City and County of Denver
HIV/STI
Surveillance Report
2003

Draft September 29, 2004

Denver Public Health Department
Sexually Transmitted Disease Control Program
September 2004

This report was prepared by:

Cornelis A. Rietmeijer, MD, PhD
Douglas B. Richardson

With statistical support from:

Laura V. Lloyd, MPH
L. Dean McEwen, MBA

Denver Public Health Department
STD Control Program
605 Bannock Street
Denver, CO 80204

Tel. (303) 436-7200
Fax. (303) 436-7211
Email: krietmei@dhha.org

Contents

Introduction	4
Technical Notes	4
HIV/AIDS	5
Gonorrhea	6
Chlamydia	6
Syphilis	6
Trends in the Denver Metro Health Clinic	7
Comment	7
References	9
Figures and Tables	10

Introduction

Surveillance is the cornerstone of public health. Surveillance data inform the prioritization and development of public health programs and, in the end, demonstrate their successes and failures. For surveillance to be useful, the timely and widespread dissemination of findings is essential. To garner support and input for its sexually transmitted infections (STI) control program, Denver Public Health (DPH) therefore intends to start regular publication of relevant STI data. Such publications are anticipated to cover the full spectrum of viral, bacterial, mycological, and protozoal STI, and will present recent trends as well as important local research findings.

This first report summarizes data for reportable STI in the City and County of Denver for 1999 through 2003, including HIV/AIDS, syphilis, gonorrhea, and chlamydia. In addition, to help interpret the data (in particular the general downward trends observed in 2003), data from the Denver Metro Health Clinic (the city's STI clinic) are also presented.

As stated above, the dissemination of these data serves a dual purpose: support and involvement of the public in our efforts. We very much welcome your feedback.

Technical Notes

Data for reportable STIs, including HIV/AIDS, syphilis, gonorrhea, and chlamydia are sent electronically from the Colorado Department of Public Health and Environment (CDPHE) to the Denver Public Health Department (DPH) on a monthly basis. HIV/AIDS cases are downloaded from the CDC HIV/AIDS Reporting System (HARS), while other STIs are downloaded from the STD Management System (SMS). Both HARS and SMS are CDC-supported databases maintained at CDPHE. Downloads include reportable cases with a City and County of Denver domicile or cases that have been diagnosed at Denver Health (including the Denver Metro Health Clinic and HIV Counseling and Testing Site) but have a domicile outside the City and County of Denver.

Individual persons may be included more than once if they have multiple diagnoses, or if they have the same diagnosis at different times. However, persons with manifestations of a single STI at multiple anatomical sites (e.g., simultaneous urethral and pharyngeal gonorrhea) on the same date are counted as a single case.

Population estimates for the years 1999-2002 were taken from the U.S. Census.[1] Because age- and race/ethnicity-specific estimates were not available for 2003, projections for 2003 were extrapolated from the 1999-2002 estimates using the Forecast function in Microsoft Excel (Microsoft Corporation, Redmond, WA).

HIV/AIDS

In 2003, 227 cases of HIV and/or AIDS were newly reported for the City and County of Denver, down from 260 cases in 2002. Of cases in 2003, 52 (23%) had an AIDS defining condition at the time of HIV diagnosis or had progressed to AIDS within the year. In addition, 97 persons diagnosed with HIV infection prior to 2003 had progressed to AIDS during the year. Thus of 149 persons diagnosed with AIDS in 2003, 34.8% were first diagnosed with HIV infection during the same year.

Figure 1 shows trend data for HIV/AIDS since 1982. After peaking in 1987 at 1,067 cases, a gradual decrease occurred until 1998 when 264 cases were reported. Since then the incidence has stabilized. Reported AIDS cases peaked in 1993 (545 cases reported) and then declined to 217 cases reported in 1999 and while there may be a reporting delay, the declining trend appears to have continued through 2003.

Figure 2 shows trends in the relative proportions of diagnosed HIV and AIDS cases. For this analysis, cases were unduplicated within the year, i.e., persons who were diagnosed with AIDS within the same year as they were diagnosed with HIV were counted as AIDS cases for that year and not as HIV cases. Because HIV reporting did not start until 1985, prior years were excluded from the analysis. The proportion of AIDS cases increased from 13.2% of all cases in 1985 to 53.5% in 1994 and started to decline again to 45.4 in 2003.

Trends in demographic and risk factors appear in Figures 3-6. Denominators for these analyses comprise all cases of HIV and/or AIDS by first year of report. Women comprised 2.4% of cases in 1985, gradually increasing to 16.2% in 2001 but then decreasing again to 7.5% in 2003 (Figure 3).

Cases among non-whites increased from 18% in 1985 to 48% in 1999 and then decreased to 41% in 2003. In 2003, 16% of new cases were diagnosed among blacks and 22% among Hispanics (Figure 4).

Men who have sex with men (MSM) have historically been the single most important risk group for HIV infection in the Denver area. In 1985, 92.8% of all cases were reported for MSM or MSM who also injected drugs. Over time, this proportion decreased to 68.7% in 2002 and slightly increased to 70.4% in 2003. (Figure 5).

Since the beginning of the epidemic, there has been a gradual increase in age at first diagnosis of HIV/AIDS. In 1985, only 28.0% were 35 years or older; in 2003 58.5% of cases fell into that age category (Figure 6). The median age at diagnosis increased form 30 in 1985 to 36 in 2004 (data not shown).

Gonorrhea

In 2003 there were 1,292 cases of gonorrhea reported in the City and County of Denver. While during the previous 4 years the number of cases had steadily increased from 1,217 cases in 1999 to 1,738 cases in 2002, the number of reported cases in 2003 represented a 26% decrease compared to 2002 (Figure 7). The overall case rate dropped from 310 cases per 100,000 in 2002 to 230 per 100,000 in 2003. (Table 1) Regardless of this decline, case rates in 2003 continued to be higher among males, younger age groups, and minority populations. Among males the case rate was 240/100,000 compared to 220/100,000 among females (Table 2). Case rates were highest among 20-24 year-old males (766/100,000) (Table 3a) and 15-19 year-old females (1,365/100,000) (Table 3b). Case rates were higher among blacks (1069/100,000) than among Hispanics (174/100,000) and whites (103/100,000) (Table 4). The highest rates were observed among 25-29 year-old black males ((4,574/100,000 (Table 5e) and 20-24 year-old black females (5,539/100,0000) (Table 5f).

Chlamydia

A total of 3,677 chlamydia cases were reported in 2003, a 16% decrease compared to 2002 (Figure 8). As with gonorrhea, this decline occurred after 3 consecutive years of case increases since 1999: 2,847 cases in 1999, 3,190 cases in 2000, 4,164 cases in 2001, and 4,359 cases in 2002. The case rate dropped to 656/100,000 from 778/100,000 in 2002 (Table 1). As in previous years, the rate continued to be considerably higher among females (937/100,000) compared to males (380/100,000) (Table 2). The age groups at highest risk included 15-19 year-ld females (6,098/100,000), 20-24 year-old females (5,503/100,000) (Table 3b) and 20-24 year-old males (1,850/100,000) (Table 3a). Case rates were higher among blacks (1,837/100,000) than among Hispanics (902/100,000) and higher among Hispanics than among whites (251/100,000) (Table 4). The highest rates were found among 20-24 year-old black females (14,003/100,000), followed by 15-19 year-old black females (10,122/100,000), 25-29 year-old black females (7,826/100,000) (Table 5f), 15-19 year-old Hispanic females (6,821/100,000), and 20-24 year-old Hispanic females (5,843/100,000) (Table 5i).

Syphilis

In 2003, 30 cases of primary and secondary syphilis were reported, down from 45 cases in 2002, a 33.3% decrease. In addition, there were 12 cases of early latent syphilis in 2003, compared to 14 in 2002 (a 14.2% decrease). Recent trends in cases and case rates of all early syphilis (including primary, secondary, and early latent syphilis) are illustrated in Figure 9. As before, case rates of early syphilis were higher in men (13.8/100,000) than women (1.1/100,000) (Table 2), and highest in the 40-44 year-old male age group (59.0/100,000) (Table 3a). In 2003, rates were higher among blacks (15.1/100,000) than among Hispanics (5.0/100,000) and whites (8.3/100,000) (Table 4). Of the 42 cases of early syphilis reported in 2003, 21.4% were among blacks, 23.8%

among Hispanics, and 54.8% among whites compared to respectively 1.6%, 25.4%, and 67.7% in 2002.

Trends in the Denver Metro Health Clinic

In 2003, the Denver Metro Health Clinic (DMHC) logged 14,409 visits compared to 19,738 visits in 2002, representing a decline of 5,329 visits (26.9%). This decline was greater among women (31.4%) than among men (24.4%), greater among blacks (30.5%) than among Hispanics (27.7%) and whites (24.3%), and greater among 15-19 year olds (42.0%) than 20-24 year olds (26.7%) and 25-29 year-olds (20.7%). The decline was greatest among patients living in Jefferson County (55.9%). (Table 6)

For the year, a total of 1,469 cases of chlamydia were diagnosed at DMHC compared to 1,996 cases in 2002, a decrease of 26.4%. This decrease was stronger among women (from 717 to 452 cases, 36.9%) than among men (from 1,279 to 1,017 cases, 20.5%). Likewise, the number of diagnosed cases of gonorrhea declined from 1,202 in 2002 to 724 in 2003 (39.8%). This decrease was somewhat greater among men (from 918 to 542 cases, 40.9%) compared to women (from 284 to 182 cases, 35.9%). The number of cases of early syphilis (primary, secondary, and early latent) declined from 36 in 2002 to 13 in 2003 (76.9%) and newly diagnosed cases of HIV infection declined from 55 to 42 (23.6%).

Comments

In December 2003, Denver Public Health implemented a sliding fee scale ($0 to $65.00, median $15.00) for DMHC visits where before that time visits had been free of charge. The initiation of the co-pay was followed by an immediate, substantive, and sustained decrease in patient volume. Compared to 2002, the overall decrease in patient visits in 2003 was 26.9% and diagnosed STI decreased by similar or larger percentages: chlamydia 26.4%, gonorrhea 39.8%, syphilis 76.9%, and HIV 23.6%. An extensive analysis to be published elsewhere strongly suggests a causative relationship between the introduction of the clinic fee and the decrease in diagnosed STI.[2]

As the DMHC is the largest provider of STI diagnostic and treatment services in the City and County of Denver, it was to be expected that the decreases in STI diagnoses would have an impact on reported STIs in this jurisdiction. Indeed, in 2003, chlamydia and gonorrhea rates in the City and County of Denver declined by 16% and 26% respectively. Rates of syphilis and HIV decreased by 14.5% and 41% respectively. Despite these decreases, this report highlights the continued high incidence of gonorrhea and chlamydia among adolescents and young adults, especially among African Americans. To the extent that these risk groups are disproportionally affected by economic barriers including clinic co-payments, the STI control program faces the challenge to develop programmatic responses that aim to improve access to STI screening services (especially for gonorrhea and chlamydia) while operating within the current fiscal constraints. In this regard, the DPH STI Control Program has deployed a number of activities, including

waiver of co-payment for adolescents, voucher programs, and a no-cost option for urine screening. An out-right abandonment of the co-payment system is also being discussed.

The co-payment at DMHC has also likely affected the ability to diagnose early syphilis and HIV infection at this institution and could thus have had similar effects on syphilis and HIV trends in the City and County of Denver. However, the interpretation of the downward trend for HIV and syphilis are more difficult to interpret than the more clear-cut decreases in gonorrhea and chlamydia. First, the smaller numbers of cases result in more erratic year-to-year trends. Second, HIV testing is widely available outside of DPH and reduced numbers at this institution may thus less affect HIV reporting in the state.

As in other parts of the country, the HIV and syphilis epidemics in Denver have largely affected men who have sex with men (MSM). Because sexual orientation and gender of sex partners are not included on STI reports to the state health department, MSM-specific STI rates are not available in the City and County of Denver. Nonetheless, a previously published report from DMHC has demonstrated substantial increases in gonorrhea among MSM visiting this clinic between 1996 and 2001[3], echoing similar findings from other jurisdictions.[4, 5] The gonorrhea increase among MSM in Denver was followed in mid-2002 by an increase in early syphilis in this population which affected the overall early syphilis trend in Denver as shown in Figure 9 of this report.

The resurgence of gonorrhea and syphilis and associated risk behaviors among MSM has led to fears that the incidence of HIV might also increase in this population. However, while STI increases among MSM have been ongoing since 1996, a concomitant increase in HIV incidence has not yet been substantiated.[6] In addition, while increases in HIV/AIDS cases have been reported for a number of jurisdictions, such increases could easily be the result of more aggressive HIV testing programs as strongly supported by CDC's recent advancing HIV Prevention Initiative.[7]

References

1. U.S. Census Bureau. Available at: www.census.gov/popest/archives. Accessed September 28, 2004.
2. Rietmeijer C, Alfonsi G, Douglas J, Lloyd L, Richardson D, Judson F. Trends in clinic visits and diagnosed C. trachomatis and N. gonorrhoeae infections following the introduction of a co-payment in an STI clinic. *Sex Transm Dis.* 2004;In Press.
3. Rietmeijer CA, Patnaik JL, Judson FN, Douglas JM, Jr. Increases in gonorrhea and sexual risk behaviors among men who have sex with men: a 12-year trend analysis at the Denver Metro Health Clinic. *Sex Transm Dis.* Jul 2003;30(7):562-567.
4. CDC. Resurgent bacterial sexually transmitted diseases among men who have sex with men - King County, Washington 1997-1999. *MMWR.* 1999;48(35):773-777.
5. CDC. Increases in unsafe sex and rectal gonorrhea among men who have sex with men - San Francisco, CA, 1994-1997. *MMWR.* 1999;48(3):45-48.
6. CDC. Trends in primary and secondary syphilis and HIV infections in men who have sex with men--San Francisco and Los Angeles, California, 1998-2002. *MMWR Morb Mortal Wkly Rep.* Jul 9 2004;53(26):575-578.
7. CDC. Advancing HIV prevention: new strategies for a changing epidemic - United States, 2003. *MMWR - Morbidity & Mortality Weekly Report.* 2003;52(15):329-332.