Massachusetts STD, HIV/AIDS and Viral Hepatitis Surveillance Report: 2009

Massachusetts
Department of Public Health
Bureau of Infectious Disease Prevention, Response and Services
Division of STD Prevention and HIV/AIDS Surveillance
Division of Epidemiology and Immunization

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Executive Summary 2009

The Massachusetts STD, HIV/AIDS, and Viral Hepatitis Surveillance Report, an annual product of the MDPH Bureau of Infectious Disease Prevention, Response and Services, provides an occasion to reflect upon trends in these diseases in the Commonwealth.

In 2009, the following trends were observed for the three most commonly reported bacterial STDs:

- Infectious syphilis (primary, secondary, and early latent syphilis) incidence rates continued at higher than previous levels – a trend which began in the last quarter of 2007 and continued through 2008 and 2009. Although infectious syphilis remains relatively rare overall, infection has reached epidemic proportions within certain populations (primarily men who have sex with men).
- Gonorrhea incidence remained stable or decreased slightly. Gonococcal disease incidence remains disproportionately higher in non-white populations in major urban centers such as Boston and Springfield.
- Incident chlamydia infection continues to increase; the more screening, the more infections found. Questions remain as to whether increased case reporting is reflective of increased electronic laboratory reporting and/or more access to screening with more sensitive laboratory tests. Moreover, recent research has revealed gaps in our understanding of what proportion of chlamydia cases will progress to complications, such as pelvic inflammatory disease, ectopic pregnancy, infertility, epididymitis and chronic pelvic pain.[1]

Regarding HIV/AIDS, notable trends in 2008 included the following:

- Newly diagnosed infections and deaths continued to decline, and no new cases of perinatal HIV infection were reported, but the actual number of persons known to be living with HIV/AIDS in Massachusetts increased to over 18,000 in 2008 because survival continues to improve.
- Similar to other sexually transmitted infections, blacks and Hispanics have higher rates of HIV infection.
- Male with male sex remains the single most frequent risk factor reported in newly diagnosed HIV infection cases.

With regard to viral hepatitis, we observed the following trends in 2009:

- Confirmed cases of chronic hepatitis B continued to decline, a trend likely related to the impact of childhood hepatitis B vaccination and school entry requirements phased in between 2002-05.
- Previous analyses had suggested a steady decline in the number of newly diagnosed hepatitis C cases reported in Massachusetts since 2004. Increased numbers of cases were reported from 2006 through 2008, in part due to enhanced surveillance methods. At approximately 63 cases reported per 100,000 population in 2009, hepatitis C remains one of the most frequently reported infections.

[1] Gottlieb et al. Summary: the natural history and immunobiology of *Chlamydia trachomatis* genital infection and implications for chlamydia control. *Journal of Infectious Diseases* 201:S190-204, 2010.

Highlighted on pages 2-21 are trends within populations disproportionally affected by STDs, HIV/AIDS, and viral hepatitis. Health disparities exist across the nation, Massachusetts is no exception, and STDs, HIV/AIDS, and viral hepatitis disproportionally affect women, minorities (both sexual and racial/ethnic minorities), and youth and young adults, which is why we highlight specific disease trends within these populations. Massachusetts data are reflective of a number of national trends. Where we differ is that surveillance has revealed some increasing gaps among certain racial/ethnic and sexual minorities in reported STDs. It remains to be determined whether this reflects improved access to care leading to more screening and identification of asymptomatic infections, or a true increase in infection within certain minority populations. Improvement in reporting systems, which provide more complete information on other possible risk and protective associations, are critical for enhancing our understanding of disparities in reportable diseases.

The focus of this annual surveillance report is upon diseases reportable to the state, not upon health. However, it should be recognized that sexually transmitted infections, including HIV/AIDS and viral hepatitis, occupying a place at the nexus of individual human behavior, community risk, efficacy of clinical diagnosis and treatment, and public health prevention and control. The intended audience for this annual surveillance report includes the clinicians and the laboratory professionals who report these cases, as well as the community organizations, local public health departments, policymakers, and researchers who are interested in the sexual health and well-being of residents of the Commonwealth. We welcome feedback. We invite you to begin by reviewing these disease statistics, but end with action toward health promotion.

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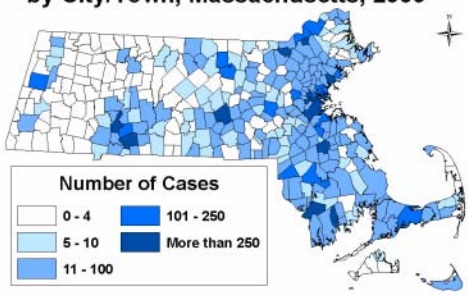
*Unless otherwise noted, all incidence calculations represent crude rates. The source for all denominator data is the U.S. Census, 2000. All data reported are current as of October 2010. All information on STD cases reflect year of report. *Due to prolonged reporting delays related to transitioning from code-based to name-based reporting of HIV cases, all HIV/AIDS data reflect HIV diagnosed through 2008.*

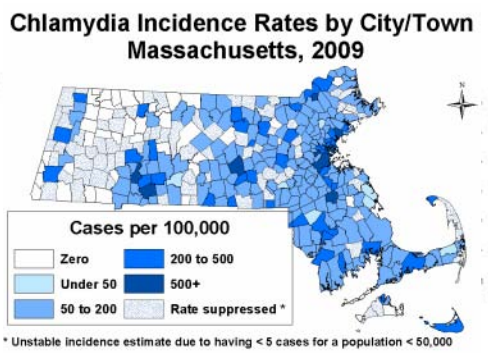
CHLAMYDIA

There were 18,811 reported chlamydia infections in Massachusetts in 2009. Chlamydia infection is widely distributed in Massachusetts.

The distribution of cases throughout the state in 2008 was similar to 2009.

Chlamydia case and incidence data by city and town are available online at www.mass.gov/dph/cdc/std.





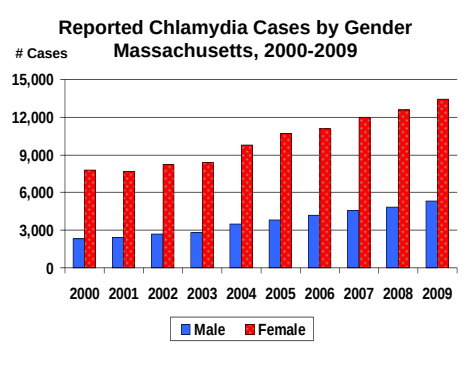
The highest incidence rates of reported chlamydia infection are in large urban areas around Boston and Springfield.

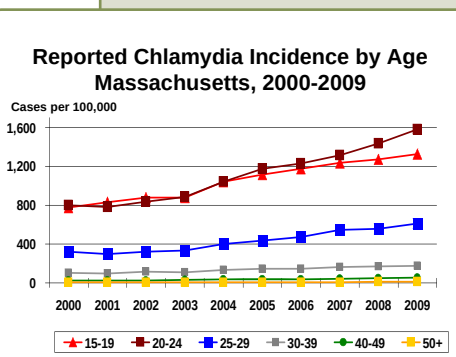
Throughout the state, the majority of cities and towns fall into the 50-200 cases per 100,000 population range.

The total number of reported chlamydia infection cases in Massachusetts has increased by 86% in the past ten years, from 10,113 in 2000 to 18,811 in 2009.

There was an 8% increase in the number of cases reported in 2009 compared to 2008.

Of the total reported cases in 2009, 5,318 were among men and 13,456 were among women. The greater number of chlamydia cases among women is a combined effect of increased incidence and a higher level of screening as compared to men.

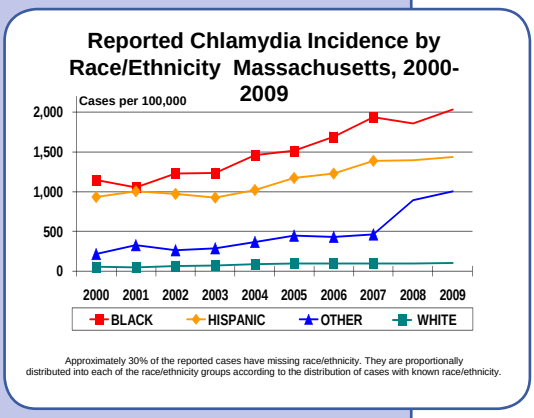




In 2009, the incidence of reported chlamydia infection in Massachusetts in adolescents (ages 15-19) and young adults (ages 20-24) exceeded 1,300 and 1,500 per 100,000, respectively. The overall Massachusetts chlamydia infection rate is 296 per 100,000.

Historically, communities of color have been disproportionately affected by STDs. In 2009, compared to whites, the incidence rates of reported chlamydia infection in Massachusetts was 19 times higher in blacks and 14 times higher in Hispanics. Disparities in the rate of chlamydia infection in Massachusetts have grown in recent years.

In 2008, changes in electronic reporting of laboratory results indicating STD cases to MDPH resulted in an increased proportion of STD cases being categorized as "other" race. Thus, as of 2008, increases in the rate of STD infections in the "other" category may be related to electronic reporting rather than increase in incidence.



INFERTILITY PREVENTION PROJECT

Since 1997, the Division of STD Prevention has participated in a Centers for Disease Control and Prevention (CDC)-funded Infertility Prevention Project. The goal of this project is to reduce infertility and other health consequences of chlamydia infection through increased screening and treatment of women who are at higher risk for infection.

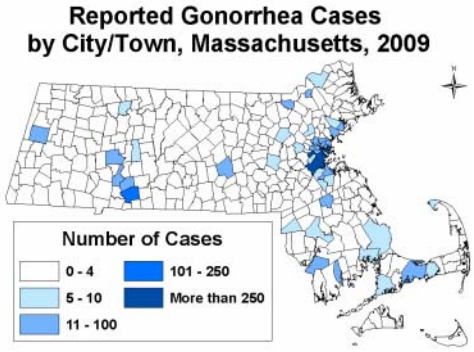
In 2009, as part of the Infertility Prevention Project, 15,561 specimens were tested for chlamydia infection. Test results from participating sites have yielded the following:

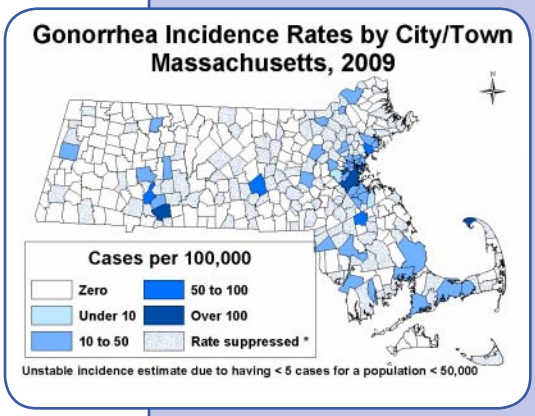
PERCENT POSITIVE FOR CHLAMYDIA INFECTION			
SITE TYPE (number tested)		FEMALES	MALES
School-Based Health Centers	(n = 1,019)	6%	7%
Correctional Facilities	(n = 3,328)	6 %	8%
Family Planning Clinics	(n = 7,829)	6%	15%
STD Clinics	(n = 3,385)	5%	6%

GONORRHEA

The overall number of reported cases of gonorrhea in Massachusetts in 2009 was 1,918 cases, an 8% decrease from the previous year. Although gonorrhea is widely distributed in Massachusetts, cases are more prevalent in urban locations.

Gonorrhea case and incidence data by city and town are available online at www.mass.gov/dph/cdc/std

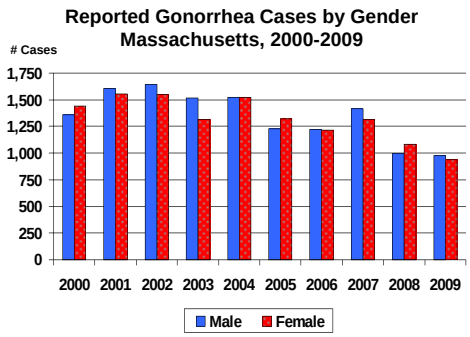




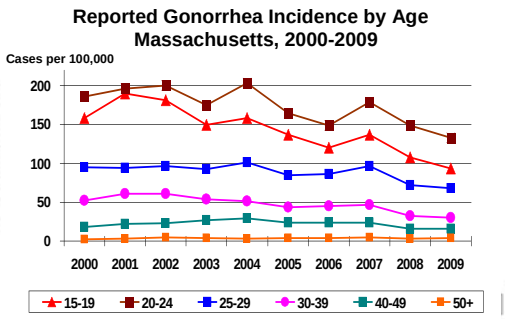
The highest incidence rates of reported gonorrhea are clustered in the large urban areas around Boston and Springfield.

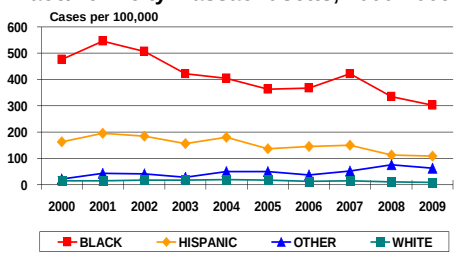
The highest concentration of cases is in the eastern part of the state.

Massachusetts experienced an increase in reported gonorrhea cases from 1998–2002, followed by a decline from 2003–2006. After a 10% increase from 2006 to 2007, there was a 24% decrease in gonorrhea cases from 2007 to 2008 and an 8% decrease from 2008 to 2009. In 2009 the incidence rates in men and in women were essentially the same.



The incidence of gonorrhea in Massachusetts is highest among young adults (ages 20-24), followed by adolescents (ages 15-19). Compared to the state-wide incidence rate (30.2 per 100,000) of gonorrhea, the incidence rate was 3.1 times higher for adolescents and 4.4 times higher for young adults.





Approximately 30% of the reported cases have missing race/ethnicity. They are proportionally distributed into each of the race/ethnicity groups according to the distribution of cases with known race/ethnicity.

In 2009, in Massachusetts, the reported gonorrhea incidence rate was 31 times higher in blacks and 11 times higher in Hispanics compared to whites.

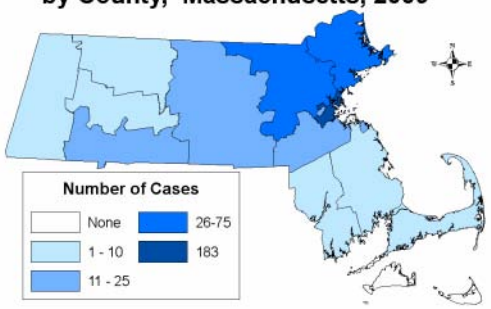
Racial and ethnic disparities in gonorrhea rates in Massachusetts exceed the national experience, where the incidence in gonorrhea is 20 times higher in blacks, and two times higher in Hispanics, when compared to whites. (Source: CDC. *Sexually Transmitted Disease Surveillance, 2008.* Atlanta, GA: U.S. Department of Health and Human Services, November 2009.)

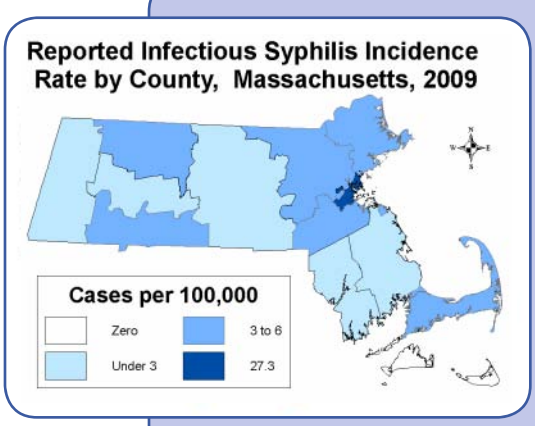
In 2008, changes in electronic reporting of laboratory results indicating STD cases to MDPH resulted in an increased proportion of STD cases being categorized as “other” race. Thus, as of 2008, increases in the rate of STD infections in the “other” category may be related to electronic reporting rather than increase in incidence.

SYPHILIS

In 2009, there were 377 reported infectious syphilis cases (primary, secondary, and early latent) in Massachusetts, a 2% increase from 2008. Although infectious syphilis cases have been reported in almost all counties, 49% of cases (183) were reported in Suffolk County.

Infectious syphilis case and incidence data by city and town are available online at www.mass.gov/dph/cdc/std

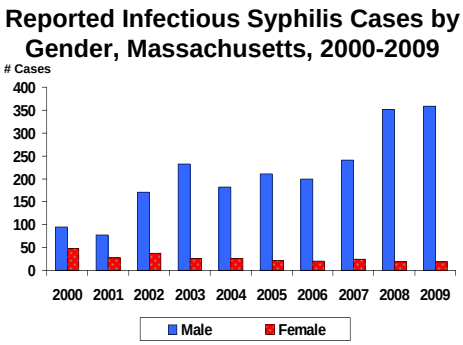




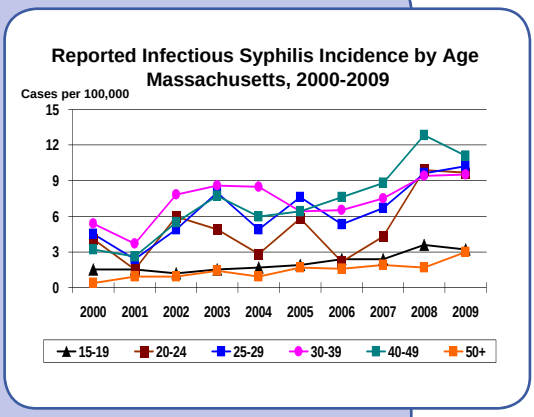
In 2009, five counties have a syphilis incidence rate of less than three cases per 100,000 population. Four counties have a rate between 3 and 6 cases per 100,000 population. Dukes and Nantucket counties have a rate of zero.

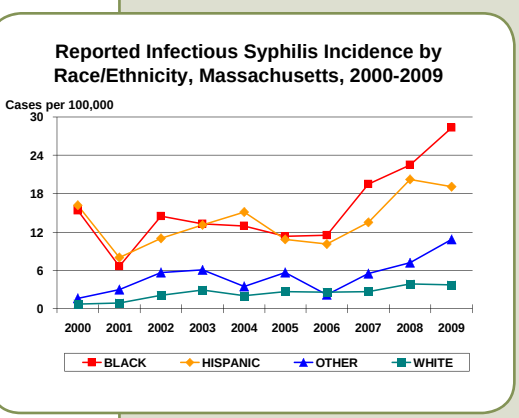
Suffolk county has the highest syphilis rate at 27.3 cases per 100,000 population.

In Massachusetts, the male-to-female ratio of infectious syphilis cases changed from 2.0 to 1 in 2000, to 18.8 to 1 in 2009. This shift reflects an increase in the number of infectious syphilis cases diagnosed in men who have sex with men. This trend has also been observed in other regions of the United States.



In contrast to chlamydia infection and gonorrhea, which tend to occur more frequently among adolescents and young adults, infectious syphilis is more commonly reported in people over age twenty-five years.





In 2009, in Massachusetts, the reported infectious syphilis incidence rate was 7.6 times higher in blacks and 5.2 times higher in Hispanics compared to whites.

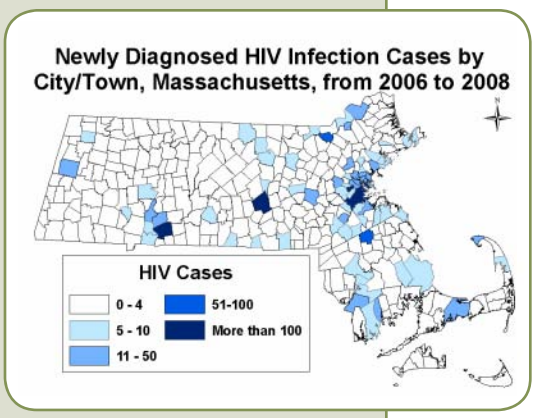
SYPHILIS IN MEN WHO HAVE SEX WITH MEN (MSM)

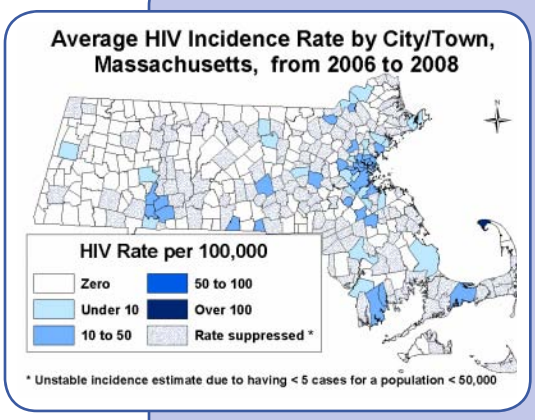
In Massachusetts, MSM represent a higher-risk group for infectious syphilis. Of the 377 reported infectious syphilis cases in 2009, 293 (78%) were in MSM. Forty-one percent (119/293) of the MSM with infectious syphilis disclosed that they were co-infected with HIV. Fourty-eight percent (142/293) of the infectious syphilis cases in MSM were reported in Suffolk county.

Transmission of syphilis can occur between men through unprotected oral and anal sex. Additional information and resources regarding MSM and STDs is available online at www.mastdinfo.org.

Of the 351 cities and towns in Massachusetts, 195 (56%) had at least one, newly diagnosed HIV infection reported from 2006-2008. The majority of newly identified HIV infections were reported in large urban areas.

HIV infection case and incidence data by city and town are available online at www.mass.gov/dph/cdc/aids. Additional information is available through the MDPH HIV/AIDS Epidemiologic Profile at the same weblink.



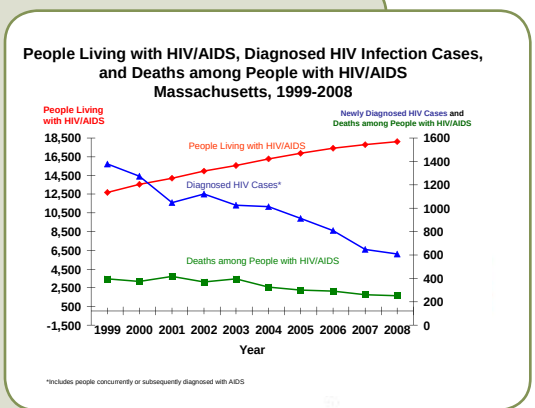


Of those cities and towns where HIV infections were diagnosed between 2006-2008, the majority had rates of under 10 per 100,000 population.

Provincetown had the highest diagnosis of HIV infection rate at greater than 100 per 100,000 population.

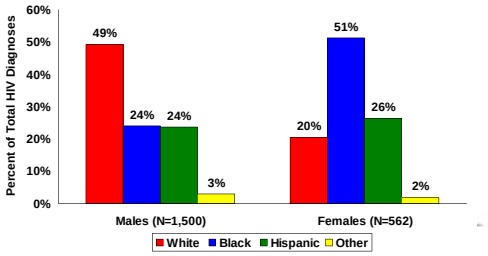
In 2008, there were 609 reported, newly diagnosed, HIV infections and 254 deaths among people with HIV/AIDS in Massachusetts.

Newly diagnosed HIV infections and deaths among people with HIV/AIDS continue to decline each year, but because newly diagnosed infections continue to exceed the number of deaths annually, the number of people known to be living with HIV/AIDS in Massachusetts increased from 12,675 on December 31,1999 to 18,136 on December 31, 2008.



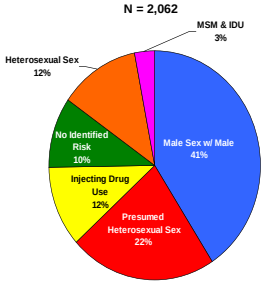
From 2006-2008, of the 2,062 newly diagnosed HIV infections in Massachusetts, 1,500 (73%) were in men and 562 (27%) were in women. Most of the newly diagnosed HIV infections in men were in white men, whereas the majority of newly diagnosed HIV infections in women were in black women.

Percent Distribution of Newly Diagnosed HIV Infection by Gender and Race/Ethnicity Massachusetts, 2006-2008



Among cases diagnosed 2006-2008, there was only one case with missing race/ethnicity.

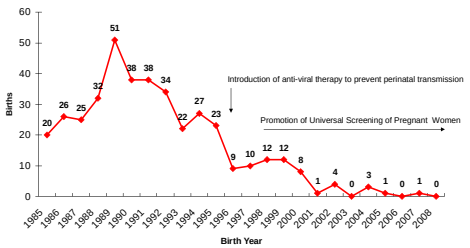
Newly Diagnosed HIV Infection by Exposure Mode Massachusetts, 2006-2008
N = 2,062



From 2006-2008, the primary exposure modes reported among newly diagnosed cases of HIV infection in Massachusetts were male with male sex (14%), presumed heterosexual sex (22%), injection drug use (12%) and heterosexual sex (12%).

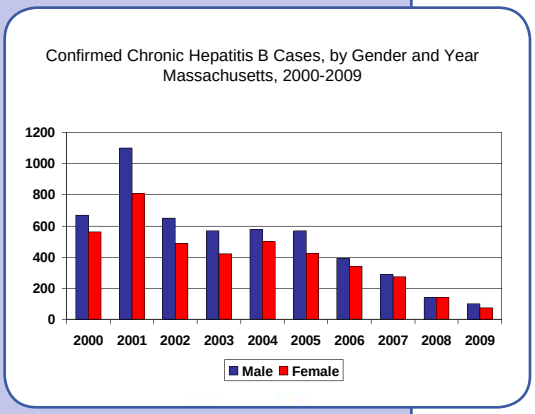
Since the mid-1990's, Massachusetts has experienced a dramatic reduction in mother-to-child transmission of HIV infection, with no HIV-infected newborns identified in 2006 and only one in 2007 and none again in 2008. This success is attributed to improvements in HIV screening during pregnancy and the treatment of HIV-infected women with anti-retroviral therapy.

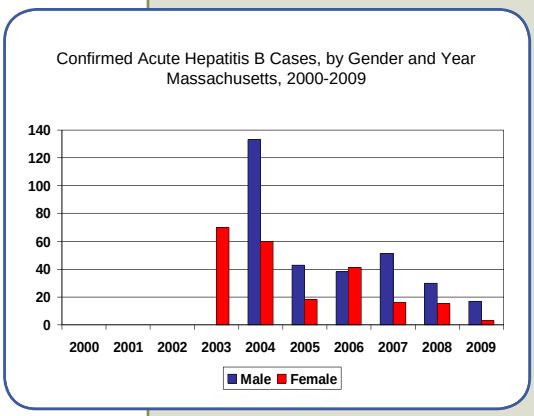
Identified Mother-to-Child Transmission of HIV Infection By Year of Birth, Massachusetts, 1985-2008



VIRAL HEPATITIS

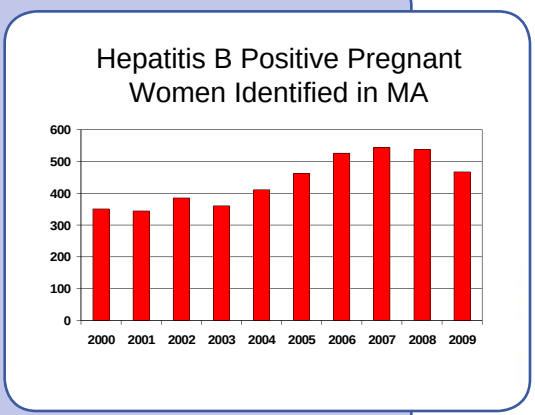
The number of confirmed cases of chronic hepatitis B reported in Massachusetts has been declining since 2005. In 2009, 175 cases were reported. However, most of the hepatitis B cases reported to MDPH for 2009 have yet to be fully processed, so this number is likely to increase. Even so, there is an overall downward trend in both confirmed and probable cases of hepatitis B, due in large part to increasing levels of vaccine-induced immunity against hepatitis B in groups at risk of infection, especially as a result of immunization of children against hepatitis B over the past 20 years.



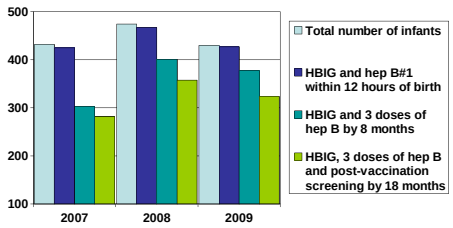


Twenty confirmed acute cases of hepatitis B were identified in 2009. Confirmation of acute infection requires additional information, including specific laboratory test result and symptom information.

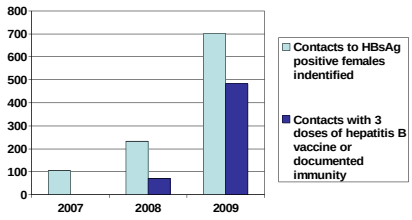
As a result of enhanced surveillance, more pregnant females are identified prior to giving birth, allowing case management to begin early and prevent transmission of the virus to infants. Since 2007, the program has partnered with local public health to increase identification of household and sexual contacts to hepatitis B positive pregnant women in an effort to reduce the risk of transmission of hepatitis.



Infants Born to Hepatitis B Positive Females in MA

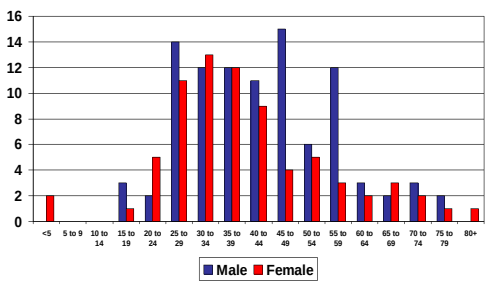


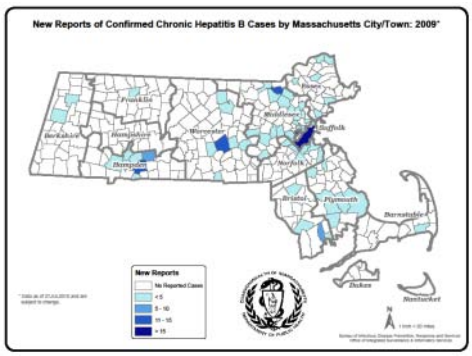
Household and Sexual Contacts of Hepatitis B Positive Pregnant Females in Massachusetts



Due to enhanced surveillance focused on identifying pregnant women who are hepatitis B carriers, a large number of the hepatitis B cases identified and reported in 2009 were in women between the ages of 25 and 44 years. While efforts are made in identifying infection among the household and sexual contacts of these women, there are many barriers to getting those partners tested for evidence of infection.

Confirmed Chronic Hepatitis B Cases Reported in 2009 by Five Year Age Groups and Gender (N=172, 3 missing age)



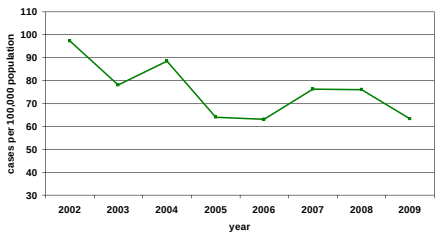


Most newly diagnosed cases of chronic hepatitis B are in people living in urban, areas such as Boston, Worcester, and Springfield.

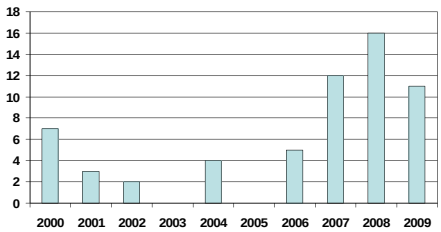
VIRAL HEPATITIS

Previous analyses had suggested a steady decline in the number of newly diagnosed hepatitis C cases reported in Massachusetts since 2004. Improvement in surveillance, however, has been associated with an increase in cases identified from 2006 through 2008. Hepatitis C remains one of the most frequently reported diseases in Massachusetts.

Rate of Newly Diagnosed, Confirmed, HCV Infection Cases by Year



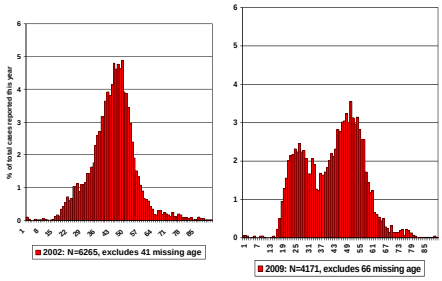
Number of Confirmed Acute Hepatitis C Cases by Year



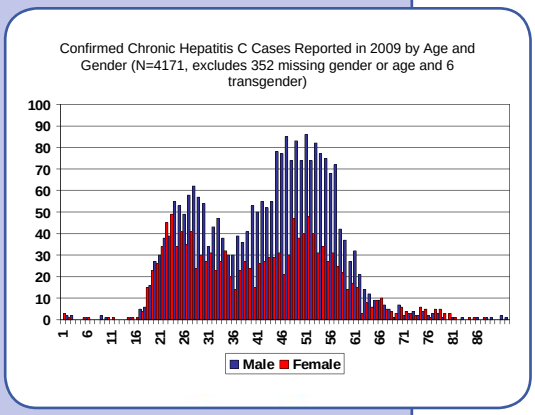
Improvements in surveillance have also allowed for better identification of acute cases of hepatitis C. Eleven acute cases were confirmed in 2009. Identification of acute cases requires information indicating negative hepatitis A and B test results, elevated serum liver enzyme tests and presence of symptoms. Thirty-eight cases of hepatitis C reported in 2009 almost met the acute case definition, but hepatitis A or B laboratory results were not available to rule out other viral hepatitis. Acute cases of hepatitis C are reported in CDC's annual summary of notifiable diseases, while chronic hepatitis C is not.

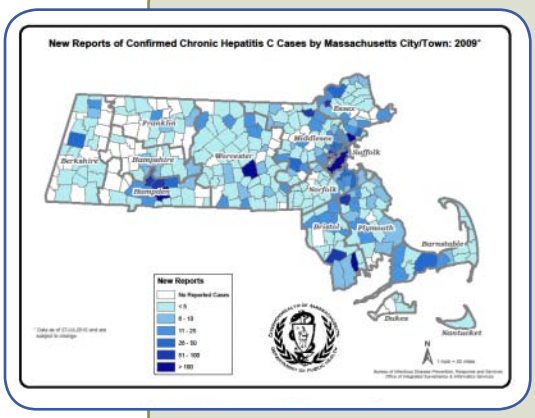
The age distribution of hepatitis C cases reported in Massachusetts has changed between 2002 and 2009. In 2002 the reported cases were distributed in a bell shaped curve with the peak between the ages of 44 and 50 years. In 2009, the reported cases were distributed in a bi-modal curve with one peak at 27 years of age and a second at 51 years.

Hepatitis C Case Distribution by Age: 2002 Versus 2009



More hepatitis C cases are identified in males than in females in almost all age groups, however, the male to female ratio is closer to one in the 15 to 30 year age group than in the 40 to 60 year age group.



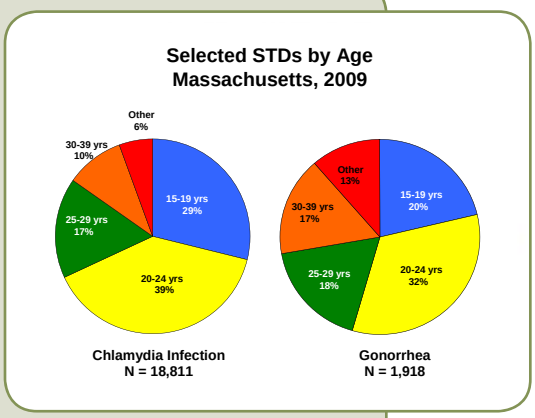


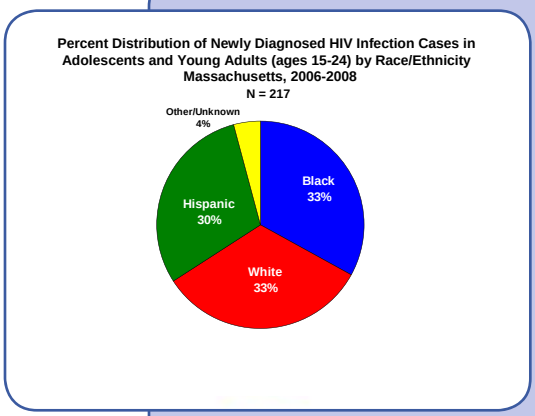
Cases of hepatitis C are reported in communities across Massachusetts, with more cases being identified in people living the urban areas of Boston, Worcester, and Springfield.

STDs IN ADOLESCENTS AND YOUNG ADULTS

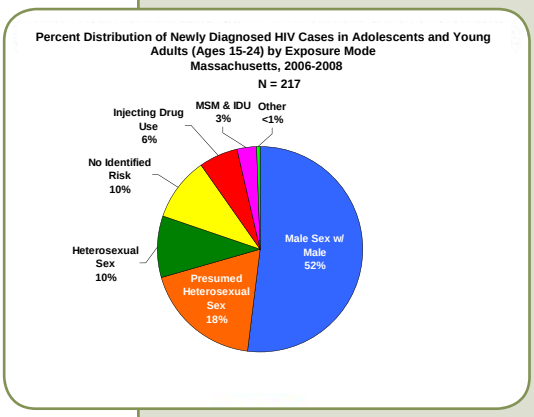
Compared to older adults, sexually active adolescents and young adults are at higher risk for acquiring STDs. This higher risk is due to a combination of behavioral, biological and cultural factors. The higher prevalence of STDs among adolescents also reflects multiple barriers to quality STD prevention services, including lack of insurance or other ability to pay, lack of transportation, discomfort with facilities and services designed for adults, and concerns about confidentiality. (Source: CDC. Sexually Transmitted Disease Surveillance, 2008. Atlanta, GA: U.S. Department of Health and Human Services, November 2009.)

In 2009, 68% of reported chlamydia infection cases, and 52% of reported gonorrhea cases, were in adolescents and young adults (ages 15-24).





From 2006-2008, reported, newly diagnosed HIV infections among adolescents and young adults in Massachusetts had the following racial/ethnic distribution: black (33%), white (33%), Hispanic (30%), and other (4%).



From 2006-2008, in Massachusetts, the primary modes of exposure for reported, newly diagnosed HIV infection cases in adolescents and young adults were male with male sex (52%), presumed heterosexual sex (18%), heterosexual sex (10%), and injecting drug use (6%).

The Youth Risk Behavior Survey (YRBS) is performed biennially on a national sample of 9th-12th grade students. A review of data provided from the Massachusetts YRBS over the past two decades indicates that three markers of risky youth sexual behavior (ever having had sex, first sex before age 13 years, and 4 or more lifetime sexual partners) reached all-time lows in 2003 (respectively 41%, 5%, and 10%), and have subsequently shown slight increases of potential concern (up to 46%, 5%, and 13% in 2009). In contrast, two markers of protective sexual behaviors, use of condoms at last sex and being taught about HIV/AIDS in school, have shown declines from previous gains (respectively 58% in 2009 down from 65% in 2005, and 87% in 2009 down from 94% in 2001).

SEXUAL BEHAVIORS AMONG MASSACHUSETTS HIGH SCHOOL STUDENTS BY GENDER, 2009

	AFFIRMATIVE RESPONSES	
	MALES	FEMALES
Respondents: All students		
Lifetime sexual intercourse	48.0%	44.6%
Sexual intercourse before age 13	8.0%	3.0%
Four or more lifetime sexual partners	15.2%	10.6%
Respondents: Students having sexual intercourse in past three months		
Condom use at last sexual intercourse	65.7%	50.6%
Substance use at last sexual intercourse	27.6%	20.0%
Taught in school about AIDS or HIV	87.2%	87.6%

Source: Youth Risk Behavior Surveillance System, MMWR 2010 59(No.SS-5)

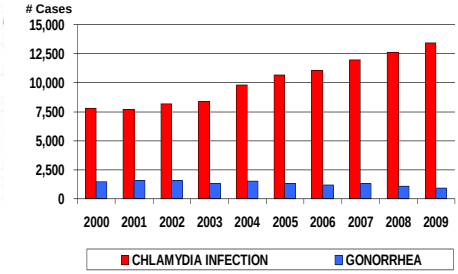
WOMEN

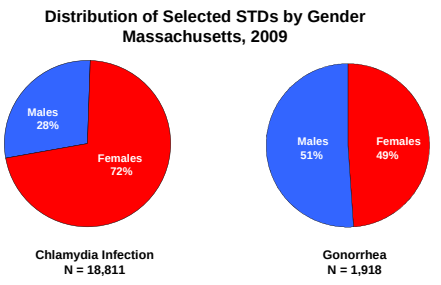
STDs AND WOMEN

Complications of STDs are greater and more frequent among women than men due to two primary factors. First, biologically, women are more likely than men to become infected if exposed to an STD. Second, STDs are more likely to remain undetected in women, resulting in delayed diagnosis and treatment, and ultimately more untreated infections leading to complications. (Source: The Hidden Epidemic, Institute of Medicine, National Academy Press, Washington, D.C., 1997.)

Untreated STDs in women can lead to serious health consequences, including pelvic inflammatorydisease, infertility, ectopic pregnancy and cervical cancer.

Unlike gonorrhea, reported chlamydia infection in Massachusetts has been increasing in the past ten years, in part due to increased adoption of recommended routine screening by healthcare providers.

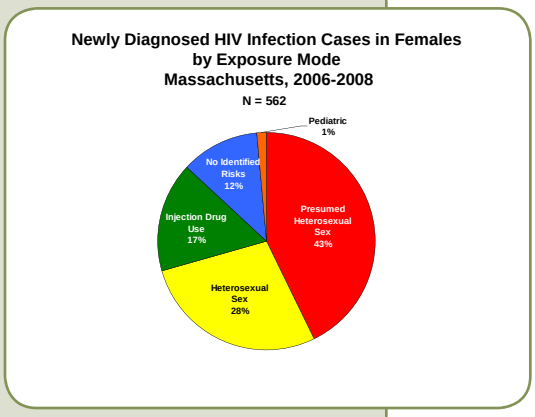


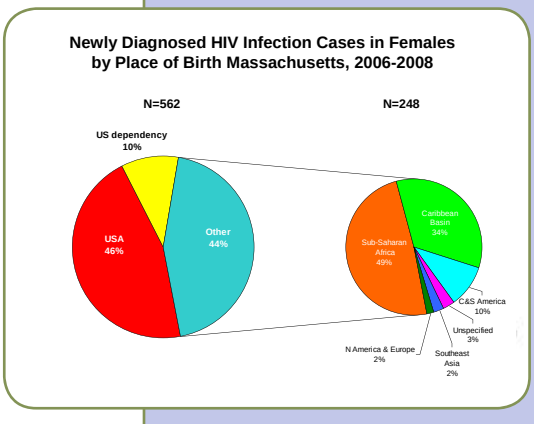


While gonorrhea cases are almost equally distributed between women and men, women are over-represented among chlamydia cases by a ratio of 2.6 to 1.

The greater number of chlamydia cases in women is partly attributable to increased screening in women as compared to men.

From 2006-2008, the exposure modes for the 562 newly diagnosed HIV cases reported in women in Massachusetts was attributed to presumed heterosexual sex (43%), heterosexual sex (28%), injecting drug use (17%), and pediatric exposure (1%).





From 2006-2008, 44% of women reported with diagnosed HIV infection were born outside of the U.S. For men diagnosed from 2006-2008, only 25% were born outside of the U.S.

Eighty-two percent of women diagnosed with HIV infection, who were born outside of the U.S., were born in regions of the world where heterosexual sex is the predominant mode of transmission of HIV infection.

HIGH-RISK HUMAN PAPILLOMAVIRUS TYPE INFECTION PREVALENCE

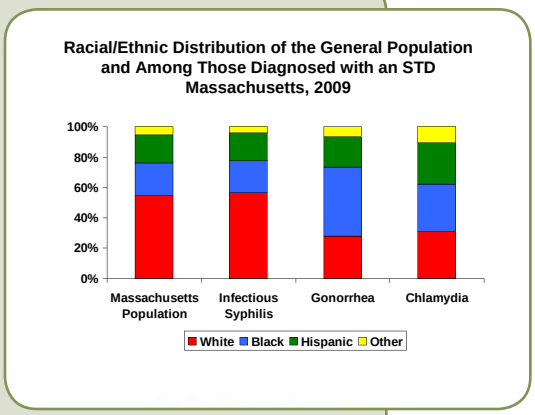
In a study of 2,048 Massachusetts women aged 18-65 years attending STD, family planning, and primary care clinics for routine cervical screening between 2003-2005, overall age- and clinic- type adjusted prevalence of high-risk human papillomavirus (HPV)* was 19%. Prevalence was highest among women 14 –19 years of age. (Source: Datta et al., HPV infection and cervical cytology in women screened for cervical cancer in the U.S., 2003-2005. Annals of Internal Medicine, 148:493-500, 2008.)

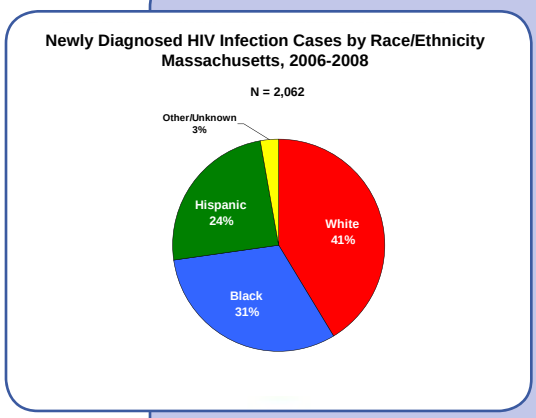
*High-risk HPV types were 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, and 68.

RACIAL/ETHNIC DISPARITIES IN STD RATES

As stated in the 2008 Sexually Transmitted Disease Surveillance Report from the Centers for Disease Control and Prevention (CDC), data show higher rates of reported STDs among some minority racial or ethnic groups when compared with rates among whites. Race and ethnicity in the United States are risk markers that correlate with other more fundamental determinants of health status such as poverty, access to quality health care, health care seeking behavior, illicit drug use, and living in communities with high prevalence of STDs. Acknowledging the disparity in STD rates by race or ethnicity is one of the first steps in empowering affected communities to organize and focus on this problem. (Source: CDC. Sexually Transmitted Disease Surveillance, 2008 Atlanta, GA: U.S. Department of Health and Human Services; November 2009. Available at www.cdc.gov/std/stats08/.

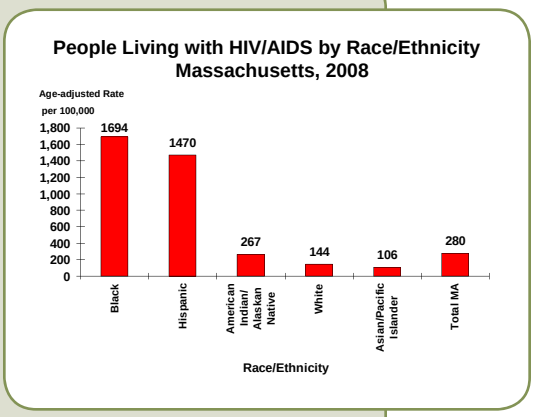
Although communities of color represent only 18% of the total Massachusetts population, these communities bear a disproportionate burden of STDs. In 2009, 45% of the reported infectious syphilis cases, 74% of the reported gonorrhea cases, and 69% of the reported chlamydia infection cases occurred in individuals from communities of color.





From 2006-2008, the racial/ethnic distribution of reported, newly diagnosed HIV infections in Massachusetts was as follows: white (41%), black (31%), Hispanic (24%), and other/unknown (3%).

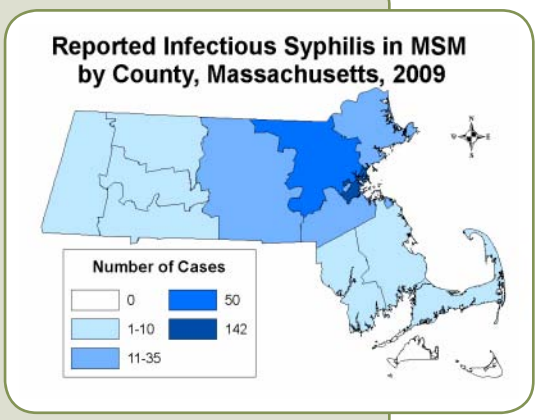
In Massachusetts, in 2008, the prevalence rate of people living with HIV/AIDS was highest among blacks and Hispanics. As compared to whites, the rate of people living with HIV/AIDS was 11.8 times higher among blacks and 10.2 times higher among Hispanics.

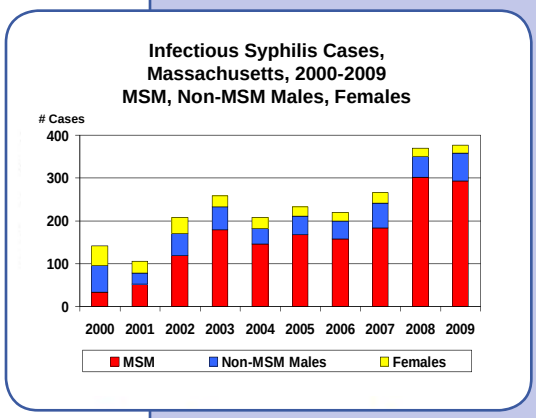


STDs IN MEN WHO HAVE SEX WITH MEN

Data from several U.S. cities suggest that an increasing number of men who have sex with men (MSM) are acquiring STDs. Data also suggest that an increasing number of MSM are engaging in sexual behaviors that palce them at risk for STDs and HIV infection. Because STDs and the behaviors associated with them increase the likelihood of acquiring and transmitting HIV infections, the rise in STDs among MSM may be associated with an increase in HIV incidence among MSM. (Source: CDC. Sexually Transmitted Disease Surveillance, 2008. Atlanta, GA: U.S. Department of Health and Human Services, November 2006.)

In 2009, there were 293 infectious syphilis cases in men who have sex with men (MSM) reported in Massachusetts, of which, 142 (48%) were in Suffolk County.

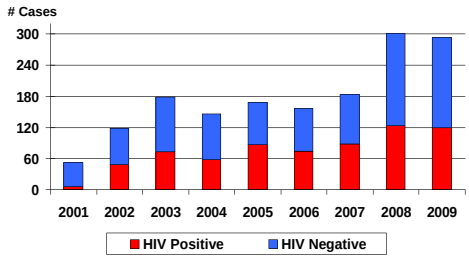




In the past eight years, MSM accounted for the majority of infectious syphilis cases in Massachusetts, ranging from 50% in 2001 to 78% in 2009.

In 2009, the racial/ethnic breakdown of reported infectious syphilis cases in MSM was white (59%), black (16%), Hispanic (14%), other (4%), and unknown (6%). The median age of the cases was 39 years, one year older than that of the year before.

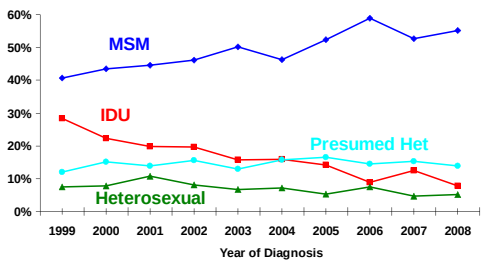
Infectious Syphilis Cases in MSM by HIV Status
Massachusetts, 2001-2009



In 2009, 41% of the reported infectious syphilis cases in MSM occurred in HIV-positive individuals.

Among males, the proportion of reported HIV infection cases with male to male sex as the reported mode of exposure increased from 40% in 1999 to a high of 58% in 2006, declined slightly to 55% in 2007 and then increased to 56% in 2008.

Percentage Distribution of Newly Diagnosed HIV Infection Cases in Males by Exposure Mode
Massachusetts, 1999-2008



Summary of Strengths and Limitations of Data

	HIV/AIDS Case Data	STD Case Data	Viral Hepatitis Case Data
Description	• Collected by MDPH Bureau of Infectious Disease Prevention, Response and Services, HIV/AIDS Surveillance Program. • Reportable statewide. • All licensed healthcare providers are required by law to report. • AIDS and HIV infection cases are reported by name, but HIV cases included in this report were reported by a code extracted from identifiers from 1999 through 2006.	• Collected by MDPH Bureau of Infectious Disease Prevention, Response and Services, Division of STD Prevention. • Reportable statewide. • All healthcare providers are required by law to report nine STDs, including syphilis, gonorrhea, chlamydia infection, and lymphoma granuloma venereum	• Collected by MDPH Bureau of Infectious Disease Prevention, Response and Services, Office of Integrated Surveillance and Informatics Services. • Reportable statewide. • All laboratories and healthcare providers are required to report laboratory indicators of hepatitis B and C infection.
Strengths	• Statewide reporting, population-based. • Risk information is available. • Completeness of reporting is high. • Comparable with other states.	• Statewide reporting, population-based. • Comparable with other states. • Enhanced reporting of positive laboratory results.	• Statewide reporting, population-based. • Enhanced reporting of acute cases, hepatitis B cases in child-bearing aged women and children and hepatitis C cases among youth ages 15-25.
Limitations	• Under-reporting (10%-15%) hampers interpretation of HIV/AIDS case data. • Not all HIV/AIDS cases are reported at time of diagnosis (reporting lag). • HIV data may be incomplete because some HIV-infected people may not have been tested or have not entered care.	• Under-reporting of up to 10% of STD cases. • Race/ethnicity is missing in 31% of gonorrhea cases and 37% of Chlamydia infection cases. • Reports are not received on those not seeking care or screening. • Bias is introduced for some STDs, such as Chlamydia infection, where screening of asymptomatic persons occurs more frequently in women than in men.	• Race data are missing in 56% of confirmed acute hepatitis B and 80% of confirmed hepatitis C cases; ethnicity data are missing in 58% of acute hepatitis B and 75% of confirmed hepatitis C cases. • Risk history data is missing in a majority of reported hepatitis B and C cases. • Reports not received on those not seeking care.

I. HIV/AIDS Exposure Mode Definitions

The HIV/AIDS exposure mode indicates the most probable risk behavior associated with HIV infection. Assignment of exposure mode is done in accordance with Centers for Disease Control and Prevention guidelines when multiple exposure modes are reported. Following is a description of the exposure mode categories:

- **MSM (Male to Male Sex)**: Includes men who report sexual contact with other men, and men who report sexual contact with both men and women.
- **IDU (Injection Drug Use)**: Cases in persons who report injection drug use.
- **MSM/IDU**: Cases in men who report both injection drug use and sexual contact with other men.
- **Heterosexual Sex**: Cases in persons who report specific heterosexual sex with a person with, or at increased risk for, HIV infection (e.g. an injection drug user). The sub-categories for this mode of transmission are listed below.
    - *Heterosexual Sex w/ an Injection Drug User*
    - *Heterosexual Sex w/ a person w/ HIV infection or AIDS*
    - *Heterosexual Sex w/Bisexual male*
    - *Other Heterosexual Sex*: Includes all other sub-categories of risk, such as heterosexual contact with a person infected through a blood transfusion.
- **Presumed Heterosexual**: Cases in persons who report heterosexual sex but do not report any other personal risk nor any knowledge of specific risk in their sex partners. Presumed Heterosexual is an exposure mode category used by the Massachusetts HIV/AIDS Surveillance Program. The Centers for Disease Control and Prevention (CDC) categorizes these cases as No Identified Risk.
- **Pediatric**: Infection before the age of 13 years, including mother to child transmission through pregnancy, childbirth or breastfeeding and blood transfusions to children.
- **NIR (No Identified Risk)**: Cases in persons with no reported history of exposure to HIV through any of the listed exposure categories. Follow-up is conducted to determine risk for those cases that are initially reported without a risk identified.

II. Race/Ethnicity of STD and HIV/AIDS Cases

Race/ethnicity references to whites and blacks represent persons who are white non-Hispanic and black non-Hispanic, respectively. All references to Hispanic for race/ethnicity represent persons of Hispanic heritage regardless of race.

III. References to Newly Diagnosed HIV Infections

Newly diagnosed HIV infections/cases include all persons diagnosed with HIV in 2008, including those who were concurrently or subsequently diagnosed with AIDS.

STD, HIV/AIDS and Viral Hepatitis Contact Information

Division of STD Prevention, HIV/AIDS Surveillance, and Ratelle STD/HIV Prevention Training Centers			
Topic	**Contact**	**E-Mail**	**Phone**
Policy Development and Administration	Brenda Cole **(Acting Division Director)**	brendacole@state.ma.us	617-983-6941
Sylvie Ratelle STD/HIV Prevention Training Center	Katherine Hsu **(Medical Director)**	katherine.hsu@state.ma.us	617-983-6948
	Janine Dyer **(Coordinator)**	janine.dyer@state.ma.us	617-983-6964
STD/HIV/AIDS Surveillance and Epidemiology	Yuren Tang **(STD Epidemiologist)**	yuren.tang@state.ma.us	617-983-6554
	Betsey John **(HIV/AIDS Epidemiologist)**	betsey.john@state.ma.us	617-983-6570
STD Clinical Services	Katherine HSU **(Medical Director)**	katherine.hsu@state.ma.us	617-983-6950
STD Disease Intervention Field Services and STD Partner Notification	Hillary Johnson **(Director of Field Services)**	hillary.johnson@state.ma.us	617-983-6951
STD Health Education, Training, and Prevention	David Goudreau **(Syphilis Elimination Coordinator)**	david.goudreau@state.ma.us	617-983-6835
Office of HIV/AIDS			
Policy, Planning, Resource Allocation, Research, and Evaluation	Dawn Fukuda **(OHA Director)**	dawn.fukuda@state.ma.us	617-624-5303
	Maura Driscoll **(Interim Director of Research and Evaluation)**	maura.driscoll@state.ma.us	617-624-5328
	Thera Meehan **(Director of Policy and Planning)**	thera.meehan@state.ma.us	617-624-5338
	Tammy Goodhue **(Director of Training and Health Communication)**	tammy.goodhue@state.ma.us	
Administration and Finance, Personnel, Contracts and Procurement, Budget	Bob Carr **(Deputy Bureau Director)**	bob.carr@state.ma.us	617-624-5317
	Ceci Dunn **(Director of Operations)**	ceci.dunn@state.ma.us	617-624-5370
Consumer Office	Sophie Lewis **(Director of Consumer Office)**	sophie.lewis@state.ma.us	617-624-5366
	Paul Goulet **(Consumer Office Coordinator)**	paul.b.goulet@state.ma.us	617-624-5389
Prevention and Education	Barry Callis **(Director of HIV/AIDS Prevention and Education)**	barry.callis@state.ma.us	617-624-5316
HIV Client Services, Case Management, Peer Support Services, Housing Support Services, Service Coordination Collaboratives	Linda Goldman **(Director of Client Services)**	linda.goldman@state.ma.us	617-624-5347
Viral Hepatitis Program			
Hepatitis Programing	Daniel Church **(Viral Hepatitis Prevention Coordinator)**	daniel.church@state.ma.us	617-983-6800
	Clare O'Donoghue **(Contract Manager)**	clare.o'donoghue@state.ma.us	617-983-6860
Hepatitis Surveillance and Epidemiology	Franny Elson **(Epidemiologist)**	franny.elson@state.ma.us	617-983-4382
	Shauna Onofrey **(Epidemiologist)**	shauna.onofrey@state.ma.us	617-983-6776

STD, HIV/AIDS and Viral Hepatitis Resources

Training

Professional training to community based organizations, local public health departments, and medical providers can be requested and is free of charge.

Type of Training	Contact Information and Website
STD Education, STD Partner Notification, and STD Reporting	617-983-6940 www.mass.gov/dph/cdc/std
HIV/AIDS Reporting and Surveillance Projects	617-983-6560 www.mass.gov/dph/cdc/aids
HIV/AIDS Provider Trainings	508-752-7313 www.mass.gov/Eeohhs2/docs/dph/aids/prov_training_calendar.pdf
Viral Hepatitis Education	617-983-6800 http://www.mass.gov/dph/cdc/epii/imm/imm.htm
STD/HIV Diagnosis, Treatment, and Management	617-983-9645 www.RatellePTC.org

Material and Clinical Toolkits

Health education materials and clinical toolkits can be requested free of charge.

STD, HIV, Viral Hepatitis Fact Sheets	617-983-6940 or 617-624-5338 www.mass.gov/dph/cdc/factsheets/factsheets.htm
HIV/AIDS Reporting for Health Care Providers Brochure	617-983-6560 www.mass.gov/dph/cdc/aids/hiv_report_for_health_care_providers.htm
Viral Hepatitis Posters and Brochures	617-983-6800 www.mass.gov/dph/cdc/epii/hepatitis/hepa.htm or www.mass.gov/hepc
STD/HIV Diagnosis, Treatment, and Management Toolkits	617-983-9645 www.RatellePTC.org

MDPH and MDPH Funded Websites

Division of STD Prevention	www.mass.gov/dph/cdc/std
Office of HIV/AIDS	www.mass.gov/dph/aids
HIV/AIDS Surveillance	www.mass.gov/dph/cdc/aids
Viral Hepatitis Program	
Hepatitis C	www.mass.gov/hepc
Hepatitis A	www.mass.gov/dph/cdc/epii/hepatitis/hepa.htm
Sylvie Ratelle STD/HIV Prevention Training Center	www.RatellePTC.org
MASTDINFO (for MSM)	www.mastdinfo.org
STD411 (for young adults/adults)	www.STD411.org

National Websites

Center for Disease Control and Prevention	www.cdc.gov
Division of STD Prevention	www.cdc.gov/std
Division of HIV/AIDS Prevention	www.cdc.gov/hiv
Division of Viral Hepatitis	www.cdc.gov/ncidod/diseases/hepatitis
National Network of STD/HIV Prevention Training Centers	www.stdhivpreventiontraining.org