



# STD and HIV Co-Infection

## Sexually transmitted diseases (STDs)

such as chlamydia, gonorrhea, and syphilis are transmitted via the same risk behaviors as HIV, namely unprotected sexual activity with an infected partner and/or sexual activity with multiple or anonymous partners. Persons with a STD are more likely to acquire HIV compared to those who do not. Sores or inflammation resulting from a STD can also facilitate the transmission of HIV that may have been prevented with unbroken skin.<sup>1</sup>

### CHLAMYDIA

Chlamydia is the most frequently reported bacterial STD reported in the United States, caused by *Chlamydia trachomatis*. While spread through sexual contact, chlamydia can also be transmitted perinatally from an infected, untreated mother to her child during childbirth.<sup>2</sup> While typically asymptomatic, if left untreated, women can develop pelvic inflammatory disease (PID), that can cause pelvic pain, ectopic pregnancies, and infertility.<sup>3</sup>

In 2014, 1,441,789 cases of chlamydia were reported to the Centers for Disease Control and Prevention (CDC).<sup>3</sup> The same year, the rate of infection among females was 627.2 per 100,000 females, while the rate of infection among males was 278.4 per 100,000 males.<sup>4,5</sup> Chlamydia is 6.7 times more prevalent among Black, non-Hispanics compared to White, non-Hispanics.<sup>2</sup>

Chlamydia is treated using antibiotics, primarily azithromycin or doxycycline<sup>6</sup>, that can also be used with HIV-positive patients. Persons infected with chlamydia should avoid sexual activity throughout the treatment regimen. It is possible to become infected with chlamydia again if a person's sex partner has not been treated for the disease.

### GONORRHEA

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae* and is transmitted through vaginal, oral, and anal sexual activity.

**1 in 20 sexually active females between the ages of 14-24 have chlamydia.<sup>2</sup>**

**The CDC estimates that the majority of reported gonorrhea cases occur among those between the ages of 15-24.<sup>5</sup>**

It can also be transmitted from mother to child during birth. Most people infected with gonorrhea are asymptomatic; however, if left untreated, gonorrhea can cause serious complications, such as PID in women.

Gonorrhea can also spread to the bloodstream and cause disseminated gonococcal infection, which can be life threatening. Gonorrhea can be treated using a dual therapy regimen; however, there is a growing concern of antimicrobial resistance among gonorrhea. It is possible to become re-infected with gonorrhea if a person's sex partner has not been treated for the disease.<sup>8</sup>

The CDC estimates that approximately 820,000 new infections of gonorrhea occur every year, with around 570,000 of those infections among those between the ages of 15-24.<sup>8</sup> The rate of infection per 100,000 people has increased 5.1% from 2013 to 2014.<sup>9</sup>

### SYPHILIS

Syphilis is caused by the bacterium *Treponema pallidum*, transmitted via vaginal, oral, or anal sexual activity through a syphilitic sore known as a "chancre". Pregnant women can also transmit the disease to their unborn child. Syphilis occurs in multiple stages, with the first symptoms occurring anywhere from 10 to 90 days after infection. If left untreated, syphilis can remain in the body for years and develop into a late stage that causes damage to internal organs and can be life-threatening.

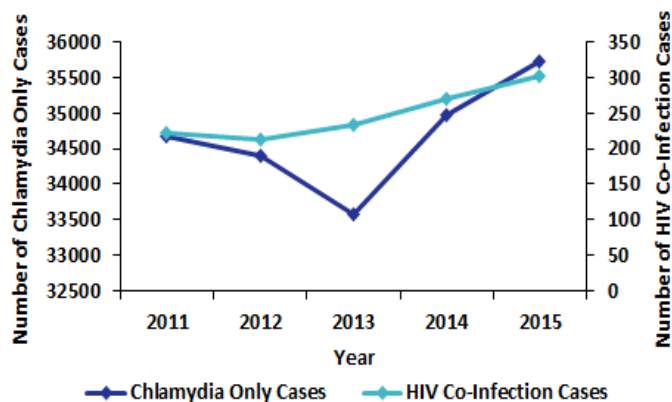
Those infected with HIV that acquire syphilis can develop very different symptoms and can have an increased risk of developing neurological effects.<sup>10</sup> In 2014, there were 63,450 cases of reported syphilis infection.<sup>10</sup> Recent outbreaks of syphilis among men who have sex with men (MSM) have coincided with high rates of HIV co-infection.<sup>11</sup>

## STD AND HIV CO-INFECTION IN VIRGINIA

### Chlamydia

From 2011 to 2015, there were a total of 174,589 cases of chlamydia diagnosed in Virginia, with less than 1% of those cases co-infected with HIV. The number of chlamydia and HIV co-infection cases appears to be increasing during this time period (Figure 1).

**Figure 1: Comparison of Chlamydia Only and HIV Co-infection Cases by Year in Virginia, 2011-2015**

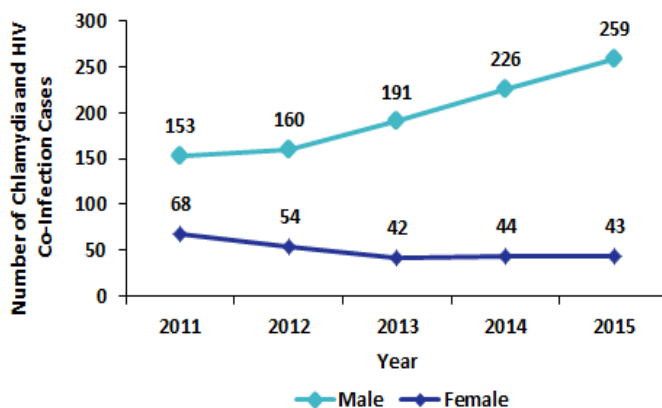


From 2011 to 2015, the chlamydia only cases occurred most frequently among males (70%), Black, non-Hispanics (45%), and those between the ages of 15-24 (69%).

HIV co-infection cases occurred mostly among males (80%), Black, non-Hispanics (68%), and those between the ages of 25-34 (37%). While the number of male co-infection cases from 2011 to 2015 is increasing, the number of female co-infection cases is decreasing (Figure 2).

**In 2015, 1 in 82 PLWH were co-infected with Chlamydia in Virginia.**

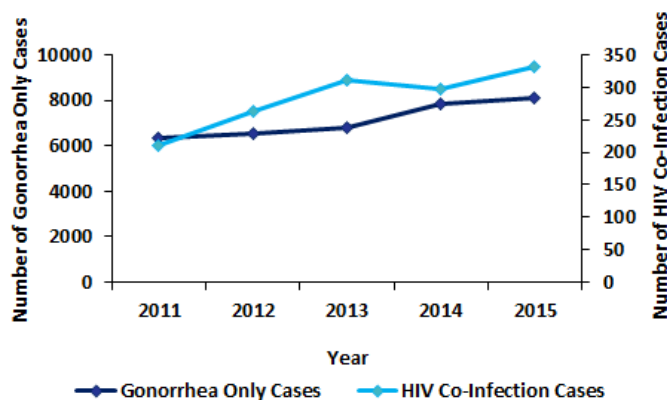
**Figure 2: Comparison of Chlamydia-HIV Co-Infection Cases by Sex in Virginia, 2011-2015**



### Gonorrhea

There were 37,010 cases of gonorrhea diagnosed in Virginia between 2011 and 2015. Approximately 4% of those cases were co-infected with HIV. Figure 2 displays the number of gonorrhea and HIV co-infection cases by year. The number of gonorrhea and HIV co-infection cases appears to be increasing during this time period (Figure 3).

**Figure 3: Comparison of Gonorrhea Only and HIV Co-infection Cases by Year in Virginia, 2011-2015**



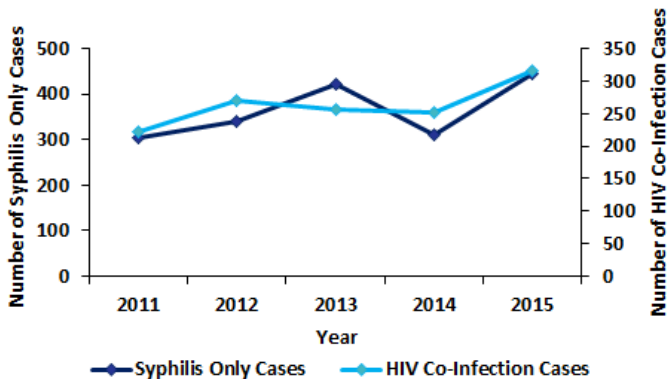
Of the 35,993 gonorrhea only cases, 55% were female. Sixty-five percent were Black, non-Hispanic, and 61% were between the ages of 15-24. A majority (93%) of the HIV co-infection cases were male. In addition, the majority (68%) were Black, non-Hispanic and most commonly between the ages of 25-34 (39%).

**In 2015, 1 in 75 PLWH were co-infected with Gonorrhea in Virginia.**

## Syphilis

There were 3,135 cases of syphilis diagnosed in Virginia between 2011 and 2015, with 42% of those cases co-infected with HIV. Figure 4 shows the number of syphilis only and HIV co-infection cases increasing from 2011 to 2015.

**Figure 4: Comparison of Syphilis Only and HIV Co-infection Cases by Year in Virginia, 2011-2015**

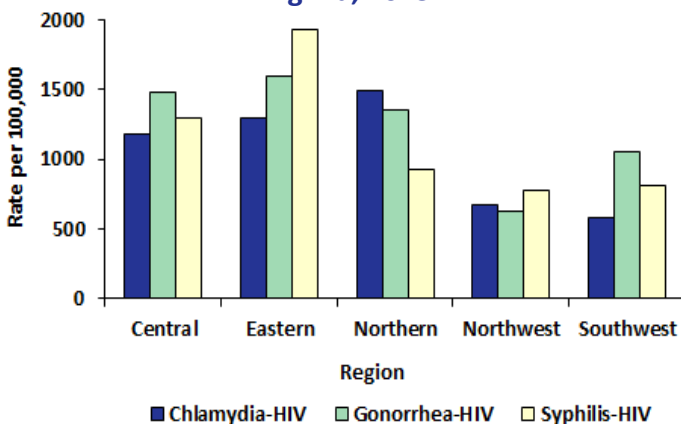


Of the 1,820 syphilis only cases, 84% were male. Fifty-two percent were Black, non-Hispanic and 38% were between the ages of 25-34. The majority of HIV co-infection cases were male (99%), Black, non-Hispanic (61%) and were most commonly between the ages of 25-34 (35%).

## Regional Co-Infection

In 2015, the rates of Syphilis-HIV and Gonorrhea-HIV co-infection were highest in the Eastern health region, while the rates of Chlamydia-HIV co-infection were highest in the Northern region.

**Figure 5: Rates of Chlamydia, Gonorrhea, and Syphilis-HIV Co-Infection among PLWH by region, Virginia, 2015**



**In 2015, 1 in 79 PLWH were co-infected with Syphilis in Virginia.**

## REFERENCES

- 1) CDC (2015). "STDs and HIV – CDC Fact Sheet". Accessed July 27, 2016: <https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm>.
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- 4) CDC (2015). "Table 4. Chlamydia Among Women - Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2010-2014." Accessed July 26, 2016: <https://www.cdc.gov/std/stats14/tables/4.htm>.
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