



HEALTHY
CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH



HIV / STI SURVEILLANCE REPORT

DECEMBER 2017

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COMMISSIONER'S LETTER

Dear Friends,

Chicago is making real progress in our fight against HIV and AIDS. As this report shows, in 2016, Chicago recorded 839 new HIV cases, the fewest number of new HIV diagnoses in more than fifteen years and a 55 percent decline from 2001. We attribute this monumental decline to three key efforts:

1. The increased use of medications to treat HIV. Persons living with HIV who are on anti-retroviral treatment can achieve viral suppression, which means they are healthier and unable to transmit the virus to sexual partners.
2. The increased use of medications to prevent HIV. Persons more vulnerable to HIV who use anti-retroviral medications for pre-exposure prophylaxis (PrEP) are protected from HIV.
3. Ongoing efforts to reach and educate individuals who are either HIV positive or at greater risk to contract the disease, so we can ensure they receive the medication and supportive services they require to stay healthy.



Though this progress is historic, it is not enough. This is why, earlier this year, Mayor Rahm Emanuel and CDPH launched **Getting to Zero** together with our partners across the city and state. Getting to Zero is an ambitious plan to end the HIV epidemic within the next 10 years by prioritizing HIV treatment and the use of PrEP. First, we will increase the number of people living with HIV who are virally suppressed. Currently, just under half of Chicagoans living with HIV have achieved viral suppression. Second, we will increase the number of HIV-vulnerable people who successfully use PrEP. Currently, approximately only 10 percent of people who can benefit from PrEP are using it. By increasing both viral suppression and PrEP use by 20 percent in the next 10 years, we will end the HIV epidemic within our lifetime.

Despite our success in reducing HIV infections, this report makes clear that certain communities continue to face an unacceptable burden of HIV. Gay, bisexual and other men who have sex with men, particularly Black and Latinx men, bear a disproportionate burden of HIV. Among women, Black women represented nearly 81 percent of new HIV diagnoses in 2016.

While Chicago has seen dramatic declines in new HIV diagnoses over the years, we have seen rising numbers of newly diagnosed sexually transmitted infections (STI), similar to trends observed nationwide. In 2016, new cases of chlamydia, gonorrhea and primary and secondary syphilis continued to climb. While some of the increases may be attributed to improved access to STI screening for more residents, we must redouble efforts to ensure people diagnosed with STIs and their partners receive appropriate treatment.

As this report also shows, there are health disparities when it comes to STI infections. Specifically, infections are concentrated in high hardship, low childhood opportunity community areas and among specific populations. Black women accounted for nearly 27 percent of all chlamydia cases in 2016, and Black men nearly 22 percent of all gonorrhea cases in 2016, while they only account for 17 and 14 percent of Chicago's adult population respectively. Nearly 75 percent of primary and secondary syphilis cases occurred in gay, bisexual and other men who have sex with men.

We are proud of the progress we have made, but recognize that there is more work to be done. This report will be used by CDPH and our partners to help inform HIV and STI programming and planning, allowing us to allocate resources to the most vulnerable communities and populations; and ultimately ensure that all Chicagoans are able to lead healthier lives.

Working together, we can eliminate new HIV infections and reduce the number of STIs in every community across Chicago.

A handwritten signature in black ink that reads "Julie Morita".

Julie Morita, M.D.
Commissioner, Chicago Department of Public Health



HEALTHY
CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH

DECEMBER 2017



EXECUTIVE & DATA SUMMARY

EXECUTIVE SUMMARY

The Chicago Department of Public Health (CDPH) believes that all Chicagoans should have the opportunity to be sexually healthy. However, CDPH recognizes that specific population groups, such as residents of certain community areas or individuals of a specific race/ethnicity, do not have an equitable chance at achieving sexual health. Through vital partnerships with communities, researchers, and public and private organizations, CDPH continues its commitment to have a city where every person can attain full sexual health.

The annual CDPH HIV/STI Surveillance Report presents cases of HIV, AIDS, chlamydia, gonorrhea, syphilis, and congenital syphilis. Similar to other large urban areas, Chicago has higher disease morbidity than suburban and rural areas. This report provides HIV and STI data useful for service providers, community organizations, program planners, policy makers, and the general public.

DATA SUMMARY

HIV CARE CONTINUUM

- In 2016, 80% of those newly diagnosed with HIV were linked to HIV medical care within 1 month of HIV diagnosis, and by 12 months post-diagnosis 92% of individuals newly diagnosed had been linked to medical care.
- Among all people living with HIV (PLWH) in Chicago, 60% had accessed care in 2016 and 40% were retained in medical care.
- Forty-eight percent of PLWH in Chicago were virally suppressed.

HIV

- There were a total of 839 new HIV diagnoses among Chicago residents in 2016 (lowest since 1990), corresponding to a rate of 31.1 per 100,000 population. There was a total of 23,824 individuals who had been diagnosed through 2015 and were living with HIV in 2016, corresponding to a rate of 882.8 per 100,000 population.
- There were 4.8 times as many new HIV diagnoses in men than in women.
- In 2016, individuals aged 20-29 years old were the most frequently diagnosed population group, representing 40.3% of all new HIV diagnoses.
- Non-Hispanic (NH) Blacks were the most frequently diagnosed population, representing 58.5% of new diagnoses, 56.4% of AIDS diagnoses, and 55.2% of late diagnoses.
- Compared with other HIV transmission groups, there were 3.7 times more new HIV diagnoses among men who have sex with men (MSM) than those reporting heterosexual (HET) contact transmission and 13.7 times more new HIV diagnoses than those reporting injection drug use (IDU).
- In 2016, the highest rates of new HIV infection diagnoses were seen in individuals residing in Douglas, Edgewater, Grand Boulevard, Kenwood, North Lawndale, Rogers Park, Washington Park, West Garfield Park, and Uptown. The highest rates of PLWH were observed in Edgewater, Rogers Park, and Uptown.

EXECUTIVE SUMMARY

CHLAMYDIA, GONORRHEA, PRIMARY & SECONDARY (P&S) SYPHILIS, AND CONGENITAL SYPHILIS

- There were a total of 29,776 chlamydia cases, 10,836 gonorrhea cases, and 813 syphilis cases reported to CDPH in 2016. The the number of chlamydia and P&S syphilis cases are the highest ever since 1997.
- There were 1.6 times as many reported chlamydia cases in women than men, 1.8 times as many reported gonorrhea cases in men than women, and 15.6 times as many reported syphilis cases in men than women. The largest proportion of P&S syphilis cases (74.9%) were among MSM.
- In 2016, individuals aged 20-29 years old were the most frequently diagnosed age group for chlamydia, gonorrhea, and P&S syphilis.
- NH Blacks were the most frequently diagnosed population among all three reportable STIs, representing 40.3% of reported chlamydia cases, 44.3% of reported gonorrhea cases, and 36.2% of reported P&S Syphilis cases. However, NH Blacks were the only population to a decrease in the number of cases for all three reportable STIs from 2015 to 2016.
- In 2016, community areas with the highest rates of chlamydia and gonorrhea included areas considered to have a high economic hardship.

This year's report highlights the continued a decrease in new HIV diagnoses, reinforces the need to address sexual health disparities experienced by certain populations and in certain community areas in our city, and acts as a call to action for health partners to address the rising STI rates within Chicago.

SUGGESTED CITATION

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SECTION ONE
HIV & STIs IN CHICAGO
2016

HIV

HIV CONTINUUM OF CARE, CHICAGO 2016

The HIV continuum of care is an important tool for monitoring progress and identifying opportunities for HIV prevention and treatment interventions. Since ensuring HIV-positive individuals are engaged in care is critical to both individual and population level health, the continuum was developed to depict two paths: (1) the percentages of newly diagnosed individuals linked to HIV medical care over the course of one year; and (2) the percentages of people living with HIV at specific levels of care engagement and viral suppression.

In 2016, 80% of those diagnosed with HIV were linked to HIV medical care within one month of HIV diagnosis. By 12 months post-diagnosis, 92% of the newly diagnosed had been linked to medical care. For individuals diagnosed with HIV through 2015 and living with HIV in 2016, 60% had accessed medical care (having at least one medical visit in 2016), 40% were considered to be retained in care (having at least 2 medical visits in 2016), and 56% had a viral load test in the past 12 months. Reaching viral suppression for individuals that are HIV positive is essential to living a healthy life and to reducing the likelihood HIV will be transmitted to others. For individuals diagnosed with HIV through 2015 and living with HIV in 2016, only 48% were considered to be virally suppressed (< 200 copies/mL), indicating an opportunity to strengthen HIV prevention and treatment interventions. The data represented in the continuum highlight the need for increased attention on services that assist individuals living with HIV to obtain viral suppression (Figure 1.1).

HIV IN CHICAGO

In 2016, a total of 839 individuals were newly diagnosed with HIV in the city of Chicago, and 367 individuals were newly diagnosed with AIDS (Stage 3 HIV infection) (Table 1.1). These case counts correspond to rates of 31.1 per 100,000 population and 13.6 per 100,000 population, respectively (Table 1.1). Of those newly diagnosed in 2016, a total of 192 individuals were considered to have a late/concurrent diagnosis, indicating that those individuals were diagnosed with HIV and subsequently AIDS within a 12-month period (Table 1.2).

There was a total of 23,824 individuals who had been diagnosed with HIV through 2015 and living with HIV in 2016 (Table 1.3). This case count corresponds to a rate of 882.8 per 100,000 population (Table 1.1). Of those living with HIV in 2015, a total of 12,444 individuals were living with AIDS (Table 1.3).

HIV BY CHICAGO COMMUNITY AREA

In 2016, the rates of reported cases of HIV ranged from 0 to 72.9 per 100,000 population throughout the city of Chicago (Figure 1.2). The five community areas with the highest average HIV infection diagnosis rates from 2015 to 2016 were Kenwood (72.9 per 100,000), Washington Park (68.3 per 100,000), West Garfield Park (66.7 per 100,000), Rogers Park (63.6 per 100,000), and Uptown (62.1 per 100,000) (Figure 1.2; Appendix Table D.1). Of these community areas listed, Washington Park and West Garfield Park were also considered to be areas of high economic hardship (Figure 1.2).

HIV BY CHICAGO COMMUNITY AREA (cont.)

In 2015, the rates of people living with HIV/AIDS ranged from 36.7 to 2,262.2 per 100,000 population throughout the city of Chicago (Figure 1.3). The three community areas with the highest prevalence rates were Uptown (2,262.2 per 100,000), Edgewater (2,078.9 per 100,000), and Rogers Park (1,640.3 per 100,000) (Figure 1.3; Appendix Table D.2).

HIV BY GENDER

In 2016, there were 4.8 times as many new HIV diagnoses in men than women, with 683 cases reported among males and 141 cases reported among females (Table 1.2). The largest number of late diagnoses occurred among males when compared to females (Table 1.2). New diagnoses among transgender individuals accounted for < 2.0% of the total 2016 new diagnoses (Table 1.2).

In 2015, there were 4.1 times as many men living with HIV than women (18,994 males and 4,592 females) (Table 1.3). HIV prevalence among transgender individuals accounted for < 1% of the total Chicago prevalence (Table 1.3).

HIV BY AGE

In 2016, individuals aged 20-29 years old were the most frequently diagnosed age group, representing 40.3% of all new HIV diagnoses and were the age group with the largest percentage of late diagnosed individuals (Table 1.2). If this group were combined with those aged 30-39 years old, then those individuals (aged 20-39) would represent almost two-thirds (64.3%) of new HIV diagnoses in 2016 (Table 1.2).

In 2015, individuals aged 40-59 years old accounted for over half (55.3%) of those individuals living with HIV in the city of Chicago (Table 1.3). Individuals aged 20-29 years old (who accounted for the largest number of new diagnoses) only represented 11.9% of those living with HIV (Table 1.3).

HIV BY RACE/ETHNICITY

In 2016, Non-Hispanic (NH) Blacks were the most frequently diagnosed population, representing 58.5% of new HIV diagnoses, 56.4% of AIDS diagnoses, and 55.2% of late diagnoses (Table 1.2). When compared to the next two populations with the largest number of individuals newly diagnosed, there were 2.7 times as many new HIV diagnoses in NH Blacks than Hispanics and 4.0 times as many than NH White new HIV diagnoses (Table 1.2).

In 2015, NH Blacks accounted for just over half (50.2%) of those individuals living with HIV in the city of Chicago (Table 1.3). When compared with the next two populations with the largest number of people living with HIV, there were 2.6 times more NH Blacks living with HIV than Hispanics living with HIV and 2.1 times more than NH Whites living with HIV (Table 1.3).

HIV BY TRANSMISSION GROUP

In 2016, men who have sex with men (MSM) accounted for the majority (71.8%) of new HIV diagnoses in the city of Chicago (Table 1.2). Compared with other HIV transmission groups, there were 3.7 times more new HIV diagnoses among MSM than those reporting heterosexual contact transmission (HET) and 13.7 times more new HIV diagnoses than those reporting injection drug use (IDU) transmission (Table 1.2).

In 2015, MSM represented 62.4% of individuals living with HIV in the city of Chicago (Table 1.3). In comparison to other HIV transmission groups, there were 3.5 times as many MSM living with HIV than HET and 4.9 times as many MSM living with HIV than IDU (Table 1.3).

CHLAMYDIA

CHLAMYDIA IN CHICAGO

Chlamydia, a sexually transmitted bacterial infection caused by *Chlamydia trachomatis*, is the most common notifiable disease in the United States. According to the CDC 2016 STD Surveillance Report, chlamydia is one of the most prevalent STIs and has comprised the largest proportion of all STIs reported to CDC since 1994. In 2016, a total of 29,776 chlamydia cases were reported in the city of Chicago (Table 1.4). This case count corresponds to a rate of 1,103.3 per 100,000 population (Table 1.1).

CHLAMYDIA BY CHICAGO COMMUNITY AREA

In 2016, the rates of reported cases of chlamydia ranged from 116.2 to 2,915.8 per 100,000 population throughout the city of Chicago (Figure 1.4). The three community areas with the highest average chlamydia case rates from 2015 to 2016 were Riverdale (2,915.8 per 100,000), North Lawndale (2,870.9 per 100,000), and Washington Park (2,654.3 per 100,000) (Figure 1.4; Appendix Table D.3). All three of these community areas were also considered to be areas of high economic hardship (Figure 1.4).

CHLAMYDIA BY BIRTH SEX

In 2016, there were 1.6 times as many reported chlamydia cases in women than men, with 18,464 cases reported among females and 11,279 cases reported among males (Table 1.4). This disparity between the sexes is consistent with previous years and likely reflects a larger number of females screened for this infection. It is also likely that many of the sex partners of women with chlamydia did not receive a diagnosis nor were they reported as having chlamydia infections.

CHLAMYDIA BY AGE

In 2016, individuals aged 20-29 years old were the most frequently diagnosed age group, representing 54.2% of all reported chlamydia cases (Table 1.4). If this group were combined with those aged 13 to 19 years old, then all those individuals (13 to 29 years) would represent 80.6% of all reported chlamydia cases in 2016 (Table 1.4).

CHLAMYDIA BY RACE/ETHNICITY

In 2016, NH Blacks were the most frequently diagnosed population, representing 40.3% of reported chlamydia cases in Chicago (Table 1.4). When compared to the next two populations with the largest number of reported cases, there were 3 times as many chlamydia cases in NH Blacks than Hispanics and 5.1 times as many than in NH Whites (Table 1.4).

CHLAMYDIA + HIV CO-INFECTION

In 2016, a total of 994 reported chlamydia cases were also co-infected with HIV (Table 1.5). The majority of co-infected individuals were male (92.0%), NH Black (31.1%), aged 20-29 years (38.6%), and were MSM (69.6%) (Table 1.5).

GONORRHEA

GONORRHEA IN CHICAGO

Gonorrhea is a sexually transmitted bacterial infection caused by *Neisseria gonorrhoeae* and is the second most commonly reported notifiable disease in the United States. According to the CDC 2016 STD Surveillance Report, gonorrhea infections are a major cause of pelvic inflammatory disease (PID) in the United States and certain strains of the bacteria have developed resistance to many of the antimicrobials used for treatment. In 2016, a total of 10,836 gonorrhea cases were reported in the city of Chicago (Table 1.4). This case count corresponds to a rate of 401.5 per 100,000 population (Table 1.1).

GONORRHEA BY CHICAGO COMMUNITY AREA

In 2016, the rates of reported cases of gonorrhea ranged from 36.7 to 1,037.9 per 100,000 population throughout the city of Chicago (Figure 1.5). The three community areas with the highest average gonorrhea case rates from 2015 to 2016 were Uptown (1,037.9 per 100,000), Washington Park (1,032.7 per 100,000), and North Lawndale (1,027.5 per 100,000) (Figure 1.5; Appendix Table D.4). Of these listed community areas, Washington Park and North Lawndale were considered areas of high economic hardship (Figure 1.5).

GONORRHEA BY BIRTH SEX

In 2016, there were 1.8 times as many reported gonorrhea cases in men than women, with 6,900 cases reported among males and 3,920 cases reported among females (Table 1.4). This disparity between the sexes may be reflective of either increased transmission or increased case ascertainment (e.g., through increased extra-genital screening) among men.

GONORRHEA BY AGE

Similar to reported cases of chlamydia, gonorrhea cases in Chicago are concentrated among adolescents and young adults. In 2016, individuals aged 20-29 years old were the most frequently diagnosed age group, representing 50.6% of all reported gonorrhea cases (Table 1.4). If this group were combined with those aged 13 to 19 years old, then all those individuals (13 to 29 years) would represent 72.0% of all reported gonorrhea cases in 2016 (Table 1.4).

GONORRHEA BY RACE/ETHNICITY

In 2016, NH Blacks were the most frequently diagnosed population, representing 44.3% of reported gonorrhea cases in Chicago (Table 1.4). When compared to the next two populations with the largest number of reported cases, there were 5.2 times as many gonorrhea cases in NH Blacks than Hispanics and 3.7 times as many than in NH Whites (Table 1.4).

GONORRHEA + HIV CO-INFECTION

In 2016, a total of 1,078 reported gonorrhea cases were also co-infected with HIV (Table 1.5). The majority of co-infected individuals were male (96.3%), NH Black (32.2%), aged 20-29 years (41.0%), and were MSM (69.2%) (Table 1.5).

PRIMARY & SECONDARY (P&S) SYPHILIS

P&S SYPHILIS IN CHICAGO

Syphilis is a sexually transmitted bacterial infection caused by *Treponema pallidum* and results in a genital ulcerative disease that if left untreated can result in significant medical complications and facilitate the transmission and acquisition of HIV infection (CDC STD Surveillance Report, 2016). Primary and secondary syphilis are the earliest stages of the infection that reflect symptomatic disease and are used as indicators of new infection. In 2016, a total of 813 P&S syphilis cases were reported in the city of Chicago (Table 1.4). This case count corresponds to a rate of 30.1 per 100,000 population (Table 1.1).

P&S SYPHILIS BY CHICAGO COMMUNITY AREA

In 2016, the rates of reported cases of syphilis ranged from 0 to 130.9 per 100,000 population throughout the city of Chicago (Figure 1.6). The three community areas with the highest average P&S syphilis case rates from 2015 to 2016 were Edgewater (130.9 per 100,000), Uptown (127.7 per 100,000), and Lake View (100.7 per 100,000) (Figure 1.6; Appendix Table D.5) .

P&S SYPHILIS BY BIRTH SEX

In 2016, there were 15.6 times as many reported syphilis cases in men than women, with 764 cases reported among males and 49 cases reported among females (Table 1.4). This disparity between the sexes may be reflective of either increased transmission or increased diagnostic screening among men, especially MSM.

P&S SYPHILIS BY AGE

In 2016, individuals aged 20-29 years old were the most frequently diagnosed age group, representing 35.8% of all reported syphilis cases (Table 1.4). However, unlike cases reported for chlamydia and gonorrhea, older age groups made up the majority of reported P&S syphilis cases. Thus, individuals aged 20 to 39 represented 68.1% of all reported P&S syphilis cases in 2016 (Table 1.4).

P&S SYPHILIS BY RACE/ETHNICITY

Like with other reportable STIs in 2016, NH Blacks were the most frequently diagnosed population, representing 36.2% of reported P&S syphilis cases in Chicago (Table 1.4). When compared to the next two populations with the largest number of reported cases, there were 1.7 times as many P&S syphilis cases in NH Blacks than Hispanics and 1.2 times as many than in NH Whites (Table 1.4).

P&S SYPHILIS BY TRANSMISSION GROUP

Since 2011, gender of sex partner was added to the Illinois National Electronic Disease Surveillance System (INEDSS), which allows providers to report this information to the health department to assess trends of syphilis cases among MSM. According to the 2016 CDC STD Surveillance Report, MSM accounted for the majority of reported P&S syphilis cases in 2016 in the United States. Similarly in Chicago, the largest proportions of P&S syphilis cases (74.9%) were among MSM, while men who have sex with females represent 8.7% of the cases (Table 1.4). Notably, 10.3% of male syphilis cases were reported as 'unknown' risk, which, if known, could potentially increase the number of MSM cases.

P&S SYPHILIS + CO-INFECTION

In 2016, a total of 310 reported P&S syphilis cases were also co-infected with HIV (Table 1.5). The majority of co-infected individuals were male (99.7%), NH Black (38.4%), aged 30-39 years (32.6%), and were MSM (80.9%) (Table 1.5).

CONGENITAL SYPHILIS

CONGENITAL SYPHILIS IN CHICAGO

If an early syphilis infection is left untreated in a pregnant woman, it can lead to congenital syphilis which can lead to infection of the fetus and increase the risk for stillbirth or death of the infant. According to the 2016 CDC STD Surveillance Report, after decreasing from 2008-2012, there has been a national increase in congenital syphilis cases from 2013-2016. However, in Chicago, there were 12 congenital syphilis cases reported in 2016, the lowest number of cases in the past 5 years (Table 1.6). In 2016, CDPH launched a campaign to bring awareness to this disease.

(https://www.cityofchicago.org/city/en/depts/cdph/supp_info/hiv/protect-your-baby-from-congenital-syphilis.html)

CONGENITAL SYPHILIS BY CHICAGO COMMUNITY AREA

From 2012-2016, the rates of reported cases of congenital syphilis ranged from 0 to 526.3 per 100,000 population throughout the city of Chicago (Figure 1.7). The Chicago community areas with the higher average congenital syphilis case rates from 2012 to 2016 were West Garfield Park, North Lawndale, Oakland, Fuller Park, Calumet Heights, Roseland, Riverdale, West Englewood, and Greater Grand Crossing (Figure 1.7). Of these nine listed community areas, seven were considered to be areas of high economic hardship (Figure 1.7).

CONGENITAL SYPHILIS BY MATERNAL AGE

In 2016, mothers aged 20-29 accounted for 67.0% of the congenital syphilis cases in the city of Chicago (Table 1.6). This age group has accounted for the majority of congenital syphilis cases for the past 5 years, with mothers aged 20-24 years consistently representing nearly half of those cases, except in 2016 where mothers aged 25-29 accounting for 42.0% of the cases (Table 1.6). The median maternal age for congenital syphilis cases in 2016 was 27 years old, an increase from the median age of 23 years in 2015 (Table 1.6).

CONGENITAL SYPHILIS BY RACE/ETHNICITY

NH Blacks accounted for the majority (75%) of reported congenital syphilis cases in 2016 and have consistently accounted for the majority of these cases for the past 5 years (Table 1.6). When compared to the next two populations with the largest number of reported cases, there were 9 times as many congenital syphilis cases in NH Blacks than Hispanics and NH Whites (Table 1.6).

SECTION ONE: HIV & STIs IN CHICAGO, 2016

Table 1.1: HIV, AIDS, and STI Case Rates and HIV Prevalence Rates by Race/Ethnicity and Birth Sex, Chicago and United States

Demographic Characteristics	Diagnosed/Reported Cases, 2016 [¥]										HIV Prevalence, 2015 [†]			
	HIV Infections [§]		AIDS		Gonorrhea		Chlamydia		Syphilis [€]		HIV Prevalence, 2015 [†]		United States ^{**}	
	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*
Race/Ethnicity														
Black, non-Hispanic	491	54.8	207	23.1	4,798	535.9	12,003	1,340.7	294	32.8	11,971	1,337.1	405,321	1,069.5
White, non-Hispanic	124	14.5	54	6.3	1,283	150.3	2,346	274.7	253	29.6	5,784	677.4	300,156	152.4
Hispanic	181	23.7	78	10.2	921	120.6	3,970	519.7	173	22.6	4,609	603.3	198,456	391.1
Asian/Pi, non-Hispanic	24	16.1	7	4.7	85	57.2	295	198.4	29	19.5	261	175.6	13,189	87.7
AI/AN, non-Hispanic	< 5	100.7	< 5	33.6	14	470.1	34	1,141.7	< 5	67.2	24	805.9	2,908	140.2
Other, non-Hispanic	16	23.5	20	29.4	85	124.9	268	393.9	62	91.1	1,175	1,726.9	35,051	525.7
Unknown	0		0		3,650		10,860		0		0			
Sex[^]														
Male	694	53.1	296	22.7	6,900	528.3	11,279	863.6	764	58.5	19,150	1,466.3	722,244	474.9
Female	145	10.4	71	5.1	3,920	281.4	18,464	1,325.7	49	3.5	4,674	335.6	230,360	146.5
Unknown	0		0		16		33		0		0			
Chicago[§]	839	31.1	367	13.6	10,836	401.5	29,776	1,103.3	813	30.1	23,824	882.8	-	-
United States[†]**	39,782	12.3	18,274	5.9	468,514	145.8	1,598,354	497.3	27,814	8.7	-	-	973,846	303.5

[¥] 2016 Diagnoses for HIV and AIDS; 2016 Reported Cases for STIs; 2015 HIV Prevalence. [†] Prevalence rate per 100,000 population. [§] HIV infection diagnosis and prevalence represents people with HIV at any stage of disease through 9/26/17. ^βTotals of newly diagnosed HIV and AIDS may be lower due to incomplete laboratory reporting. ^{*} Rate per 100,000 population using 2010 U.S. Census Bureau Population figures. [€] Primary and secondary syphilis (symptomatic and infectious stages) only. ^{**} Centers for Disease Control and Prevention, HIV Surveillance Report, 2016; vol. 28. <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published November 2017. [‡] Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2016. Atlanta: U.S. Department of Health and Human Services; 2017. [^] Counts based on birth sex.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

Table 1.2: HIV and AIDS Infections and Late Diagnosis by Selected Demographic Characteristics, Chicago, 2016. (as of 09/26/2017)

Demographic Characteristics	HIV*		AIDS*		Late Diagnosis‡	
	No.	%	No.	%	No.	%
Gender**						
Male	683	81.4%	292	79.6%	153	79.7%
Female	141	16.8%	70	19.1%	37	19.3%
Transgender: MtF	11	1.3%	< 5	1.1%	< 5	< 1%
Transgender: FtM	< 5	< 1%	< 5	< 1%	< 5	< 1%
Race/Ethnicity^						
Black, non-Hispanic	491	58.5%	207	56.4%	106	55.2%
White, non-Hispanic	124	14.8%	54	14.7%	24	12.5%
Hispanic	181	21.6%	78	21.3%	49	25.5%
Asian/PI, non-Hispanic	24	2.9%	7	1.9%	6	3.1%
AI/AN, non-Hispanic	< 5	< 1%	< 5	< 1%	< 5	< 1%
Multiple, non-Hispanic	16	1.9%	20	5.4%	6	3.1%
Unknown	0	0.0%	0	0.0%	0	0.0%
Transmission Group						
Male Sex w/Male	602	71.8%	231	62.9%	122	63.5%
Injection Drug Use	44	5.2%	35	9.5%	13	6.8%
MSM and IDUS	23	2.7%	13	3.5%	5	2.6%
Heterosexual	164	19.5%	22.3%	50	26.0%	
Other¶	6	< 1%	6	1.6%	< 5	< 1%
Age Category†						
Less than 13	5	< 1%	< 5	< 1%	< 5	< 1%
13-19	64	7.6%	8	< 1%	6	1.2%
20-29	338	40.3%	100	27.2%	66	34.4%
20-24	140	16.7%	40	10.9%	28	14.6%
25-29	198	23.6%	60	16.3%	38	19.8%
30-39	201	24.0%	92	25.1%	45	23.4%
40-49	113	13.5%	67	18.3%	31	16.1%
50-59	86	10.3%	59	16.1%	33	17.2%
60+	32	3.8%	39	10.6%	10	5.2%
Total€	839		367		192	

Note: Groups may not total 100% due to rounding. Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.

*HIV infection diagnoses represents people newly diagnosed with HIV, at any stage of disease through 09/26/2017.

AIDS represents all newly diagnosed as stage 3 HIV (AIDS), through 09/26/2017.** Current gender identity or gender with which a person identifies.

Because total diagnoses were calculated using current gender independently of values using birth sex, total diagnoses may differ slightly across tables.

^ Multiple, non-Hispanic indicates more than one race identified. § Men who have sex with men and inject drugs.

¶ Includes perinatal transmission, blood transfusion, hemophilia, and no indicated risk (NIR).

† Age at time of diagnosis. ‡ Late diagnosis represents those diagnosed with stage 3 HIV (AIDS) within 1 year of being diagnosed with HIV.

€Total case count may be lower due to incomplete laboratory reporting.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

Table 1.3: People Living with HIV Infection (PLWH) and AIDS (PLWA) in 2015, by Selected Demographic Characteristics, Chicago. (as of 09/26/2017)

Demographic Characteristics	HIV*		AIDS‡	
	No.	%	No.	%
Gender**				
Male	18,994	79.7%	9,977	80.2%
Female	4,592	19.3%	2,356	18.9%
Transgender: MtF	157	< 1%	70	< 1%
Transgender: FtM	79	< 1%	39	< 1%
Additional Gender	< 5	< 1%	0	0.0%
Race/Ethnicity[^]				
Black, non-Hispanic	11,971	50.2%	6,479	52.1%
White, non-Hispanic	5,784	24.3%	2,628	21.1%
Hispanic	4,609	19.3%	2,554	20.5%
Asian/PI, non-Hispanic	261	1.1%	124	1.0%
AI/AN, non-Hispanic	24	< 1%	9	< 1%
Multiple, non-Hispanic	1,175	4.9%	650	5.2%
Unknown	0	0.0%	0	0.0%
Transmission Group				
Male Sex w/Male	14,863	62.4%	7,180	57.7%
Injection Drug Use	3,043	12.8%	2,000	16.1%
MSM and IDU§	1,278	5.4%	858	6.9%
Heterosexual	4,247	17.8%	2,215	17.8%
Other¶	393	1.6%	191	1.5%
Age Category†				
Less than 13	69	< 1%	8	< 1%
13-19	184	< 1%	33	< 1%
20-29	2,829	11.9%	785	6.3%
20-24	993	4.2%	233	1.9%
25-29	1,836	7.7%	556	4.5%
30-39	4,174	17.5%	1,696	13.6%
40-49	6,210	26.1%	3,301	26.5%
50-59	6,949	29.2%	4,311	34.6%
60+	3,409	14.3%	2,306	18.5%
Total	23,824		12,444	

Note: Groups may not total 100% due to rounding.

Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.

* HIV prevalence represents people diagnosed with HIV through 2015 and living with HIV in 2016. ‡ AIDS represents people diagnosed with stage 3 HIV (AIDS) through 2015 and living with AIDS in 2016.

** Current gender identity or gender with which a person identifies. Because total diagnoses were calculated using current gender independently of values using birth sex, total diagnoses may differ slightly across tables.

[^] Multiple, non-Hispanic indicates more than one race identified. § Men who have sex with men and inject drugs. ¶ Includes perinatal transmission, blood transfusion, hemophilia, and NIR. † Current age as of 2015.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

Table 1.4: Reported Cases of Chlamydia, Gonorrhea, Primary and Secondary (P&S) Syphilis by Selected Demographic Characteristics, Chicago, 2016

Demographic Characteristics	Chlamydia		Gonorrhea		P&S Syphilis	
	No.	%	No.	%	No.	%
Birth Sex[¥]						
Male	11,279	37.9%	6,900	63.7%	764	94.0%
Female	18,464	62.0%	3,920	36.2%	49	6.0%
Race/Ethnicity[^]						
Black, non-Hispanic	12,003	40.3%	4,798	44.3%	294	36.2%
White, non-Hispanic	2,346	7.9%	1,283	11.8%	253	31.1%
Hispanic	3,970	13.3%	921	8.5%	173	21.3%
Asian/PI, non-Hispanic	295	1.0%	85	< 1%	29	3.6%
AI/AN, non-Hispanic	34	< 1%	14	< 1%	< 5	< 1%
Other, non-Hispanic	268	< 1%	85	< 1%	62	7.6%
Unknown	10,860	36.5%	3,650	33.7%	0	0.0%
Transmission Group[‡]						
Male sex w/Male	—	—	—	—	609	74.9%
Heterosexual Males	—	—	—	—	71	8.7%
Females	—	—	—	—	49	6.0%
Male unknown	—	—	—	—	84	10.3%
Age Category[†]						
Less than 13	37	< 1%	16	< 1%	0	0.0%
13-19	7,867	26.4%	2,315	21.4%	27	3.3%
20-29	16,137	54.2%	5,483	50.6%	291	35.8%
20-24	10,033	33.7%	3,117	28.8%	101	12.4%
25-29	6,104	20.5%	2,366	21.8%	190	23.4%
30-39	4,078	13.7%	1,952	18.0%	263	32.3%
40-49	1,135	3.8%	682	6.3%	141	17.3%
50-59	415	1.4%	304	2.8%	77	9.5%
60+	107	< 1%	84	< 1%	14	1.7%
Total**	29,776		10,836		813	

Note: Groups may not total 100% due to rounding.

Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.

¥ Does not include unknown. ‡ Transmission Group represents the sex of sexual partner of syphilis cases.

Data are not collected for chlamydia and gonorrhea.

† Age a time of diagnosis. ^ AI/AN refers to American Indian/Alaska Native.

** Includes cases with unknown sex.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

Table 1.5: Co-Infection between HIV Infection Diagnoses & Reported Cases of Chlamydia, Gonorrhea, Primary & Secondary (P&S) Syphilis by Selected Demographic Characteristics, Chicago, 2016[€]

Demographic Characteristics	HIV + Chlamydia		HIV + Gonorrhea		HIV + P&S Syphilis	
	No.	%	No.	%	No.	%
Gender**						
Male	914	92.0%	1038	96.3%	309	99.7%
Female	79	7.9%	37	3.4%	< 5	< 1%
Unknown	< 5	< 1%	< 5	< 1%	0	0.0%
Race/Ethnicity[^]						
Black, non-Hispanic	309	31.1%	347	32.2%	119	38.4%
White, non-Hispanic	205	20.6%	237	22.0%	91	29.4%
Hispanic	144	14.5%	149	13.8%	72	23.2%
Asian/PI, non-Hispanic	6	0.6%	16	1.5%	8	2.6%
AI/AN, non-Hispanic	< 5	< 1%	< 5	< 1%	< 5	< 1%
Multiple, non-Hispanic	5	< 1%	10	< 1%	5	1.6%
Unknown	324	32.6%	318	29.5%	14	4.5%
Transmission Group[¥]						
Male Sex w/Male	691	69.6%	746	69.2%	251	80.9%
Injection Drug Use	13	1.3%	10	< 1%	< 5	< 1%
MSM and IDU [§]	37	3.7%	63	5.8%	12	3.7%
Heterosexual	56	5.7%	31	2.9%	< 5	1.1%
Other [¶]	9	< 1%	10	< 1%	0	0.0%
Missing	187	18.8%	218	20.2%	42	13.5%
Age Category[†]						
13-19	32	3.2%	33	3.1%	8	2.6%
20-29	384	38.6%	442	41.0%	83	26.8%
20-24	156	15.7%	161	14.9%	25	8.1%
25-29	228	22.9%	281	26.1%	58	18.7%
30-39	290	29.2%	341	31.6%	101	32.6%
40-49	191	19.2%	172	16.0%	69	22.3%
50-59	84	8.5%	76	7.1%	43	13.9%
60+	13	1.3%	14	1.3%	6	1.9%
Total	994	100.0%	1,078	100.0%	310	100.0%

Note: Groups may not total 100% due to rounding. Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.
HIV+Chlamydia, HIV+Gonorrhea and HIV+Syphilis diagnoses represents people living with HIV and also diagnosed with the respective STI during 2016.

€ Data Source: Illinois Department of Public Health (IDPH) as of 10/10/2017.

** Current gender identity or gender with which a person identifies.

Because total diagnoses were calculated using current gender, independently of values using birth sex, total diagnoses may differ slightly across tables.

^ Multiple, non-Hispanic indicates more than one race identified.

AI/AN refers to American Indian/ Alaskan Native.

¥ Transmission Group data based on HIV surveillance data as of 9/26/2017

§ Men who have sex with men and inject drugs.

¶ Includes perinatal transmission, blood transfusion, hemophilia, and NIR.

† Age at time of STI diagnosis.



SECTION ONE: HIV & STIs IN CHICAGO, 2016

Table 1.6: Congenital Syphilis Cases by Selected Demographic Characteristics, Chicago, 2012-2016

Demographic Characteristics	Year of Report									
	2012		2013		2014		2015		2016	
	No.	%	No.	%	No.	%	No.	%	No.	%
Case Classification										
Presumptive Cases	22	100.0%	13	87.0%	18	90.0%	24	100.0%	12*	100%
Stillborns	0	0.0%	< 5	13.0%	< 5	10.0%	0	0.0%	0	0.0%
Race/Ethnicity										
Black, non-Hispanic	17	77.3%	9	60.0%	13	65.0%	18	75.0%	9	75.0%
White, non-Hispanic	< 5	4.5%	< 5	13.3%	< 5	5.0%	< 5	4.2%	< 5	8.3%
Hispanic	< 5	9.1%	< 5	20.0%	< 5	5.0%	5	20.8%	< 5	8.3%
Asian/PI, non-Hispanic	< 5	9.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
AI/AN, non-Hispanic	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other/Unknown	0	0.0%	< 5	6.7%	5	25.0%	0	0.0%	< 5	8.3%
Maternal Age Category†										
Less than 13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
13-19	5	22.7%	< 5	20.0%	0	0.0%	< 5	8.3%	0	0.0%
20-29	15	68.2%	10	66.7%	15	75.0%	19	79.2%	8	67.0%
20-24	13	59.1%	7	46.7%	9	45.0%	12	50.0%	< 5	25.0%
25-29	< 5	9.1%	< 5	20.0%	6	30.0%	7	29.2%	5	42.0%
30-39	< 5	4.5%	< 5	13.3%	5	25.0%	< 5	8.3%	< 5	33.0%
40+	< 5	4.5%	0	0.0%	0	0.0%	< 5	4.2%	0	0.0%
Median Age	22		22		26		23		27	
Total	22		15		20		24		12*	

Note: Groups may not total 100% due to rounding.

Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.

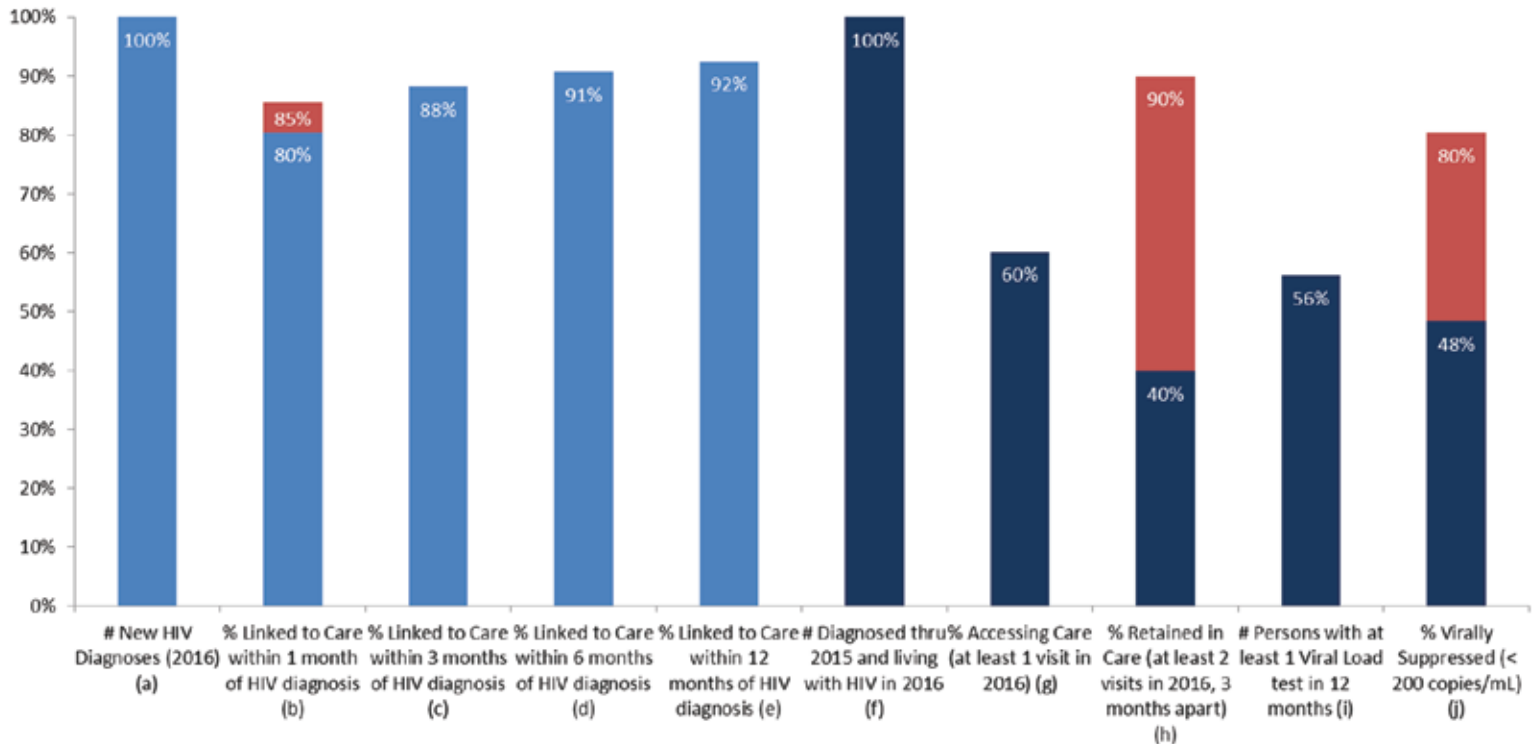
† Age at time of diagnosis.

*Number of cases are based on the date of report to the Health Department



SECTION ONE: HIV & STIs IN CHICAGO, 2016

Figure 1.1: HIV Continuum of Care Among Cases 13 Years and Older, Chicago, 2016 (as of 9/26/2017) with 2020 National HIV/AIDS Strategy Indicators #4-6(red)



(a) Number of persons ≥ 13 years of age at diagnosis with HIV infection between 1/1/2016 and 12/31/2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Link1 Table.

(b) Percent of persons ≥ 13 years of age linked to care (at least one CD4, Viral Load (VL), or HIV-1 genotype test) within 1 month of HIV diagnosis among those diagnosed with HIV infection between 1/1/2016 and 12/31/2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Link1 Table.

(c) Percent of persons ≥ 13 years of age linked to care (at least one CD4, VL, or HIV-1 genotype test) within 3 months of HIV diagnosis among those diagnosed with HIV infection between 1/1/2016 and 12/31/2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Link1 Table.

(d) Percent of persons ≥ 13 years of age linked to care (at least one CD4, VL, or HIV-1 genotype test) within 6 months of HIV diagnosis among those diagnosed with HIV infection between 1/1/2016 and 12/31/2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Link1 Table.

(e) Percent of persons ≥ 13 years of age linked to care (at least one CD4, VL, or HIV-1 genotype test) within 12 months of HIV diagnosis among those diagnosed with HIV infection between 1/1/2016 and 12/31/2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Link1 Table.

(f) Number of persons ≥ 13 years of age on 12/31/2015 diagnosed with HIV through 12/31/2015 and living with HIV on 12/31/2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Care1 and VL1 Tables.

(h) Number of persons ≥ 13 years of age on 12/31/2015 diagnosed with HIV through 12/31/2015 and living with HIV on 12/31/2016 who received at least two medical care visits (at least one CD4 or VL at each), 3 months apart, between January 2016 and December 2016. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, Care1 Table.

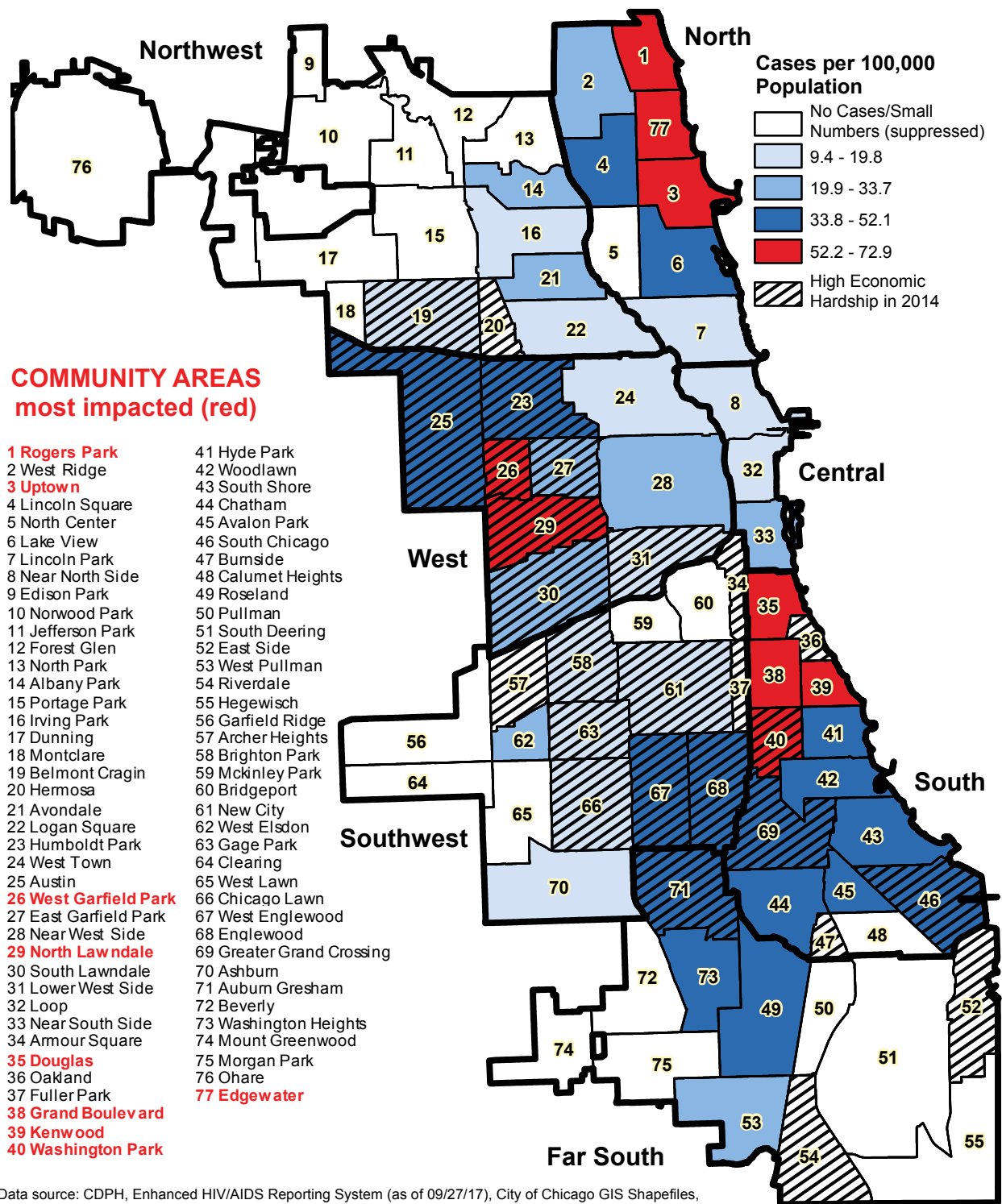
(i) Number of persons ≥ 13 years of age on 12/31/2015 diagnosed with HIV through 12/31/2015 and living with HIV on 12/31/2016 who received at least one VL test in the past 12 months. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, VL1 Table.

(j) Percent of persons ≥ 13 years of age on 12/31/2015 diagnosed with HIV through 12/31/2015 and living with HIV on 12/31/2016 whose most recent VL test result was < 200 copies /mL. Source: Chicago enhanced HIV/AIDS reporting system (eHARS) (as of 9/26/2017). NHAS output, VL1 Table.



SECTION ONE: HIV & STIs IN CHICAGO, 2016

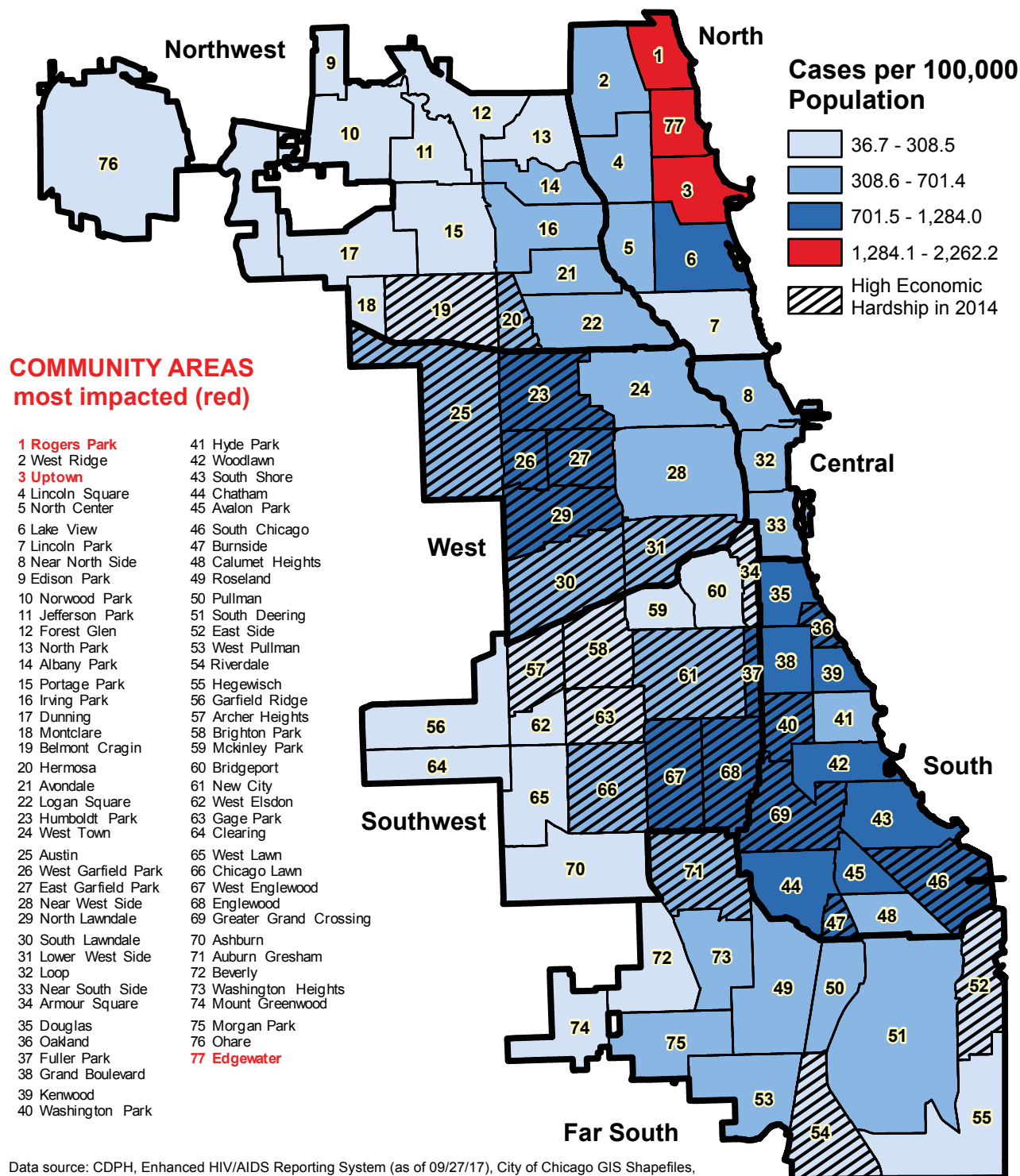
Figure 1.2: 2016 Rate of HIV Infection Diagnoses in Chicago by Community Area



Data source: CDPH, Enhanced HIV/AIDS Reporting System (as of 09/27/17), City of Chicago GIS Shapefiles, and U.S. Census. This map represents 88% (738/839) of total new HIV infection diagnoses. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

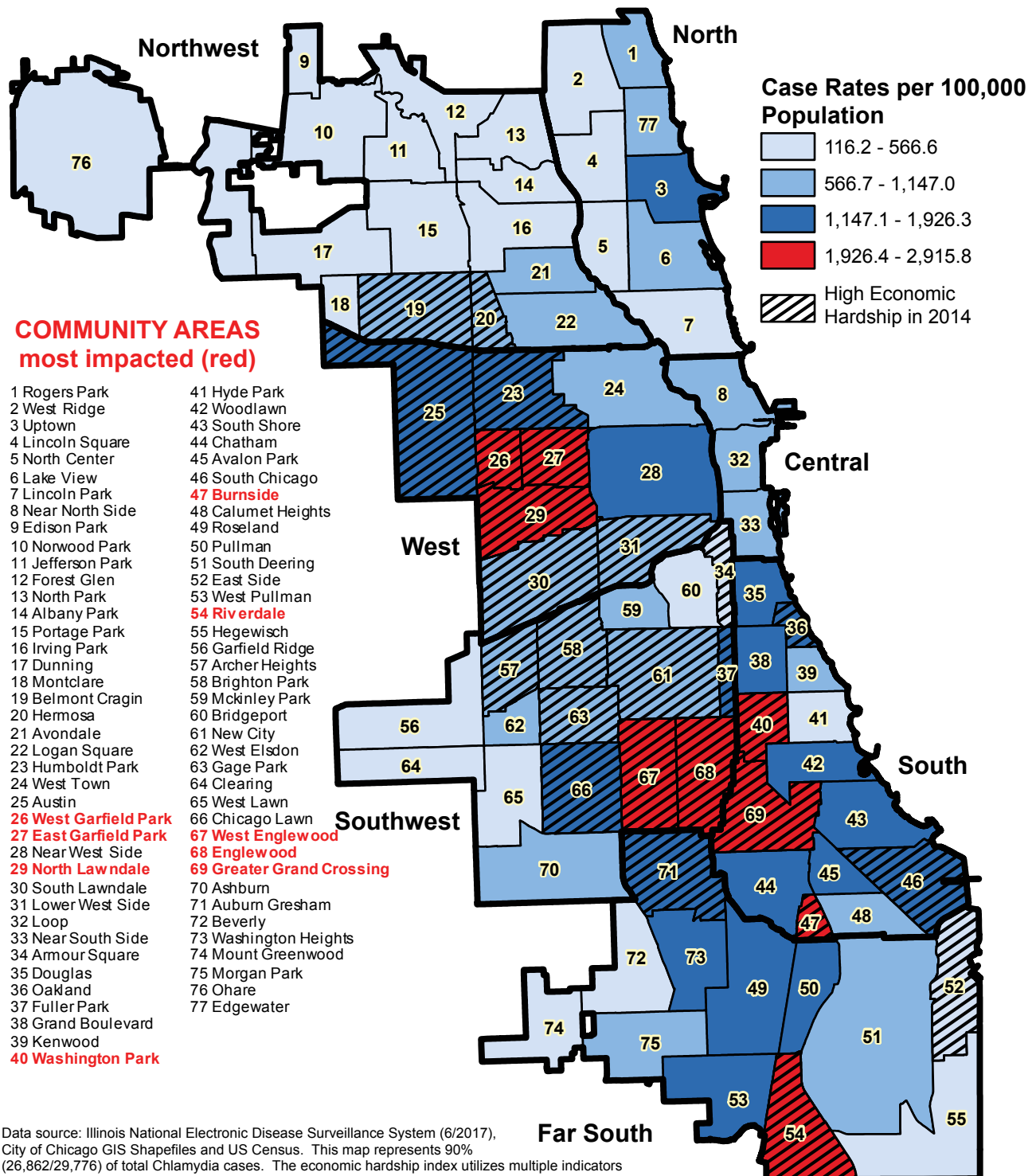
Figure 1.3: 2015 Rate of People Living with HIV/AIDS in Chicago by Community Area



Data source: CDPH, Enhanced HIV/AIDS Reporting System (as of 09/27/17), City of Chicago GIS Shapefiles, and U.S. Census. This map represents 68% (16,226/23,824) of people living with HIV/AIDS. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

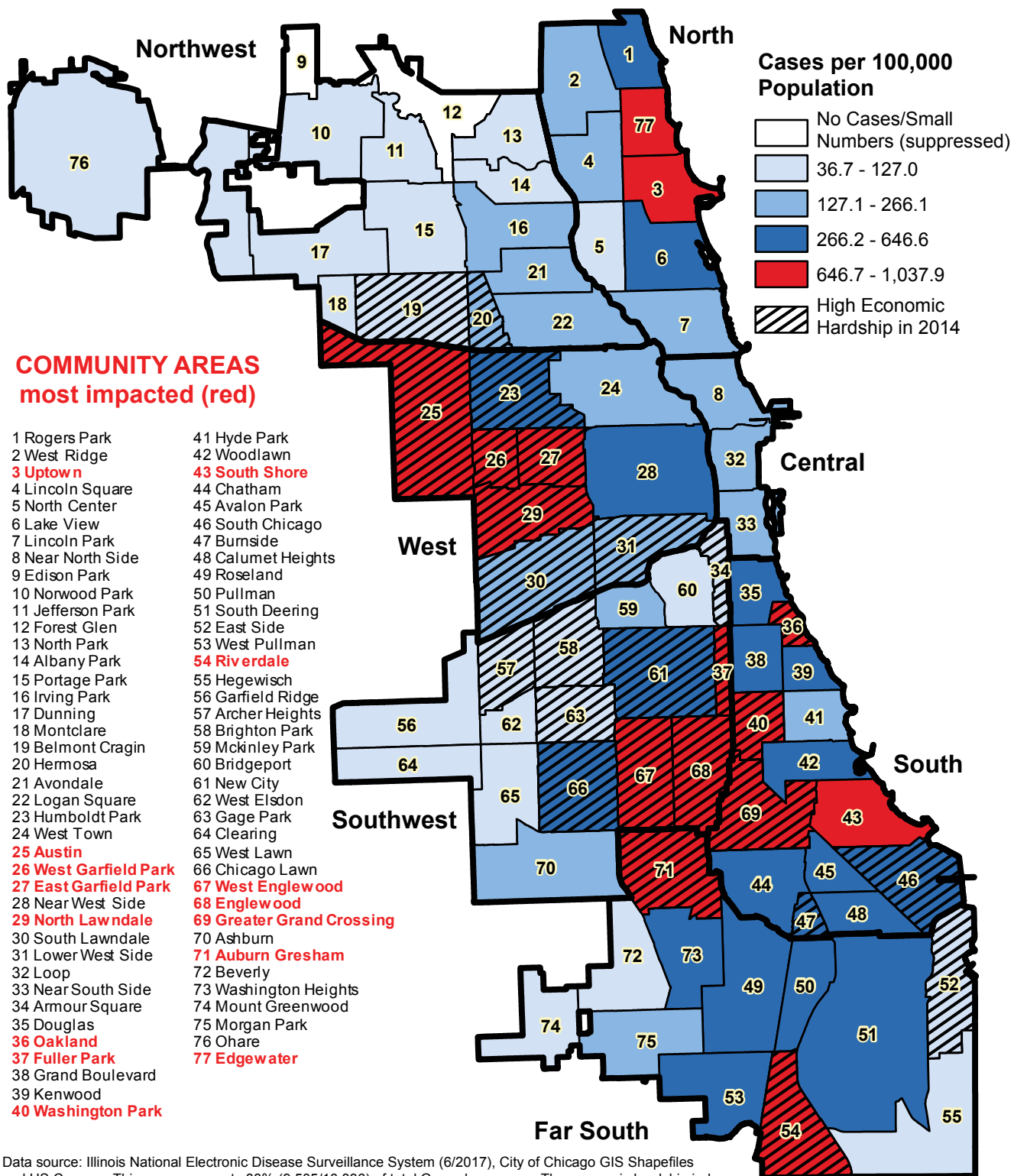
Figure 1.4: Chlamydia Case Rates by Community Area, Chicago, 2016



Data source: Illinois National Electronic Disease Surveillance System (6/2017), City of Chicago GIS Shapefiles and US Census. This map represents 90% (26,862/29,776) of total Chlamydia cases. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

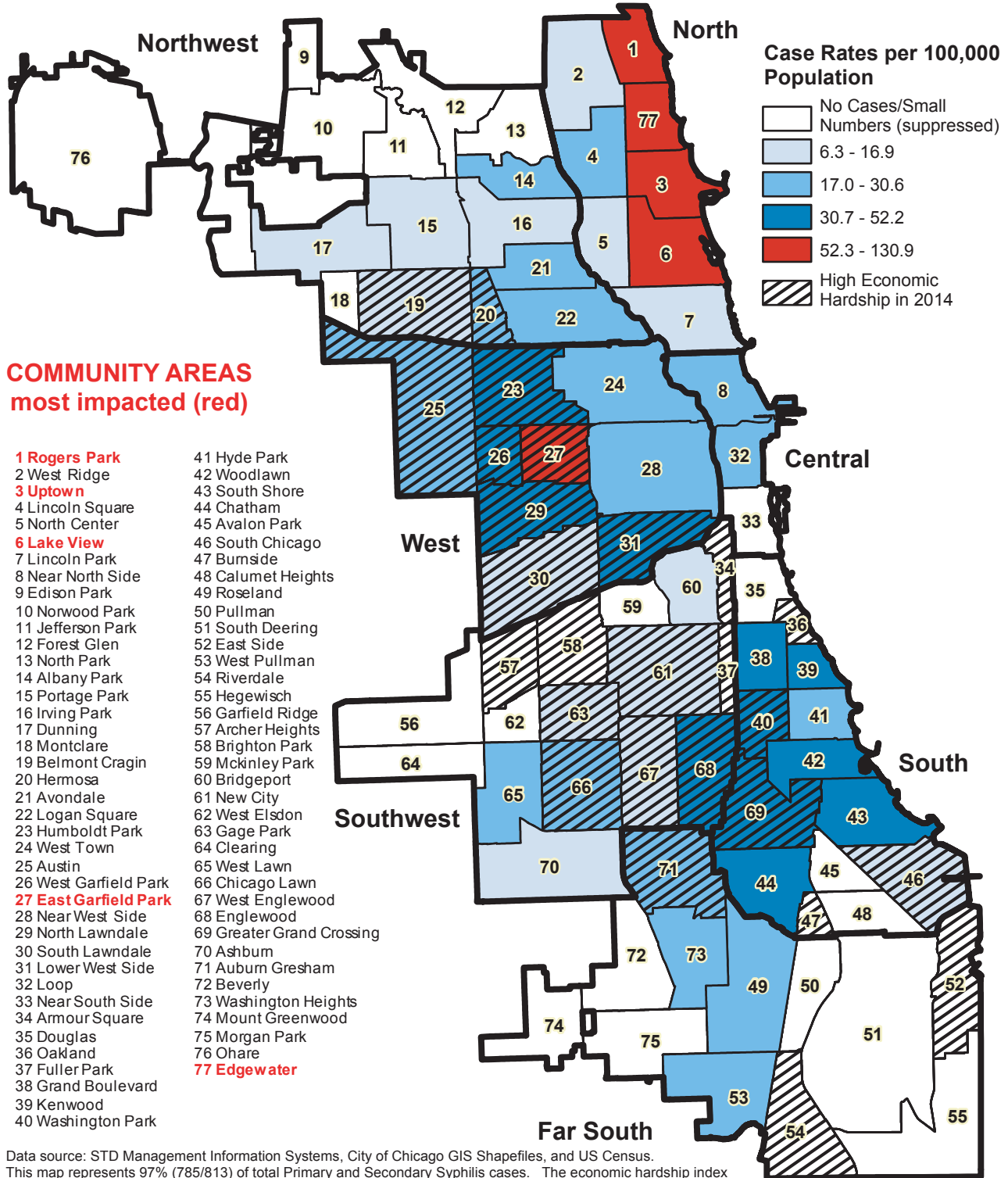
Figure 1.5: Gonorrhea Case Rates by Community Area, Chicago, 2016



Data source: Illinois National Electronic Disease Surveillance System (6/2017), City of Chicago GIS Shapefiles and US Census. This map represents 88% (9,505/10,836) of total Gonorrhea cases. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

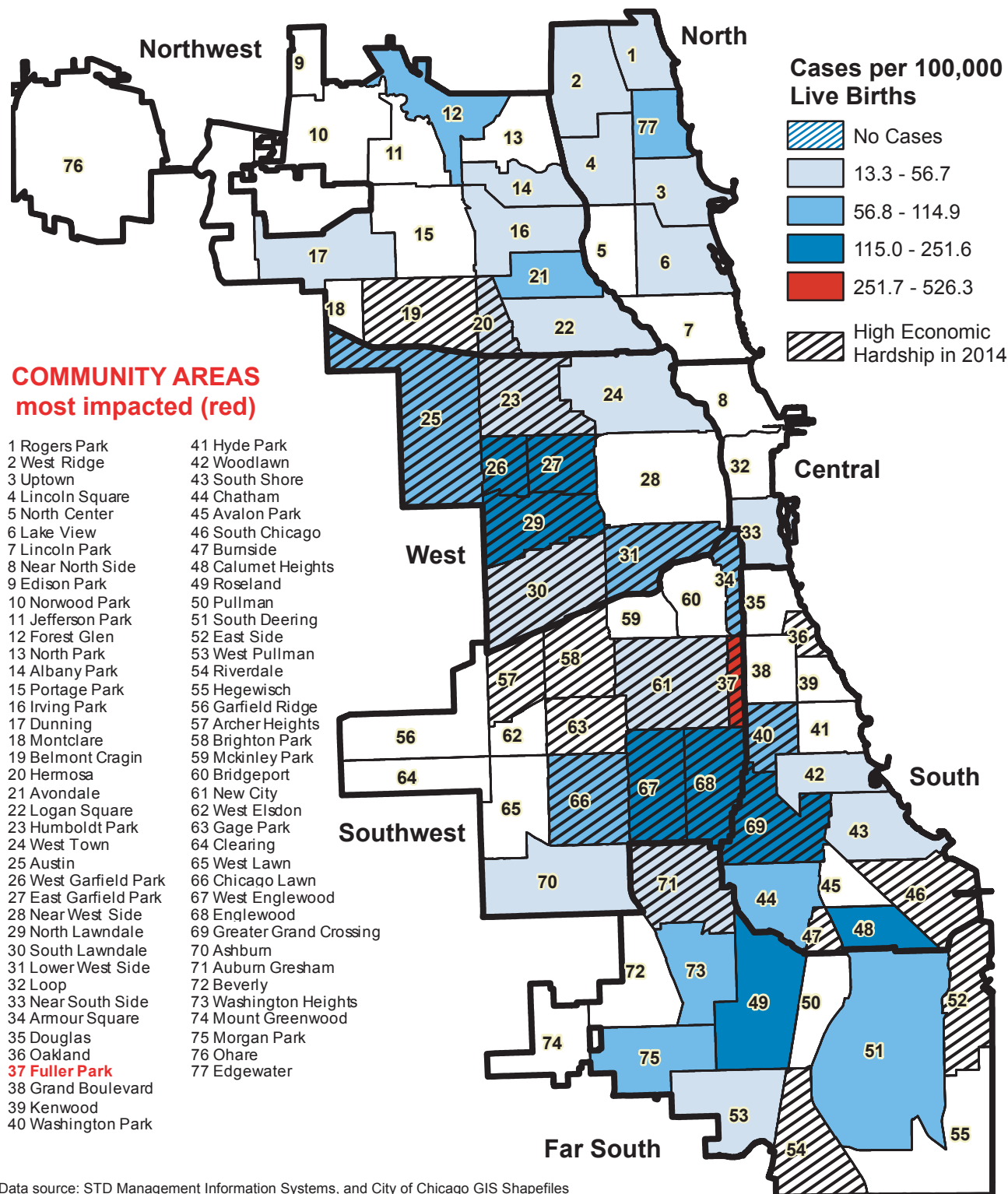
Figure 1.6: Primary and Secondary Syphilis Case Rates by Community Area, Chicago, 2016



Data source: STD Management Information Systems, City of Chicago GIS Shapefiles, and US Census. This map represents 97% (785/813) of total Primary and Secondary Syphilis cases. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION ONE: HIV & STIs IN CHICAGO, 2016

Figure 1.7: Average Annual Congenital Syphilis Case Rates by Community Area, Chicago, 2012-2016



Data source: STD Management Information Systems, and City of Chicago GIS Shapefiles
 Note: Rates per 100,000 were calculated using 2014 live births as the denominator. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.



SECTION TWO
TRENDS IN HIV AND
STIs IN CHICAGO
2012-2016

Trends in People Living With & Diagnosed with HIV Infection in Chicago

There has been an annual increase in the number of individuals living with HIV in Chicago from 1990-2015 with 23,824 people living with HIV (PLWH) in Chicago in 2015. This is approximately 4.4 times the number of PLWH in Chicago in 1990 (Figure 2.1).

The number of newly diagnosed cases reported to CDPH in 2016 was below 900 cases, while the average number of cases reported during each of the past three years (2013-2015) averaged near 940 cases per year (Figure 2.1).

Comparing 2012 newly diagnosed HIV cases with 2016 newly diagnosed HIV cases, all age groups had a percent decrease in newly diagnosed HIV infections, except for the 25-29 yr. age group (Table 2.2).

The proportion of males and females among newly diagnosed HIV infections and among AIDS cases has remained relatively consistent from 2012-2016 with a majority of cases occurring among men (Table 2.1).

Comparing 2012 reported AIDS cases with 2016 reported AIDS cases, there was an increase in the percent of AIDS cases among all the age groups except for the < 13 and 40-49 year age groups (Table 2.2).

Since 2012, the largest proportion of newly diagnosed HIV cases and AIDS cases have occurred among non-Hispanic Blacks, with the next largest proportion occurring among Hispanics (Table 2.3).

From 2012-2016, the largest proportion of HIV infection diagnoses occurred among NH Blacks (Table 2.3), with 491 cases accounting for 58.5% (491/839) of the reported 2016 cases.

Trends in the Number of Reported Sexually Transmitted Infections in Chicago

The number of 2016 reported cases of chlamydia (29,776 cases) and primary & secondary (P&S) syphilis (813 cases) are the highest ever since 1997 (Figure 2.2). The number of 2016 reported gonorrhea cases is the highest since 2009 (10,836 cases) (Figure 2.2).

While there has been a steady increase in the proportion of reported chlamydia cases in males from 2012-2016, there were still 1.6 times as many reported chlamydia cases in women than men in 2016 (Table 2.1).

Targeted testing efforts among MSM may have partly contributed to the overall increase of reported gonorrhea cases in 2016, compared to previous years. In fact, there were over 2,000 more reported gonorrhea cases in 2016 than in 2015 (Table 2.1).

Similar to chlamydia and gonorrhea, there was an overall increase in the number of P&S syphilis cases from 2012 to 2016 with approximately 90% of cases occurring in men, annually (Table 2.1).

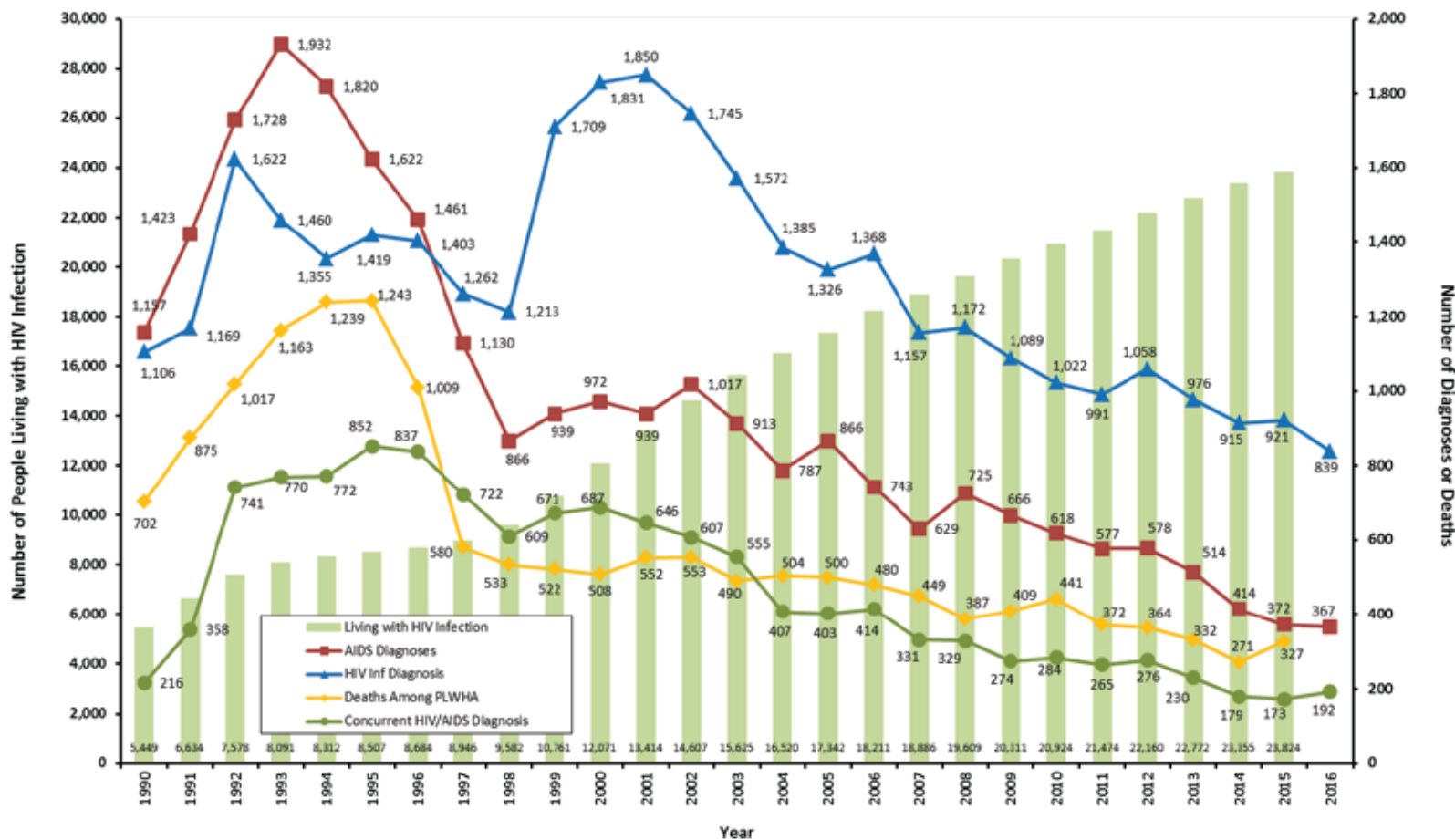
Individuals aged ≤ 24 years made up a majority of reported chlamydia cases from 2012-2016 and a majority of reported gonorrhea cases between 2012-2015. In 2016, however, the proportion of individuals aged ≤ 24 years and aged ≥ 25 years were almost equivalent. This increase in reported gonorrhea cases in the older age group may be a result of increased testing efforts by providers and also increased STI awareness in the general population (Table 2.2).

Similar to HIV/AIDS trends from 2012-2016, the highest proportion of reported chlamydia, reported gonorrhea, and P&S syphilis cases were among non-Hispanic Blacks. However, it should be noted that the second largest proportion of P&S syphilis cases were among non-Hispanic Whites from 2012-2016 (Table 2.3).

Compared to other race/ethnicity groups, non-Hispanic Asians make up a small proportion of the total number of reported chlamydia, gonorrhea and P&S syphilis cases. However, comparing the 2016 STI data to the 2012 STI data – there were 143 more chlamydia cases, 46 more gonorrhea cases and 20 more P&S syphilis cases reported for non-Hispanic Asians (Table 2.3).

SECTION TWO: TRENDS IN HIV AND STIs IN CHICAGO

Figure 2.1: People Living with HIV Infection (PLWH), People Diagnosed with HIV Infection, People Diagnosed with AIDS, Concurrent HIV/AIDS Diagnoses, and Deaths Among PLWH, Chicago, 1990-2016 (as of 9/26/2017)

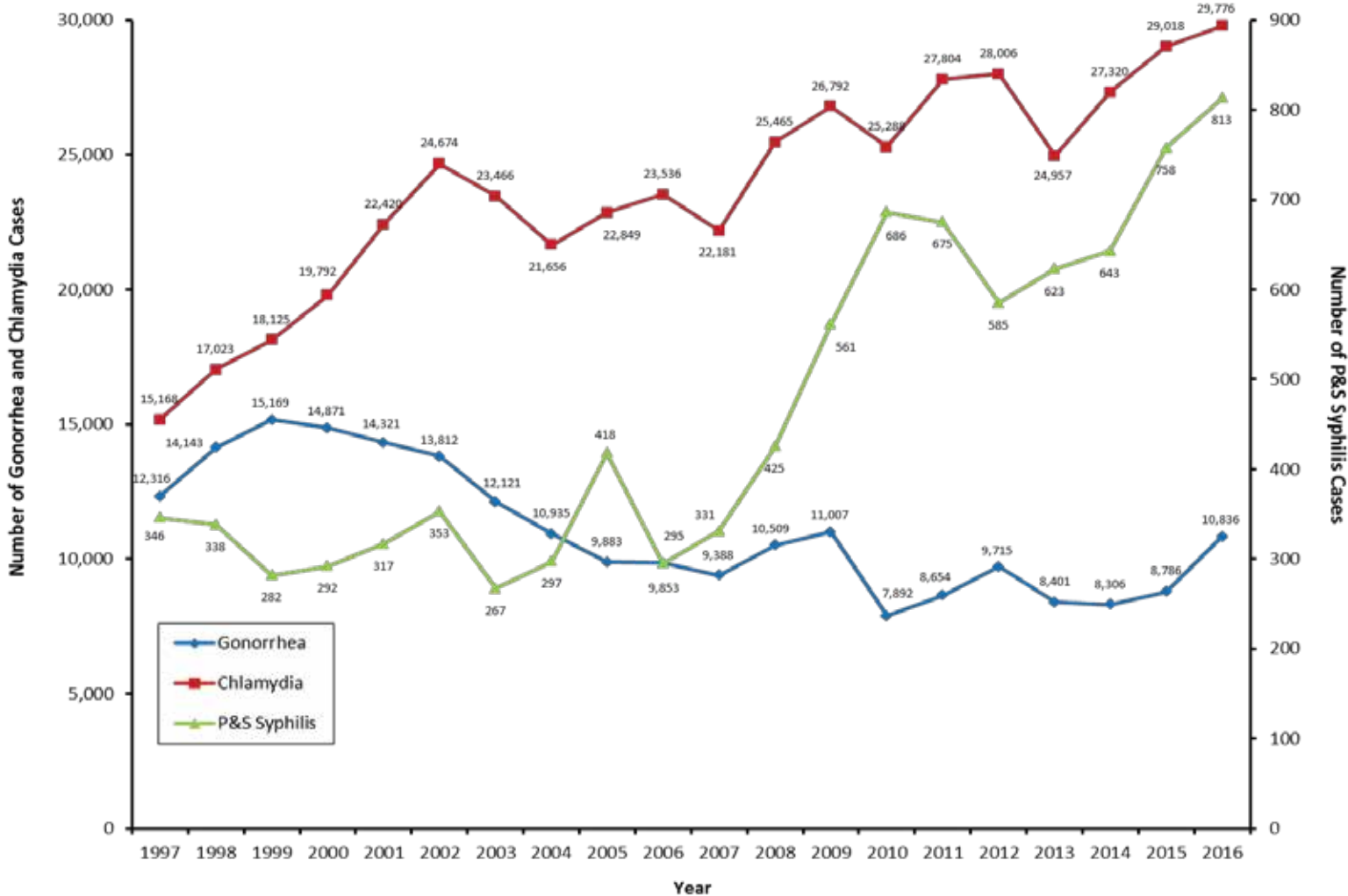


Notes on Surveillance Reporting:
 1983 = AIDS case reporting begins
 1995 = Effective drug therapy against HIV becomes available
 1999 = Code-based HIV reporting begins
 2006 = Name-based HIV reporting begins
 2012 = All CD4 and viral load labs become reportable.



SECTION TWO: TRENDS IN HIV AND STIs IN CHICAGO

Figure 2.2: Number of Reported Sexually Transmitted Infections, Chicago, 1997-2016



SECTION TWO: TRENDS IN HIV AND STIs IN CHICAGO

Table 2.1: HIV/STI by Year of Diagnosis and Sex*, Chicago, 2012-2016

Year of Diagnosis Characteristics	2012		2013		2014		2015		2016		% Change 2015 to 2016 %
	No.	%	No.	%	No.	%	No.	%	No.	%	
HIV Infection Diagnosis											
Male	858	80.7%	809	82.8%	763	83.0%	764	83.1%	683	81.4%	-10.6%
Female	178	16.7%	157	16.1%	129	14.0%	132	14.4%	141	16.8%	6.8%
Transgender: MtF	23	2.2%	8	0.8%	14	1.5%	18	2.0%	11	1.3%	-38.9%
Transgender: FtM	< 5	< 1%	< 5	< 1%	13	1.4%	5	< 1%	< 5	< 1%	-20.0%
Total	1,063	100.0%	977	100.0%	919	100.0%	919	100.0%	839	100.0%	-8.7%
AIDS Cases											
Male	454	78.5%	414	80.7%	312	75.2%	302	81.6%	292	79.6%	-3.3%
Female	114	19.7%	89	17.3%	96	23.1%	58	15.7%	70	19.1%	20.7%
Transgender: MtF	8	1.4%	7	1.4%	< 5	< 1%	< 5	1.1%	< 5	1.1%	0.0%
Transgender: FtM	< 5	< 1%	< 5	< 1%	< 5	1.0%	6	1.6%	< 5	< 1%	-83.3%
Total	578	100.0%	513	100.0%	415	100.0%	370	100.0%	367	100.0%	-0.8%
Chlamydia Cases											
Male	8,364	29.9%	7,520	30.1%	9,073	33.2%	10,299	35.5%	11,279	37.9%	9.5%
Female	19,574	69.9%	17,396	69.7%	18,201	66.6%	18,635	64.2%	18,464	62.0%	-0.9%
Unknown	68	< 1%	41	< 1%	46	< 1%	84	< 1%	33	< 1%	-60.7%
Total	28,006	100.0%	24,957	100.0%	27,320	100.0%	29,018	100.0%	29,776	100.0%	2.6%
Gonorrhea Cases											
Male	4,752	48.9%	4,286	51.0%	4,709	56.7%	5,173	58.9%	6,900	63.7%	33.4%
Female	4,948	50.9%	4,107	48.9%	3,582	43.1%	3,583	40.8%	3,920	36.2%	9.4%
Unknown	15	< 1%	8	< 1%	15	< 1%	30	< 1%	16	< 1%	-46.7%
Total	9,715	100.0%	8,401	100.0%	8,306	100.0%	8,786	100.0%	10,836	100.0%	23.3%
P&S Syphilis Cases											
Male	526	89.9%	567	91.2%	581	90.4%	700	92.3%	764	94.0%	9.1%
Female	59	10.1%	55	8.8%	62	9.6%	58	7.7%	49	6.0%	-15.5%
Unknown	0	0.0%	< 5	< 1%	0	0.0%	0	0.0%	0	0.0%	0.0%
Total	585	100.0%	622	100.0%	643	100.0%	758	100.0%	813	100.0%	7.3%

Note: Groups may not total 100% due to rounding. Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.

*For HIV and AIDS cases, current gender identity or gender with which a person identifies.

Because total diagnoses were calculated using current gender, independently of values using birth sex, total diagnoses may differ slightly across tables. HIV and AIDS cases as of 9/26/2017. For STI cases, reported sex at birth.

SECTION TWO: TRENDS IN HIV AND STIs IN CHICAGO

Table 2.2: HIV/STI Cases by Year of Diagnosis and Age* Group, Chicago, 2012-2016

Year of Diagnosis	2012		2013		2014		2015		2016		% Change 2015 to 2016
	No.	%	No.	%	No.	%	No.	%	No.	%	
HIV Infection Diagnosis											
Less than 13	10	< 1%	7	< 1%	5	< 1%	< 5	< 1%	5	< 1%	66.7%
13-19	75	7.1%	55	5.6%	60	6.5%	58	6.3%	64	7.6%	10.3%
20-29	355	33.4%	397	40.6%	381	41.5%	395	43.0%	338	40.3%	-14.4%
20-24	170	16.0%	238	24.4%	189	20.6%	203	22.1%	140	16.7%	-31.0%
25-29	185	17.4%	159	16.3%	192	20.9%	192	20.9%	198	23.6%	3.1%
30-39	274	25.8%	224	22.9%	200	21.8%	218	23.7%	201	24.0%	-7.8%
40-49	183	17.2%	152	15.6%	154	16.8%	119	12.9%	113	13.5%	-5.0%
50+	166	15.6%	142	14.5%	119	12.9%	126	13.7%	118	14.1%	-6.3%
Total	1063	100.0%	977	100.0%	919	100.0%	919	100.0%	839	100.0%	-8.7%
AIDS Cases											
Less than 13	0	0.0%	0	0.0%	< 5	< 1%	0	0.0%	< 5	< 1%	-
13-19	20	3.5%	12	2.3%	8	1.9%	< 5	< 1%	8	2.2%	300.0%
20-29	143	24.7%	128	25.0%	83	20.0%	90	24.3%	100	27.2%	11.1%
20-24	50	8.7%	65	12.7%	33	8.0%	30	8.1%	40	10.9%	33.3%
25-29	93	16.1%	63	12.3%	50	12.0%	60	16.2%	60	16.3%	0.0%
30-39	136	23.5%	139	27.1%	108	26.0%	85	23.0%	92	25.1%	8.2%
40-49	133	23.0%	119	23.2%	107	25.8%	88	23.8%	67	18.3%	-23.9%
50+	146	25.3%	115	22.4%	106	25.5%	105	28.4%	98	26.7%	-6.7%
Total	578	100.0%	513	100.0%	415	100.0%	370	100.0%	367	100.0%	-0.8%
Chlamydia Cases											
Less than 13	58	< 1%	49	< 1%	28	< 1%	26	< 1%	37	< 1%	42.3%
13-19	10304	36.8%	8545	34.2%	8427	30.8%	8036	27.7%	7867	26.4%	-2.1%
20-29	13822	49.4%	12783	51.2%	14497	53.1%	15833	54.6%	16137	54.2%	1.9%
20-24	9548	34.1%	8898	35.7%	9789	35.8%	10229	35.3%	10033	33.7%	-1.9%
25-29	4274	15.3%	3885	15.6%	4708	17.2%	5604	19.3%	6104	20.5%	8.9%
30-39	2839	10.1%	2594	10.4%	3144	11.5%	3689	12.7%	4078	13.7%	10.5%
40-49	722	2.6%	748	3.0%	845	3.1%	1013	3.5%	1135	3.8%	12.0%
50+	261	< 1%	238	1.0%	379	1.4%	421	1.5%	522	1.8%	24.0%
Total	28006	100.0%	24957	100.0%	27320	100.0%	29018	100.0%	29776	100.0%	2.6%
Gonorrhea Cases											
Less than 13	21	< 1%	16	< 1%	6	< 1%	8	< 1%	16	< 1%	100.0%
13-19	3261	33.6%	2682	31.9%	2162	26.0%	2165	24.6%	2315	21.4%	6.9%
20-29	4644	47.8%	4099	48.8%	4273	51.4%	4529	51.5%	5483	50.6%	21.1%
20-24	3173	32.7%	2780	33.1%	2798	33.7%	2740	31.2%	3117	28.8%	13.8%
25-29	1471	15.1%	1319	15.7%	1475	17.8%	1789	20.4%	2366	21.8%	32.3%
30-39	1138	11.7%	1017	12.1%	1196	14.4%	1413	16.1%	1952	18.0%	38.1%
40-49	467	4.8%	422	5.0%	458	5.5%	438	5.0%	682	6.3%	55.7%
50+	184	1.9%	165	2.0%	211	2.5%	233	2.7%	388	3.6%	66.5%
Total	9715	100.0%	8401	100.0%	8306	100.0%	8786	100.0%	10836	100.0%	23.3%
P&S Syphilis Cases											
Less than 13	0	0.0%	< 5	< 1%	0	0.0%	0	0.0%	0	0.0%	0.0%
13-19	36	6.2%	27	4.3%	26	4.0%	23	3.0%	27	3.3%	17.4%
20-29	240	41.0%	249	40.0%	257	40.0%	305	40.2%	291	35.8%	-4.6%
20-24	115	19.7%	134	21.5%	114	17.7%	137	18.1%	101	12.4%	-26.3%
25-29	125	21.4%	115	18.5%	143	22.2%	168	22.2%	190	23.4%	13.1%
30-39	152	26.0%	175	28.1%	175	27.2%	199	26.3%	263	32.3%	32.2%
40-49	112	19.1%	108	17.3%	113	17.6%	132	17.4%	141	17.3%	6.8%
50+	45	7.7%	63	10.1%	72	11.2%	99	13.1%	91	11.2%	-8.1%
Total	585	100.0%	623	100.0%	643	100.0%	758	100.0%	813	100.0%	7.3%

Note: Groups may not total 100% due to rounding.
 Use caution when interpreting data based on less than 20 events; rate/percent is unreliable.
 HIV and AIDS cases as of 9/26/2017. *Age at time of diagnosis.

SECTION TWO: TRENDS IN HIV AND STIs IN CHICAGO

Table 2.3: HIV/STI Cases by Year of Diagnosis and Race/Ethnicity*, Chicago, 2012-2016

Year of Diagnosis	2012		2013		2014		2015		2016		% Change 2015 to 2016
	No.	%	No.	%	No.	%	No.	%	No.	%	
HIV Infection Diagnosis											
Black, non-Hispanic	552	51.9%	525	53.7%	485	52.8%	486	52.9%	491	58.5%	1.0%
White, non-Hispanic	218	20.5%	189	19.3%	177	19.3%	175	19.0%	124	14.8%	-29.1%
Hispanic	227	21.4%	206	21.1%	216	23.5%	202	22.0%	181	21.6%	-10.4%
Asian/PI, non-Hispanic	10	0.9%	15	1.5%	17	1.8%	23	2.5%	24	2.9%	4.3%
AI/AN, non-Hispanic	< 5	< 1%	0	0.0%	0	0.0%	< 5	< 1%	< 5	< 1%	50.0%
Other, non-Hispanic	55	5.2%	42	4.3%	24	2.6%	31	3.4%	16	1.9%	-48.4%
Total	1063	100.0%	977	100.0%	919	100.0%	919	100.0%	839	1.0%	-8.7%
AIDS Cases											
Black, non-Hispanic	328	56.7%	299	58.3%	236	56.9%	197	53.2%	207	56.4%	5.1%
White, non-Hispanic	91	15.7%	83	16.2%	57	13.7%	62	16.8%	54	14.7%	-12.9%
Hispanic	117	20.2%	94	18.3%	95	22.9%	86	23.2%	78	21.3%	-9.3%
Asian/PI, non-Hispanic	9	1.6%	< 5	< 1%	5	1.2%	7	1.9%	7	1.9%	0.0%
AI/AN, non-Hispanic	0	0.0%	0	0.0%	0	0.0%	< 5	< 1%	< 5	< 1%	0.0%
Other, non-Hispanic	33	5.7%	33	6.4%	22	5.3%	17	4.6%	20	5.4%	17.6%
Total	578	100.0%	513	100.0%	415	100.0%	370	100.0%	367	100.0%	-0.8%
Chlamydia Cases											
Black, non-Hispanic	14,479	51.7%	13,184	52.8%	12,858	47.1%	13,786	47.5%	12003	40.3%	-12.9%
White, non-Hispanic	1,125	4.0%	1,222	4.9%	1,516	5.5%	2,106	7.3%	2346	7.9%	11.4%
Hispanic	3,107	11.1%	2,906	11.6%	3,298	12.1%	3,785	13.0%	3970	13.3%	4.9%
Asian/PI, non-Hispanic	152	< 1%	159	< 1%	172	< 1%	264	< 1%	295	1.0%	11.7%
AI/AN, non-Hispanic	12	0.0%	11	0.0%	20	< 1%	30	< 1%	34	< 1%	13.3%
Other, non-Hispanic	279	1.0%	273	1.1%	311	1.1%	254	< 1%	268	< 1%	5.5%
Unknown	8,852	31.6%	7,202	28.9%	9,145	33.5%	8,793	30.3%	10860	36.5%	23.5%
Total	28,006	100.0%	24,957	100.0%	27,320	100.0%	29,018	100.0%	29776	100.0%	2.6%
Gonorrhea Cases											
Black, non-Hispanic	5,991	61.7%	5,357	63.8%	4,200	50.6%	4,812	54.8%	4798	44.3%	-0.3%
White, non-Hispanic	469	4.8%	465	5.5%	680	8.2%	948	10.8%	1283	11.8%	35.3%
Hispanic	437	4.5%	424	5.0%	495	6.0%	639	7.3%	921	8.5%	44.1%
Asian/PI, non-Hispanic	39	< 1%	26	< 1%	25	< 1%	67	< 1%	85	< 1%	26.9%
AI/AN, non-Hispanic	5	< 1%	9	< 1%	6	< 1%	12	< 1%	14	< 1%	16.7%
Other, non-Hispanic	63	< 1%	62	< 1%	62	< 1%	73	< 1%	85	< 1%	16.4%
Unknown	2,711	27.9%	2,058	24.5%	2,838	34.2%	2,235	25.4%	3650	33.7%	63.3%
Total	9,715	100.0%	8,401	100.0%	8,306	100.0%	8,786	100.0%	10836	100.0%	23.3%
P&S Syphilis Cases											
Black, non-Hispanic	290	49.6%	291	46.7%	280	43.5%	330	43.5%	294	36.2%	-10.9%
White, non-Hispanic	156	26.7%	169	27.1%	191	29.7%	251	33.1%	253	31.1%	< 1.0%
Hispanic	99	16.9%	104	16.7%	103	16.0%	147	19.4%	173	21.3%	17.7%
Asian/PI, non-Hispanic	9	1.5%	21	3.4%	10	1.6%	11	1.5%	29	3.6%	163.6%
AI/AN, non-Hispanic	0	0.0%	0	0.0%	< 5	< 1%	< 5	< 1%	< 5	< 1%	-50.0%
Other, non-Hispanic	31	5.3%	38	6.1%	56	8.7%	15	2.0%	62	7.6%	313.3%
Unknown	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0.0%
Total	585	100.0%	623	100.0%	643	100.0%	758	100.0%	813	100.0%	7.3%

Note: Groups may not total 100% due to rounding. Use caution when interpreting data based on less than 20 events; rate/percent is unreliable. HIV and AIDS cases as of 9/26/2017.

*AI/AN refers to American Indian/ Alaskan Native.



SECTION THREE
LOOKING FORWARD:
STIs ARE ON THE RISE

DISCUSSION

SEXUALLY TRANSMITTED INFECTIONS ARE ON THE RISE

Sexually transmitted infections (STIs) have re-entered the national spotlight following the release of the CDC's 2016 Sexually Transmitted Disease Surveillance Report. In a press release for the report CDC noted that for the third year in a row reportable STIs reached an all-time high in 2016, and emphasized the need for expanded efforts in STI prevention, especially for those at greatest risk.¹ Though the distribution of cases varies by disease, nationally the majority of STI diagnoses occur among young men and women, non-Hispanic Blacks, and youth aged 15-24. As with HIV, men who have sex with men (MSM) are also a priority population.²

In order to combat this growing trend, CDC has called on local health departments, providers, and members of the public to renew efforts towards STI detection, treatment, and prevention. In Chicago, CDPH has utilized STI Specialty clinics as well as established partnerships with health care providers and delegate agencies to focus on priority populations and strengthen responses to the increasing trends of STIs. However, there is need to continue to promote STI screening with a specific focus on testing extra-genital sites. A recent study of extra-genital gonorrhea and chlamydia testing among individuals identified as MSM found that in Chicago between 2010 and 2012 9.3% of MSM screened tested positive for pharyngeal gonorrhea, 11.8% tested positive for rectal gonorrhea, 3.7% tested positive for pharyngeal chlamydia and 11.4% tested positive for rectal chlamydia, underscoring the importance of extra-genital testing within this population.³

It is vital to increase awareness and promote regular testing and the use of risk reduction strategies. Though the burden of STIs is high, these strategies are the key to addressing the growing number of STI infections and promoting sexual and reproductive health among Chicagoans.

STI PRIORITY POULATIONS

Gonorrhea (Figure 3.1)

The number of reported gonorrhea has increased by 37% between 2010 and 2016. During the same time the proportion of cases with confirmed treatment increased from 51% to 60%. In previous years, gonorrhea infections occurred fairly evenly between males and females. However, starting in 2015, trends shifted and the majority of reported gonorrhea cases were among men (64%). An increase in the number of reported gonorrhea cases among males could be partially attributed to the expanding extra-genital screening among MSM. Figure 3.1 highlights population shifts that occurred between 2010 and 2016, specifically among men over 25 years old and women under 25 years old. Among men over the age of 25 this trend is reversed. In 2010 the proportion of gonorrhea cases reported among men over 25 was 22% while in 2016 men in the same age group accounted for 41% of gonorrhea cases.

Between 2010 and 2016, overall number of reported cases among females decreased by 21% (from 4,948 to 3,920 in 2016). During the same time period the proportion of gonorrhea cases among women under 25 years old decreased from 41% to 25%.

In 2016, the median age of all gonorrhea cases was 25, however when examining age by sex the median age among women was lower than that of men (22 versus 27) in 2016. By race, the median age of NH Blacks (23) is lower than that of Hispanics (27) and NH Whites (31).

CHLAMYDIA (Figures 3.2 and 3.3)

Chlamydia is the most commonly diagnosed sexually transmitted infection in the United States. Between 2010 and 2016, the number of Chlamydia cases reported to CDPH increased by 18%. The vast majority of chlamydia cases reported between 2010 and 2016 were among women (67%), primarily women under the age of 25 years old (47%) (median age=22 years old in 2016). In comparison, 32% of cases were reported among men and men under 25 years old comprised only 17% of all reported cases during this time period. In 2016, 58% of females and 55% of males were treated for *Chlamydia trachomatis* infections, though it is worth noting that treatment data are incomplete due to underreporting or incomplete reporting.

Among women, the distribution of chlamydia infection varies by race/ethnicity: NH Black women have consistently comprised the majority (39%) of reported cases in women between 2010 and 2016; however, the proportion of cases reported among this group have decreased by 16% (from 58% in 2010 to 50% in 2016). The vast majority of cases (73%) among NH Black women were under the age of 25 years old (median age =22 in 2016). During the same time period, cases among Hispanic women have increased by 19% (from 10% in 2010 to 14% in 2016). Similarly to NH Black women, the majority of cases (61%) among Hispanic women were under the age of 25 years old (median age=22 years old in 2016). The proportion of chlamydia cases among NH White women is low, but has increased slightly from less than 3% in 2010 to 4% in 2016. Contrary to the trends in age seen among NH Black and Hispanic women, the median age among NH White women in 2016 was slightly older at 26, and cases were evenly divided by age with 49% of 2016 cases falling within the under 25 group.

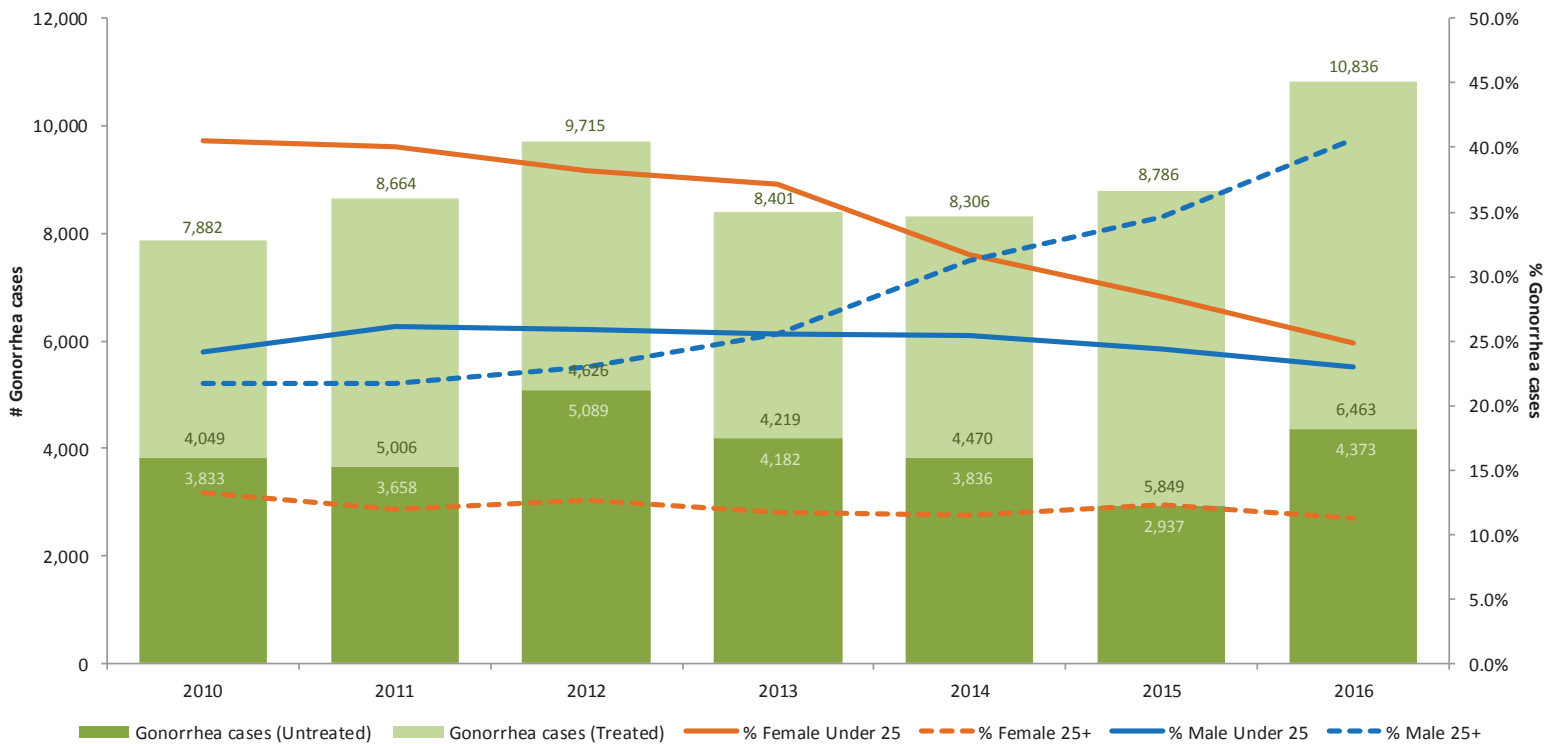
Primary and Secondary Syphilis (Figure 3.4)

During 2016, a total of 813 cases of P&S syphilis were reported to CDPH; 764 (94%) were in males and 49 (6%) were among women. Cases among men who have sex with men (MSM) comprise the majority (75%) of P&S syphilis cases in the city. The median age among all reported P&S syphilis cases in 2016 was 33 years old, but was higher among men (33) than women (29) and higher among NH Whites (37) and Hispanics (33) than among NH Blacks (30). Between 2012 and 2016 the proportion of cases among men over the age of 25 increased, comprising 70% of new diagnoses in 2012 and 81% of cases in 2016. During this same time period the number of cases among men under 25, and women of both age groups decreased. Cases among men under 25 decreased from 20% in 2012 to 13% in 2016. Similarly to males under 25, the proportion of cases among women under 25 years old decreased from 4% of cases in 2012 to 2% in 2016, while cases among women 25 and older decreased from 6% in 2012 to 4% in 2016. Although women accounted for only 6% of P&S syphilis cases in 2016, addressing syphilis among women remains an essential part of preventing congenital syphilis (CS). CS is a serious but preventable outcome of syphilis infection during pregnancy. Screening and treatment of syphilis infection in women, especially pregnant women, are required to prevent any increase in CS infections.

References

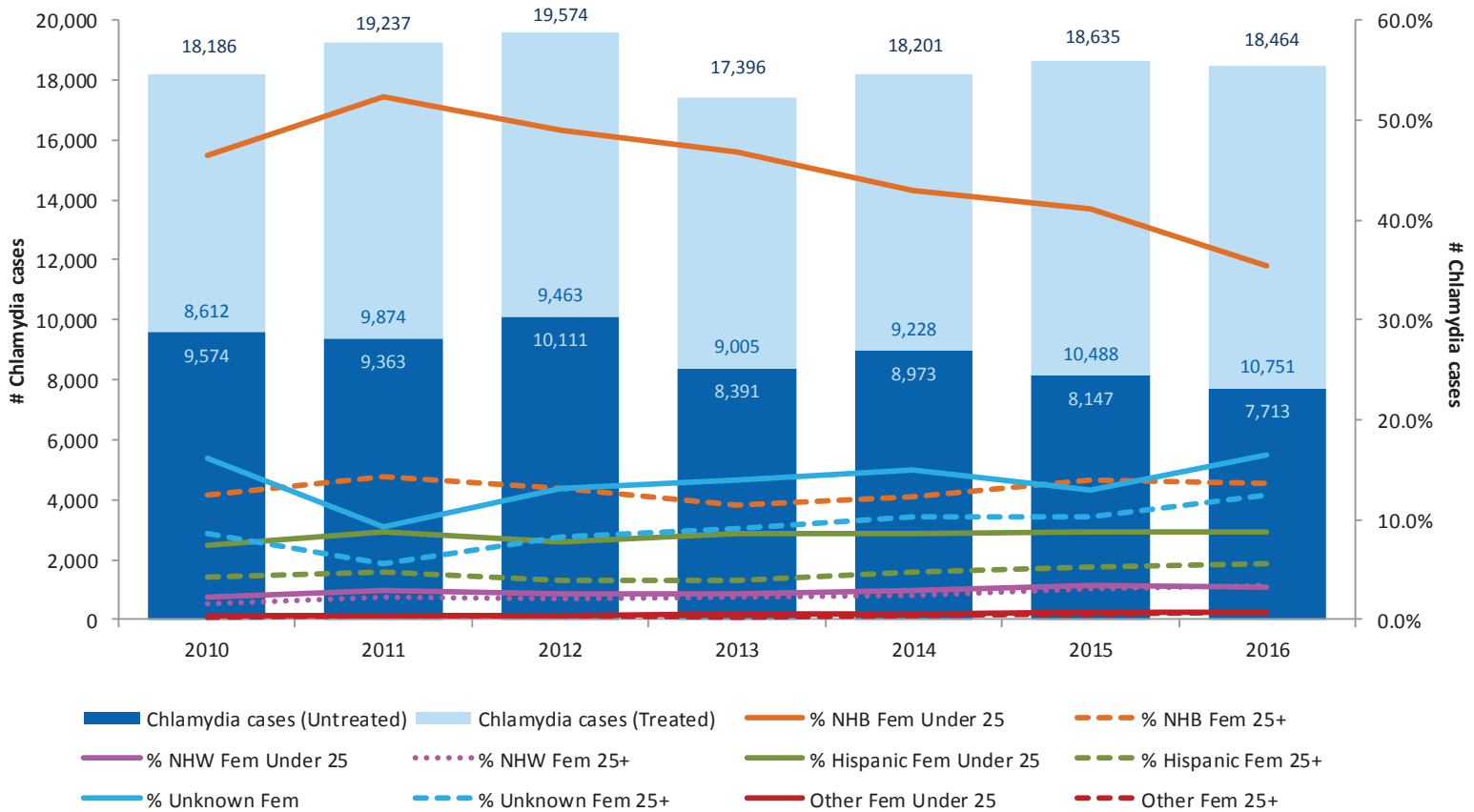
1. Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. (2017, September 26). STDs at record high, indicating urgent need for prevention [Press release]. Retrieved November 3, 2017, from <https://www.cdc.gov/media/releases/2017/p0926-std-prevention.html>.
2. Centers for Disease Control and Prevention. (2017). Sexually Transmitted Disease Surveillance 2016. Atlanta, GA: U.S. Department of Health and Human Services. Retrieved November 3, 2017, from https://www.cdc.gov/std/stats16/CDC_2016_STDS_Report-for508WebSep21_2017_1644.pdf.
3. Patton, M. E. (2014). Extragenital Gonorrhea and Chlamydia Testing and Infection Among Men Who Have Sex With Men—STD Surveillance Network, United States, 2010–2012. *Clinical Infectious Diseases*, 58(11), 1564-1570. Retrieved November 3, 2017, from <https://academic.oup.com/cid/article/58/11/1564/2895546>.

Figure 3.1: Reported Gonorrhea Infections by Birth Sex, Age, and Year-end Treatment Status, Chicago, 2010-2016



SECTION THREE: LOOKING FORWARD: STIs ARE ON THE RISE

Figure 3.2: Reported Chlamydia Infections among Women by Age, Race/Ethnicity, and Year-end Treatment Status, Chicago, 2010-2016



SECTION THREE: LOOKING FORWARD: STIs ARE ON THE RISE

Figure 3.3: Reported Chlamydia Infections among Women under 25 by Race/Ethnicity and Year-end Treatment Status, Chicago, 2010-2016

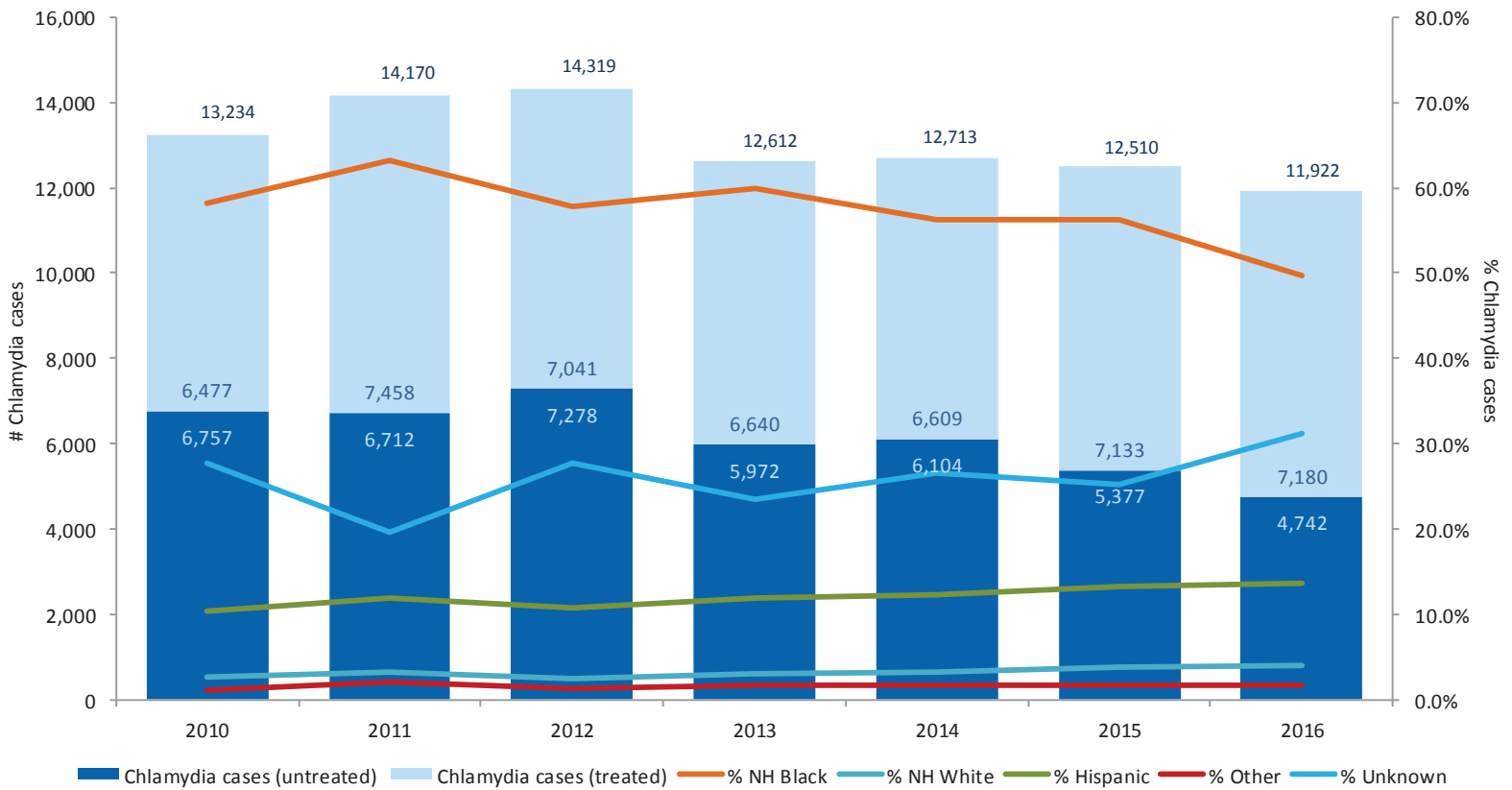
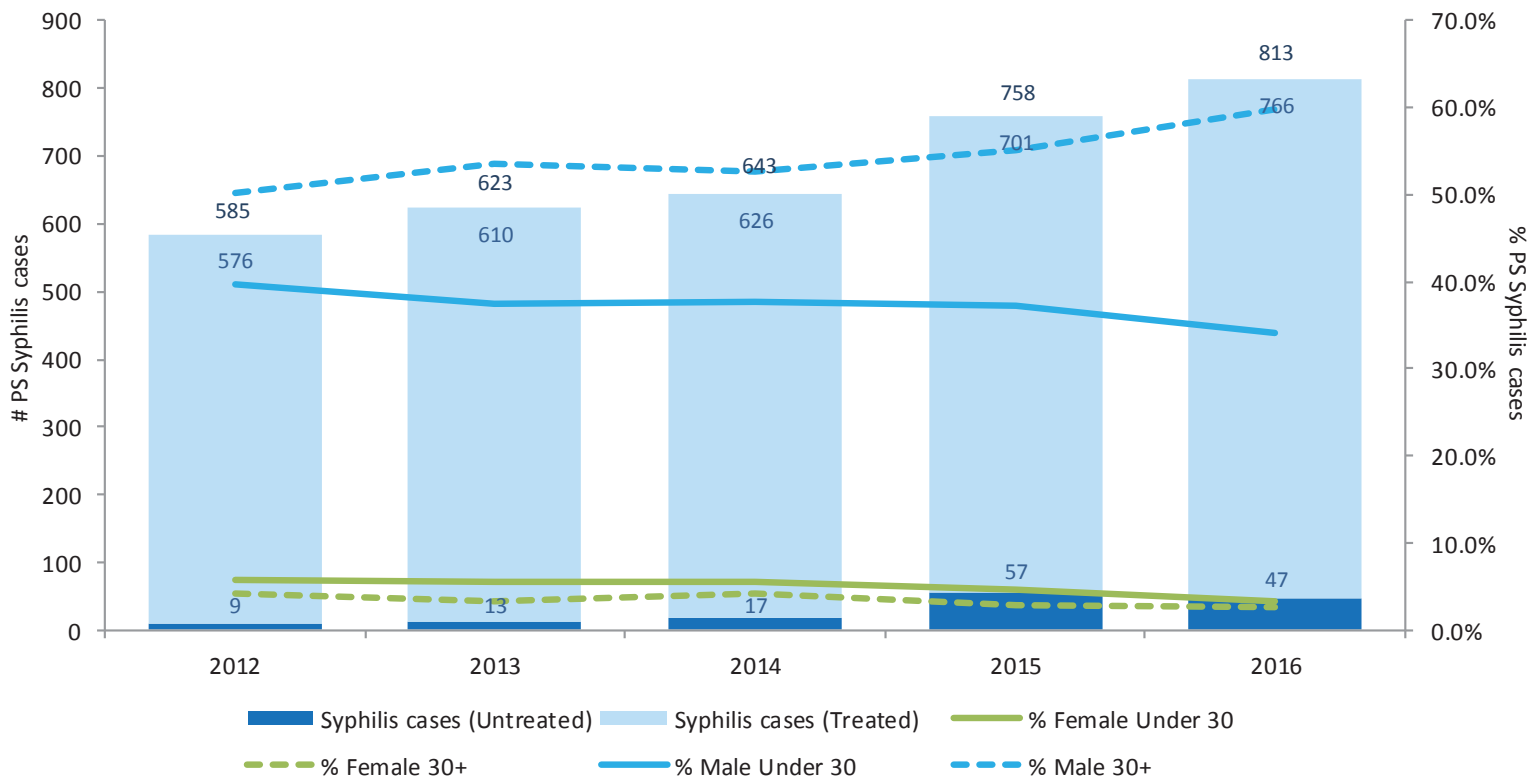


Figure 3.4: Reported Primary & Secondary Syphilis Infections by Birth Sex, Age, and Year-end Treatment Status, Chicago, 2012-2016





HEALTHY
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DECEMBER 2017

SECTION FOUR
SPATIAL PATTERNS OF
GONORRHEA SCREENING
CHICAGO, 2014-2016

DISCUSSION

SPOTLIGHT: SPATIAL PATTERNS OF GONORRHEA SCREENING CHICAGO, 2014-2016

Chicago, like most other large urban areas, has higher rates of Sexually Transmitted Infections (STIs) (e.g. syphilis, gonorrhea and chlamydia) than the country overall. In 2016, a total of 10,836 gonorrhea (GC) cases were reported to the Chicago Department of Public Health (CDPH) and represents an increase by 30% in comparison to 2014. Increase in the number of GC during 2014–2016 was observed among both males and females; however, the increase was larger among males (Table 2.1). Similarly to previous years, in 2016, adolescents, racial and ethnic minorities and men who have sex with men (MSM) are disproportionately affected with STIs (Table 1.4).

In order to combat these trends, in 2015, CDPH awarded two agencies to promote and expand STI screening and treatment among STI high-risk populations. Delegate agencies were selected through competitive Request for Proposal (RFP) process. Agencies (Howard Brown Health and Core Foundation at Cook County) were funded to provide safety net STI services for MSM and adolescent females. Specifically, Howard Brown Health (HBH) was awarded to expand syphilis and extra-genital gonorrhea (GC) screening in MSM. Between 2015 and 2016, rectal GC screening at HBH increased by 66% (from 7,446 to 12,377 in 2016), with an increase by 59% (from 1,020 to 1,620 in 2016) in Black MSM and 74% (from 1,517 to 2,635 in 2016) in Hispanic MSM.

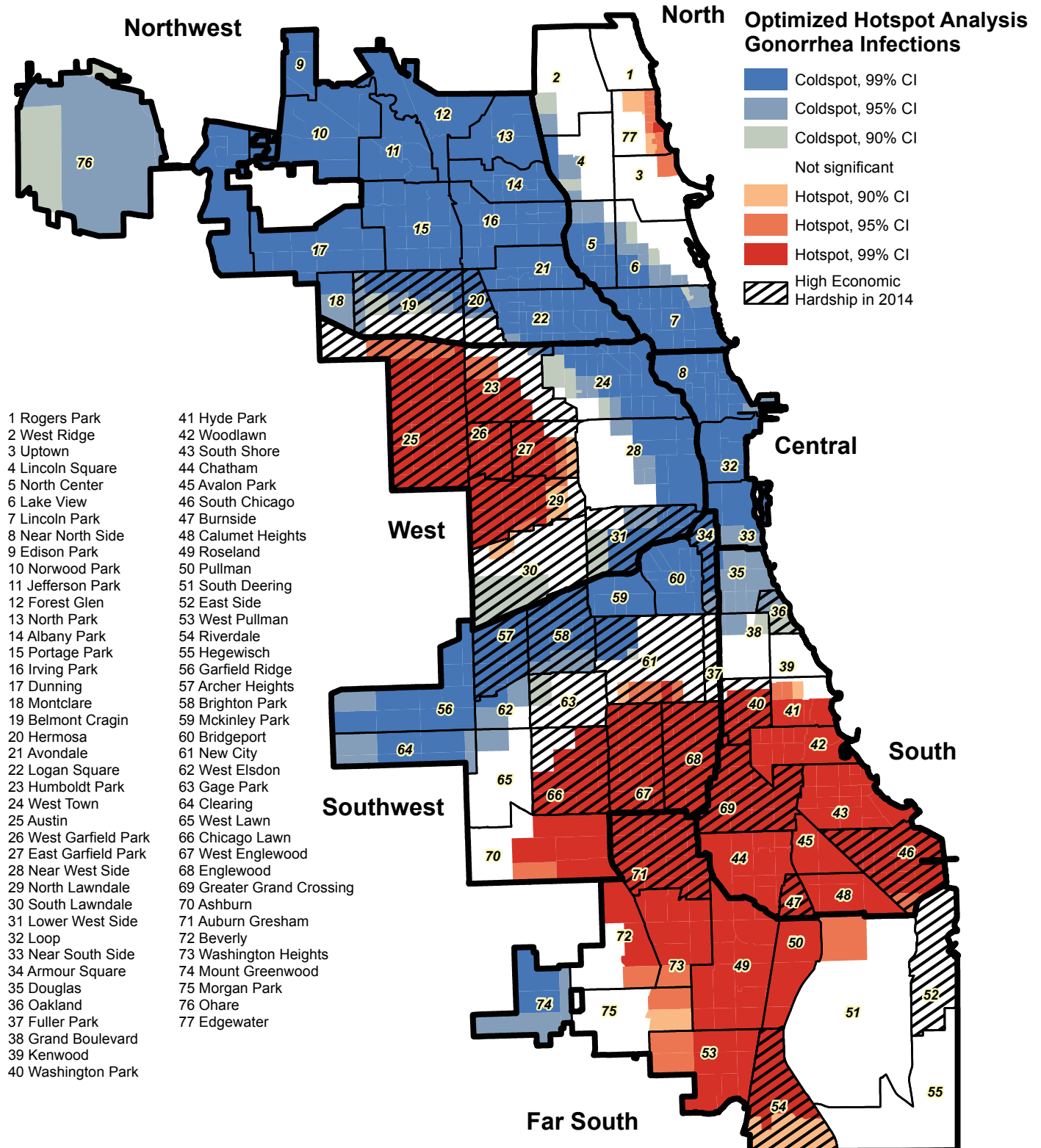
In addition to the descriptive analysis, clustering of GC infections was assessed using Optimized Hot Spot within ArcGIS 10.2.2. The Optimized Hot Spot analysis uses the Getis-Ord G_i^* statistic to identify hot and cold spots of GC infections at the Chicago census tract level.

From 2014 through 2016, clustering of GC infections on the West and South side of the city remained unchanged. Over the same time period, clustering increased on the North side of the city. In 2014, significant clustering of GC infections occurred in nine census tracts, involving Edgewater and Uptown community areas ($P \leq 0.05$) (Figure 4.1). In comparison, in 2016, the number of census tracts with significant clustering of GC infections ($P \leq 0.05$) increased five-fold from nine in 2014 to 60 in 2016, involving seven community areas (Rogers Park, West Ridge, Uptown, Lincoln Square, North Center Lake View and Edgewater) outside of the hardship areas (Figure 4.3).

In summary, changes in the burden of GC cases in Chicago can be explained by changes in screening (e.g., increased screening at extra-genital anatomic sites) and/or changes in reporting practices. The magnitude of the increase of the Hot Spots on the North side of the city suggests increased case ascertainment through increased extra-genital screening. Ongoing assessment of screening practices for extra-genital infections is necessary for interrupting transmission among persons with exposures at these sites, and has shown to detect substantial numbers of cases that would be missed by urogenital screening alone.

SECTION FOUR: SPATIAL PATTERNS OF GONORRHEA SCREENING

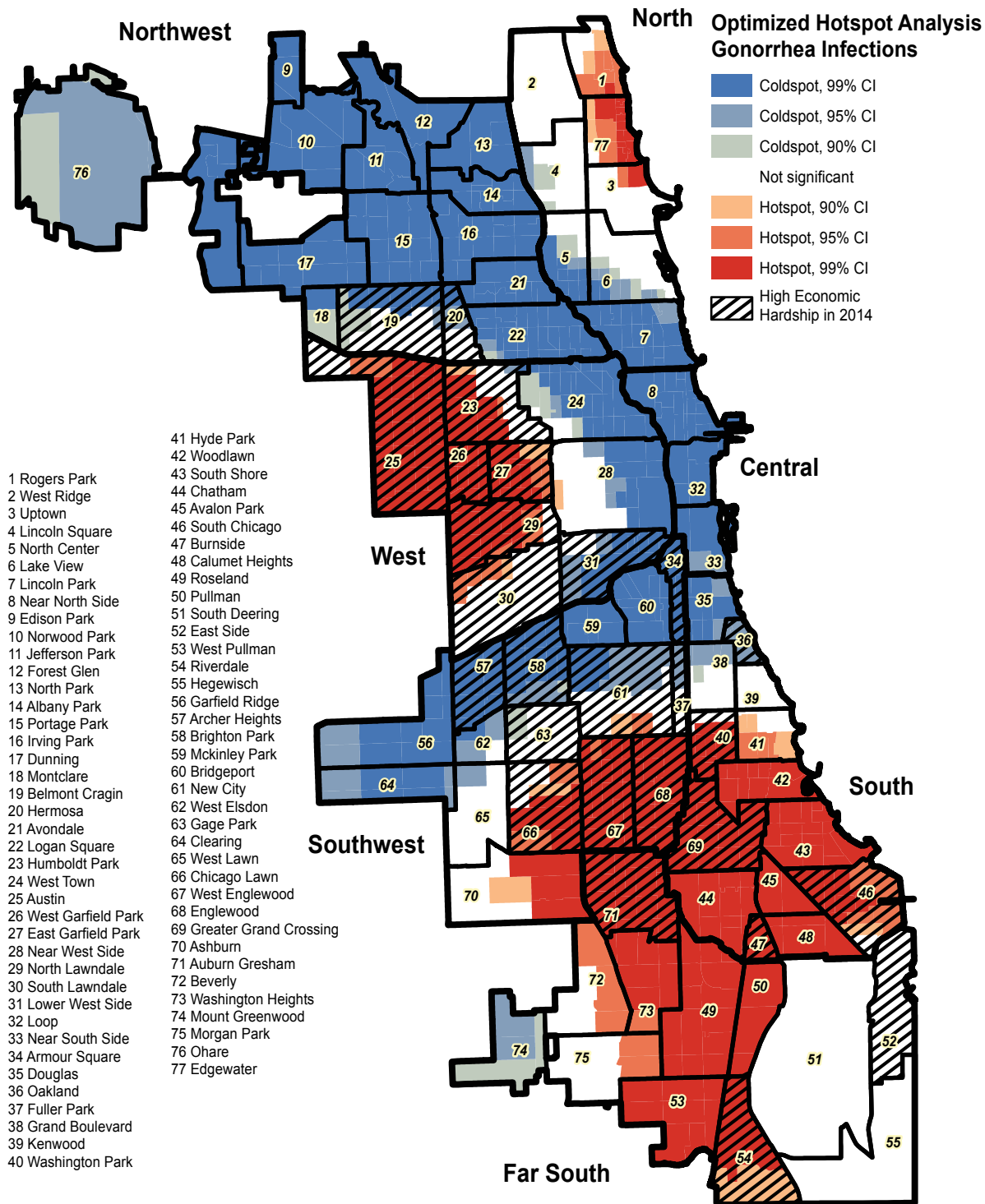
Figure 4.1: Gonorrhea Infections in 2014 in Chicago
Getis-ord G_i^* Statistic (Optimized Hot Spot Analysis)



Data source: Illinois National Electronic Disease Surveillance System (6/2014), City of Chicago GIS Shapefiles and US Census. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION FOUR: SPATIAL PATTERNS OF GONORRHEA SCREENING

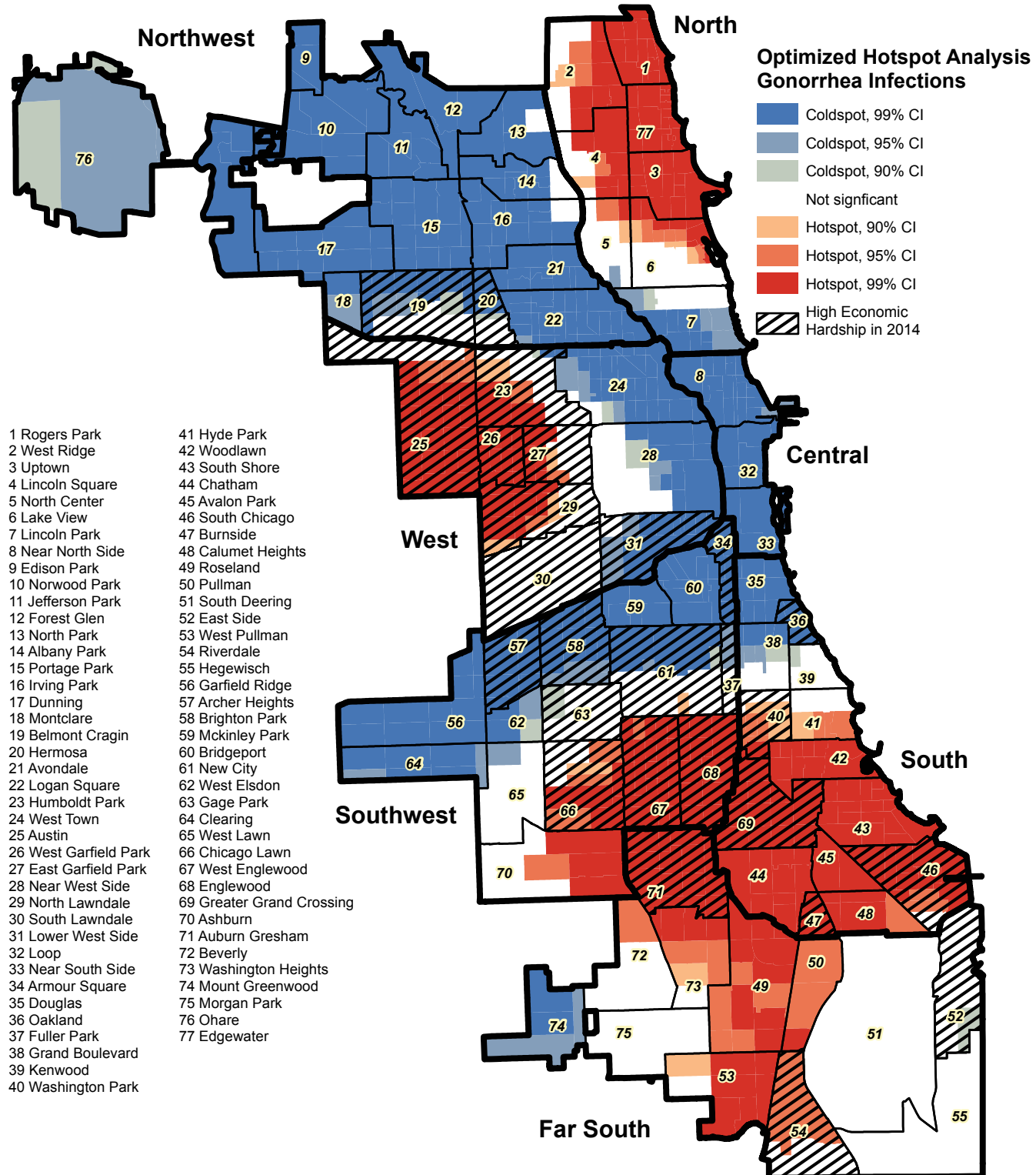
Figure 4.2: Gonorrhea Infections in 2015 in Chicago
Getis-ord G_i^* Statistic (Optimized Hot Spot Analysis)



Data source: Illinois National Electronic Disease Surveillance System (6/2015), City of Chicago GIS Shapefiles and US Census. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.

SECTION FOUR: SPATIAL PATTERNS OF GONORRHEA SCREENING

Figure 4.3: Gonorrhea Infections in 2016 in Chicago
Getis-ord G_i^* Statistic (Optimized Hot Spot Analysis)



Data source: Illinois National Electronic Disease Surveillance System (6/2017), City of Chicago GIS Shapefiles and US Census. The economic hardship index utilizes multiple indicators to measure economic conditions of Chicago Community Areas. High hardship index scores indicate worse economic conditions.



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APPENDIX

As the HIV epidemic and HIV reporting systems change, new opportunities arise to better describe the epidemic. Thus, in keeping with these changes we have made a number of modifications to STI/HIV Chicago. A description of the changes and other technical notes follow.

Diagnoses data are presented through 2016. While STI data are final, AIDS and HIV data for 2016 are still provisional.

HIV/AIDS

When interpreting data in this report, keep in mind that the eHARS database is updated continuously to reflect the most current and complete information on people infected and newly diagnosed with HIV or AIDS; data in this report were up-to-date as of 9/26/2017. Reporting delays are important when interpreting trends in case numbers and rates over time and especially, the most recent year of diagnosis. Report delay is defined as the interval between the date an HIV or AIDS case is diagnosed and the date the case is reported to the health department. Within 3 years, the total number of HIV diagnoses reported are relatively stable (fluctuating < 10 cases) and the data are no longer considered provisional. In order to provide the most complete data as possible, we will be presenting trend data through 2016. Additional cases continue to be reported in subsequent years and new cases are identified through laboratory reporting and registry matches. Thus, the numbers of cases diagnosed for each year are subject to change as new information is received from any of the reporting sources.

The “HIV Infection Diagnosis” data presented in this issue include 3 categories of diagnoses: (1) a diagnosis of HIV infection, (2) a diagnosis of HIV infection with a later diagnosis of AIDS, and (3) concurrent diagnoses of HIV infection and AIDS [defined as receiving an AIDS diagnosis within 12 months of an HIV diagnosis]. Data from the HIV reporting system should be interpreted with caution. HIV surveillance reports may not be representative of all persons infected with HIV because not all infected persons have been tested. The guidelines for cell suppression used in this report try to balance data accessibility with confidentiality and confidence in the stability of the estimates published. Rates and percentages based on twenty or fewer cases can vary widely just by random chance even when there is no meaningful statistical difference between measurements. Thus, the number and rate for categories with less than 5 are suppressed.

For surveillance purposes, HIV and AIDS cases are counted only once in a hierarchy of modes of transmission. Persons with more than one reported mode of transmission are classified in the transmission mode first in the hierarchy. The exception is men who have sex with men and also inject drugs, which has its own category. Persons whose transmission mode is classified as male-to-male sexual contact (MSM) include men who report sexual contact with other men and men who report sexual contact with both men and women. Persons whose mode of transmission is classified as heterosexual contact are persons who report specific heterosexual contact with a person with, or at increased risk for, HIV infection (e.g., an injection drug user).

Because many cases of HIV infection and AIDS are initially reported without a defined mode of transmission, we use multiple imputation to assign a mode of transmission for these cases. Multiple imputation is a statistical approach in which each missing mode of transmission is replaced with a set of plausible values that represent the uncertainty about the true, but missing, value. The plausible values are analyzed by using standard procedures, and the results from these analyses are then combined to produce the final results. Multiple imputation is used by the Centers for Disease Control and Prevention (CDC) in their national HIV Surveillance Report.



Gonorrhea

Gonorrhea is one of three sexually transmitted infections (STI) that local providers are required to report to CDPH per 77 Illinois Administrative Code 693 (Control of sexually transmissible infections code). Gonorrhea is a bacterial STI caused by *Neisseria gonorrhoeae*; infection varies in course, severity, and symptoms among males and females (Heymann, 2004). Co-infection with chlamydia can occur. Left untreated, disease sequelae can include pelvic inflammatory disease (PID), ectopic pregnancy, and infertility. *Neisseria gonorrhoeae* has progressively developed resistance to each of the antibiotics used for treatment of gonorrhea. Most recently, declining susceptibility to cefixime resulted in a change in the CDC treatment guidelines, so that dual therapy with ceftriaxone and either azithromycin or doxycycline is now a CDC recommended treatment regimen for gonorrhea.

Chlamydia

Chlamydia trachomatis infection is the most commonly reported notifiable disease and is one of three sexually transmitted infections (STI) that local providers are required to report to CDPH per 77 Illinois Administrative Code 693 (Control of sexually transmissible infections code). Chlamydial infections in women are usually asymptomatic. However, these can result in pelvic inflammatory disease (PID), which is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. In addition, pregnant women infected with chlamydia can pass the infection to their infants during delivery, potentially resulting in neonatal ophthalmia and pneumonia. Because of the large burden of disease and risks associated with infection, CDC recommends that all sexually active women younger than age 26 years receive annual chlamydia screening.

Syphilis

Syphilis is one of three sexually transmitted infections that local providers are required to report to CDPH per 77 Illinois Administrative Code 693 (Control of sexually transmissible infections code). Syphilis is caused by a bacterial STI called *Treponema pallidum*. Syphilis, a genital ulcerative disease, causes significant complications if untreated and facilitates the transmission of HIV infection. Syphilis is characterized by stages: primary (can have a lesion known as a chancre, usually occurring 3 weeks post exposure), secondary (symptoms include rash and fatigue), early latent (less than 1 year post exposure), and late latent (greater than 1 year post exposure). Primary and secondary syphilis are the most infectious and symptomatic stages. Periods of latency vary and may lead to increased morbidity and, potentially, mortality.

A probable case of congenital syphilis is defined as: “A condition affecting an infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant, or an infant or child who has a reactive treponemal test for syphilis and any one of the following:

- Any evidence of congenital syphilis on physical examination
- Any evidence of congenital syphilis on radiographs of long bones
- A reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL)
- An elevated CSF cell count or protein (without other cause)
- A reactive fluorescent treponemal antibody absorbed - 19S-IgM antibody test or IgM enzyme-linked immunosorbent assay” (CDC 1997)

A syphilitic stillbirth is defined as: “A fetal death that occurs after a 20-week gestation or in which the fetus weighs >500g and the mother had untreated or inadequately treated syphilis at delivery” (CDC 1997)

References:

1. Centers for Disease Control and Prevention (2013). Sexually Transmitted Disease Surveillance. Retrieved from <http://www.cdc.gov/std/default.htm>.
2. Centers for Disease Control and Prevention (1997). Case Definition for Infectious Conditions Under Public Health Surveillance. MMWR; 46(No. RR-10).
3. Heymann, D (Ed) (2004). Control of Communicable Diseases Manual (18th Ed). American Public Health Association: Washington, DC.
4. Illinois Department of Public Health (2013). Control of Sexually Transmissible Infections Code. Retrieved from http://www.idph.state.il.us/2013_Rules/Adopted/77_IAC_693_6-13.pdf
5. Zenilman, J. (2007). Sexually Transmitted Diseases. In K. Nelson & C Masters Williams (Eds.), Infectious Disease Epidemiology: Theory and Practice, 2nd edition. Sudbury, MA: Jones and Bartlett Publishers.

INEDSS - Address Validation

On March 24, 2012, INEDSS Release 10.2 was deployed. This release included address validation within INEDSS and geocoded data. Before case information is submitted to the Illinois Department of Public Health (IDPH) for counting, addresses are verified to ensure the accuracy and standardization of the data. Addresses that are verified in INEDSS will be assigned latitude and longitude coordinates. For addresses not validated, INEDSS geocodes the data using the zip code centroid, followed by the city and then the country.

Twice a month, IDPH submits an updated morbidity file to the Chicago Department of Public Health (CDPH) via MOVEit File Transfer, a secured application for exchanging confidential files and data between servers and organizations. This file does not include the geocoded address field. Once CDPH receives the electronic file, it is prepared for submission to the City of Chicago GIS FTP server for validation and geocoding.

Geocoding INEDSS Morbidity File

Before the INEDSS data file is submitted to the City of Chicago GIS FTP site, the street address is rounded (e.g. 8634 to 8600) in order to preserve confidentiality. A new data file is created containing only the rounded street address and a record identifier (state case number). This file is converted from Microsoft Excel to a common delimited (.csv) file, and submitted to the City of Chicago GIS FTP server for processing.

The files submitted are assigned a name that does not associate it with a person, case, health condition, or CDPH. Once the geographic identifiers (e.g., community area number, zipcode, ward, and 2010 census tract) are selected, the file is submitted. After the geocoder has received the request, an email is sent notifying the user that the geocoding process has commenced. When the geocoding job is completed, the results (output) file is downloaded to a secure server that meets HIPPA security requirements. Lastly, the original (input) file that was submitted and the results (output) file are both deleted from the FTP folders.

Addresses that are not geocoded in the output file are cleaned using the Geocoder website by identifying the correct street components. All apartment components (e.g., FL, BSMT, Apt #1) are also removed from the address field. The file is resubmitted to the GIS FTP server for validation and geocoding. To increase the number of geocoded addresses, the match standard code can be changed from medium (default) to low to obtain nearest matches.

Reasons why addresses fail to match

- A. Addresses may be missing street segments or in the wrong format (AVE, ST., King Dr. instead of Dr. Martin Luther King Drive).
- B. Address may incorporate typographical errors that result in erroneous street names or local street names that are different than those officially recorded by the government.
- C. Addresses may end at jurisdictional boundaries.

Limitations in Determining Geographic Patterns in Rates of Health-Related Events

- Unable to determine if the geographical variation in the incidence rates across years is due to a true change in the progression of the disease or an artifact of the address validation process in INEDSS.
- Inflation of the rates due to increase in the proportion of exact or nearest matched addresses



APPENDIX C: LIST OF ACRONYMS

- AI/AN** = American Indian/Alaskan Native
- AIDS** = Acquired Immunodeficiency Syndrome
- ART** = Anti-Retroviral therapy
- CDC** = Centers for Disease Control and Prevention
- CDPH** = Chicago Department of Public Health
- EAPC** = Estimate Annual Percent Change
- eHARS** = Enhanced HIV/AIDS Reporting System
- FtM** = Female to Male Transgender
- HAART** = Highly Active Anti-Retroviral Therapy
- HIV** = Human Immunodeficiency Virus
- IDPH** = Illinois Department of Public Health
- IDU** = Injection Drug Use/Injection Drug User
- MtF** = Male to Female Transgender
- MSM** = Men who have sex with men
- MSM/IDU** = Men with a history of injection drug use who have sex with men
- NIR** = No identified risk
- NH** = Non-Hispanic
- PI** = Pacific Islander
- PLWHA** = People Living with HIV/AIDS
- P&S** = Primary and Secondary Syphilis
- STI** = Sexually Transmitted Infection
- SSun** = STD Surveillance Network



APPENDIX D: SUPPLEMENTAL DATA TABLES

Table D.1: 2016 HIV Infection* Diagnosis Rates by Community Area, Chicago (as of 09/27/17)

Community Area	Average HIV Infections†	Average HIV Infection Rate§	Community Area	Average HIV Infections†	Average HIV Infection Rate§
1 Rogers Park	35	63.6	40 Washington Park	8	68.3
2 West Ridge	17	23.6	41 Hyde Park	11	42.8
3 Uptown	35	62.1	42 Woodlawn	13	50.0
4 Lincoln Square	15	38.0	43 South Shore	20	40.2
5 North Center	<5	12.6	44 Chatham	12	38.7
6 Lake View	35	37.1	45 Avalon Park	5	49.1
7 Lincoln Park	6	9.4	46 South Chicago	12	38.5
8 Near North Side	14	17.4	47 Burnside	<5	102.9
9 Edison Park	0	0.0	48 Calumet Heights	<5	29.0
10 Norwood Park	<5	2.7	49 Roseland	20	44.8
11 Jefferson Park	<5	3.9	50 Pullman	<5	27.3
12 Forest Glen	0	0.0	51 South Deering	<5	6.6
13 North Park	0	0.0	52 East Side	<5	13.0
14 Albany Park	12	23.3	53 West Pullman	10	33.7
15 Portage Park	<5	6.2	54 Riverdale	<5	15.4
16 Irving Park	8	15.0	55 Hegewisch	<5	10.6
17 Dunning	<5	2.4	56 Garfield Ridge	<5	2.9
18 Montclare	0	0.0	57 Archer Heights	0	0.0
19 Belmont Cragin	13	16.5	58 Brighton Park	9	19.8
20 Hermosa	<5	16.0	59 McKinley Park	<5	19.2
21 Avondale	12	30.6	60 Bridgeport	<5	6.3
22 Logan Square	10	13.6	61 New City	7	15.8
23 Humboldt Park	29	51.5	62 West Elsdon	5	27.6
24 West Town	12	14.7	63 Gage Park	5	12.5
25 Austin	44	44.7	64 Clearing	<5	17.3
26 West Garfield Park	12	66.7	65 West Lawn	<5	3.0
27 East Garfield Park	5	24.3	66 Chicago Lawn	10	18.0
28 Near West Side	17	31.0	67 West Englewood	13	36.6
29 North Lawndale	20	55.7	68 Englewood	14	45.7
30 South Lawndale	18	22.7	69 Gr. Grand Crossing	17	52.1
31 Lower West Side	5	14.0	70 Ashburn	7	17.0
32 Loop	5	17.1	71 Auburn Gresham	23	47.2
33 Near South Side	6	28.1	72 Beverly	<5	5.0
34 Armour Square	<5	14.9	73 Washington Heights	11	41.5
35 Douglas	10	54.8	74 Mount Greenwood	<5	5.2
36 Oakland	<5	50.7	75 Morgan Park	<5	17.7
37 Fuller Park	<5	34.8	76 O'Hare	0	0.0
38 Grand Boulevard	12	54.7	77 Edgewater	33	58.4
39 Kenwood	13	72.9	Unknown CA	101	--
			Chicago Total¶	839	31.1

Note: Use caution when interpreting data based on less than 20 events; rate/percent is unreliable. §Rate per 100,000 population using 2010 U.S. Census Bureau population figures. ¶Includes all persons with unknown/undetermined community area. *HIV infection diagnoses represents newly diagnosed with HIV in a given year, at any stage of the disease.

APPENDIX D: SUPPLEMENTAL DATA TABLES

Table D.2: People Living with HIV Infection (PLWH) in 2015 by Community Area, Chicago (as of 09/27/2017)

Community Area	Prevalent Cases	Prevalence Rate	Community Area	Prevalent Cases	Prevalence Rate
1 Rogers Park	902	1,640.3	40 Washington Park	122	1,041.2
2 West Ridge	295	410.1	41 Hyde Park	129	502.3
3 Uptown	1,275	2,262.2	42 Woodlawn	254	977.6
4 Lincoln Square	189	478.6	43 South Shore	639	1,284.0
5 North Center	111	348.3	44 Chatham	311	1,002.3
6 Lake View	937	992.9	45 Avalon Park	82	805.1
7 Lincoln Park	170	265.1	46 South Chicago	280	897.5
8 Near North Side	298	370.3	47 Burnside	24	823.0
9 Edison Park	10	89.4	48 Calumet Heights	77	557.5
10 Norwood Park	31	83.7	49 Roseland	261	585.0
11 Jefferson Park	33	129.7	50 Pullman	48	655.3
12 Forest Glen	26	140.5	51 South Deering	85	562.6
13 North Park	46	256.5	52 East Side	28	121.5
14 Albany Park	215	417.1	53 West Pullman	183	617.2
15 Portage Park	139	216.8	54 Riverdale	20	308.5
16 Irving Park	194	363.6	55 Hegewisch	9	95.5
17 Dunning	53	126.4	56 Garfield Ridge	44	127.5
18 Montclare	38	283.0	57 Archer Heights	20	149.3
19 Belmont Cragin	235	298.4	58 Brighton Park	124	273.3
20 Hermosa	99	395.8	59 McKinley Park	39	249.8
21 Avondale	163	415.2	60 Bridgeport	68	212.7
22 Logan Square	332	451.1	61 New City	185	416.9
23 Humboldt Park	437	775.9	62 West Elsdon	23	127.0
24 West Town	364	447.0	63 Gage Park	97	243.1
25 Austin	691	701.4	64 Clearing	30	129.7
26 West Garfield Park	161	894.4	65 West Lawn	55	164.9
27 East Garfield Park	217	1,055.1	66 Chicago Lawn	269	483.6
28 Near West Side	343	625.0	67 West Englewood	272	766.1
29 North Lawndale	337	938.4	68 Englewood	267	871.0
30 South Lawndale	510	643.2	69 Gr. Grand Crossing	344	1,055.1
31 Lower West Side	137	383.0	70 Ashburn	97	236.1
32 Loop	116	396.1	71 Auburn Gresham	341	699.6
33 Near South Side	105	490.9	72 Beverly	42	209.6
34 Armour Square	33	246.4	73 Washington Heights	140	528.4
35 Douglas	170	932.1	74 Mount Greenwood	7	36.7
36 Oakland	51	861.8	75 Morgan Park	105	465.8
37 Fuller Park	26	904.0	76 O'Hare	15	117.6
38 Grand Boulevard	281	1,281.4	77 Edgewater	1,175	2,078.9
39 Kenwood	145	812.7	Unknown CA	7,598	--
			Chicago Total¶	23,824	883.8

Note: Use caution when interpreting data based on less than 20 events; rate/percent is unreliable. †All persons diagnosed with HIV, from the beginning of the epidemic through 12/31/2015 and living through 12/31/2016 as of 09/27/2017. ‡Rate per 100,000 population using 2010 U.S. Census Bureau population figures.

¶Includes all persons with unknown/undetermined community area.

APPENDIX D: SUPPLEMENTAL DATA TABLES

Table D.3: Chlamydia Case Rates by Community Area, Chicago, 2016

Community Area	Chlamydia Cases	Rate	Community Area	Chlamydia Cases	Rate
1 Rogers Park	540	982.0	40 Washington Park	311	2,654.3
2 West Ridge	314	436.5	41 Hyde Park	138	537.4
3 Uptown	694	1,231.3	42 Woodlawn	443	1,705.0
4 Lincoln Square	134	339.3	43 South Shore	839	1,685.9
5 North Center	86	269.9	44 Chatham	507	1,634.0
6 Lake View	889	942.1	45 Avalon Park	133	1,305.8
7 Lincoln Park	338	527.2	46 South Chicago	469	1,503.3
8 Near North Side	535	664.7	47 Burnside	60	2,057.6
9 Edison Park	13	116.2	48 Calumet Heights	158	1,143.9
10 Norwood Park	61	164.8	49 Roseland	682	1,528.5
11 Jefferson Park	65	255.4	50 Pullman	110	1,501.7
12 Forest Glen	36	194.5	51 South Deering	171	1,131.8
13 North Park	63	351.3	52 East Side	103	447.0
14 Albany Park	269	521.9	53 West Pullman	428	1,443.5
15 Portage Park	270	421.1	54 Riverdale	189	2,915.8
16 Irving Park	282	528.5	55 Hegewisch	45	477.4
17 Dunning	116	276.6	56 Garfield Ridge	143	414.3
18 Montclare	53	394.8	57 Archer Heights	83	619.7
19 Belmont Cragin	550	698.5	58 Brighton Park	327	720.8
20 Hermosa	210	839.7	59 McKinley Park	119	762.2
21 Avondale	242	616.4	60 Bridgeport	130	406.5
22 Logan Square	484	657.7	61 New City	509	1,147.0
23 Humboldt Park	904	1,605.0	62 West Elsdon	125	690.3
24 West Town	610	749.1	63 Gage Park	334	837.2
25 Austin	1,839	1,866.7	64 Clearing	117	505.6
26 West Garfield Park	470	2,611.0	65 West Lawn	189	566.6
27 East Garfield Park	498	2,421.4	66 Chicago Lawn	759	1,364.4
28 Near West Side	684	1,246.3	67 West Englewood	774	2,180.0
29 North Lawndale	1,031	2,870.9	68 Englewood	650	2,120.4
30 South Lawndale	675	851.3	69 Gr. Grand Crossing	711	2,180.8
31 Lower West Side	279	780.0	70 Ashburn	329	800.9
32 Loop	218	744.5	71 Auburn Gresham	856	1,756.1
33 Near South Side	138	645.2	72 Beverly	85	424.3
34 Armour Square	64	477.9	73 Washington Heights	418	1,577.8
35 Douglas	231	1,266.6	74 Mount Greenwood	46	240.9
36 Oakland	114	1,926.3	75 Morgan Park	190	842.8
37 Fuller Park	43	1,495.1	76 O'Hare	29	227.3
38 Grand Boulevard	363	1,655.3	77 Edgewater	549	971.3
39 Kenwood	199	1,115.4	Unknown CA	2,914	0
			Chicago Total[¶]	29,776	1,104.6

Note: Use caution when interpreting data based on less than 20 events; rate/percent is unreliable. \$Rate per 100,000 population using 2010 U.S. Census Bureau population figures. ¶Includes all persons with unknown/undetermined community area.

APPENDIX D: SUPPLEMENTAL DATA TABLES

Table D.2: People Living with HIV Infection[†] (PLWH) in 2015 by Community Area, Chicago (as of 09/27/2017)

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5 North Center	111	348.3	44 Chatham	311	1,002.3
6 Lake View	937	992.9	45 Avalon Park	82	805.1
7 Lincoln Park	170	265.1	46 South Chicago	280	897.5
8 Near North Side	298	370.3	47 Burnside	24	823.0
9 Edison Park	10	89.4	48 Calumet Heights	77	557.5
10 Norwood Park	31	83.7	49 Roseland	261	585.0
11 Jefferson Park	33	129.7	50 Pullman	48	655.3
12 Forest Glen	26	140.5	51 South Deering	85	562.6
13 North Park	46	256.5	52 East Side	28	121.5
14 Albany Park	215	417.1	53 West Pullman	183	617.2
15 Portage Park	139	216.8	54 Riverdale	20	308.5
16 Irving Park	194	363.6	55 Hegewisch	9	95.5
17 Dunning	53	126.4	56 Garfield Ridge	44	127.5
18 Montclare	38	283.0	57 Archer Heights	20	149.3
19 Belmont Cragin	235	298.4	58 Brighton Park	124	273.3
20 Hermosa	99	395.8	59 McKinley Park	39	249.8
21 Avondale	163	415.2	60 Bridgeport	68	212.7
22 Logan Square	332	451.1	61 New City	185	416.9
23 Humboldt Park	437	775.9	62 West Elsdon	23	127.0
24 West Town	364	447.0	63 Gage Park	97	243.1
25 Austin	691	701.4	64 Clearing	30	129.7
26 West Garfield Park	161	894.4	65 West Lawn	55	164.9
27 East Garfield Park	217	1,055.1	66 Chicago Lawn	269	483.6
28 Near West Side	343	625.0	67 West Englewood	272	766.1
29 North Lawndale	337	938.4	68 Englewood	267	871.0
30 South Lawndale	510	643.2	69 Gr. Grand Crossing	344	1,055.1
31 Lower West Side	137	383.0	70 Ashburn	97	236.1
32 Loop	116	396.1	71 Auburn Gresham	341	699.6
33 Near South Side	105	490.9	72 Beverly	42	209.6
34 Armour Square	33	246.4	73 Washington Heights	140	528.4
35 Douglas	170	932.1	74 Mount Greenwood	7	36.7
36 Oakland	51	861.8	75 Morgan Park	105	465.8
37 Fuller Park	26	904.0	76 O'Hare	15	117.6
38 Grand Boulevard	281	1,281.4	77 Edgewater	1,175	2,078.9
39 Kenwood	145	812.7	Unknown CA	7,598	--
			Chicago Total¶	23,824	883.8

Note: Use caution when interpreting data based on less than 20 events; rate/percent is unreliable. [†]All persons diagnosed with HIV, from the beginning of the epidemic through 12/31/2015 and living through 12/31/2016 as of 09/27/2017. [§]Rate per 100,000 population using 2010 U.S. Census Bureau population figures.

¶Includes all persons with unknown/undetermined community area.

APPENDIX D: SUPPLEMENTAL DATA TABLES

Table D.5: Primary and Secondary Syphilis Case Rates by Community Area, Chicago, 2016

Community Area	P&S Syphilis Cases	Rate	Community Area	P&S Syphilis Cases	Rate
1 Rogers Park	45	81.8	40 Washington Park	5	42.7
2 West Ridge	10	13.9	41 Hyde Park	5	19.5
3 Uptown	72	127.7	42 Woodlawn	9	34.6
4 Lincoln Square	9	22.8	43 South Shore	18	36.2
5 North Center	5	15.7	44 Chatham	10	32.2
6 Lake View	95	100.7	45 Avalon Park	<5	19.6
7 Lincoln Park	10	15.6	46 South Chicago	5	16
8 Near North Side	18	22.4	47 Burnside	<5	34.3
9 Edison Park	0	0	48 Calumet Heights	2	14.5
10 Norwood Park	<5	2.7	49 Roseland	9	20.2
11 Jefferson Park	<5	7.9	50 Pullman	0	0
12 Forest Glen	<5	10.8	51 South Deering	<5	6.6
13 North Park	<5	5.6	52 East Side	<5	13
14 Albany Park	10	19.4	53 West Pullman	8	27
15 Portage Park	8	12.5	54 Riverdale	0	0
16 Irving Park	9	16.9	55 Hegewisch	<5	10.6
17 Dunning	7	16.7	56 Garfield Ridge	<5	5.8
18 Montclare	<5	7.4	57 Archer Heights	0	0
19 Belmont Cragin	12	15.2	58 Brighton Park	<5	6.6
20 Hermosa	5	20	59 McKinley Park	<5	12.8
21 Avondale	12	30.6	60 Bridgeport	5	15.6
22 Logan Square	16	21.7	61 New City	6	13.5
23 Humboldt Park	22	39.1	62 West Elsdon	<5	5.5
24 West Town	18	22.1	63 Gage Park	6	15
25 Austin	26	26.4	64 Clearing	<5	4.3
26 West Garfield Park	9	50	65 West Lawn	8	24
27 East Garfield Park	16	77.8	66 Chicago Lawn	11	19.8
28 Near West Side	12	21.9	67 West Englewood	6	16.9
29 North Lawndale	15	41.8	68 Englewood	16	52.2
30 South Lawndale	5	6.3	69 Gr. Grand Crossing	13	39.9
31 Lower West Side	13	36.3	70 Ashburn	6	14.6
32 Loop	7	23.9	71 Auburn Gresham	13	26.7
33 Near South Side	<5	14.0	72 Beverly	0	0
34 Armour Square	<5	14.9	73 Washington Heights	8	30.2
35 Douglas	<5	21.9	74 Mount Greenwood	0	0
36 Oakland	<5	50.7	75 Morgan Park	<5	17.7
37 Fuller Park	<5	34.8	76 O'Hare	<5	7.8
38 Grand Boulevard	7	31.9	77 Edgewater	74	130.9
39 Kenwood	7	39.2	Unknown CA	28	
			Chicago Total¶	813	30.2

Note: Use caution when interpreting data based on less than 20 events; rate/percent is unreliable. \$Rate per 100,000 population using 2010 U.S. Census Bureau population figures. ¶Includes all persons with unknown/undetermined community area.

APPENDIX E: TECHNICAL NOTES

HARDSHIP INDEX AND HOTSPOT ANALYSIS

Chicago Community Area Economic Hardship Index

- The economic hardship index (EHI), developed by Richard P. Nathan and Charles F. Adams Jr in 1975, is used to provide a complete, multidimensional measure of neighborhood socioeconomic conditions of inequality across the City of Chicago.
- The EHI is a composite of six indicators:
 - Crowded housing (percentage occupied by housing units with more than 1 person per room)
 - Poverty (percentage of persons living below the federal poverty level)
 - Unemployment (percentage of persons over the age of 16 years who are unemployed)
 - Education (percentage of persons over the age of 25 years without a high school education)
 - Dependency (percentage of the population under 18 or over 64 years of age)
 - Per capita income level
- The EHI score is a median of the six indicators that are standardized on a scale of 0 to 100, with a higher score representing a greater level of economic hardship or burden.
- The U.S. Census Bureau's American Community Survey estimates are used to calculate index values at the census tract levels. To calculate index values at the Chicago Community Area boundaries, the census tract data are aggregated using the Geographic Information Systems (GIS) software.

References:

1. UIC Great Cities Institute (2016). Fact Sheet #2: Chicago Community Area Economic Hardship Index. Retrieved from: <https://greatcities.uic.edu/wp-content/uploads/2016/07/GCI-Hardship-Index-Fact-SheetV2.pdf>
2. Shih, M., Dumke, K.A., Goran, M.I., and Simon, P.A. (2012). The association between community-level economic hardship and childhood obesity prevalence in Los Angeles. *Pediatric Obesity*, Volume 8(6): 411-417. Retrieved from: <http://corc.usc.edu/pdf/The%20association%20between%20commmunity-level%20economic%20hardship%20and%20childhood%20obesity%20prevalence%20in%20Los%20Angeles.pdf>

Optimized Hot Spot Analysis (ArcGIS 10.2.2 Spatial Statistics)

- Hotspot analysis is a spatial analysis and mapping technique used to identify clustering of spatial phenomena (i.e., new gonorrhea infections).
- A hotspot is defined as an area that has higher concentration of events (i.e., gonorrhea infections) compared to the expected number given a random distribution of events.
- The Optimized Hot Spot Analysis, a statistical method available in ArcGIS Version 10.2, used in the spotlight section of the 2017 HIV/STI Surveillance report identifies significant spatial clustering of high values (hot spots) and low values (cold spots) of gonorrhea infections across the city of Chicago.
- This method uses the Getis-Ord G_i^* statistic to generate Z scores (standard deviation) and P values (statistical probabilities) to identify the location and degree of spatial clustering of gonorrhea infections at the census tract level.
- A Z score above 1.96 or below -1.96 means that there is a statistically significant hot spot or a statistically significant cold spot of gonorrhea infections at a significance level of $P < 0.05$. The larger a Z-score, the more intense the clustering of values (hot spot). A Z-score near zero, means no spatial clustering.

References:

1. Columbia University Mailman School of Public Health. Population Health Methods: Hot Spot Detection. Retrieved from: <https://www.mailman.columbia.edu/research/population-health-methods/hot-spot-detection>
2. Izumi, K., et. al. (2015). Detection of Tuberculosis Infection Hotspots Using Activity Spaces Based Spatial Approach in an Urban Tokyo, from 2003 to 2011. *PLoS*, 10(9): 1-16. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4575109/pdf/pone.0138831.pdf>
3. Children's Environmental Health Initiative. Introduction to Hotspot Analysis – GIS III: GIS Analysis. Retrieve from: https://www.cdc.gov/dhdsp/maps/GISX/training/module3/files/3_hotspot_analysis_module.PDF



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