	17.3	16.0	16.5
Ineligible	0.5	1.8	1.0	1.0	6.0	0.3	3.8	5.3	2.5
Other+	39.5	30.8	31.8	24.5	27.5	24.5	37.5	36.3	33.5

+ Refer to those who could not be contacted because they were lost-to-follow-up or moved out of the HMMP project area.

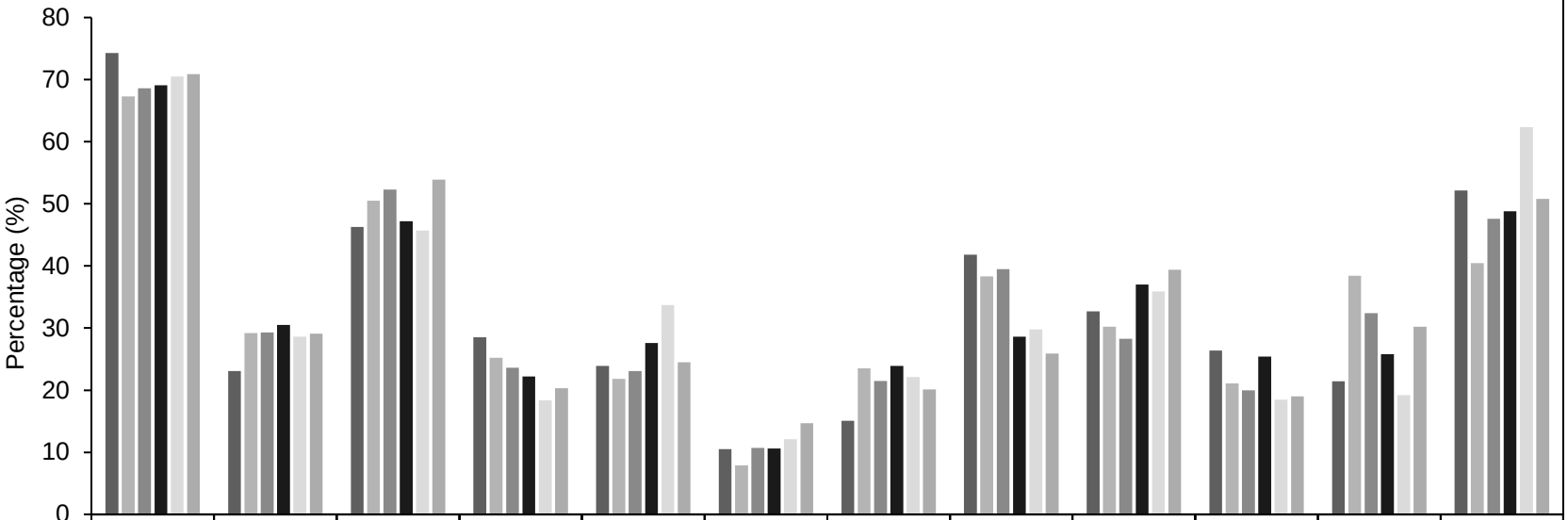
Survey Outcomes

The HMMP survey outcomes presented below were based on data analysis conducted using weighted overlap datasets (data were weighted to adjust for non-response bias), which combine both the interview and medical record abstraction (MRA) data completed during the 2009-2017 data collection cycles. Thus, the number of records may vary slightly from the actual numbers of interviews and MRAs completed during each project cycle. No statistical tests were performed to test differences across variables and no attempts were made to infer any causal relationships.

Demographic Characteristics

Trends in demographic characteristics of MMP participants between 2009 and 2014 are shown in Figure 5. In general, the survey outcomes showed slight fluctuations in demographic characteristics over the survey period. About 70% of participants were males. The majority of participants were African Americans (45.7-53.9%). While the proportions of White participants generally tended to decrease with each cycle year (28.5-18.4%), the proportion of Hispanic/Latino people tended to increase (21.8-33.7%). Most participants were aged 40 years and above (65.3-74.5%) and generally had greater than high school education. Between 2010 and 2013 cycles, the proportion of participants with higher than high school education increased from 40.5% to 62.3%, while the proportion of those with only a high school diploma or GED decreased (38.4-19.2%) during the same period. Using the new MMP sampling methodology, a similar distributional trend was reported for demographic characteristics in 2015-2016 (Table 1). However, a comparison of the income of PLWH during the two phases of the project is depicted in Figure 6. A decrease of 17.2% was noted among persons whose income ranged from $0 to 19,999, while increases were reported in all other income brackets between the two phases. The income categories of $40,000 to 74, 999 and $75,000 or more doubled during the 2015-2016 data collection cycle.

FIGURE 5 - Distribution of Demographic Characteristics of HMMP Participants, 2009-2014



	Gender		Race/Ethnicity			Age at time of Interview (yrs)				Educational Level		
	Male	Female	Black or Afriacn American	White	Hispanic or Latino	18-29 yrs	30-39 yrs	40-49 yrs	>=50 yrs	<High School	High School diploma or GED	>High School
2009	74.3	23.1	46.3	28.5	23.9	10.5	15.1	41.8	32.7	26.4	21.4	52.2
2010	67.3	29.2	50.5	25.2	21.8	7.9	23.5	38.3	30.2	21.1	38.4	40.5
2011	68.6	29.3	52.3	23.6	23.1	10.7	21.5	39.5	28.3	20.0	32.4	47.6
2012	69.1	30.5	47.2	22.2	27.6	10.6	23.9	28.6	37.0	25.4	25.8	48.8
2013	70.5	28.6	45.7	18.4	33.7	12.1	22.1	29.8	35.9	18.5	19.2	62.3
2014	70.9	29.1	53.9	20.3	24.5	14.7	20.1	25.9	39.4	19.0	30.2	50.8

FIGURE 6 - Comparison of Income of PLWH during the two phases of HMMP

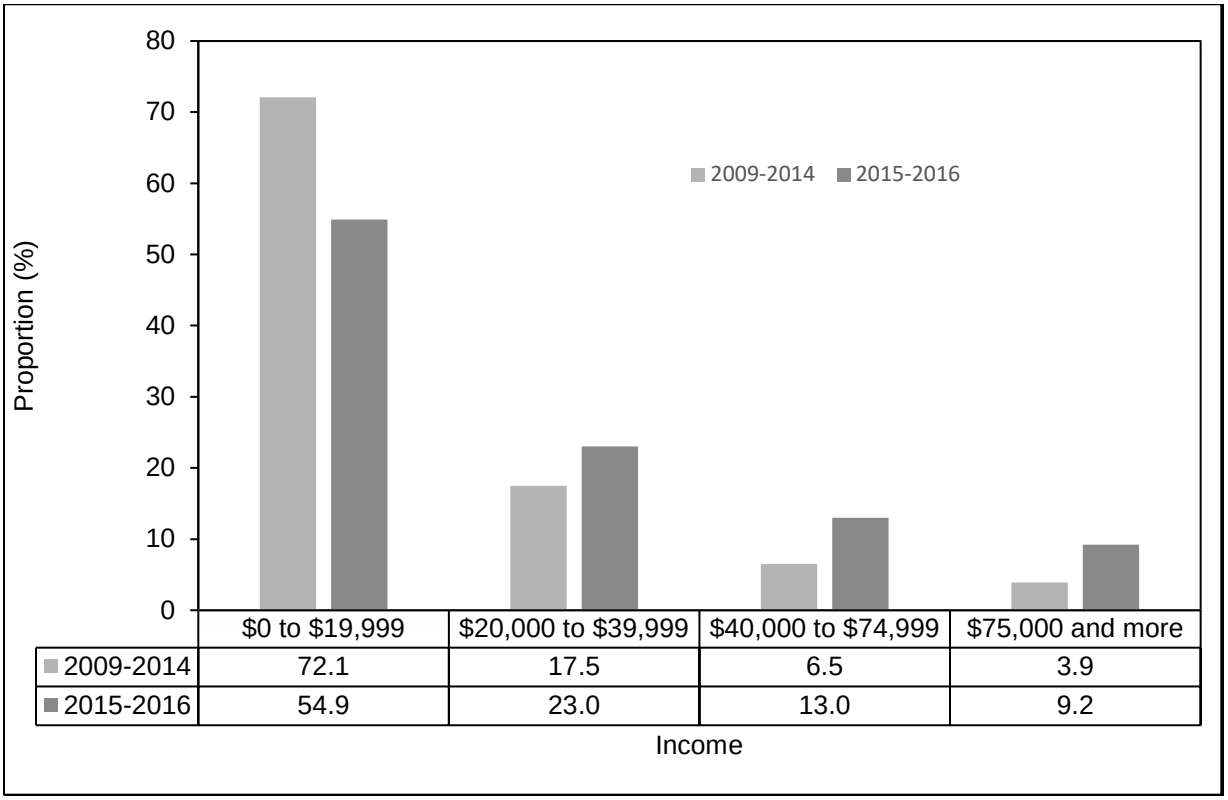


TABLE 1 - Characteristics of adults with diagnosed HIV--HMMP, 2015-2016*

	n	col % (95% CI∞)
Overall	294	100
Age at time of interview, in years		
18-29	37	14.3 (9.6-18.9)
30-39	62	21.3 (16.0-26.6)
40-49	83	26.6 (20.9-32.2)
≥50	112	37.9 (31.5-44.3)
Race/ethnicity		
White, non-Hispanic	40	17.5 (12.0-23.0)
Black, non-Hispanic	164	48.7 (42.2-55.2)
Hispanic or Latino†	72	26.5 (20.7-32.3)
Other	18	7.3 (3.6-11.1) *
Country of birth		
United States	240	82.0 (77.3-86.8)

Country outside United States	52	18.0 (13.2-22.7)
English proficiency		
Speaks English well	270	92.5 (89.3-95.7)
Does not speak English well	23	7.5 (4.3-10.7)*
Gender**		
Male	189	74.3 (69.1-79.5)
Female	102	24.8 (19.7-29.9)
Transgender‡	--	--
Sexual orientation		
Lesbian or gay	101	40.2 (33.7-46.8)
Heterosexual or straight	159	46.4 (39.9-52.9)
Bisexual	24	11.5 (6.7-16.3)*
Other	--	--
Educational attainment		
<High School	66	20.3 (15.3-25.4)
High School diploma or equivalent	80	26.5 (20.9-32.2)
>High School	147	53.2 (46.7-59.7)
Combined yearly household income (US$)		
0–19,999	156	54.9 (48.2-61.6)
20,000–39,999	64	23.0 (17.1-28.8)
40,000–74,999	33	13.0 (8.5-17.4)
≥75,000	22	9.2 (5.3-13.1)*
Household at or below federal poverty line, past 12 months§		
Yes	139	48.3 (41.6-54.9)
No	136	51.7 (45.1-58.4)
Homeless, past 12 months¶		
Yes	38	15.7 (10.5-21.0)
No	255	84.3 (79.0-89.5)
History of incarceration, past 12 months		
Yes	29	10.0 (6.2-13.9)*
No	264	90.0 (86.1-93.8)
Type of health insurance or coverage for antiretroviral medications, past 12 months**		
Private health insurance		
Yes	97	33.4 (27.4-39.5)
No	194	66.6 (60.5-72.6)
Medicare		

	Yes	65	22.0 (16.3-27.7)
	No	227	78.0 (72.3-83.7)
Medicaid			
	Yes	71	21.2 (15.9-26.5)
	No	221	78.8 (73.5-84.1)
Ryan White HIV/AIDS program or ADAP			
	Yes	169	58.2 (51.7-64.6)
	No	122	41.8 (35.4-48.3)
TRICARE/CHAMPUSπ or VA			
	Yes	--	--
	No	276	92.2 (87.5-96.9)
Other publicly funded insurance			
	Yes	68	21.9 (16.7-27.1)
	No	225	78.1 (72.9-83.3)

*All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

**Gender - The final gender variable used in HMMP (_GENDER) combines gender at birth (BIRTGEN) and described gender [GENDER] and has the following final four formatted values for GENDER in the datasets: (1) Male, (2) Female, (3) Transgender, (4) Intersex

∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

†Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

‡Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose transgender in response to the question about self-identified gender.

§Poverty guidelines as defined by HHS; the 2014 guidelines were used for persons interviewed in 2015 and the 2015 guidelines were used for persons interviewed in 2016. More information regarding HHS poverty guidelines can be found at https://aspe.hhs.gov/frequently-askedquestions-related-poverty-guidelines-and-poverty.

πTRICARE and CAMPUS are federally funded health programs that provides health benefits to uniformed service member, retirees and their families.

¶Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

**Persons could select more than 1 response for health insurance or coverage for antiretroviral medications.

Health Insurance Status

The type of health insurance or coverage for antiretroviral medications during the last 12 months is given in Table 1. During 2015-2016 cycle, 58.2% of PLWH were covered under the Ryan White HIV/AIDS program or AIDS Drug Assistance Program (ADAP). About 22.0% of PLWH were on Medicare, 21.2% on Medicaid, 33.4% on private insurance, while 21.9% were on other public funded insurance during the same period. There were differences in health insurance status based on the federal poverty line (Table 2). For instance, PLWH who had private insurance were 81.2% were above federal poverty line, while only 18.8% in this group were at or below the federal poverty line. Among PLWH that used the Ryan White HIV/AIDS program or ADAP, 50.7% of them were at or below the federal poverty line compared to those that were above federal poverty line (49.3%). As much as 80.7% of PLWH who were on Medicaid and 51.6% on Medicare were at or below the federal poverty line.

Poverty Status of PLWH

Table 2 shows the federal poverty line characteristics of adults diagnosed with HIV in Houston/Harris County, Texas during 2015-2016 cycle of the project. Approximately, 48.3% of the households of PLWH were at or below federal poverty line, while 51.7% were above federal poverty line. Majority of the PLWH who were Black, non-Hispanic (53.7%) were at or below federal poverty line compared to Hispanic or Latino (48.5%) and White, non-Hispanic (30.6%). More males (58.1%) than females (32.0%) were above federal poverty line. The poverty divide across the various age groups were generally similar for those who were at or below and those above the federal poverty line (Table 2). About 71.7% of PLWH whose educational attainments were less than high school were at or below the federal poverty line compared to 28.3% classified as being above the federal poverty line. As much as 63.8% of PLWH who had more than high school education were above federal poverty line compared to 36.2 % who were at or below the federal poverty line. Among PLWH who had other publicly funded insurance, 63.3% of them were at or below federal poverty line, while 36.7% were above federal poverty level.

TABLE 2 - Characteristics of adults with diagnosed HIV, by poverty status in the past 12 months-HMMP, 2015-2016*

Characteristic	Household at or below federal poverty line§		Household above federal poverty line§	
	n	row % (95% CI)	n	row % (95% CI∞)
Overall	139	48.3 (41.6-54.9)	136	51.7 (45.1-58.4)

Age at time of interview, in years				
18-29	13	46.9 (27.2-66.6) *	17	53.1 (33.4-72.8) *
30-39	29	46.2 (32.4-60.1) *	31	53.8 (39.9-67.6)
40-49	43	52.8 (40.3-65.4)	35	47.2 (34.6-59.7)
≥50	54	46.7 (35.6-57.8)	53	53.3 (42.2-64.4)
Race/ethnicity				
White, non-Hispanic	13	30.6 (14.6-46.5) *	27	69.4 (53.5-85.4) *
Black, non-Hispanic	81	53.7 (44.9-62.5)	74	46.3 (37.5-55.1)
Hispanic or Latino†	36	48.5 (34.9-62.0)	28	51.5 (38.0-65.1) *
Other	9	57.0 (30.1-83.9) *	--	--
Country of birth				
United States	116	49.5 (42.1-57.0)	114	50.5 (43.0-57.9)
Country outside United States	23	42.9 (28.0-57.9) *	21	57.1 (42.1-72.0)*
English proficiency				
Speaks English well	126	47.5 (40.5-54.5)	130	52.5 (45.5-59.5)
Does not speak English well	13	59.0 (35.2-82.8) *	6	41.0 (17.2-64.8)*
Gender[**]				
Male	76	41.9 (33.9-49.8)	104	58.1 (50.2-66.1)
Female	60	68.0 (58.0-78.1)	32	32.0 (21.9-42.0)
Transgender‡	3	100*	0	
Sexual orientation				
Lesbian or gay	30	30.1 (20.2-40.0)	67	69.9 (60.0-79.8)
Heterosexual or straight	93	63.8 (55.1-72.5)	54	36.2 (27.5-44.9)
Bisexual	12	51.8 (29.4-74.2) *	12	48.2 (25.8-70.6)*
Other	4	81.5 (48.3-100.0) *	--	--
Educational attainment				

<High School	42	71.7 (59.1-84.2)	16	28.3 (15.8-40.9)*
High School diploma or equivalent	43	57.2 (44.8-69.6)	32	42.8 (30.4-55.2)
>High School	54	36.2 (27.2-45.3)	88	63.8 (54.7-72.8)
Combined yearly household income (US$)				
0–19,999	131	84.4 (78.4-90.4)	25	15.6 (9.6-21.6) *
20,000–39,999	--	--	56	91.6 (85.5-97.6)
40,000–74,999	0		33	100
≥75,000	0		22	100*
Homeless, past 12 months¶				
Yes	28	83.4 (69.7-97.0) *	--	--
No	111	42.1 (35.1-49.0)	130	57.9 (51.0-64.9)
History of incarceration, past 12 months				
Yes	18	75.6 (58.3-92.8) *	--	--
No	121	45.5 (38.5-52.5)	129	54.5 (47.5-61.5)
Type of health insurance or coverage for antiretroviral medications, past 12 months**				
Private health insurance				
Yes	19	18.8 (9.9-27.6) *	77	81.2 (72.4-90.1)
No	118	64.0 (55.5-72.5)	59	36.0 (27.5-44.5)
Medicare				
Yes	34	51.6 (36.5-66.7) *	29	48.4 (33.3-63.5)*
No	104	47.1 (39.6-54.5)	107	52.9 (45.5-60.4)
Medicaid				
Yes	54	80.7 (66.6-94.7)	--	--
No	84	39.3 (31.9-46.7)	125	60.7 (53.3-68.1)

Ryan White HIV/AIDS program or ADAP				
Yes	82	50.7 (41.5-59.8)	72	49.3 (40.2-58.5)
No	55	44.4 (34.3-54.4)	64	55.6 (45.6-65.7)
TRICARE/CHAMPUSπ or VA				
Yes	--	--	--	--
No	129	46.9 (40.2-53.7)	131	53.1 (46.3-59.8)
Other publicly funded insurance				
Yes	38	63.3 (49.9-76.8)	22	36.7 (23.2-50.1)*
No	101	44.4 (36.8-52.0)	114	55.6 (48.0-63.2)

*All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

**Gender - The final gender variable used in HMMP (_GENDER) combines gender at birth (BIRTGEN) and described gender [GENDER] and has the following final four formatted values for GENDER in the datasets: (1) Male, (2) Female, (3) Transgender, (4) Intersex∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

†Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

‡Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose transgender in response to the question about self-identified gender.

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¶Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

**Persons could select more than 1 response for health insurance or coverage for antiretroviral medications.

πTRICARE and CAMPUS are federally funded health programs that provides health benefits to uniformed service member, retirees and their families.

Sexual Behaviors Among Adults Diagnosed with HIV

Sexual behaviors among PLWH during the 2015-2016 cycle are summarized in Tables 3 and 4. Approximately, 30.3% and 69.7% of the PLWH reported having condomless and non-condomless sex with their sexual partners, respectively. Of the number that had condomless sex, 16.2% of those encounters were with HIV-negative or HIV-unknown partners. About 8.6% of these HIV-negative or HIV-unknown partners did not have sustained viral suppression, implying that they may have exposed their partners to HIV . Overall, across the characteristics assessed, the majority of PLWH (51.9-85.6%) used

condoms during their sexual encounters. However, 40% of those who had more than high school education had condomless sex with their partners compared to those with less than high school education (16.9%) and those with high school diploma or its equivalent (22.0%). Of the number of PLWH who had condomless sexual encounters, 26.1% of them were at or below federal poverty line. On the other hand, about 73.9% of PLWH who were in the same poverty category did not have condomless sex.

TABLE 3 - Sexual behaviors in the past 12 months among adults with diagnosed HIV--HMMP, 2015-2016*

	n	col % (95% CI∞)
Condomless sex		
Yes	85	30.3 (24.3-36.3)
No	202	69.7 (63.7-75.7)
Condomless sex with an HIV-negative or HIV-unknown partner		
Yes	51	16.2 (11.7-20.7)
No	237	83.8 (79.3-88.3)
Condomless sex with an HIV-negative or HIV-unknown partner while not sustainably virally suppressed		
Yes	25	8.6 (5.0-12.3)*
No	263	91.4 (87.7-95.0)
PrEP use among persons with HIV-negative partners		
Yes	12	41.6 (23.1-60.1) *
No	21	58.4 (39.9-76.9)*
Indication of high risk sex†		
Yes	25	8.7 (5.0-12.3)*
No	265	91.3 (87.7-95.0)
Exchange sex		
Yes	--	--
No	169	94.8 (90.8-98.7)

*All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, “don’t know” responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

†Vaginal or anal sex with at least 1 HIV-negative or unknown status partner while not sustainably virally suppressed, a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

TABLE 4 - Characteristics of adults with diagnosed HIV by condomless sex in the past 12 months--HMMP, 2015-2016*

	Had condomless sex		Did not have condomless sex	
	n	row % (95% CI)	n	row % (95% CI[∞])
Overall	85	30.3 (24.3-36.3)	202	69.7 (63.7-75.7)
Age at time of interview, in years				
18-29	16	48.1 (29.9-66.3)*	19	51.9 (33.7-70.1)*
30-39	28	43.1 (29.4-56.9)*	34	56.9 (43.1-70.6)
40-49	20	27.4 (15.9-38.9)*	60	72.6 (61.1-84.1)
≥50	21	18.4 (10.8-26.0)*	89	81.6 (74.0-89.2)
Race/ethnicity				
White, non-Hispanic	10	25.8 (11.0-40.5)*	29	74.2 (59.5-89.0)*
Black, non-Hispanic	49	32.4 (24.1-40.6)	111	67.6 (59.4-75.9)
Hispanic or Latino†	19	28.2 (16.2-40.3)*	51	71.8 (59.7-83.8)
Other	--	--	11	65.5 (41.9-89.1)*
Country of birth				
United States	72	31.9 (25.0-38.7)	163	68.1 (61.3-75.0)
Country outside United States	13	23.6 (11.7-35.4)*	39	76.4 (64.6-88.3)
English proficiency				
Speaks English well	81	31.7 (25.3-38.0)	183	68.3 (62.0-74.7)
Does not speak English well	--	--	19	85.6 (71.9-99.3)*
Gender**				
Male	54	29.7 (22.5-37.0)	129	70.3 (63.0-77.5)
Female	29	30.7 (20.2-41.2)*	72	69.3 (58.8-79.8)
Transgender‡	--	--	--	--
Sexual orientation				
Lesbian or gay	36	37.5 (27.2-47.9)	63	62.5 (52.1-72.8)
Heterosexual or straight	39	23.0 (15.9-30.1)	117	77.0 (69.9-84.1)
Bisexual	--	--	15	62.3 (39.8-84.9)*

Other	--	--	--	--
Educational attainment				
<High School	12	16.9 (7.6-26.3)*	54	83.1 (73.7-92.4)
High School diploma or equivalent	17	22.0 (11.6-32.3)*	61	78.0 (67.7-88.4)
>High School	56	40.0 (30.9-49.0)	87	60.0 (51.0-69.1)
Combined yearly household income (US$)				
0–19,999	44	28.0 (20.0-35.9)	107	72.0 (64.1-80.0)
20,000–39,999	16	30.9 (16.6-45.2)*	47	69.1 (54.8-83.4)
40,000–74,999	12	36.3 (18.8-53.9)*	21	63.7 (46.1-81.2)*
≥75,000	8	38.0 (16.5-59.4)*	14	62.0 (40.6-83.5)*
Household at or below federal poverty line, past 12 months§				
Yes	37	26.1 (17.9-34.4)	98	73.9 (65.6-82.1)
No	43	35.0 (25.9-44.1)	91	65.0 (55.9-74.1)
Homeless, past 12 months¶				
Yes	--	--	26	78.0 (62.7-93.3)*
No	76	31.8 (25.4-38.3)	176	68.2 (61.7-74.6)
History of incarceration, past 12 months				
Yes	10	36.2 (16.1-56.3)*	19	63.8 (43.7-83.9)*
No	75	29.6 (23.4-35.9)	183	70.4 (64.1-76.6)
Type of health insurance or coverage for antiretroviral medications, past 12 months**				
Private health insurance				
Yes	34	35.7 (25.5-46.0)	63	64.3 (54.0-74.5)
No	50	27.3 (19.8-34.8)	138	72.7 (65.2-80.2)
Medicare				
Yes	18	24.4 (13.4-35.4)*	46	75.6 (64.6-86.6)
No	67	32.0 (25.1-39.0)	155	68.0 (61.0-74.9)
Medicaid				
Yes	18	25.4 (14.1-36.8)*	51	74.6 (63.2-85.9)
No	67	31.7 (24.7-38.6)	150	68.3 (61.4-75.3)
Ryan White HIV/AIDS program or ADAP				
Yes	55	34.2 (25.9-42.5)	109	65.8 (57.5-74.1)

No	29	25.0 (16.5-33.5)*	92	75.0 (66.5-83.5)
TRICARE/CHAMPUSπ or VA				
Yes	--	--	10	80.8 (58.5-100.0)*
No	80	30.7 (24.5-36.9)	191	69.3 (63.1-75.5)
Other publicly funded insurance				
Yes	22	32.3 (19.9-44.7)*	45	67.7 (55.3-80.1)
No	63	29.8 (22.9-36.6)	157	70.2 (63.4-77.1)
Sustained viral suppression††				
Yes	44	25.7 (18.7-32.6)	122	74.3 (67.4-81.3)
No	41	36.1 (26.1-46.1)	80	63.9 (53.9-73.9)

*All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

**Gender - The final gender variable used in HMMP (_GENDER) combines gender at birth (BIRTGEN) and described gender [GENDER] and has the following final four formatted values for GENDER in the datasets: (1) Male, (2) Female, (3) Transgender, (4) Intersex ∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

†Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

‡Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose transgender in response to the question about self-identified gender.

§Poverty guidelines as defined by HHS; the 2014 guidelines were used for persons interviewed in 2015 and the 2015 guidelines were used for persons interviewed in 2016. More information regarding HHS poverty guidelines can be found at https://aspe.hhs.gov/frequently-askedquestions-related-poverty-guidelines-and-poverty.

¶Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

**Persons could select more than 1 response for health insurance or coverage for antiretroviral medications.

††Sustained viral suppression defined as having all viral load measurements documented undetectable or <200 copies/mL in the past 12 months.

πTRICARE and CAMPUS are federally funded health programs that provides health benefits to uniformed service member, retirees and their families.

Receipt of medical care and support services among adults diagnosed with HIV

Table 5 shows the receipt of medical care services among adults diagnosed with HIV in Houston/Harris County, Texas during the 2015-2016 data collection cycle. About 40.4% of PLWH who needed HIV case management service received the service, while as much as 49.4% indicated that they did not need and did not receive this service during the period. A majority of the PLWH (67.2%) indicated that they did not need any professional help remembering to take their medicines on time and correctly (adherence support services). Dental care needs of 51.3% of persons needing it were met during this period. Although, only 37.3% of PLWH needed, and received mental health service, 56.9%

indicated that they did not need and did not receive this service. Similarly, 58.9% of the PLWH needed and did receive medications from ADAP. On the other hand, a majority of this population indicated that they did not need and did not receive the following services during the period under review: patient navigation service (75.5%), HIV peer support group (78.9%), transportation assistance (65.6%), shelter or housing services (69.5%), drug or alcohol counseling or treatment (92.1%), meal or food services (70.2%), domestic violence services (99.2%) and interpreter services (94.8%). When considering only those who needed and received the medical care and support services and those who needed, but did not receive these services, a different pattern emerged in term of the actual population served (Table 6). For all services considered, those who needed and received the services ranged from 47.4% (shelter or housing services) to 98.5% (professional help remembering to take HIV medicines on time or correctly - adherence support services). On the other hand, the PLWH who needed, but did not receive these services ranged from 6.9% (Medicine through ADAP) to 52.6% (shelter or housing services).

TABLE 5 - Receipt of medical care services among adults with diagnosed HIV--HMMP, 2015-2016*

	n	col % (95% CI∞)
HIV case management services		
Needed and received this service	114	40.4 (33.9-46.9)
Needed, but did not receive this service	33	10.2 (6.3-14.0)
Did not need and did not receive this service	145	49.4 (42.8-55.9)
Professional help remembering to take HIV medicines on time or correctly (adherence support services)		
Needed and received this service	97	32.3 (26.3-38.4)
Needed, but did not receive this service	--	--
Did not need and did not receive this service	192	67.2 (61.1-73.2)
Medicine through ADAP		
Needed and received this service	169	58.9 (52.6-65.3)
Needed, but did not receive this service	15	4.4 (2.1-6.7)*
Did not need and did not receive this service	105	36.7 (30.4-42.9)
Patient navigation services		
Needed and received this service	46	16.7 (11.5-21.9)
Needed, but did not receive this service	22	7.8 (4.2-11.4)*
Did not need and did not receive this service	224	75.5 (69.6-81.4)
HIV peer support group		
Needed and received this service	37	15.2 (9.7-20.7)

Needed, but did not receive this service	19	5.9 (2.9-8.9)*
Did not need and did not receive this service	236	78.9 (73.0-84.8)
Dental care		
Needed and received this service	145	51.3 (44.7-57.8)
Needed, but did not receive this service	79	25.1 (19.5-30.6)
Did not need and did not receive this service	68	23.7 (18.1-29.2)
Drug or alcohol counseling or treatment		
Needed and received this service	19	6.9 (3.5-10.3)*
Needed, but did not receive this service	--	--
Did not need and did not receive this service	270	92.1 (88.5-95.7)
Mental health services		
Needed and received this service	106	37.3 (30.9-43.6)
Needed, but did not receive this service	20	5.8 (3.2-8.5)*
Did not need and did not receive this service	166	56.9 (50.4-63.4)
Transportation assistance		
Needed and received this service	65	24.1 (18.0-30.1)
Needed, but did not receive this service	29	10.3 (6.2-14.4)*
Did not need and did not receive this service	198	65.6 (59.2-72.1)
Shelter or housing services		
Needed and received this service	40	14.5 (9.6-19.3)
Needed, but did not receive this service	51	16.1 (11.4-20.8)
Did not need and did not receive this service	200	69.5 (63.4-75.5)
Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Child		
Needed and received this service	106	33.2 (27.1-39.2)
Needed, but did not receive this service	46	15.7 (11.1-20.3)
Did not need and did not receive this service	139	51.1 (44.6-57.6)
Meal or food services, including (soup kitchens, food pantries, food banks, church dinners, or food delivery services)		
Needed and received this service	57	18.6 (13.5-23.7)
Needed, but did not receive this service	32	11.2 (7.0-15.4)
Did not need and did not receive this service	203	70.2 (64.2-76.2)
Domestic violence services		
Needed and received this service	--	--
Needed, but did not receive this service	--	--

Did not need and did not receive this service	288	99.2 (98.5-100.0)
Interpreter services		
Needed and received this service	13	3.8 (1.7-5.9)*
Needed, but did not receive this service	--	--
Did not need and did not receive this service	276	94.8 (92.3-97.3)

*All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

TABLE 6 - Receipt of medical care services among adults with diagnosed HIV who needed services--HMMP, 2015-2016*

	n	col % (95% CI∞)
HIV case management services		
Needed and received this service	114	79.9 (72.6-87.1)
Needed, but did not receive this service	33	20.1 (12.9-27.4)
Professional help remembering to take HIV medicines on time or correctly (adherence support services)		
Needed and received this service	97	98.5 (96.3-100.0)
Needed, but did not receive this service	--	--
Medicine through ADAP		
Needed and received this service	169	93.1 (89.4-96.7)
Needed, but did not receive this service	15	6.9 (3.3-10.6)*
Patient navigation services		
Needed and received this service	46	68.1 (55.2-81.0)
Needed, but did not receive this service	22	31.9 (19.0-44.8)*
HIV peer support group		
Needed and received this service	37	72.1 (58.8-85.3)
Needed, but did not receive this service	19	27.9 (14.7-41.2)*
Dental care		
Needed and received this service	145	67.2 (60.2-74.1)
Needed, but did not receive this service	79	32.8 (25.9-39.8)
Drug or alcohol counseling or treatment		

Needed and received this service	19	87.1 (72.4-100.0)*
Needed, but did not receive this service	--	--
Mental health services		
Needed and received this service	106	86.5 (80.5-92.4)
Needed, but did not receive this service	20	13.5 (7.6-19.5)*
Transportation assistance		
Needed and received this service	65	70.0 (59.2-80.8)
Needed, but did not receive this service	29	30.0 (19.2-40.8)*
Shelter or housing services		
Needed and received this service	40	47.4 (35.3-59.4)
Needed, but did not receive this service	51	52.6 (40.6-64.7)
Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Child		
Needed and received this service	106	67.8 (59.4-76.3)
Needed, but did not receive this service	46	32.2 (23.7-40.6)
Meal or food services, including (soup kitchens, food pantries, food banks, church dinners, or food delivery services)		
Needed and received this service	57	62.4 (50.6-74.2)
Needed, but did not receive this service	32	37.6 (25.8-49.4)
Domestic violence services		
Needed and received this service	--	--
Needed, but did not receive this service	--	--
Interpreter services		
Needed and received this service	13	73.4 (50.9-96.0)*
Needed, but did not receive this service	--	--

*All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, “don’t know” responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

Level of Satisfaction with HIV care received

Table 7 shows the level of satisfaction with HIV care received by persons living with HIV in Houston/Harris County, Texas. Overall, they are very satisfied with the medical care received (94.8%). This high level of satisfaction (range: 93.6-95.8%) was also reflected when assessed across race/ethnicity, federal poverty line and attendance of Ryan White funded facilities during the past 12 months (Table 7).

TABLE 7 - Satisfaction with HIV care received overall and by selected characteristics among adults with diagnosed HIV--HMMP, 2015-2016*

	n	row % (95% CI∞)
Overall	265	94.8 (91.8-97.7)
Race/ethnicity		
White, non-Hispanic	36	95.8 (89.7-100.0)
Black, non-Hispanic	149	93.6 (89.1-98.1)
Hispanic or Latino†	64	94.8 (88.7-100.0)
Household at or below federal poverty line, past 12 months§		
Yes	125	94.9 (90.5-99.3)
No	124	95.0 (91.0-99.1)
Attendance at a RWHAP-funded facility, past 12 months		
Yes	226	94.8 (91.5-98.0)
No	36	94.3 (86.5-100.0)

*Satisfaction with HIV care received was defined using a modified Likert scale, where respondents could rate satisfaction as being very satisfied, somewhat satisfied, somewhat dissatisfied, and very dissatisfied. "Very satisfied" and "somewhat satisfied" responses were considered to be satisfied. All numbers are unweighted and all percentages are weighted percents; CIs incorporate weighted percents. Excluded are values for which the percentage estimates have a coefficient of variation >0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width >30% and values with an absolute confidence interval width of between 5% and 30% and a relative confidence interval width >130% should be interpreted with caution.

∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

†Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

§Poverty guidelines as defined by HHS; the 2014 guidelines were used for persons interviewed in 2015 and the 2015 guidelines were used for persons interviewed in 2016. More information regarding HHS poverty guidelines can be found at https://aspe.hhs.gov/frequently-askedquestions-related-poverty-guidelines-and-poverty.

Receipt of prevention services among adults diagnosed with HIV

Approximately, 45.8% of PLWH in Houston/Harris County received informational materials and education on HIV prevention with only 30.6% of them having a one-on-one HIV/STD risk-reduction conversation with an outreach worker, counselor, or prevention program worker (Table 8). Similarly, 50.4% of PLWH had one-on-one HIV/STD risk-reduction conversation with a doctor, nurse, or other healthcare worker, while only 16.9% of PLWH attended an organized HIV/STD risk-reduction session involving a small group of people during the 2015-2016 data collection cycle. Receipt of free condoms was reported among 47.1% of the PLWH during the period.

TABLE 8 - Receipt of prevention services among adults with diagnosed HIV--HMMP, 2015-2016*

	n	col % (95% CI∞)
Received free condoms		
Yes	130	47.1 (40.5-53.6)
No	162	52.9 (46.4-59.5)
Received of informational/educational information on HIV prevention		
Yes	134	45.8 (39.3-52.4)
No	156	54.2 (47.6-60.7)
Had one-on-one HIV/STD risk-reduction conversation with an outreach worker, counselor, or prevention program worker		
Yes	90	30.6 (24.6-36.7)
No	202	69.4 (63.3-75.4)
Had one-on-one HIV/STD risk-reduction conversation with a doctor, nurse, or other healthcare worker		
Yes	150	50.4 (43.8-57.0)
No	141	49.6 (43.0-56.2)
Attended an organized HIV/STD risk-reduction session involving a small group of people		
Yes	50	16.9 (12.0-21.9)
No	241	83.1 (78.1-88.0)

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Sustained viral suppression among adults diagnosed with HIV

Table 9 shows sustained viral suppression among adults diagnosed with HIV. A total of 54.1% of PLWH had sustained viral suppression, while 45.9% did not have sustained viral suppression during the 2015-2016 cycle of the project. Interestingly, between ages of 18-29 years (29.0%) and 50 years and over (68.8%)sustained viral suppression tended to increase with increasing age.) Conversely, the reverse occurred for PLWH who did not have sustained viral suppression with more belonging to the 18-29 years' age group (71.0%) and the least in this category belonging to ≥50 years (31.2%). However, more males (54.9%) than females (51.0%) had sustained viral suppression. Condomless sex with an HIV-negative or HIV-unknown partner was reported for 46.8% of PLWH with sustained viral suppression. Hispanic or Latino people had the most sustained viral suppression (59.6%) than White, non-Hispanic (52.5%) and Black, non-Hispanic (48.1%). Household at or below federal poverty line had more sustained viral suppression (58.7%) than those who were above federal poverty line (49.1%). The majority of PLWH who were born in countries outside the United States (69.8%) and those who do not speak English well (65.3%) had more sustained viral suppression than those born in the United States (51.4%) and those who speak English very well (53.6%), respectively.

TABLE 9 - Sustained viral suppression among adults with diagnosed HIV, by sociodemographic and risk characteristics--HMMP, 2015-2016*

	Had sustained viral suppression**		Did not have sustained viral suppression	
	n	row % (95% CI)	n	row % (95% CI∞)
Overall	169	54.1 (47.5-60.6)	125	45.9 (39.4-52.5)
Age at time of interview, in years				
18-29	13	29.0 (14.3-43.7)*	24	71.0 (56.3-85.7)*
30-39	30	44.6 (30.8-58.3)	32	55.4 (41.7-69.2)
40-49	48	54.2 (41.9-66.5)	35	45.8 (33.5-58.1)
≥50	78	68.8 (58.1-79.4)	34	31.2 (20.6-41.9)
Race/ethnicity				
White, non-Hispanic	24	52.5 (34.6-70.3)*	16	47.5 (29.7-65.4)*
Black, non-Hispanic	86	48.1 (39.5-56.7)	78	51.9 (43.3-60.5)
Hispanic or Latino†	46	59.6 (46.7-72.5)	26	40.4 (27.5-53.3)*
Other	13	77.6 (58.1-97.1)*	--	--

Country of birth				
United States	131	51.4 (44.0-58.7)	109	48.6 (41.3-56.0)
Country outside United States	38	69.8 (55.8-83.7)	14	30.2 (16.3-44.2)*
English proficiency				
Speaks English well	153	53.6 (46.7-60.4)	117	46.4 (39.6-53.3)
Does not speak English well	16	65.3 (43.7-86.9)*	--	--
Gender[**]				
Male	112	54.9 (46.9-62.9)	77	45.1 (37.1-53.1)
Female	55	51.0 (39.8-62.2)	47	49.0 (37.8-60.2)
Transgender‡	--	--	--	--
Sexual orientation				
Lesbian or gay	68	62.9 (52.0-73.8)	33	37.1 (26.2-48.0)
Heterosexual or straight	84	50.7 (41.8-59.7)	75	49.3 (40.3-58.2)
Bisexual	11	38.1 (16.5-59.6)*	13	61.9 (40.4-83.5)*
Other	--	--	--	--
Educational attainment				
<High School	38	55.2 (41.4-69.0)	28	44.8 (31.0-58.6)*
High School diploma or equivalent	47	55.3 (42.8-67.8)	33	44.7 (32.2-57.2)
>High School	84	53.7 (44.4-63.0)	63	46.3 (37.0-55.6)
Combined yearly household income (US$)				
0–19,999	95	57.5 (48.5-66.4)	61	42.5 (33.6-51.5)
20,000–39,999	33	46.1 (31.7-60.4)	31	53.9 (39.6-68.3)
40,000–74,999	19	54.2 (35.8-72.6)*	14	45.8 (27.4-64.2)*
≥75,000	11	49.8 (27.6-72.1)*	11	50.2 (27.9-72.4)*
Household at or below federal poverty line, past 12 months[§]				
Yes	87	58.7 (49.0-68.4)	52	41.3 (31.6-51.0)
No	71	49.1 (39.7-58.5)	65	50.9 (41.5-60.3)
Homeless, past 12 months[¶]				
Yes	16	39.2 (20.9-57.4)*	22	60.8 (42.6-79.1)*
No	153	57.3 (50.3-64.3)	102	42.7 (35.7-49.7)
History of incarceration, past 12 months				
Yes	15	43.7 (24.0-63.4)*	14	56.3 (36.6-76.0)*
No	154	55.6 (48.7-62.6)	110	44.4 (37.4-51.3)
Private health insurance				
Yes	49	50.6 (39.9-61.4)	48	49.4 (38.6-60.1)

No	118	56.0 (47.6-64.3)	76	44.0 (35.7-52.4)
Medicare				
Yes	37	52.1 (37.3-67.0)	28	47.9 (33.0-62.7)*
No	131	54.9 (47.6-62.2)	96	45.1 (37.8-52.4)
Medicaid				
Yes	38	45.3 (31.7-58.8)	33	54.7 (41.2-68.3)
No	130	56.7 (49.4-64.1)	91	43.3 (35.9-50.6)
Ryan White HIV/AIDS program or ADAP				
Yes	102	55.1 (46.3-63.9)	67	44.9 (36.1-53.7)
No	65	52.9 (42.9-62.9)	57	47.1 (37.1-57.1)
TRICARE/CHAMPUSπ or VA				
Yes	10	65.7 (33.5-98.0)*	--	--
No	156	53.0 (46.5-59.6)	120	47.0 (40.4-53.5)
Other publicly funded insurance				
Yes	45	58.5 (45.1-71.8)	23	41.5 (28.2-54.9)*
No	124	53.3 (45.8-60.9)	101	46.7 (39.1-54.2)
Injection drug use during the previous 12 months				
Yes	--	--	--	--
No	167	54.7 (48.1-61.3)	122	45.3 (38.7-51.9)
Condomless sex with an HIV-negative or HIV-unknown partner				
Yes	26	46.8 (32.0-61.5)*	25	53.2 (38.5-68.0)*
No	140	55.9 (48.5-63.3)	97	44.1 (36.7-51.5)

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**Gender - The final gender variable used in HMMP (_GENDER) combines gender at birth (BIRTGEN) and described gender [GENDER] and has the following final four formatted values for GENDER in the datasets: (1) Male, (2) Female, (3) Transgender, (4) Intersex∞Confidence interval (CI) is a type of interval estimate, it measures the level of confidence that the parameter lies in the interval. E.g. 95% chance that the calculated confidence interval contains the true population mean.

†Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

‡Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose transgender in response to the question about self-identified gender.

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¶Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

**Sustained viral suppression defined as having all viral load measurements documented undetectable or <200 copies/mL in the past 12 months.

πTRICARE and CAMPUS are federally funded health programs that provides health benefits to uniformed service member, retirees and their families.

Data Dissemination and Use

To disseminate the outcomes of this project, the HMMP project area regularly conducts data analyses and shares the findings at numerous local, regional and national meetings and conferences. The project site has also published the first volume of the HMMP Book of Abstracts, which is a collection of abstracts emanating from these activities from 2005 through 2012[2]. Although some of the findings were considered preliminary, they have laid a strong foundation for a more comprehensive evaluation of the clinical and behavioral characteristics and health outcomes of patients receiving medical care for HIV in Houston/Harris County. In addition, the project area also disseminates project information and news through the website (www.hmmptx.org) and the Community Monitor Newsletter. The HIV/STD Surveillance program continues to work in collaboration with the HIV/STD Prevention and Care programs to identify ways in which the HMMP data can supplement the HHD planning and prioritizing for activities such as identifying gaps in the scope and reach of HIV prevention interventions, and strategies to enhance the coordination of HIV prevention in Houston/Harris County, Texas. At the national level, several surveillance reports and MMWRs based on MMP data have been published, and can be accessed at http://www.cdc.gov/hiv/statistics/systems/mmp/resources.html.

The HMMP project area has produced series of technical and surveillance reports and peer-reviewed journal publications based on data obtained from the MMP survey[2-10]. In addition, numerous abstracts and presentations based on HMMP data have been presented at local, regional, state and national conferences and meetings during the period under review. Because MMP's estimates are representative, data and information gathered from this project may be used to monitor the U.S. National HIV/AIDS strategy goal of increasing access to care and optimizing health outcomes among persons living with HIV. Locally, MMP data has been used by the Houston Area Ryan White Planning Council, HIV Prevention planning groups, policy leaders, health-care providers, and people living with HIV can use the data to inform HIV prevention activities, highlight disparities in care and services, identify unmet needs, and evaluate services. The data are also used to guide policy and funding decisions aimed at increasing engagement in care and improving the quality of care for people living with HIV in Houston/Harris County, Texas and throughout the United States.

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