

## Tuberculosis and HIV

Tuberculosis (TB) is a disease caused by infection with the bacteria *Mycobacterium tuberculosis* (CDC, 2014). Although the bacteria usually attacks the lungs, it can attack any part of the body such as the kidney, spine or brain (CDC, 2011). It is estimated that one-third of the world's population is infected with *M. tuberculosis* (WHO, 2018).

There are two types of TB infection—latent and active. Persons with latent TB infection (LTBI) do not have active symptoms and cannot spread the disease. However, persons with LTBI can develop active disease with a lifetime risk estimated at 5–10% (CDC, 2014). Persons with active TB are usually symptomatic and infectious, releasing bacteria into the air by coughing or sneezing (CDC, 2011).

In the United States, rates of TB infection have been decreasing since the 1950s, with a slight increase in cases in the early 1990s and again, in 2015 (CDC, 2017). In 1953, the U.S. tuberculosis infection rate was 52.6 cases per 100,000 population and in 2016, had declined to 2.9 cases per 100,000 (n=9,272) (CDC, 2017). Since 2001, the majority of cases in the U.S. have been among foreign born individuals with this group accounting for 68.5% of TB cases in 2016 (CDC, 2017).

Worldwide, TB is the leading cause of death among persons living with HIV (WHO, 2018). Among persons who are co-infected with both HIV and TB, progression to active TB disease is more likely to occur with some estimates as high as 20 times more likely than among persons who are not HIV-positive (Pawlowski, et al, 2012). Due to the risks associated with co-infection, CDC recommends that all persons living with HIV disease be tested for TB and that those with LTBI initiate TB treatment (WHO, 2018).

In the U.S. there has been a strong downward trend in the level of HIV and TB co-infection. In 1993, 48.2% of reported TB cases were co-infected with HIV and by 2009, less than 10% of TB cases were co-infected with HIV (CDC, 2017). Studies have shown that antiretroviral therapy (ART) for HIV can reduce the risk of progressing to active TB (UCSF, 2013). Increased usage of ART has contributed to the reduced burden of TB in the U.S. (UCSF, 2013).

### Tuberculosis in Illinois

In 2016, Illinois ranked 18<sup>th</sup> among all U.S. states in the rate of TB cases with 342 cases of TB reported or 2.7 cases per 100,000 population (CDC, 2017). From 2013 to 2017, the number of TB cases in Illinois increased by 3% (IDPH TB Program, 2018).

In 2016, 75% of TB cases in Illinois were among foreign-born persons (CDC, 2017). Among foreign-born persons, the highest proportion of cases occurred among those who had been in the U.S. for ≥20 years (26.5%) (CDC, 2017). Most TB cases (90%) reported during 2013–2017 in Illinois were among persons residing in urban counties (see factsheet, “Rural Communities”).

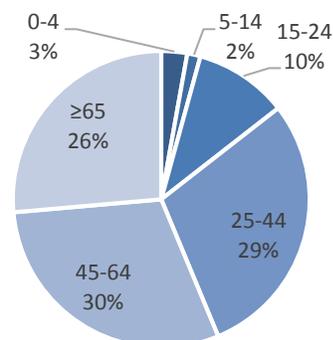
### Sex

During 2013–2017, the majority of TB cases in Illinois were diagnosed among males (59%) (IDPH TB Program, 2018).

### Age at Diagnosis

During 2013–2017, the majority (85%) of diagnosed TB cases were among adults over the age of 25 years (IDPH TB Program, 2018).

**Figure 1. Tuberculosis Cases by Age at Diagnosis, Illinois, 2013–2017**

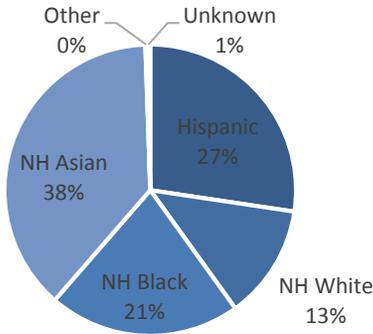


Source: IDPH TB Program, 2018

### Race/Ethnicity

During 2013–2017, NH Asians accounted for the largest proportion of cases (38%) followed by Hispanics who accounted for 27% of TB cases reported in Illinois (IDPH TB Program, 2018).

**Figure 2. Tuberculosis Cases by Race/Ethnicity, Illinois, 2013–2017**

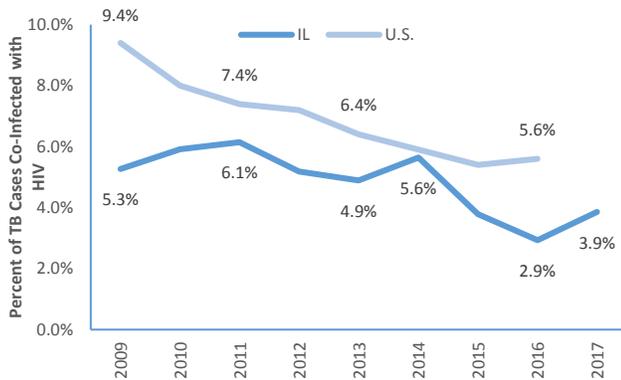


Source: IDPH TB Program, 2018

### HIV and TB Co-Infection

The annual rate of HIV and TB co-infection in Illinois was lower than the national annual rate during 2009–2016 (IDPH TB Program, 2018). Due to low numbers, there was fluctuation from year to year in Illinois but an overall downward trend occurred.

**Figure 3. Percent of Tuberculosis Cases Co-Infected with HIV, Illinois and United States, 2009–2017**



Source: IDPH TB Program, 2018 and CDC, 2017

Note: TB data for the U.S. available through 2016; Illinois data available through 2017

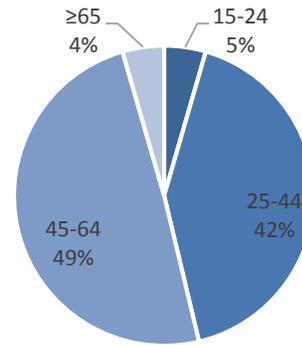
### Sex

Among those co-infected with TB and HIV, 66% were male. Males with TB were more likely to be co-infected with HIV reflecting the higher proportion of males infected with HIV in Illinois (see factsheet, “Overview of HIV Disease in Illinois”).

### Age at TB Diagnosis

No children <15 years and few adults >65 years were co-infected during 2013–2017. The majority of co-infected persons were 25–64 years at the time of TB diagnosis.

**Figure 4. Tuberculosis and HIV Co-Infected Cases by Age at TB Diagnosis, Illinois, 2013–2017**

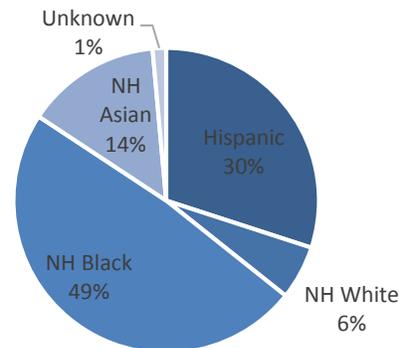


Source: IDPH TB Program, 2018

### Race/Ethnicity

Thirty percent of co-infected cases were Hispanic, which was similar to the overall distribution of TB cases (Figure 2). During 2013–2017, 49% of co-infected cases were NH black. The higher level of co-infection reflects the higher prevalence of HIV infection among the NH black population (see factsheet, “Overview of HIV Disease in Illinois”).

**Figure 5. Tuberculosis and HIV Co-Infected Cases by Race/Ethnicity, Illinois, 2013–2017**



Source: IDPH TB Program, 2018

### Summary

The number of TB cases in Illinois, after a slight increase in 2015, has again continued to decline. The majority of TB cases in Illinois were foreign-born. The rate of HIV and TB co-infection in Illinois is lower than the U.S. overall and has declined since 2009. However, racial/ethnic disparities among co-infected cases persist with NH blacks accounting for a disproportionate number of co-infected cases.

## REFERENCES

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