

EPIDEMIOLOGICAL PROFILE
OF
SEXUALLY TRANSMITTED
DISEASES
HOUSTON, TEXAS

CHLAMYDIA, GONORRHEA, SYPHILIS
HIV/AIDS
THROUGH 2001

Produced by:

Houston Department of Health and Human Services

Published October 2002

COMPILED AND EDITED BY:

Jan Risser, PhD
University of Texas School of Public Health
Houston, Texas

WITH CONTRIBUTIONS FROM:

Darline El Reda, DrPH
Liz Lee
C. Dawn Meade, MSPH
Emma Hughes
Mark Perry, MPH
Jerald Harms, MPH

FUNDING FROM:

CENTERS FOR DISEASE CONTROL AND PREVENTION
and the
TEXAS DEPARTMENT OF HEALTH

AVAILABLE ON LINE: <http://www.HoustonHealth.org>

EXECUTIVE SUMMARY

This report describes the burden of sexually transmitted diseases including HIV/AIDS in Houston/Harris County for the year 2001. Primary emphasis is placed on chlamydia, gonorrhea, syphilis, and HIV/AIDS.

Summary of Reported Sexually Transmitted Diseases in Houston/Harris County for 2000 and 2001.

Disease	2000 Cases	2001 Cases	2000 Rates ¹	2001 Rates ¹	2001 US Rates ³
Chlamydia	12,144	11,304	357.1	327.2	278.3
Gonorrhea	6,033	5,501	177.4	159.2	128.5
Primary and Secondary Syphilis	71	103	2.1	3.0	2.2
Total Syphilis	824	911	24.4	26.4	11.4
Congenital Syphilis ²	34	20	53.7	31.5	0.2
AIDS Cases (incident cases)	755	547	22.2	15.8	14.9
HIV Cases (incident cases)	1200	876	35.0	25.4	12.5

¹ Rates are reported per 100,000 population based on the 2000 census and 2001 population projections from Texas A&M University, Texas State Data Center. (<http://222.tdh.texas.gov/programs/shd&pa/popdata/menu.htm>)

² Rates for congenital syphilis are reported per 100,000 live births.

³ Data from Sexually Transmitted Diseases Surveillance, 2001. CDC. and

STDs are common, costly, and preventable. These infections are not equally distributed among the population; there are higher rates among minorities and among sexually active adolescents.

Comparing number of reported cases in 2000 to those reported in 2001:

- Chlamydia **decreased** 7% from 12,144 cases to 11,304 cases.
- Gonorrhea **decreased** 9% from 6,033 cases to 5,501 cases.
- P&S syphilis **increased** 45% from 71 cases to 103 cases.
- Total syphilis **increased** 11% from 824 cases to 911 cases.
- Incident AIDS **decreased** 24% from 755 to 547 cases.
- Incident HIV **decreased** 40% from 1200 to 876 cases

CHLAMYDIA

Women are more likely to be routinely screened for chlamydia than men. Because screening efforts are directed toward women, the prevalence of chlamydia among men may be under-reported. Symptomatic men attending HDHHS STD clinics are often treated based on symptoms of urethral discharge and not offered testing specific to chlamydia. In absence of a reactive laboratory test for chlamydia the case cannot be reported as chlamydia morbidity. Asymptomatic males are tested for chlamydia in HDHHS STD clinics and if positive are counter. Screening efforts may change from year to year, making comparisons over time difficult to interpret.

Teens have the highest rates. Among teens, females have higher rates than males.

Healthy People 2010 goals for chlamydia infections are directed towards individuals 15-24 years of age and are:

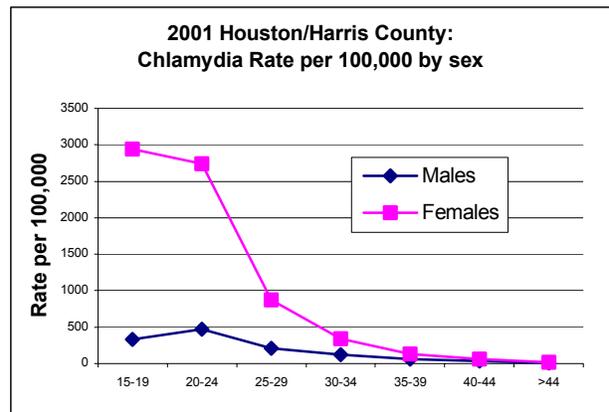
- 3% for males and females attending STD clinics, and
- 3% for females attending family planning clinics.

This data is not available for Houston, because the proportion of the population attending STD clinics and family planning clinics is not known.

Total number of cases and rate of chlamydia by sex, Houston/Harris County, 1991-2001.

	Male		Female	
	Total	Rate	Total	Rate
1991	612	42.7	6,407	441.3
1992	1,162	79.4	7,728	521.7
1993	1,604	107.5	6,413	424.5
1994	1,673	110.8	7,506	490.9
1995	664	43.5	7,292	472.1
1996	749	48.4	8,210	523.5
1997	1,434	91.5	9,257	579.8
1998	1,644	103.2	9,854	607.1
1999	1,618	100.0	8,688	526.8
2000	1,962	115.8	10,164	595.5
2001	1,800	104.5	9,492	548.0

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix).



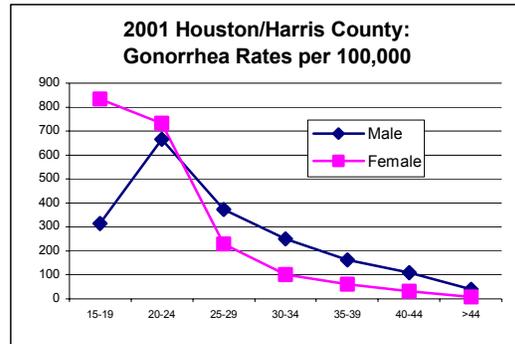
GONORRHEA

Because gonorrhea is often symptomatic in males, more men than women are usually reported as having this STD. Since there is a higher likelihood that males are treated based on symptoms and sometime are not tested, the burden of disease in men might be underestimated. Highest rates are found among adolescent females.

Total number of cases and rate of gonorrhea by sex, Houston/Harris County, 1991-2001.

	Male		Female	
	Total	Rate	Total	Rate
1991	7,452	519.9	4,994	344.0
1992	5,671	387.6	3,984	269.0
1993	4,778	320.1	2,694	178.3
1994	4,534	300.2	2,756	180.2
1995	4,232	277.6	2,873	186.0
1996	3,273	211.3	2,711	172.9
1997	3,570	227.9	3,061	191.7
1998	3,894	244.5	3,267	201.3
1999	3,174	196.1	2,684	162.7
2000	3,003	177.3	3,027	177.4
2001	2,813	163.3	2,682	154.8

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix).



SYPHILIS

Although syphilis rates in Houston/Harris County have declined more than 83% since 1991, rates have increased 8% since 2000. This trend also been reported in other major cities across the US.

Rates for primary and secondary (P&S) syphilis decreased 95% from 1991 through 2001, dropping from 56.8 per 100,000 to 3.0 per 100,000; unfortunately, P&S rates have been higher the last two years than the two years previous.

In 2000, Houston rates for total syphilis were 2 times greater than US rates (24 compared to 11 per 100,000).

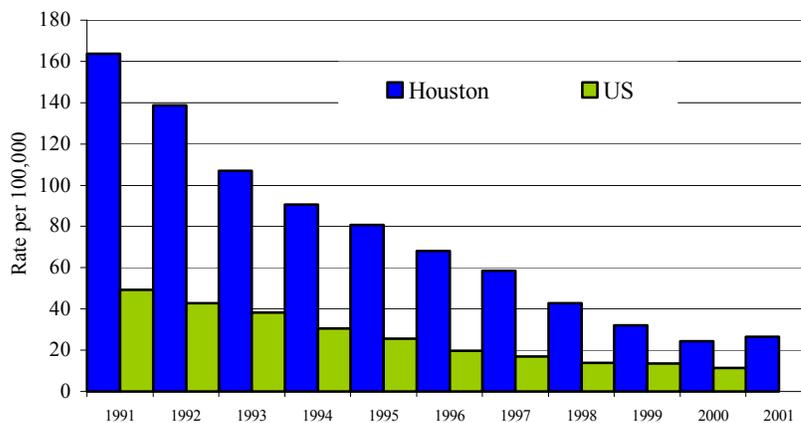
Number of cases and rates per 100,000 population per year for primary and secondary syphilis (P&S), early latent syphilis (EL), and late latent syphilis (LL)*. Houston/Harris County, Texas, 1991-2001.

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of Cases											
P&S	1,638	1,011	558	428	389	178	174	99	68	71	103
EL	2,349	2,466	1,538	1,116	868	755	520	366	239	133	134
LL	739	610	1,114	1,214	1,226	1,188	1,160	894	721	620	674
TOTAL	4,726	4,087	3,210	2,758	2,483	2,121	1,854	1,379	1,050	824	911
Rate per 100,000 population per year											
P&S	56.8	34.3	18.6	14.1	12.7	5.7	5.5	3.1	2.1	2.1	3.0
EL	81.4	83.8	51.2	36.7	28.3	24.2	16.4	11.4	7.3	3.9	3.9
LL	25.6	20.7	37.1	39.9	39.9	38.1	36.7	28.4	22.1	18.2	19.5
TOTAL	163.8	138.8	106.9	90.7	80.9	68.0	58.6	42.9	32.1	24.4	26.4

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix).

* Syphilis of unknown duration was included with late latent syphilis.

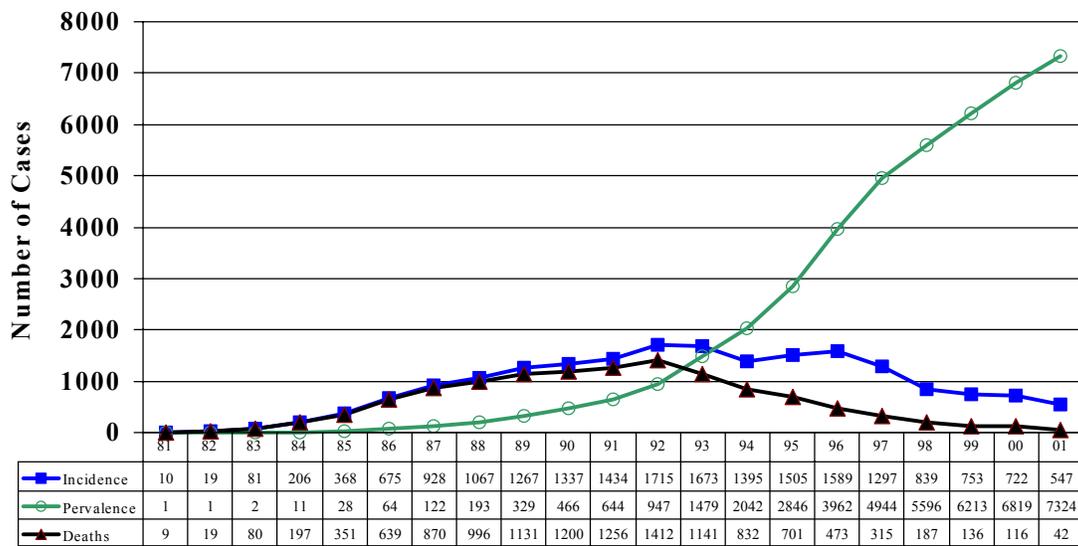
Syphilis: U.S. to Houston



AIDS INFECTION

Although the number of new AIDS cases each year is decreasing, the number of people living with HIV and AIDS is increasing. The total number of people needing services and the number needing prevention education has risen dramatically over the last several years. The Figure below show AIDS incidence (new AIDS cases diagnosed each year), AIDS mortality (number of deaths from AIDS each year), and AIDS prevalence (total number of persons living with AIDS each year).

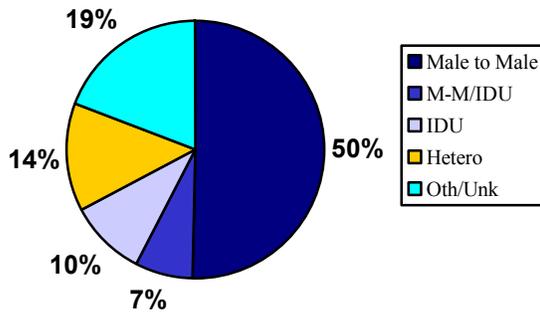
**Houston/Harris County AIDS
Incident Cases, Prevalent Cases, and Number of Deaths**



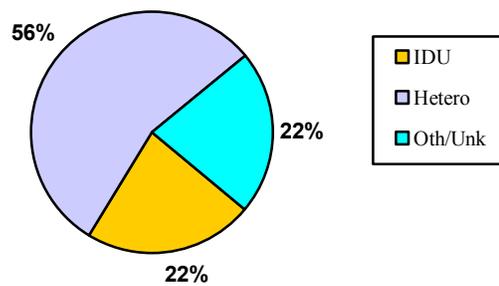
Year of Initial AIDS Diagnosis

The risk factor most often identified in HIV infection is gay and bisexual male sex. Young gay men are at the highest risk.

Risk Factors for Diagnosed AIDS Cases
1998-2001 MALE

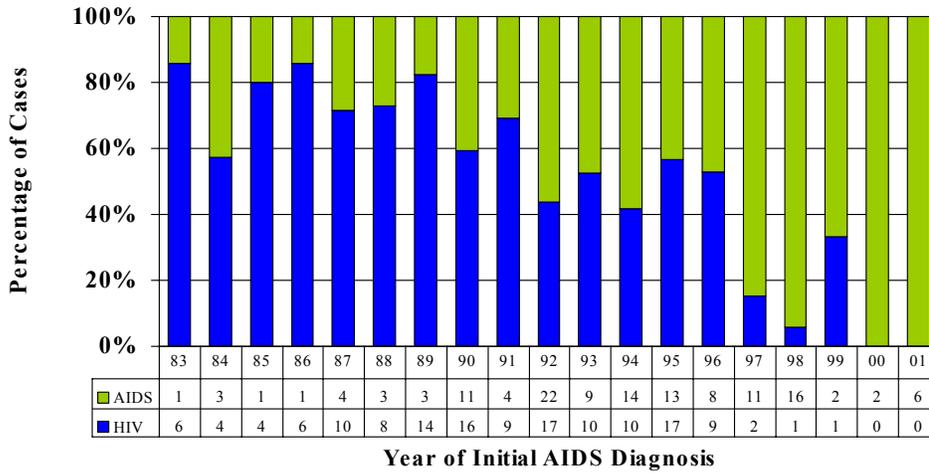


Risk Factors for Diagnosed AIDS cases
1998-2001 FEMALE



Pediatric AIDS is steadily decreasing in Harris County. Black children are disproportionately exposed to HIV in-utero.

Number of Cases and Percent of Children With Perinatal HIV Exposure who Develop HIV and then Progress to AIDS Houston/Harris County



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Data strengths:

- Because the prevalence of other sexually transmitted diseases are higher than the prevalence of HIV/AIDS, following trends in STD infection rates may provide information on trends in sexual risk-taking behavior that could affect transmission of HIV/AIDS.

Data limitations:

- These data represent only data that is reported to the City of Houston.
- There may be bias in reporting of STDs.
 - Public providers may be more likely to report;
 - Private medical doctors may be more likely to treat presumptively without positive diagnosis.
 - It is also assumed that each case reported is independent of other reported cases, although it is known that some cases have repeat diagnostic tests and may be counted more than once.

TABLE OF CONTENTS

BACKGROUND	1
I. INTRODUCTION	3
II. DESCRIPTION OF HOUSTON / HARRIS COUNTY	9
III. RESEARCH DESIGN AND METHODS	15
IV. RESULTS	
A. CHLAMYDIA	17
CRUDE RATES	18
GENDER-SPECIFIC RATES	20
AGE-SPECIFIC RATES	22
DISTRIBUTION BY PROVIDER	24
PREVALENCE	25
GEOGRAPHIC DISTRIBUTION	27
B. GONORRHEA	29
CRUDE RATES	30
GENDER-SPECIFIC RATES	32
AGE-SPECIFIC RATES	34
DISTRIBUTION BY PROVIDER	35
PREVALENCE	36
GEOGRAPHIC DISTRIBUTION	37
C. SYPHILIS INFECTION	39
CRUDE RATES	41
GENDER SPECIFIC RATES	45
RACE/ETHNICITY SPECIFIC RATES	47
AGE-SPECIFIC RATES (TOTAL AND BY STAGE)	49
CONGENITAL SYPHILIS RATES	50
EPIDEMIC AMONG MSM	51
DISTRIBUTION BY PROVIDER	52
GEOGRAPHIC DISTRIBUTION	53

D. HIV	55
AIDS INCIDENCE, PREVALENCE, MORTALITY	57
PREVALENCE (PERSONS LIVING WITH AIDS)	58
INCIDENCE (NEW AIDS CASES)	59
AIDS RATES	60
DISTRIBUTION BY RACE/ETHNICITY	63
SUMMARY	64
AIDS CASES BY AGE	65
AIDS MORTLAITY	66
AIDS MODE OF TRANSMISSION	69
PEDIATRIC AIDS AND HIV	74
HIV DISTRIBUTION	77
SEROSURVEILLANCE – ADOLESCENT MALES	79
SURVEY OF CHILDBEARING WOMEN	80
V. ELECTRONIC REFERENCES OF INTEREST	83
VII. REFERENCES	85
VI. APPENDIX	
CENSUS DATA	87

BACKGROUND

This is the yearly update of the *Epidemiology Profile of Sexually Transmitted Diseases* for the City of Houston, Texas. The purpose of this document is to present current epidemiologic information on sexually transmitted disease (chlamydia, gonorrhea, syphilis, and HIV and AIDS). We will include local, state, and country wide data that will be helpful to those engaged in developing and evaluating HIV/STD prevention services.

We anticipate that this document will be used in HIV and STD prevention policy and planning efforts and in the HIV Prevention Community Planning process. This profile should also be a valuable reference for anyone seeking to understand what is currently happening in Houston/Harris County regarding trends over time in sexually transmitted diseases infections including HIV/AIDS. We have made efforts to be as comprehensive as the data allow.

This report supplements other epidemiological and behavioral reports describing different aspects of the HIV/AIDS epidemic in Houston, including the following reports from Ryan White (http://www.rwpc.org/Publications/publication_listing.htm):

- Comprehensive HIV Services Plan for the Houston Area Through 12/31/2005
- 2002 Comprehensive Plan Update
- 2002 Epidemiological Report
- 2002 Needs Assessment
- Planning Council Brochure - English and Spanish

As in previous years, we have exclusively utilized surveillance data to describe the distribution of chlamydia, gonorrhea, syphilis, and HIV/AIDS by race/ethnicity, sex, and age. When possible, distribution by zip code of residence has been reported in order to identify those areas of the city in most need of appropriate and effective prevention programs.

The report also includes a description of Houston and Harris County and population figures for Harris County for the previous 10 years as well as a glossary of terms.

As suggested by the Centers for Disease Control and Prevention¹ this epidemiologic profile is designed to identify characteristics of both HIV-infected and HIV-negative persons at high risk in the HDHHS service region. This profile addresses the following questions:

1. What are the socio-demographic characteristic of the general population?
2. What is the impact of chlamydia, gonorrhea, syphilis, and HIV/AIDS on the population?
3. Who is at risk for becoming infected with chlamydia, gonorrhea, syphilis, and HIV?
4. What is the geographic distribution of STD and HIV?

To address these questions, we will:

1. Describe the epidemiology of chlamydia, gonorrhea, and syphilis in Houston/Harris County for the years 1991 through 2001.
2. Describe the epidemiology of HIV and AIDS in Houston/Harris County for the years 1998 and 2001.

The profile contains tables and figures showing trends and distributions of disease by: gender; race/ethnicity (where possible); age; provider type (public, private, corrections facility); and, for some infections, by zip code of residence.

Comparisons are made with national data reported by the Centers for Disease Control and Prevention ² and with recommendations from Healthy People 2010.³

I. INTRODUCTION

SEXUALLY TRANSMITTED DISEASES IN THE UNITED STATES.

Sexually transmitted diseases (STD) refer to more than 25 infectious organisms transmitted through sexual activity.³ Many STDs are curable; all cause significant morbidity, costs, and complications, and remain important public health problems.

The United States has the highest rates of curable sexually transmitted diseases in the developed world (see Figure 1).⁵

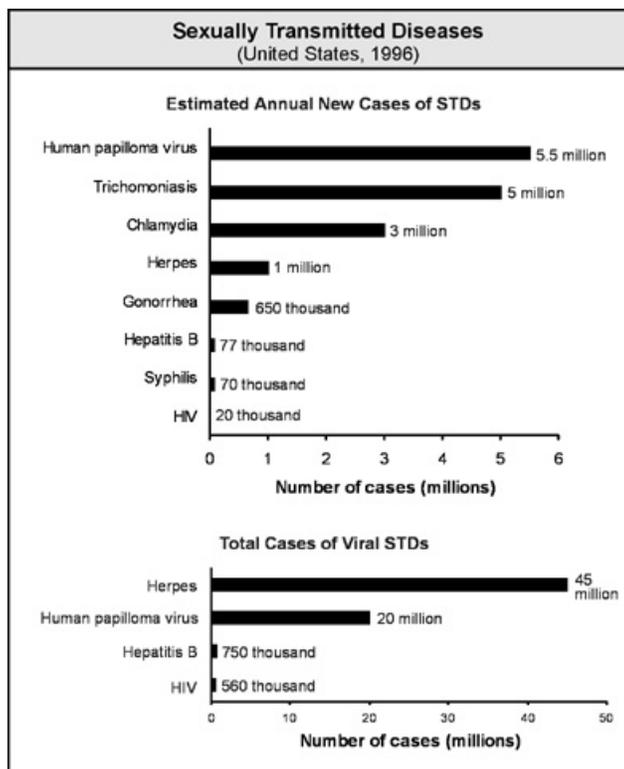
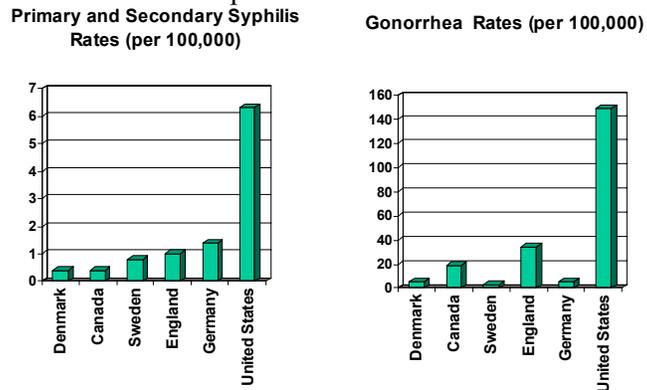
Of the top ten most frequently reported disease in the United States, five are STDs.⁵ STDs are also the most common reportable diseases in Texas, and in Harris County (see the Texas Fact Sheets for Texas and Harris County data at:

<http://www.tdh.state.tx.us/dpa/cfsweb.htm>.

More than 15 million new cases are diagnosed each year, and almost 25% of these cases are in adolescents.⁴ This burden of disease has a tremendous health and economic consequences.⁵

The health consequences of STDs range from mild acute illness to infertility, cancer of the cervix and liver, and life threatening complications associated with HIV. The majority of STDs have mild or no symptoms, increasing the probability that infected persons will not seek medical attention.³ As many as 85% of women and 50% of men with chlamydia have no symptoms; a person newly infected with HIV may remain asymptomatic

Figure 1. Reported rates of curable STDs are several times higher in the United States than in other developed countries. 1997.



Source: American Social Health Association. *Sexually Transmitted Diseases in America: How Many Cases and at What Cost?* Menlo Park, CA: Kaiser Family Foundation, 1998.

for many years but may transmit disease to another person.³ Women are especially affected by STDs; they are more biologically susceptible to certain infections; are more likely to have asymptomatic infections and therefore fail to seek diagnosis and treatment; and untreated disease is more likely to have a profound effect on their reproductive health and the health of offspring that may become infected during pregnancy or delivery.

The economic consequences of STDs are staggering. The Institute of Medicine has estimated that the annual direct costs (costs associated with medical care) and indirect costs (costs associated with lost wages) of selected major STDs, including HIV, are \$17 billion.⁵

Social factors associated with STDs are complex. For reasons that are poorly understood, STD rates are highest in minority and low income populations. Social and behavioral factors may create obstacles to seeking care in a timely manner. Disenfranchised groups also have a higher burden of STDs because of a higher prevalence of individuals with risk-taking behaviors: sex workers, injection drug users, recently released prisoners, adolescents, and migrant workers have all been identified as being particularly vulnerable to STDs and HIV.⁵

Comprehensive screening of incarcerated populations may play an important role in containing STD infections. Many arrests are associated with drug use and sex work – two behaviors that greatly increase the likelihood of both STD and HIV infection. Where comprehensive screening programs are implemented, a substantial number of infected individuals are identified and treated; this can reduce the rate of infection in the population, by preventing disease transfer after release from correctional institutions.

Comprehensive screening programs have also been found to reduce the consequences of untreated STDs, including reduction in pelvic inflammatory disease.⁶⁻⁸

The rate of STD infection in a population is related to exposure, transmission, and duration of infection. That is, the rate that infected individuals have sex with uninfected individuals, the probability that the exposed individual will become infected, and the time period during which an infected person remains infected all contribute to sustaining STD infections in populations.⁴ These are the reasons for current safer-sex recommendations: abstinence, monogamy with an uninfected partner, limit the number of partners, use condoms consistently and correctly, and seek medical care when infection is suspected.

Effective STD prevention requires effective population-level and individual-level interventions. Because the burden of STDs falls disproportionately on the young, the poor, and women, society has a continuing responsibility to educate people about the risk of STDs.⁹ There are both population level factors and personal level factors to consider when attempting to change rates of infection through education. Included in population level factors are the interface with the health care system, accessibility and acceptability of care, availability of successful outreach programs, and general knowledge of the risks of STDs. At the individual level are accessibility of condoms, drug use, recognition of STD symptoms, partner referral, douching practices, and use of oral contraceptives.¹⁰

Prevention and early treatment of treatable STDs are also important in HIV prevention. There is epidemiologic evidence that infection with other STDs increases the risk of infection with HIV. The risk of becoming infected with HIV is 5 to 10 times greater when other STDs are present. This finding has been confirmed through community-level intervention trials in Africa. In these trials, early treatment of symptomatic STDs decreased the incidence of HIV.

The Advisory Committee for HIV and STD Prevention recommends that early detection and treatment of treatable STDs should be a major component of comprehensive HIV prevention programs through expanded STD prevention projects sponsored by private and public partnering. The Institute of Medicine⁵ has recommended formation of an effective national system for STD prevention that addresses key areas, including:

1. Investigating ways to overcome the barriers to adoption of healthy sexual behaviors;
2. Developing strong leadership in STD prevention programs; and
3. Implementing innovative STD-related services for adolescents and for underserved and minority populations.

The Advisory Committee for HIV and STD Prevention recommends that STD detection and treatment programs designed to prevent HIV transmission should include:

1. Timely access to high-quality STD clinical care, in both private and public medical settings, for symptomatic individuals and their partners. These services should be available through public STD clinics, primary-care settings, hospital walk-in clinics, community health centers, family planning clinics, adolescent medicine clinics, correctional institutions, and primary-care physicians' offices.
2. Appropriate screening programs for asymptomatic or unrecognized STD infections, following current guidelines. Specifically, education of providers on the importance and favorable cost-benefit ratio of selective screening of high-risk individuals, including sexually active adolescents and young adults and women of reproductive age. Such screening programs should be available wherever routine health care is sought, including school health and sports-participation physical examination visits.
3. Expanded screening programs based on prevalence of infections found in smaller screening programs. It is especially important to expand screening programs wherever adolescents seek medical care, including school-based clinics and family-planning clinics.
4. Expanded STD screening in non-medical settings where persons at high risk for HIV infections and curable STDs are encountered and can be treated efficiently, including jails and other correctional facilities, substance abuse treatment centers, hospital emergency departments, and social setting such as bars and clubs.
5. Implement presumptive treatment of STDs in situations where it seems unlikely that follow-up care will be possible, including presumptive treatment of sexual partners of infected individuals. Such sites include mobile medical vans providing care for homeless or transient clients, emergency rooms, and free clinics.
6. Facilitate identification, treatment, and reporting of all individuals with primary or secondary syphilis, perhaps through onsite rapid serologic tests for syphilis and treatment programs at non-STD clinic sites.
7. Training of program and management staff, including members of the HIV prevention community planning groups, on the role of STD detection and treatment in HIV prevention.

Because of the high prevalence of STDs in the United States, enhanced STD control may have a substantial impact on the health and economic burden of treatable STDs in this country. Also, because the incidence of heterosexually transmitted HIV is increasing most

rapidly among the same population subgroups that have the highest rates of treatable STDs, implementing enhanced STD detection and treatment programs as part of our comprehensive HIV prevention efforts should result in lowering the HIV incidence.

In addition to the potential of reducing HIV incidence, other public health benefits that will result from enhanced detection and treatment of treatable STDs, in addition to syphilis elimination, include:

1. Improved birth outcomes and infant health;
2. Narrowing of racial disparities in health status; and
3. Strengthening of public health infrastructures to detect and address other emerging and re-emerging infectious diseases.¹¹

Sustainable STD and HIV prevention efforts should include enhanced surveillance and outbreak response, strengthened community involvement and organizational partnerships, and improved biomedical and behavioral interventions. Such treatment plans have been beneficial; one enhanced surveillance and treatment program reduced chlamydia rates by 67% over an 8 year period.¹¹

Although rates for syphilis have been declining in most populations, rates for chlamydia and gonorrhea have not. Primary and secondary syphilis rates are increasing among men who have sex with men (MSM). Latent syphilis rates are also high; this confirms that most cases of syphilis are not detected during their infectious states and provides evidence that detection and treatment of syphilis should be enhanced.

HEALTHY PEOPLE 2010, SEXUALLY TRANSMITTED DISEASES

The sexually transmitted diseases goal of Healthy People 2010³ is to:

Promote responsible sexual behaviors, strengthen community capacity, and increase access to quality services to prevent sexually transmitted diseases (STDs) and their complications.

During the 1990s, there was significant progress toward reducing the prevalence rates for gonorrhea, syphilis, and congenital syphilis. However, STD complications, such as pelvic inflammatory disease (PID) and congenital syphilis, are still at rates higher than desirable.³ Ten of 17 Healthy People 2000 STD-related objectives were either met, or nearly met by 2000. Two important objectives were not been met: 1) there has not been a substantial decline in the proportion of adolescents engaging in sexual intercourse and 2) there has not been a substantial decline in the proportion of the population with incident genital herpes and warts.

Healthy People 2010 Bacterial STDs Objectives related to this report.¹

	1997 Baseline	2010 Target
25-1 Reduction in <i>Chlamydia trachomatis</i> infections		
Females aged 15-24 attending family planning clinics	5.0%	3.0%
Females aged 15-24 years attending STD clinics	12.2%	3.0%
Males aged 15-24 years attending STD clinics	15.7%	3.0%
25-2 Reduce Gonorrhea	123 new cases per 100,000 persons	19 new cases per 100,000 persons
25-3 Eliminate sustained domestic transmission of primary and secondary syphilis	3.2 cases per 100,000 persons	0.2 cases per 100,000 persons
25-9 Reduce congenital syphilis	27 new cases per 100,000 live births	1 new case per 100,000 live births

¹ <http://www.health.gov/healthypeople/Document/pdf/Volume2/25STDs.pdf>

II. DESCRIPTION OF HOUSTON AND HARRIS COUNTY

HOUSTON, TEXAS²

Houston is the fourth largest city in the nation, and the largest city in Texas. There are nearly 2,000,000 residents in the City of Houston, and more than 4,500,000 million in the metropolitan region. The city is quite diverse with over 90 different languages spoken in the Houston metropolitan area.

Houston is the county seat for Harris County, the largest county in Texas. Most of Harris County is also Houston.

For convenience and ease in calculating rates, Harris County is conventionally used as the population when describing Houston, although Houston spills into several other counties.

Houston is divided into 88 Super Neighborhoods to encourage residents of neighboring communities to work together to identify, plan, and set priorities to address the needs and concerns of their communities. The Super Neighborhood Council serves as a forum for these activities.

GEOGRAPHY³

Houston is located on the upper Texas Gulf Coast, 50 miles from the Gulf of Mexico. The City covers 617.34 square miles and lies in three counties: Harris, Fort Bend, and Montgomery.

The Houston Primary Metropolitan Statistical Area (PMSA) includes Chambers, Fort Bend, Harris, Liberty, Montgomery, and Waller Counties and covers 6,304 square miles.

WEATHER³

The City averages more than 45 inches of rain per year. Thunderstorms occur on more than 100 days per year with about 200 days of sunshine. There are about three weeks of freezing temperatures (interspersed over several months), and 95 days with temperatures above 90°.

POPULATION⁴

The population is young.

- 39% of Houstonians are 24 years old or younger and
- 33% are between the ages of 25 and 44.

² <http://www.ci.houston.tx.us/abouthouston/houstonfacts.html>

³ <http://www.ci.houston.tx.us/ctr/cafr/cafr12ak.html>

⁴ <http://factfinder.census.gov/servlet/BasicFactsServlet>

The 2000 Census Summary for Harris County is presented below.

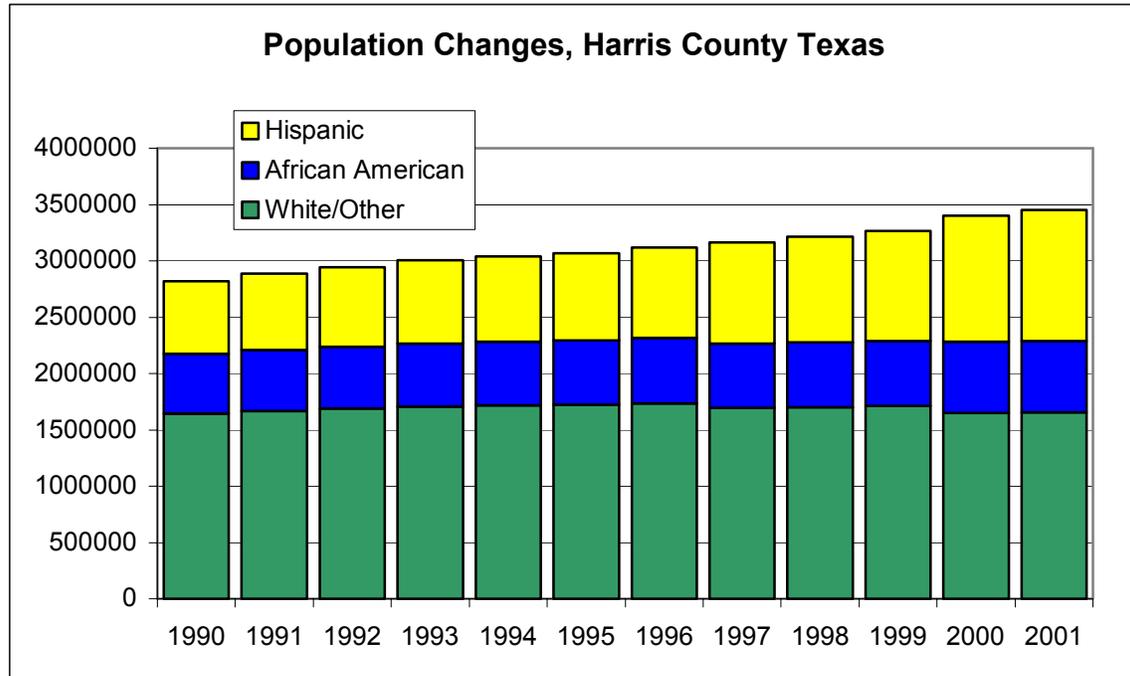
	Number	Percent
Total Population	3,400,578	
Sex		
Male	1,693,882	49.8%
Female	1,706,696	50.2%
Median Age	31.2 years	
Race		
White	1,997,123	58.7%
Black or African American	628,619	18.5%
Asian	174,626	5.1%
Ethnicity		
Hispanic (includes Mexican)	1,119,751	32.9%
Mexican	814,693	24.0%
White – Non-Hispanic	1,432,264	42.1%
Household Types		
Total households	1,205,516	
Married-couple family	609,446	50.6%
Female householder (no husband present)	165,497	13.7%
Non-family households	371,226	30.8%
Households with individuals under age 18	505,237	41.9%
Average household size	2.79 persons	
Average family size	3.38 persons	

Recent Immigrants

More than 20% of the population is foreign born (n=756,548); half of these entered the country during the last 10 years (n=374,541). Of the foreign born, 71% were born south of the United States, the majority in Mexico. Nearly 30% of the population speaks Spanish (n=898,885); more than 15% of the population are Spanish speakers who speak English less than “very well” (n=569,799).

GROWTH TRENDS

There has been a 23% increase in population since 1991. There was only a 1% increase among the White and Other race group, a 20% among African Americans, and an 80% increase among the Hispanic.



EMPLOYMENT

The ten largest employers in Harris County in 1999 were: Aldine Independent School District, Baylor College of Medicine, Compac Computer Corporation (1999), Continental Airlines Inc., Exxon Corporation, Harris County, Harris County Hospital District, and Houston Independent School District.

Houston is home of more than half of the world's 100 largest non-U.S.-based corporations, and 15 of the 1997 Fortune 500 corporations, and more than 5,000 energy related firms.

For three consecutive years, Houston has ranked first in the nation in new business growth, according to American Business Information. The most recent survey shows that more than 31,000 new local businesses were started in Houston.

Houston is known internationally as the home of one of the best medical communities in the world. The Texas Medical Center (TMC), the largest medical center in the world, is just 10 minutes from downtown Houston. TMC sits on 675 acres, and is home to 42 nonprofit and government institutions, including 13 teaching hospitals, two medical schools, four colleges of nursing, a dental college, a school of public health, a college of pharmacy and a college of optometry. Overall, 4.8 million patients visit these sites each year. In addition to TMC, Houstonians have access to quality-health care throughout the City. The Harris County Hospital District provides access to health care for Harris County residents, regardless of

their ability to pay. The district is made up of three hospitals, 12 community health centers, a dental center, an AIDS clinic and several school-based clinics. Among these are Ben Taub General Hospital, Lyndon B. Johnson Hospital, and Quentin Mease Community Hospital.

SCHOOLS AND EDUCATION⁵

There are 40 colleges, universities, and other educational institutions in Houston; the Houston Independent School District is the 6th largest in the U.S. There are 23 school districts in Harris County, with 211,197 students enrolled in public schools and 25,158 students enrolled in accredited nonpublic schools.

Educational Attainment (2000 Census)	Number	Percent
Population 25 years and over	2,067,399	
Less than 9 th grade	249,925	12.1%
9 th to 12 th grade	274,497	13.3%
High school graduate or GED	447,295	21.6%
Some College (no degree)	98,048	4.7%
Bachelor's degree	370,465	17.9%

POVERTY AND INCOME⁶

Socioeconomic Indicators (1999)	Number	Rate
Unemployment Rate	106,368	4.2%
Persons Living Below Poverty	101,693	12.1%
Families with Female Head of Household	43,512	27.1%
Household Income		
Households	1,206,423	
Less than \$10,000	111,132	9.2%
\$10,000 to \$14,999	68,905	5.7%
\$15,000 to \$24,999	151,968	12.6%
\$25,000 to \$34,999	159,654	13.2%
\$35,000 to \$49,999	194,801	16.1%
\$50,000 to \$74,999	222,091	18.4%
\$75,000 to \$99,999	124,688	10.3%
\$100,000 to \$149,999	106,367	8.8%
\$150,000 to \$199,999	32,487	2.7%
\$200,000 or more	34,330	2.8%
Median household income	\$42,598	
Per Capita income	\$21,435	

⁵ <http://www.ci.houston.tx.us/about/houston/houstonfacts.html>

⁶ <http://factfinder.census.gov/servlet/BasicFactsServlet>

HOUSING⁷

Houston has the most affordable housing of the 10 most populated metropolitan areas; the housing costs are 39 percent below the average of 26 U.S. urban centers with populations of 1.5 million, and it has the second lowest cost of living among major American cities.

HOUSTON DEPARTMENT OF HEALTH AND HUMAN SERVICES

The Houston Department of Health and Human Services (HDHHS) provides preventive health care for the residents of Houston, treatment for selected diseases, and a wide range of environmental health services. Preventive health services are offered at health centers located throughout Houston. Many health centers offer evening and weekend hours. In addition, HDHHS operates nine multi-service centers containing agencies that offer a variety of programs and services to the people of Houston.

The Houston Department of Health and Human Services is responsible for surveillance of sexually transmitted diseases in the City of Houston and Harris County.

This epidemiologic summary includes morbidity data and incidence rates for Houston/Harris County for gonorrhea, chlamydia, syphilis, and HIV/AIDS.

⁷ <http://www.ci.houston.tx.us/about/houston/houstonfacts.html>

III. RESEARCH DESIGN AND METHODS

In order to evaluate changes in STD morbidity over time, we developed a comprehensive epidemiologic summary of existing data, and addressed the following questions:

1. What is the magnitude of STD infections in Houston/Harris County?
2. What facilities are reporting STD cases?
3. What is the geographic distribution of cases?

CHLAMYDIA, GONORRHEA, AND SYPHILIS DATA SOURCES

Data for chlamydia, gonorrhea and syphilis are from the sexually transmitted diseases surveillance system of the HDHHS Bureau of Epidemiology. Physicians, hospitals, laboratories, clinics, and other medical provider organizations make reports. Prevalence of chlamydia, gonorrhea, and syphilis at screening for clients screened through HDHHS maternity, family planning and STD clinics is examined using computerized data from the HDHHS Laboratory Information System and prevalence data from the Medical Microbiology Section of the HDHHS. For most rate calculations, the year-specific estimates of the Harris County population are used in the denominator. For syphilis, prevalence of infection among those screened can be estimated from data gathered through a Syphilis Prevention Project at the County Jail, at County Hospital delivery rooms, at one drug treatment center, and at HDHHS STD, family planning, and maternity clinics.

Information on race/ethnicity is not consistently collected by providers for each reported STD case. As a consequence, it is not possible to describe rates of STDs by race/ethnicity from non-Health Department sources. The information is complete for all early syphilis cases.

HIV/AIDS DATA SOURCES

Since 1983, the HDHHS has collected data on the HIV/AIDS epidemic in Houston and the surrounding counties. Disease surveillance activities have collected data on AIDS cases since 1983, and on HIV infection cases since January 1, 1999. Traditionally, information on reported AIDS cases has been used to identify the extent of the HIV/AIDS epidemic in the community for the planning of HIV prevention activities. Data for analysis of the HIV/AIDS epidemic in Houston are from the HIV/AIDS Reporting System (HARS).

While AIDS surveillance data primarily describes the epidemic of infections that occurred up to fifteen years ago, the information correlates closely with the HIV prevalence data from serosurveillance studies. The HIV/AIDS Reporting System provides data on reported HIV and AIDS cases. Evaluation studies have shown that information on AIDS is 85—90% complete in the Houston area. AIDS has been a reportable disease in Texas for sixteen years and active surveillance using many resources is conducted for AIDS cases. HIV infection reporting by name has only been in place in Texas since January 1999, and it is still too soon to determine the completeness of reporting of this information.

CALCULATION OF RATES

Harris County population figures were used to represent the HDHHS surveillance population in rate calculations. Intercensal estimated population projections for Harris

County from the Texas State Data Center,¹² Texas A & M University, will be used as reference for years 1991 through 1999 and 2001; Census data will be used for 2000 (Appendix). Rates for all STDs are reported per 100,000 population.

PRESENTATION OF DATA

This is a descriptive study. Data are presented in tables and figures. There are some obvious limitations of the study. Primary among these is the accuracy of the reported data, and the potential for under-reporting of sexually transmitted diseases. Data from HDHHS clinics for chlamydia and gonorrhea are verified; however, data from other sites are not. Many case reports are missing age, race/ethnicity, and zip code information. Data for syphilis is more complete since most cases are interviewed by disease intervention specialists.

There is also the potential for duplicate reporting of chlamydia, gonorrhea, and HIV cases, since identifiers are not always included, because both health care providers and laboratories may report the same case, and because individuals may seek multiple testing. Whenever possible, duplicate records were eliminated.

Unlike chlamydia and gonorrhea, AIDS has an extremely long incubation period, often exceeding ten years from infection to illness. AIDS cases reported in any given year may have been diagnosed in that year or any previous year. Cases diagnosed in a given year may be reported in that year or any subsequent year. Information about cases can be compared by year of report, which tells about reporting and surveillance practices, or compared by year of diagnosis, which gives information about trends in the epidemic. The long incubation period and difficult diagnosis often leads to a delay in reporting of AIDS cases. It may take as much as a year to receive reports from health care providers. Although this report will include data on cases diagnosed through December 2001, and reported through June, 2002. The data for 2001 may not yet be fully reported and should be considered preliminary and subject to later revision.

IV. RESULTS

A. CHLAMYDIA INFECTION

A. CHLAMYDIA INFECTION

The nature and epidemiology of *Chlamydia trachomatis* infections

Chlamydia trachomatis is the most common sexually transmitted disease. The estimated incidence of chlamydia in the US is over 4,000,000 new cases annually.⁵ However, because current screening efforts are not consistent across the US and documentation of cases is incomplete; there were only 783,242 cases reported in 2001.² Using CDC reported rates for 2001, Texas ranked 9th among states with 334.5 cases per 100,000 population; and Houston ranked 47th among selected cities of greater than 200,000 population with 332.0 cases per 100,000.

Healthy People Year 2000 goal for chlamydia was 5% infection rates among females 15-24 years old; year 2010 goal is to reduce the infection rate to 3%.³ In 2001, Houston had rates of 2.9% among females 15-19 years of age and 2.7% among females 20-24 years of age. However, rates as high as 28% were found among women screened at the Juvenile Detention Center in 1998.¹³

The Institute of Medicine has estimated the total annual cost of chlamydia to be 2.0 billion dollars in direct and indirect costs.⁵ Direct costs include health care expenditures and reflect the value of goods and services used to treat chlamydia; indirect costs refer to lost productivity associated with being infected with chlamydia.

It is difficult to interpret the rising US rates because of variable compliance with testing and reporting. Also, several different diagnostic tests with varying sensitivity and specificity are used to identify chlamydial infection.¹⁴ Chlamydia positivity among 15 to 24 year-old women varies by population studied. The female to male ratio among cases 15 to 24 year old is 8:1, and probably reflects current screening practices which focus on women.² Approximately 70% of chlamydial infections in women are asymptomatic; and, if not adequately treated, 20% to 40% of infected women develop pelvic inflammatory disease (PID).²

There are estimates that chlamydial urethral infection is present among 5% of males seeking general medical care, over 10% among asymptomatic soldiers undergoing routine physical examination, and up to 20% among heterosexual men seen at STD clinics.¹⁵ Similarly for women, cervical infections are found in 5% of asymptomatic college students, 10% of women seen in family planning clinics, and over 20% of women seen in STD clinics.

Approximately half of children exposed to *C. trachomatis* infections during birth go on to acquire the infection.

Screening and treating women for chlamydia may be an important intervention for preventing pelvic inflammatory disease (PID).¹⁶ Women at high risk for chlamydia infection who received routine screening were about half as likely to develop PID compared to similar women who did not receive routine screening.

A. CHLAMYDIA: CRUDE RATES**Table A.1.** Crude rates for chlamydia in Houston/Harris County, Texas, 1991 – 2001.

Chlamydia	N	Rate	% Change*
1991	7,020	243.3	
1992	8,891	302.0	24%
1993	8,231	274.1	-9%
1994	9,245	304.2	11%
1995	8,018	261.2	-14%
1996	9,092	291.7	12%
1997	10,635	336.2	15%
1998	11,499	357.6	6%
1999	10,443	319.5	-11%
2000	12,144	357.1	12%
2001	11,304	327.2	-8%

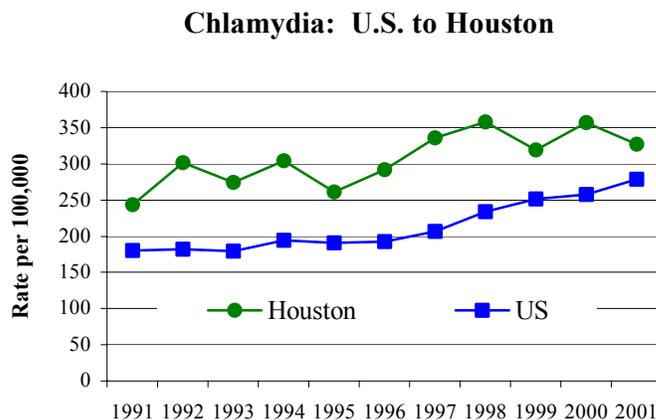
Rates per 100,000 persons per year based on intercensal estimates of Houston/ Harris County population (Appendix).

*Change in rate from the preceding year.

Although there has been variation from year to year, there has been a gradual increase in chlamydia rates since 1991; rates in 2001 are 24% higher than 1991 rates.

These changes may reflect changes in screening practices rather than a true increase in the incidence of chlamydia. Rates in Houston have remained consistently above reported rates in the US (Figure A.1).

Figure A.1. Comparison of chlamydia rates in the US to rates in Houston, 1991 through 2001. Rates are reported per 100,000 persons based on intercensal estimates of Houston/Harris County population.



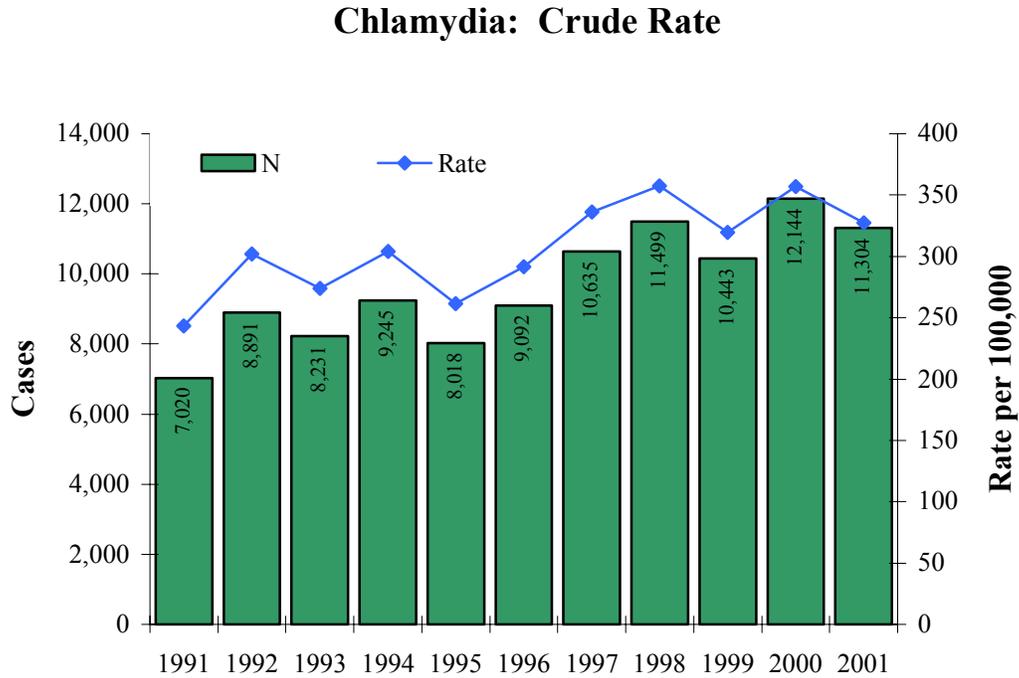
A. CHLAMYDIA: CRUDE RATES

Figure A.2. Harris County chlamydia cases and rates per 100,000 persons per year for the years 1991 through 2001. There has been a 34% increase in the number of reported cases over the study period, during which time the population only increased 23%. Rates per 100,000 in 2001 were 34% higher than the 1991 rates.

Rates for 1991-1999 and 2001 are based on intercensal estimates of Houston/Harris County population; rates for 2000 are based on the 2000 census (Appendix).

A. CHLAMYDIA: GENDER-SPECIFIC RATES**Table A.2.** Gender-specific rates for chlamydia by race/ethnicity in Houston/Harris County, Texas, 1991 – 2001.

	Total Rate		Number of Cases			Missing Race/Ethnicity	
			Black	Hispanic	White	No.	%
Male							
1991	612	42.7	372	72	168	0	0%
1992	1,162	79.4	803	108	114	137	12%
1993	1,604	107.5	1,180	152	97	175	11%
1994	1,673	110.8	1,126	113	140	294	18%
1995	664	43.5	152	63	24	425	64%
1996	749	48.4	163	84	29	473	63%
1997	1,434	91.5	530	187	45	672	47%
1998	1,644	103.2	523	249	59	813	49%
1999	1,618	100.0	636	432	63	487	30%
2000	1,962	115.8	745	590	130	497	25%
2001	1,800	104.5	602	529	87	582	32%
Female							
1991	6,407	441.3	3,147	1,838	1,418	4	0%
1992	7,728	521.7	3,968	1,596	1,365	799	10%
1993	6,413	424.5	2,503	1,372	288	2,250	35%
1994	7,506	490.9	2,602	1,733	730	2,441	33%
1995	7,292	472.1	2,000	1,527	384	3,381	46%
1996	8,210	523.5	2,311	1,830	402	3,667	45%
1997	9,257	579.8	2,606	1,991	390	4,270	46%
1998	9,854	607.1	2,809	2,028	420	4,597	47%
1999	8,688	526.8	3,095	2,311	616	2,666	31%
2000	10,164	595.5	3,557	3,285	711	2,611	26%
2001	9,492	548.0	2,773	2,774	456	3,489	37%

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix).

Gender data is nearly complete; more than 80% of reported cases are female. There has been a relatively steady increase in rates for both males and females since 1991; the increase has been more pronounced among females. It is unclear if changes in surveillance practices are the likely explanation for the increasing rates, and for the fluctuations in rates by year.

Race/ethnicity data is relatively incomplete. In recent years, nearly one third of cases are missing race/ethnicity data, and for some years, nearly half the reported morbidity is missing race/ethnicity data. It is impossible to evaluate the prevalence of chlamydia by race/ethnicity with such a large proportion of the reported cases missing information.

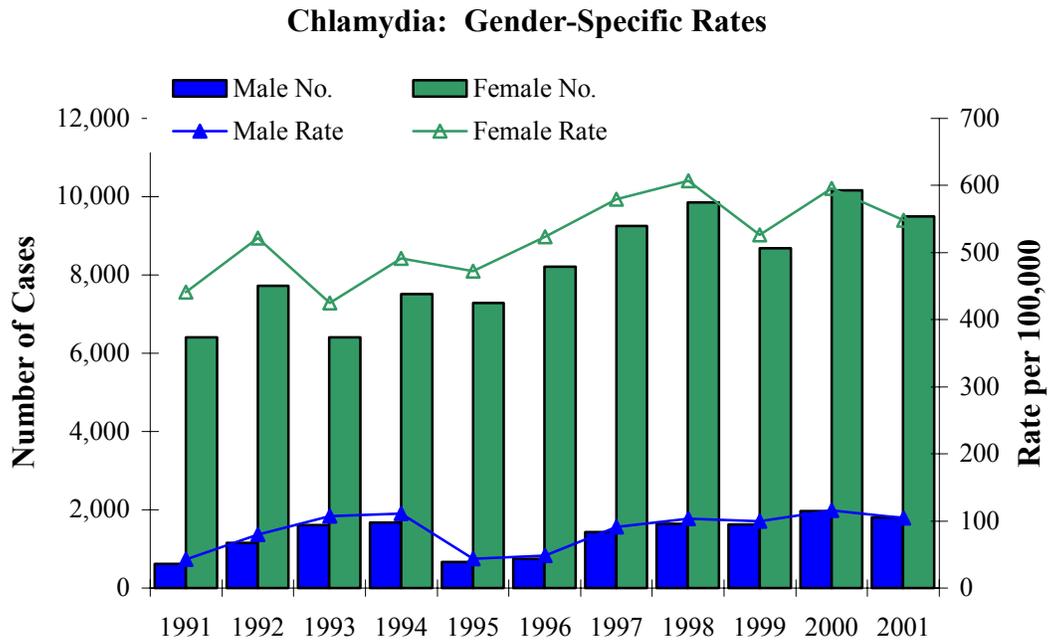
A. CHLAMYDIA: GENDER-SPECIFIC RATES

Figure A.3. Chlamydia cases and rates by gender. Females make up more than 80% of the total cases reported. Rates are presented per 100,000 population (Appendix).

A. CHLAMYDIA: AGE-SPECIFIC RATES

Table A.3. Age-specific rates for chlamydia in Houston/Harris County, Texas 1991 – 2001.

AGE	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
15-19	1,455	1,710	1,546	1,668	1,419	1,460	1,645	1,798	1,672	1,782	1,593
20-24	1,113	1,340	1,189	1,360	1,161	1,174	1,479	1,533	1,454	1,651	1,585
25-29	308	436	372	484	453	479	505	554	530	589	538
30-34	118	183	143	186	156	171	209	229	200	235	230
35-39	49	90	64	85	68	73	105	112	89	104	97
40-44	22	33	37	33	23	27	48	57	36	48	49
>44	6	12	8	10	9	9	13	15	10	13	12
% UK	0%	0%	5%	4%	6%	14%	7%	6%	2%	5%	2%

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix). %UK = percent of reported cases that are missing age data.

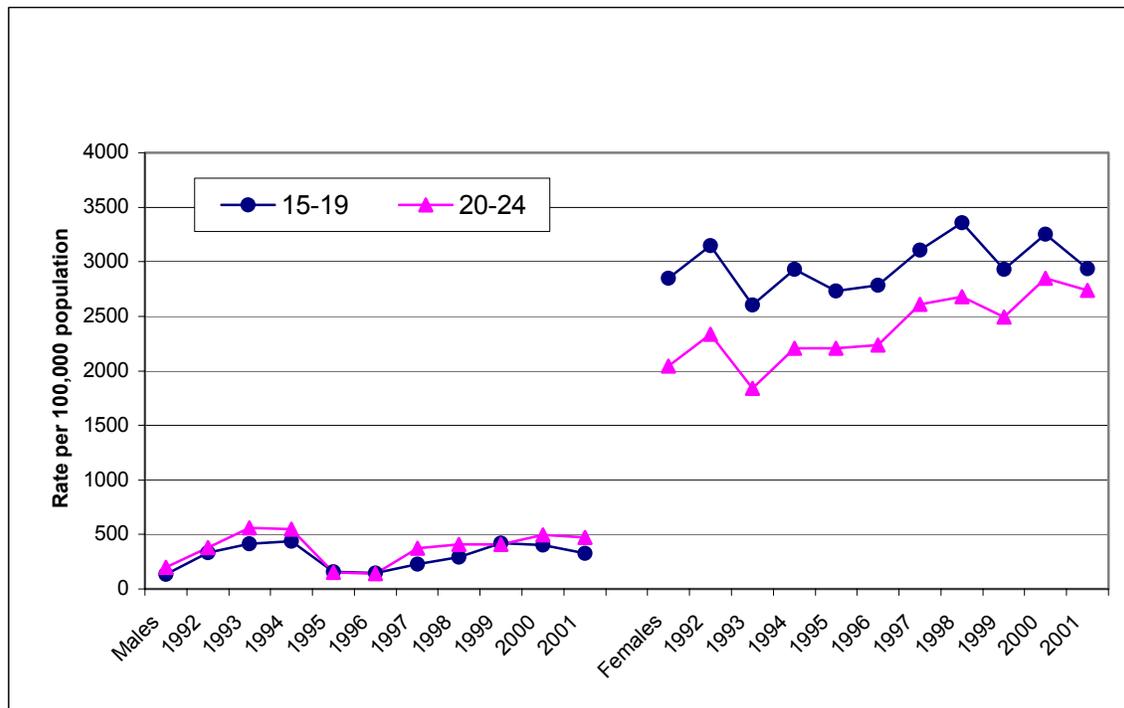


Figure A.4. Chlamydia rates by age and sex. For all years, rates are highest among females aged 15 to 24. Rates among young adults have been substantially higher among women than men (see Figure A.4.). However, this does not mean that the actual burden of disease varies by gender; females may be more likely to be screened and diagnosed with chlamydia than males because of differences in surveillance efforts. Rates are presented per 100,000 population (Appendix).

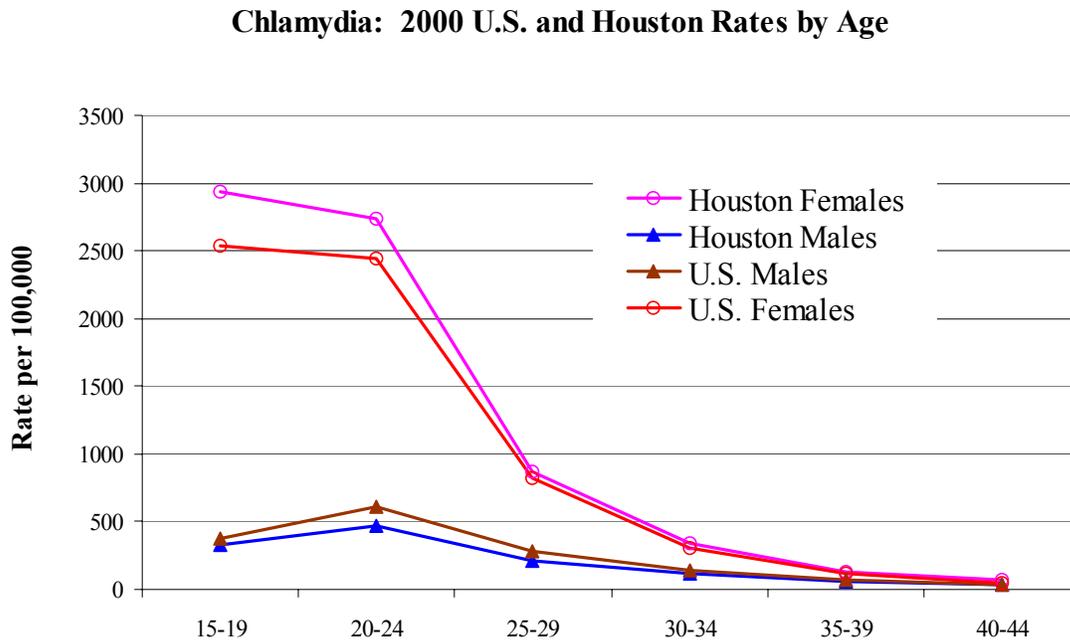
A. CHLAMYDIA: AGE-SPECIFIC RATES

Figure A.5. The 2001 Houston rates among females aged 15 – 29 years are higher than corresponding US rates; 2001 rates among Houston males are similar to US rates at all ages. Rates are presented per 100,000 persons.

A. CHLAMYDIA: DISTRIBUTION BY PROVIDER

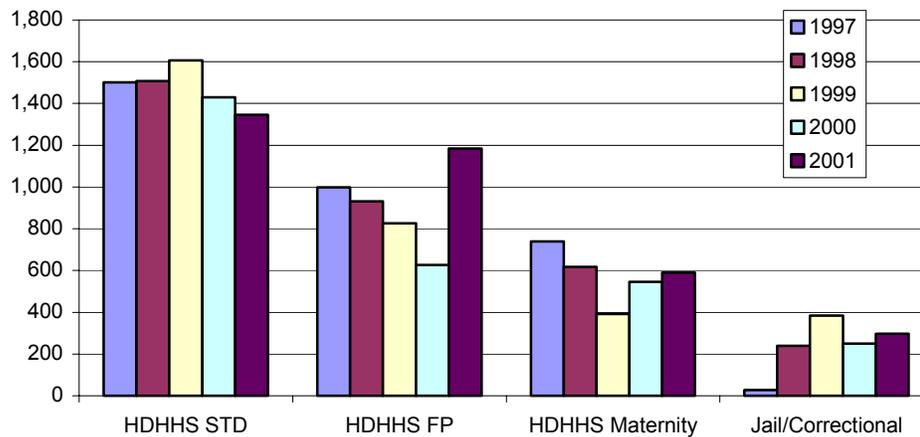
Table A. 4. Distribution of cases among provider types, 1997 – 2001.

	1997	1998	1999	2000	2001
	N (%)				
HDHHS STD ¹	1,502 (14%)	1,507 (13%)	1,607 (15%)	1,430 (12%)	1,346 (12%)
HDHHS FP ²	998 (9%)	931 (8%)	826 (8%)	626 (5%)	1,184 (10%)
HDHHS Maternity ³	739 (7%)	618 (5%)	391 (4%)	546 (5%)	590 (5%)
Jail / Correctional ⁴	27 (1%)	240 (2%)	384 (4%)	250 (2%)	297 (3%)

More than 60% of all chlamydia cases are identified through private physicians, health maintenance organizations, or through laboratory reporting with type-of-provider not documented. Taken together, HDHHS Clinics identify nearly one-third of all Chlamydia cases.

In 2000, the Baylor Teen Clinics ⁵Teen Clinics and the Community Partners Teen Clinics reported almost 17% of all Chlamydia cases. In addition, the screening program at the Juvenile Detention Center reported 2% of the 1999 chlamydia cases and 1.5% of the 2000 cases.

Figure A.6. Number of cases reported by public providers.



¹ HDHHS STD: Lyons, Medical Center, Northside, Riverside, West End, and La Nueva Casa de Amigos

² HDHHS Family Planning: La Nueva Casa de Amigos, Lyons, Magnolia, Northside, Riverside, Sunnyside and West End.

³ HDHHS Maternity: La Nueva Casa de Amigos, Lyons, Magnolia, Northside, Riverside, Sunnyside, West End.

⁴ Jail / Correctional: Harris County Juvenile Detention Center, Harris County Jail, Municipal Detention Center.

⁵ Teen Clinics: Austin, Baylor, Ben Taub, Cavalcade, Lawn, LBJ, and Community Partners Clinics.

A. CHLAMYDIA: PREVALENCE

Prevalence at screening in Certain Clinical Settings

Prevalence varies depending on the population examined and whether testing is for screening or among symptomatic individuals or both (see Figure A.7.). Screening prevalence rates are available for several populations in Houston. During the summer of 1998, all juveniles entering the Juvenile Detention Center were screened for chlamydia. Also, women seeking care at HDHHS maternity clinics are routinely screened for STDs.

Juvenile Detention Center

Incarcerated youth are a high-risk population for sexually transmitted diseases, including chlamydia. During the summer of 1998, youths incarcerated at the Juvenile Detention Center were screened for chlamydia infection and interviewed for potential risk factors. Nearly 14% of all subjects (n=589; 76.4% male) were positive for chlamydia. Females were almost 3 times (95% CI 2.0 to 4.3) more likely to be infected than males (28.1% compared to 9.6%, respectively). Among females, Blacks and Hispanics compared to Whites had similar infection rates (29.0% compared to 27.3%); among males, Blacks and Hispanics had rates twice as high (95% CI 1.2 to 4.2) as Whites (13.5% compared to 6.6%). Self-reported drug use was not associated with increased risk of chlamydia infection, even after adjusting for sex and race/ethnicity ($p = 0.09$). Self-reported use of condoms as sometimes or never, compared to always, was not associated with increased risk of infection, and was not confounded by sex or race/ethnicity ($p = 0.62$). More than 80% of infected individuals (both male and female) were asymptomatic.¹³

HDHHS Maternity and Family Planning Clinics

Using data compiled through the HDHHS Laboratory, we can describe the prevalence of chlamydia among women seeking care at maternity and family planning clinics. Among women tested for chlamydia at HDHHS maternity clinics in 1998, 7.1% were found to be infected (727/10,238) and in 1999, 8.3% (828/9993) were infected; among women tested for chlamydia at HDHHS family planning clinics in 1998, 4.2% were found to be infected (1,013/24,240); in 1999, 6.8% (1850/27272) were infected. If there were no changes in screening practices in the HDHHS Family Planning and Maternity Clinics, these rates do not suggest that the prevalence of chlamydia has declined in the past year.

HDHHS STD Clinics

Symptomatic males examined at HDHHS STD Clinics who are gram stain positive for gonorrhea symptomatic are given dual therapy for gonorrhea and chlamydia. Only asymptomatic males are routinely screened for chlamydia infection. Therefore, the prevalence of chlamydia at screening in STD clinics for males, represents the prevalence of chlamydia in asymptomatic men.

Among males tested for chlamydia in HDHHS STD Clinics, in 1998, 7.2% (617/8,590) were infected, and in 1999, 8.3% (704/8471) were infected.

Among women tested in 1998, 8.6% (1,012/11,811) tested positive; in 1999, 8.3% (980/11,876) tested positive. These figures do not support an overall decline in the prevalence of chlamydia in Houston.

Percent Infected with Chlamydia at Testing



Figure A.7. The percent of individuals found infected with chlamydia among all tested, comparing prevalence at testing for 1998 through 2001.

A. CHLAMYDIA: GEOGRAPHIC DISTRIBUTION

Zip code information is missing for nearly 25% of reported chlamydia cases.

Among those reported by HDHHS STD, Family Planning, and Prenatal clinics, zip code information is available more than 95% of cases. Using this information, we can identify areas of the city where chlamydia rates were highest in 2001.

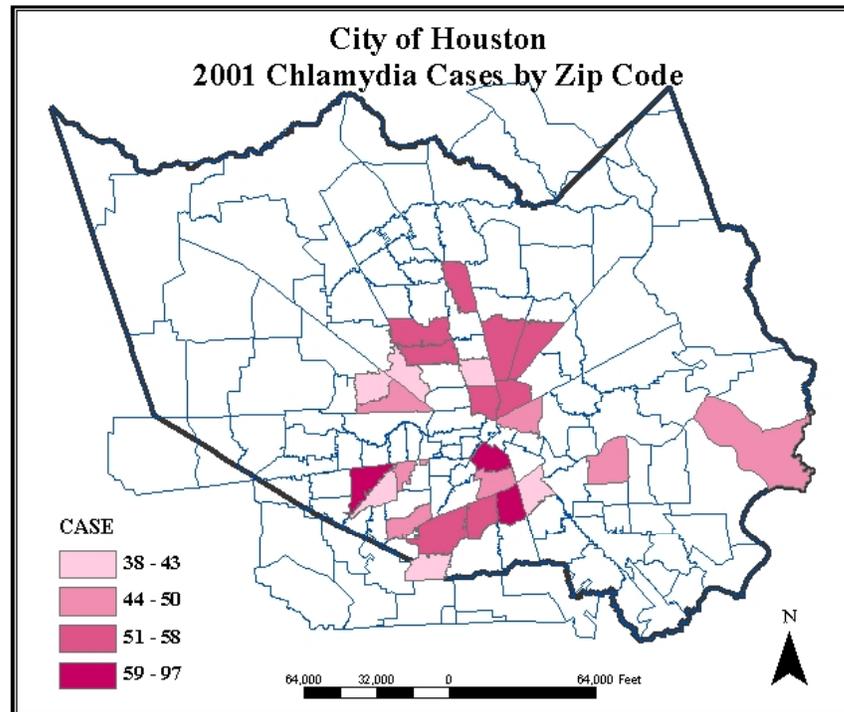
Fifty percent of infections identified through HDHHS STD clinics were from 25 of the City's 100 zip code areas listed below.

Distribution of Chlamydia cases identified through HDHHS STD
clinics in 2001, among zip codes of residence.

ZIP Code	Total Cases	Cumulative Percent
77033	97	4%
77004	93	7%
77036	76	10%
77088	58	12%
77051	57	15%
77009	56	17%
77045	54	19%
77060	54	21%
77093	54	23%
77091	53	25%
77016	52	27%
77026	52	29%
77021	50	31%
77020	47	33%
77035	47	35%
77055	46	36%
77081	46	38%
77506	46	40%
77520	44	42%
77022	43	43%
77080	42	45%
77053	40	46%
77087	39	48%
77074	38	49%
77092	38	51%

A. CHLAMYDIA: GEOGRAPHIC DISTRIBUTION

Figure A.8 Distribution of cases identified through HDHHS STD clinics, Houston/Harris County, 2001.



B. GONORRHEA INFECTIONS

B. GONORRHEA INFECTION

The nature and epidemiology of *Neisseria gonorrhoeae*

Gonorrhea, caused by *Neisseria gonorrhoeae*, is a common sexually transmitted disease. The estimated incidence of gonorrhea in the US is over 800,000 cases annually.⁵ As with chlamydia, testing and reporting are not consistent. Many infections are without symptoms and remain undiagnosed and unreported.

In the US, there were 361,705 cases reported to the CDC in 2001; Texas ranked 16th among states with 144.0 cases per 100,000 population and Houston ranked 42nd among cities of greater than 200,000 population, with 161.4 cases per 100,000 population.²

Year 2010 goal for gonorrhea is for no more than 19 new cases or less per 100,000.³ Year 2000 goals were for rates of no more than 375 per 100,000 among adolescents 15-19 years old and no more than 175 per 100,000 among women 15-44 years old. Houston gonorrhea rates in 2001 were 159 per 100,000 or nearly at the Year 2000 goals.

The Institute of Medicine estimated that the annual total cost associated with gonorrhea infection was 1.0 billion dollars.⁵ This includes both the direct cost of medical care and the contribution of lost productivity associated with being infected.

The national age-specific incidence rates tripled from 1963 to 1975, when over 1 million cases were reported. Prevalence rates for gonorrhea are related to age, gender, sexual preference, race, socioeconomic status, marital status, urban residence, and level of education.¹⁷ Rates are highest among teenagers, non-whites, the poor and poorly educated, in large cities, and among unmarried persons. As with chlamydia, rates are highest in the 15-24 year range and the female to male ratio is 1.3:1. Black and Hispanic females aged 15-24 have gonorrhea rates that are 17.6 and 1.6 times same-aged White females, respectively.²

Gonorrhea is usually spread by carriers who have no symptoms. Over 90 percent of men with gonococcal infection seek medical attention because of the development of urethral discharge. However, those who do not develop symptoms remain untreated and often serve as the main source of spread of infection to women. The infection can be passed to the newborn during birth and infect the conjunctivas, pharynx, respiratory tract, or anal canal.

B. GONORRHEA: CRUDE RATES

Table B.1. Crude rates for gonorrhea in Houston/Harris County, Texas, 1991-2001.

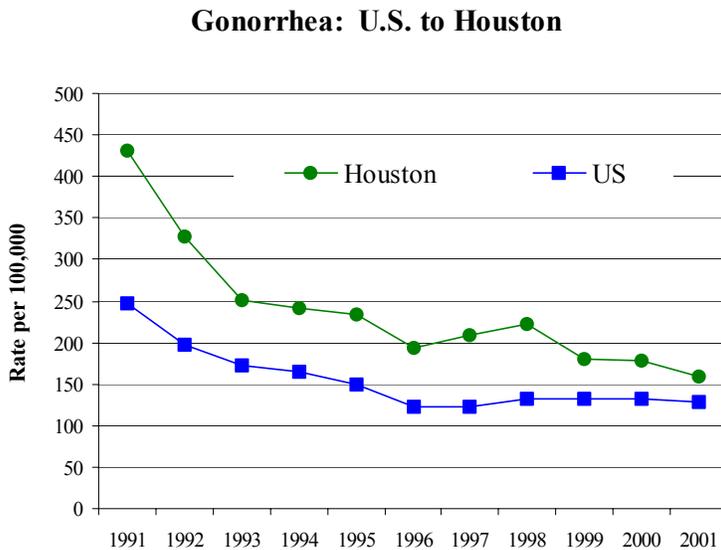
Gonorrhea	N	Rate	% Change*
1991	12,449	431.4	
1992	9,667	328.3	- 24%
1993	7,565	251.8	- 23%
1994	7,358	242.1	- 4%
1995	7,191	234.3	- 3%
1996	6,046	193.9	- 17%
1997	6,633	209.7	8%
1998	7,164	222.8	6%
1999	5,905	180.7	- 19%
2000	6,033	177.4	- 2%
2001	5,501	159.2	- 10%

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population. (Appendix).

* Change in rate from the preceding year.

In Houston/Harris County gonorrhea rates have decreased nearly 60% since 1991.

Figure B.1. Comparison of gonorrhea rates in the US to rates in Houston, 1991 through 2001. Gonorrhea rates in Houston/Harris County in 2001 were 1.2 times greater than the US rate of 128.5 per 100,000. Rates are falling nation wide, and rates in Houston are converging with US rates. Rates are reported per 100,000 persons.



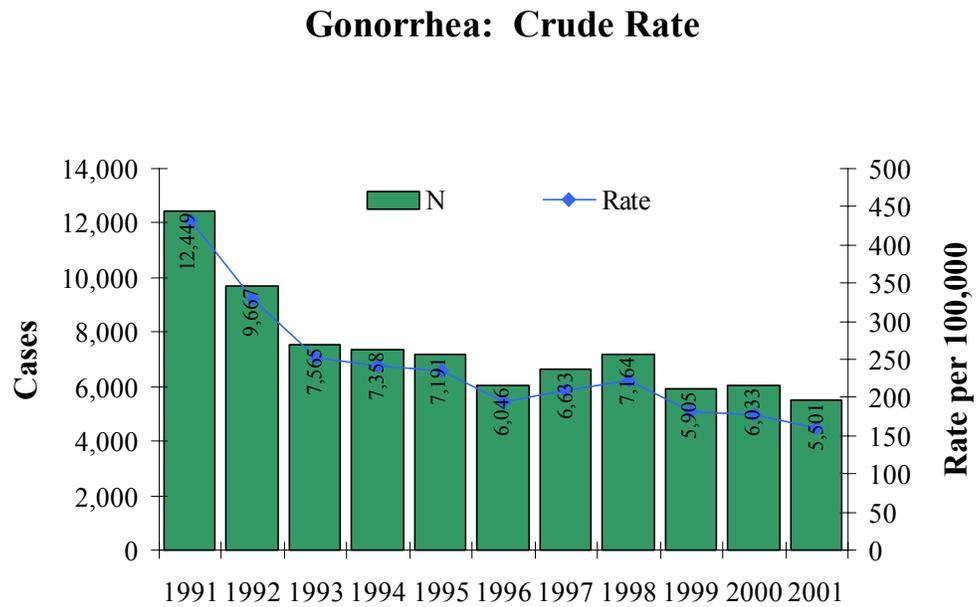
B. GONORRHEA: CRUDE RATES

Figure B.2. Gonorrhea cases and rates per 100,000 persons per year. Since 1991, there has been a slow decline in the number of reported cases of gonorrhea. This could be due to a true decline, or to changes in surveillance.

B. GONORRHEA: GENDER-SPECIFIC RATES**Table B.2.** Crude rates for gonorrhea in Houston/Harris County Texas, 1991-2001.

	Male		Number of Cases			Missing	
			Total	Rate	Black	Hispanic	White
1991	7,452	519.9	6,562	357	532	1	0%
1992	5,671	387.6	4,788	260	483	140	2%
1993	4,778	320.1	4,085	191	160	342	7%
1994	4,534	300.2	3,787	147	206	394	9%
1995	4,232	277.6	3,333	138	153	608	14%
1996	3,273	211.3	2,525	134	90	524	16%
1997	3,570	227.9	2,637	162	93	678	19%
1998	3,894	244.5	2,729	191	104	870	22%
1999	3,174	196.1	2,349	212	129	484	15%
2000	3,003	177.3	2,052	340	142	469	16%
2001	2,813	163.3	1,772	274	109	658	23%
Female							
1991	4,994	344.0	3,975	448	569	2	0%
1992	3,984	269.0	2,935	303	435	311	8%
1993	2,694	178.3	1,738	248	155	553	21%
1994	2,756	180.2	1,635	285	276	560	20%
1995	2,873	186.0	1,324	210	185	1,154	40%
1996	2,711	172.9	1,297	178	125	1,111	41%
1997	3,061	191.7	1,505	194	131	1,231	40%
1998	3,267	201.3	1,575	202	171	1,319	40%
1999	2,684	162.7	1,585	301	173	625	23%
2000	3,027	177.4	1,804	448	203	527	17%
2001	2,682	154.8	1,466	354	109	722	28%

Rates per 100,000 persons per year based on census or intercensal estimates of Houston/Harris County population. (Appendix).

Gonorrhea rates have been relatively stable since 1996, however, it is unclear if the stability is due to screening activity or a stability in population infections.

In 2000, rates among males and females in Houston/Harris County were 1.3 times greater than US rates. Healthy People 2010 target for gonorrhea prevalence is 19 cases/100,000; current rates for males and females nearly are 9 times that goal.

Gender data is relatively complete: fewer than 1% for each year are missing gender identification. Race/ethnicity data are relatively incomplete: since 1995, race/ethnicity data has been missing for 40% of females and approximately 20% of males. It is impossible to evaluate whether the missing values are evenly distributed: therefore comparison of changes in rates by race/ethnicity are not appropriate.

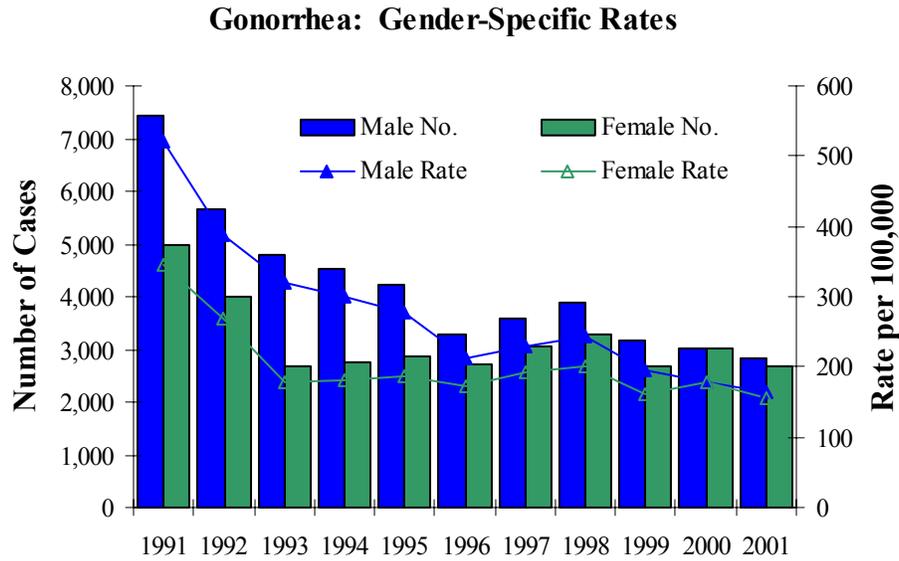
B. GONORRHEA: GENDER-SPECIFIC RATES

Figure B.3. Gonorrhea cases and rates by gender. Rates among males and females have been similar for the last two years. The 2010 goal is for 19 cases per 100,000 population; current rates in Harris County are nearly 9 times that goal. Rates are reported per 100,000 population based on intercensal estimates of Houston/Harris County population and the 2000 census (Appendix).

B. GONORRHEA: AGE-SPECIFIC RATES

Table B.3. Age-specific gonorrhea rates for Houston/Harris County Texas by sex, from 1991 through 2001.

Total Pop.	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
15-19	1,834	1,423	1,069	985	948	807	800	856	687	670	567
20-24	1,720	1,327	1,077	1,097	1,053	851	924	996	785	728	698
25-29	710	562	428	463	434	409	387	426	354	335	302
30-34	451	332	228	220	232	184	200	215	188	198	178
35-39	260	214	151	150	136	118	135	130	122	124	112
40-44	174	124	107	89	84	65	85	82	74	76	70
>44	48	34	29	26	27	20	39	42	29	20	22

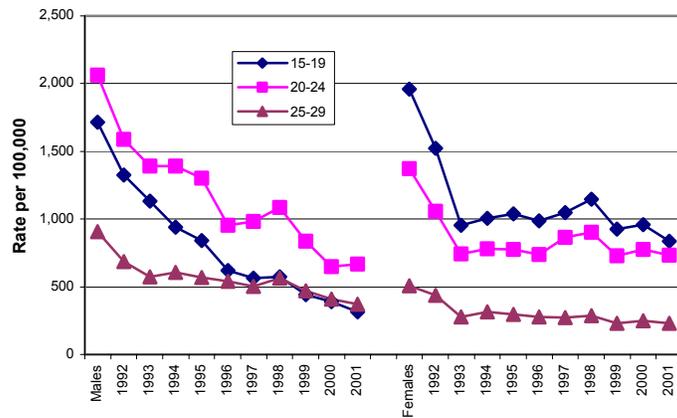
Males											
15-19	1,715	1,323	1,132	938	842	620	562	575	443	388	315
20-24	2,062	1,586	1,389	1,393	1,301	956	983	1,087	836	649	665
25-29	907	686	575	606	567	540	501	563	472	408	372

Females											
15-19	1,959	1,524	952	1,004	1,038	985	1,047	1,148	927	957	835
20-24	1,371	1,056	744	779	774	736	864	900	727	774	733
25-29	508	436	275	316	294	275	273	288	232	249	230

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (1991-2001) and the 2000 Census. (Appendix).

Figure B.4. Gonorrhea rates by sex and age. Although there was a decrease in the crude rates over time, rates among 20-24 year old males and females have not decreased substantially in the last two years.

Rates are highest in 20-24 year old males and 15-19 year old females.



B. GONORRHEA: DISTRIBUTION BY PROVIDER

In 2001, 40% of gonorrhea cases were found through HDHHS STD clinics; 3% through HDHHS family planning clinics, and 1.5% through HDHHS pre-natal clinics. 30% were identified through private physicians, Health Maintenance Organizations (HMOs), and laboratory reports.

Table B.4. Distribution of gonorrhea cases by provider type, 2001.

	1997	1998	1999	2000	2001
HDHHS STD ¹	3630	3653	3944	2562	2196
HDHHS FP ²	75	17	94	126	156
HDHHS Maternity ³	37	4	18	41	76
Jail / Correctional ⁴	23	65	66	62	45

¹ City STD: Lyons, Medical Center, Northside, Riverside, West End, and La Nueva Casa de Amigo.

² City Family Planning: La Nueva Casa de Amigo, Lyons, Northside, Riverside, Sunnyside and West End.

³ City Maternity: La Nueva Casa de Amigo, Lyons, Northside, Riverside, Sunnyside, West End.

⁴ Jail / Correctional: Harris County Sheriff, Municipal Detention Center.

B. GONORRHEA: PREVALENCE

Prevalence in Certain Clinical Settings

Prevalence at screening varies depending on the population examined and whether testing is done for surveillance or among symptomatic individuals. Screening prevalence rates are available for several populations in Houston.

HDHHS STD Clinics

Among females tested for gonorrhea in HDHHS STD Clinics, in 1998, 4.8% tested positive, 6.2% in 1999, and 5.8% in 2000. In STD clinics, asymptomatic males are tested for gonorrhea with Gen-Probe; in 1998, 4.2%, 2.8% in 1999, and 2.0% in 2000 tested positive.

HDHHS Maternity and Family Planning Clinics

Using data compiled through the HDHHS Laboratory, we can describe the prevalence of gonorrhea among women seeking care at maternity and family planning clinics. Among women tested for gonorrhea at HDHHS maternity clinics in 1998 - 2000, 1.1%, 1%, and 0.6% respectively, were found to be infected. Among women tested for gonorrhea at HDHHS family planning clinics in than 1% were infected in 1998 –2000.

Gonorrhea: Prevalence at Selected Clinics

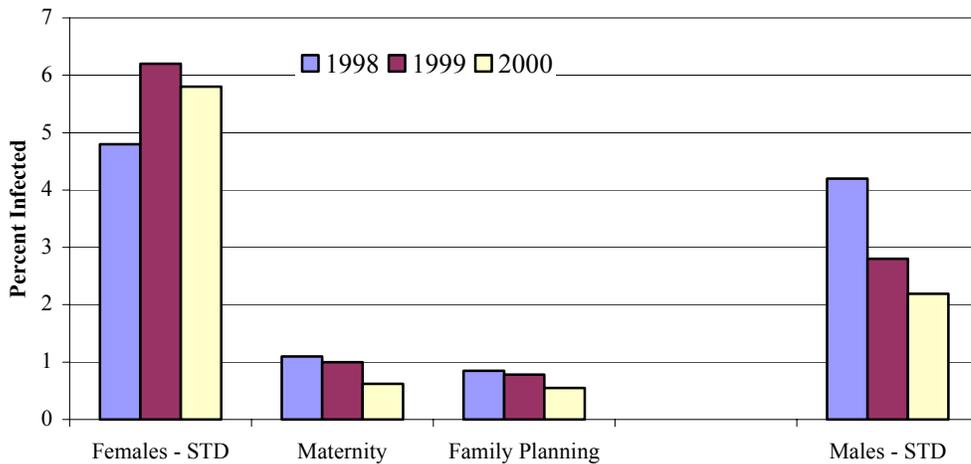


Figure B.6. Percent of positive tests reported by selected clinics for 1998-2000.

B. GONORRHEA: GEOGRAPHIC DISTRIBUTION

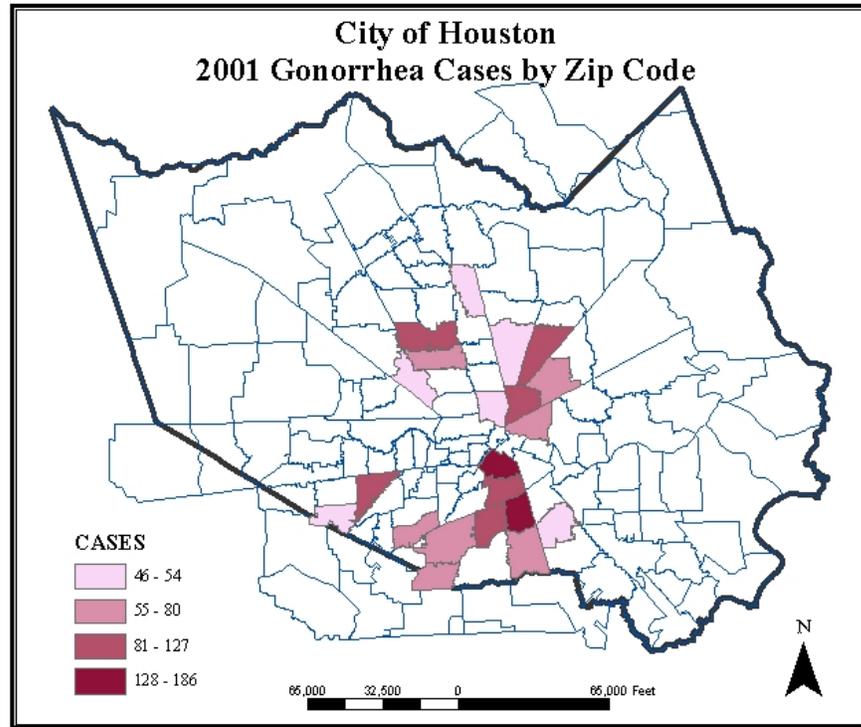
Zip code information is missing for nearly 20% of cases in 2001, however, zip code information was missing in only 5% of individuals reported from HDHHS STD, family planning, and pre-natal clinics. Using information from all HDHHS clinics, 50% of cases were found within 21 zip code areas.

Distribution of cases among zip code areas. The areas with the largest numbers of gonorrhea cases identified are similar to those at high risk of chlamydia.

Zip code	Cases	Percent of Total Cases
77033	186	5%
77004	175	11%
77021	127	14%
77036	106	17%
77016	98	20%
77088	96	23%
77026	95	26%
77051	92	29%
77045	80	31%
77028	66	33%
77035	66	35%
77048	61	37%
77053	61	38%
77020	59	40%
77091	59	42%
77060	54	43%
77099	52	45%
77092	51	46%
77061	49	48%
77093	48	49%
77009	46	51%

B. GONORRHEA: GEOGRAPHIC DISTRIBUTION

Figure B.7. Distribution of cases identified through HDHHS STD clinics, Houston/Harris County, 2001.



C. SYPHILIS INFECTION

C. SYPHILIS INFECTION

The nature and epidemiology of syphilis

Syphilis is caused by the organism *Treponema pallidum*. Sexual transmission occurs as a result of direct exposure to the lesions of early, infectious syphilis. Syphilis has a complex and variable clinical course. Untreated infections may progress through several stages of disease.

Primary syphilis is characterized by the presence of one or more chancres that may occur from 10 to 90 days after exposure, with an average of 21 days. **Secondary syphilis** occurs from 17 days to 6.5 months after the chancre appears (average 10 weeks) and is characterized by localized or diffuse mucocutaneous lesions, often with lymphadenopathy. The primary lesion may still be present. **Latent syphilis** occurs when the organisms persist in the body of the infected person without causing symptoms or signs. Latent syphilis is divided into early, late, and unknown categories based on duration of infection. Early latent syphilis is identified less than one year after the initial syphilis infection, and late latent syphilis has greater than one year's duration. Latent syphilis of unknown duration is diagnosed when the date of initial infection cannot be established as having occurred within the previous year and the patient's age and titer meet certain surveillance case definition criteria. **Tertiary syphilis** may occur after the latent infection, is characterized by chronic, inflammatory lesions that occur through out the body, but predominantly in skin, subcutaneous tissues, and bone. Tertiary syphilis may also produce cardiovascular and central nervous system disorders.

The incidence rates for syphilis infection increased in the United States over the decade of the 1980's, peaking in 1990. The increase occurred in both men and women; nationally, the male to female ratio of incidence rates is approximately 1:1.

Rates vary with age, race/ethnicity, socio-economic status, and among disease stages. In 2001, US rates for primary and secondary (P&S) syphilis were highest in the 20-29 year range for males and females and all race/ethnicity groups. For all ages, rates were highest among Blacks.² Texas ranked 14th among states in primary and secondary syphilis rates with 2.3 per 100,000 population; Houston ranked 26th among selected cities with greater than 200,000 population, with 5.8 cases per 100,000. The year 2000 objective for primary and secondary syphilis is 4.0 per 100,000 population; P&S rates reported in 2001 were 3.0/100,000. Houston is within the Year 2000 Objectives for primary and secondary syphilis.

Congenital syphilis may occur in infants born to mothers with untreated syphilis, especially primary, secondary, or early latent disease. The Year 2000 Objective for congenital syphilis is 40 cases per 100,000 live births; in 1999, Houston reported 39 cases for a rate of 31.5 per 100,000. US rates for congenital syphilis have declined since 1991; however, rates are still many time higher than most industrialized countries where congenital syphilis had been essentially eliminated.²

Syphilis elimination projects

The United States launched a national syphilis elimination campaign in late Fall, 1999 (HDHHS, STD Prevention Letter, January 2000). Syphilis elimination is defined by the CDC as the absence of sustained transmission (i.e., no transmission after 90 days of the report of an imported index case).¹⁸ The plan expects to address the race-related disparities in syphilis rates in the U.S and in other health status markers, such as AIDS, infant mortality, and coronary heart disease mortality. One of the main strategies in the syphilis elimination campaign is to develop and support communication between the multiple audiences participating in syphilis, HIV, and other STD prevention programs.

In a recent report from the CDC¹⁸, data for syphilis cases reported to state health departments show an increase in primary and secondary syphilis among men who have sex with men. Houston is listed as having a 50% increase in P&S syphilis (Table 2 is taken from MMWR 51(43);971-973:2002).

The pattern of syphilis in the US is changing. Racial/ethnic differences seem to be decreasing and the ratio of males to females is increasing, especially in cities with large gay populations.

TABLE 2. Counties and independent cities accounting for ≥50% of reported cases of primary and secondary syphilis, by number and rate* of persons infected — United States, 2001

County (Major City)	No.	Rate
Wayne County, Michigan (Detroit)	379	18.4
Cook County, Illinois (Chicago)	339	6.3
Fulton County, Georgia (Atlanta)	224	27.5
Los Angeles County, California (Los Angeles)	211	2.2
Shelby County, Tennessee (Memphis)	208	23.2
Dade County, Florida (Miami)	185	8.2
Baltimore, Maryland†	161	24.7
Maricopa County, Arizona (Phoenix)	148	4.8
New York County, New York (New York City)	145	9.4
San Francisco County, California (San Francisco)	138	17.8
Marion County, Indiana (Indianapolis)	128	14.9
Dallas County, Texas (Dallas)	121	5.5
Harris County, Texas (Houston)	103	3.0
Robeson County, North Carolina	90	73.0
Essex County, New Jersey (Newark)	79	10.0
Philadelphia County, Pennsylvania (Philadelphia)	78	5.1
Davidson County, Tennessee (Nashville)	76	13.3
Bexar County, Texas (San Antonio)	71	5.1
Kings County, New York (New York City)	71	2.9
Guilford County, North Carolina (Greensboro)	70	16.6
Franklin County, Ohio (Columbus)	62	5.8

* Per 100,000 population.

† Independent city.

C. SYPHILIS: CRUDE RATES¹

Although syphilis rates in Houston/Harris County have declined more than 83% since 1991, rates have increased 8% since 2000. This is a trend that has also been reported in the US.

Rates for primary and secondary (P&S) syphilis decreased 95% from 1991 through 2001, dropping from 56.8 per 100,000 to 3.0 per 100,000; unfortunately, P&S rates have been higher the last two years than the two years previous.

In 2000, Houston rates for total syphilis were 2 times greater than US rates (24 compared to 11 per 100,000).

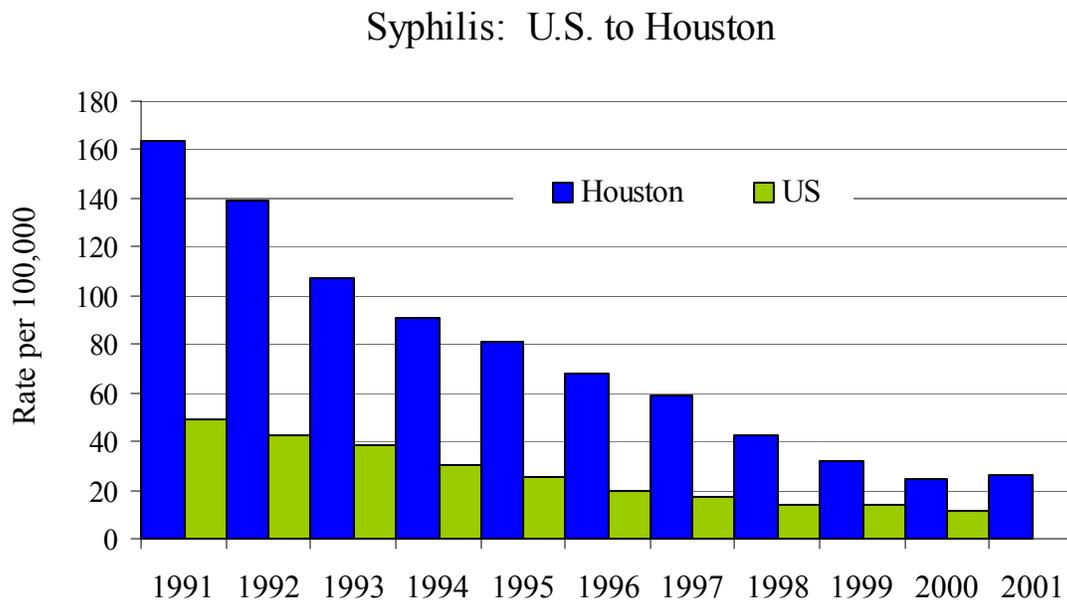


Figure C.1. Changes in total syphilis rates per 100,000 (excluding congenital) in Houston compared to the US. While there has been an 83% decline in syphilis rates in Houston since 1991, rates in 2001 were higher than rates in 2000. Rates are reported per 100,000 persons per year using Harris County population as the denominator (Appendix).

¹ Except where noted, syphilis rates will include all stages except congenital. Congenital syphilis will be reported separately.

C. SYPHILIS: CRUDE RATES

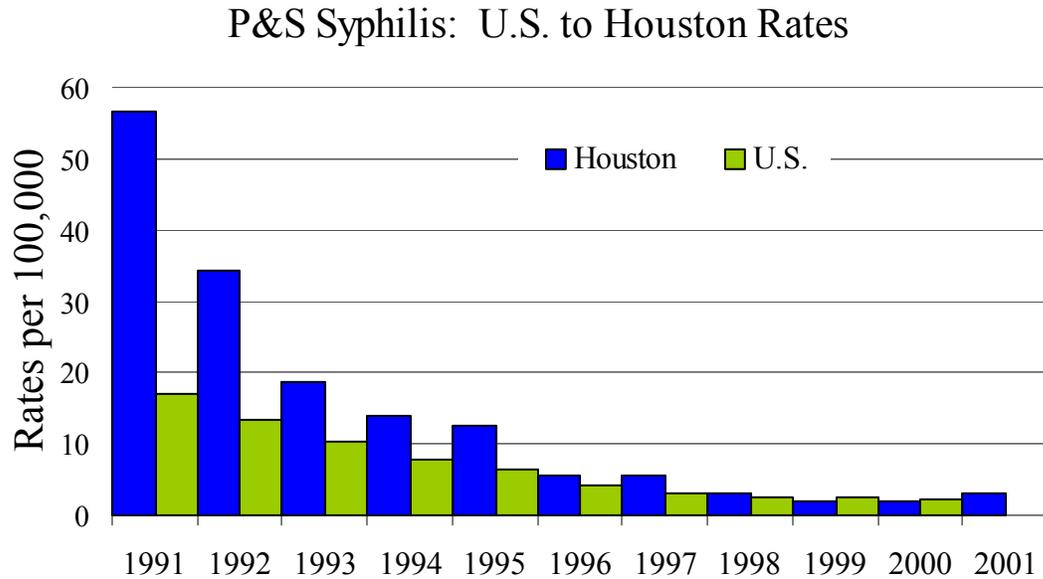


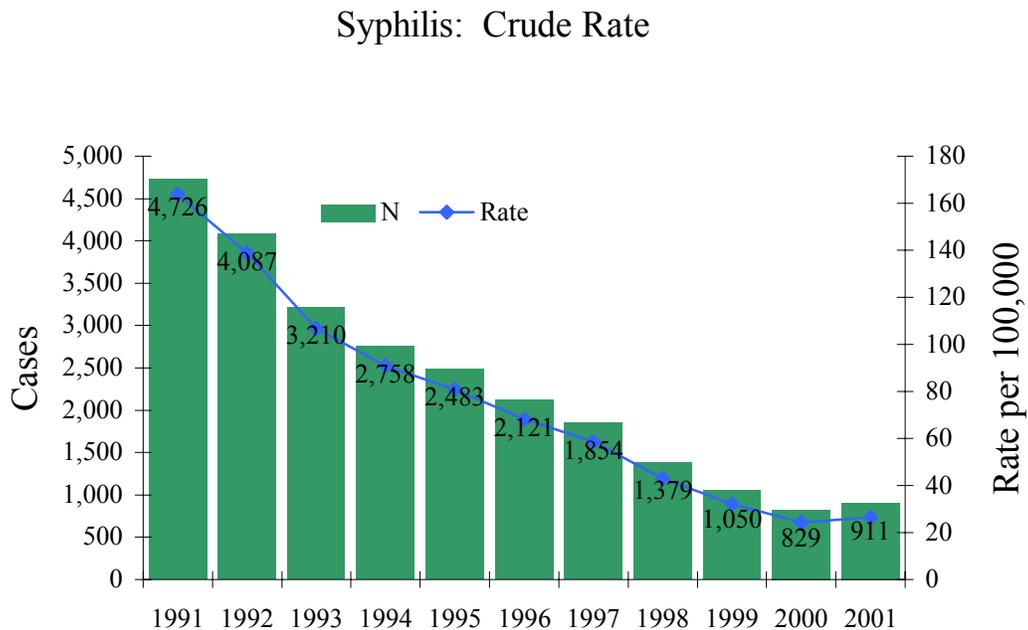
Figure C.2. Comparison of Primary & Secondary syphilis rates between the US and Houston/Harris County. *Health People 2010* goal for P&S syphilis is 0.2 case per 100,000. Crude P&S rates in Houston are 15 times that goal. Rates are presented per 100,000 persons per year using Harris County as the denominator (Appendix).

C. SYPHILIS: CRUDE RATES BY STAGE OF DISEASE**Table C.1.** Number of cases and rates per 100,000 population per year for primary and secondary syphilis (P&S), early latent syphilis (EL), and late latent syphilis (LL)*. Houston/Harris County, Texas, 1991-1997.

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of Cases											
P&S	1,638	1,011	558	428	389	178	174	99	68	71	103
EL	2,349	2,466	1,538	1,116	868	755	520	366	239	133	134
LL	739	610	1,114	1,214	1,226	1,188	1,160	894	721	620	674
TOTAL	4,726	4,087	3,210	2,758	2,483	2,121	1,854	1,379	1,050	824	911
Rate per 100,000 population per year											
P&S	56.8	34.3	18.6	14.1	12.7	5.7	5.5	3.1	2.1	2.1	3.0
EL	81.4	83.8	51.2	36.7	28.3	24.2	16.4	11.4	7.3	3.9	3.9
LL	25.6	20.7	37.1	39.9	39.9	38.1	36.7	28.4	22.1	18.2	19.5
TOTAL	163.8	138.8	106.9	90.7	80.9	68.0	58.6	42.9	32.1	24.4	26.4

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix).

* Syphilis of unknown duration was included with late latent syphilis.

**Figure C.3.** Crude number and rate of adult syphilis in Houston, 1991-2001. There is a modest, but troubling, 10% increase in rates in 2001 over 2000. Rates per 100,000 persons per year (Appendix).

C. SYPHILIS: CRUDE RATES BY STAGE OF DISEASE

Figure C.4. While rates for total syphilis have declined substantially since 1991, the rate of change has varied among the different stages of disease.

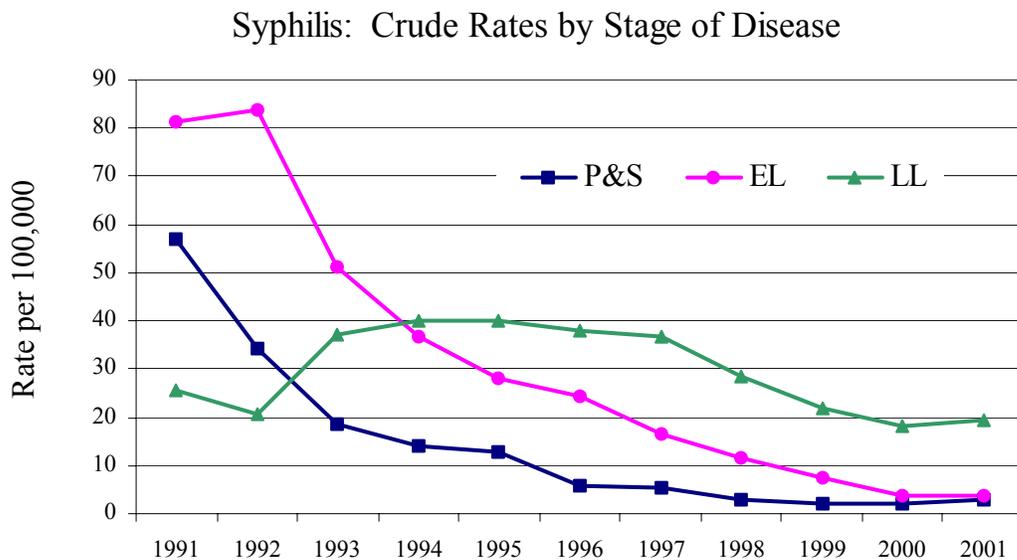
Primary and Secondary (P&S) syphilis declined 94% since the peak in 1991, however, rates in 2001 were 40% greater than the 2000 rates.

Early latent (EL) peaked in 1992 and has since declined 95%; rates in 2001 are essentially the same as the 2000 rates.

Late latent (including syphilis of unknown duration) did not peak until 1995, remained stable between 1995 and 1997, and declined 54% between 1997 and 2001; however, rates in 2001 are 10% greater than 2000 rates.

For all three stages of syphilis there was a increase in rates between 2000 and 2001.

Rates per 100,000 persons per year (Appendix).



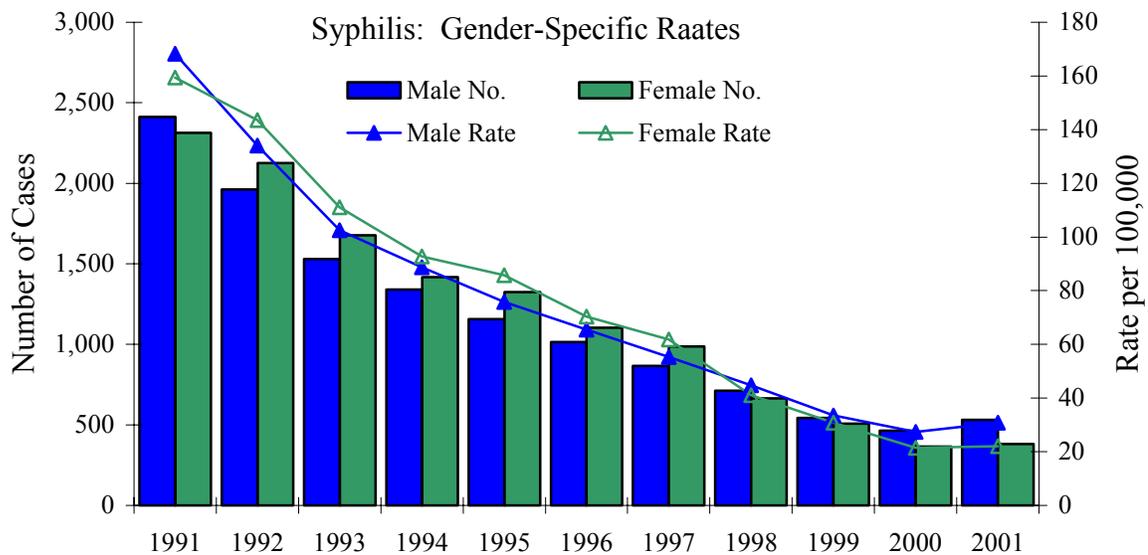
C. SYPHILIS: GENDER-SPECIFIC RATES

Table C.2. Gender-specific numbers and rates for syphilis in Houston/Harris County, Texas, 1991 – 2001.

	Male		Female	
	Total	Rate	Total	Rate
1991	2,412	168.3	2,314	159.4
1992	1,961	134.0	2,126	143.5
1993	1,530	102.5	1,678	111.1
1994	1,340	88.7	1,418	92.7
1995	1,156	75.8	1,324	85.7
1996	1,015	65.5	1,104	70.4
1997	867	55.3	987	61.8
1998	713	44.8	666	41.0
1999	534	33.5	507	30.7
2000	463	27.3	366	21.4
2001	530	30.8	381	22.0

Rates per 100,000 persons per year based on intercensal estimates of Houston/Harris County population (Appendix).

Figure C.5. Rates decreased dramatically from 1991 through 2000. In 2001, rates for both males and females increased slightly. The male to female ratio has been essentially 1:1 until 1999; the ratio was 1:3 in 2000 and 1:4 in 2001. Rates per 100,000 persons per year (Appendix).



C. SYPHILIS: GENDER-SPECIFIC RATES BY STAGE OF DISEASE

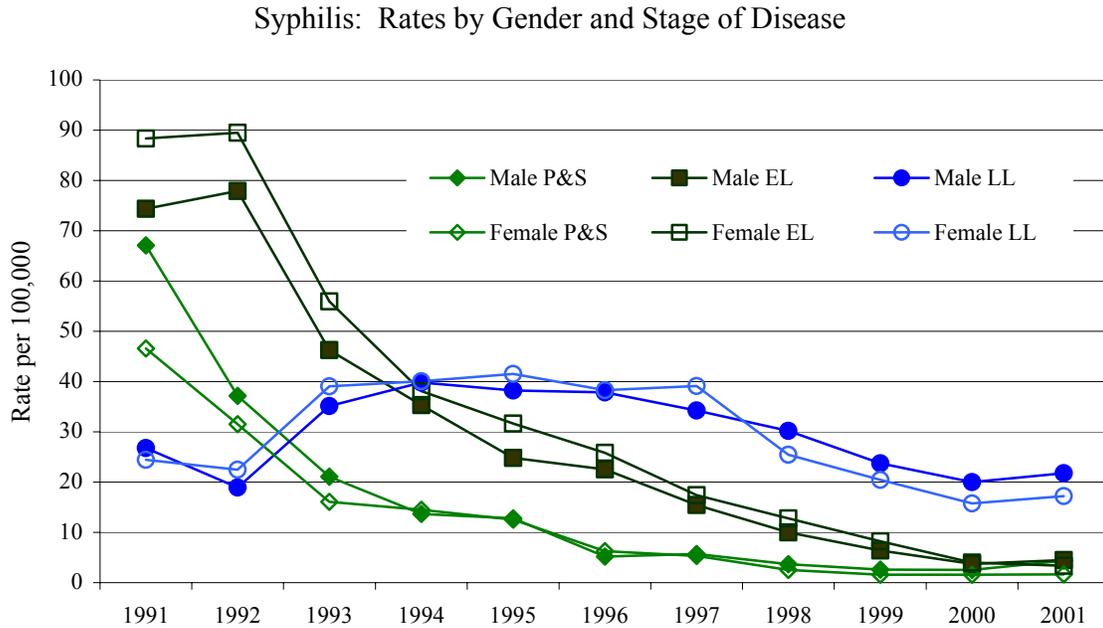


Figure C.6. The ratio of male rates to female rates has varied over time. From 1994 through 1997, the ratio in P&S syphilis was essentially 1:1. Since 1998 the ratio has increased (see Table C.3.) and may represent behavior changes in men who have sex with men.

Table C.3. Male to female ratio of syphilis rates, 1991 through 2001.

	Primary & Secondary	Early Latent	Late Latent
1991	1.4	0.8	1.1
1992	1.2	0.9	0.8
1993	1.3	0.8	0.9
1994	0.9	0.9	1.0
1995	1.0	0.8	0.9
1996	0.8	0.9	1.0
1997	1.1	0.9	0.9
1998	1.4	0.8	1.2
1999	1.6	0.8	1.2
2000	1.6	0.9	1.3
2001	2.7	1.4	1.3

C. SYPHILIS: RACE/ETHNICITY-SPECIFIC RATES

Table C.4. Number of total syphilis cases per year in Houston/Harris County, by race/ethnicity and gender

	Hispanic		African American		White		% Missing
	Male	Female	Male	Female	Male	Female	
1991	308	324	1991	1894	112	96	0.0%
1992	178	190	1660	1779	122	157	0.0%
1993	152	177	1250	1338	126	160	0.2%
1994	157	131	1067	1142	113	144	0.1%
1995	159	158	835	886	101	120	9.0%
1996	212	217	721	779	75	79	1.8%
1997	194	190	610	713	61	78	0.4%
1998	200	161	431	418	65	55	3.5%
1999	144	134	327	303	59	57	2.5%
2000	141	113	263	226	56	26	0.5%
2001	174	114	284	220	67	42	0.8%

Rates of total syphilis per year in Houston/Harris County, per 100,000 persons per year (Appendix).

	Hispanic		African American		White	
	Male	Female	Male	Female	Male	Female
1991	87	100	782	662	14	11
1992	48	56	641	612	15	18
1993	40	50	474	453	15	19
1994	40	36	400	382	13	17
1995	40	42	309	293	12	14
1996	51	56	264	254	9	9
1997	42	44	231	234	7	9
1998	40	36	158	134	8	6
1999	28	28	122	98	7	7
2000	25	22	93	70	6	3
2001	29	21	96	65	8	5

C. SYPHILIS: RACE/ETHNICITY-SPECIFIC RATES

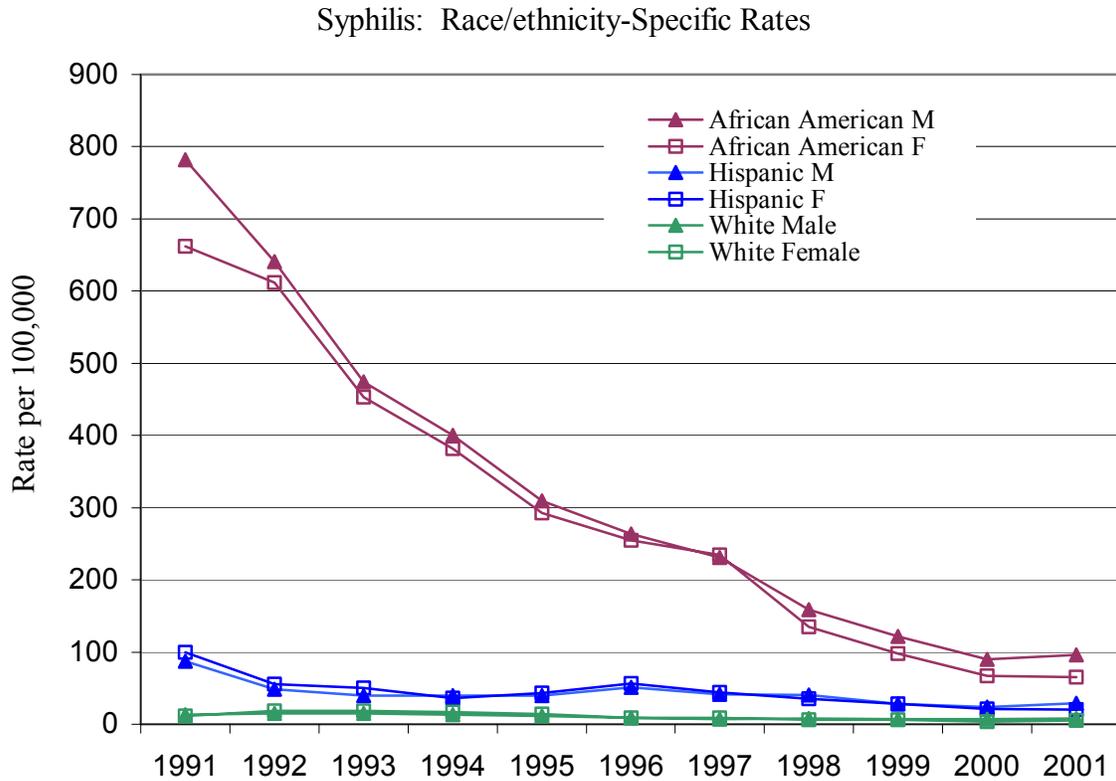


Figure C.7. Race-ethnicity specific numbers of cases and rates for total adult syphilis in Houston/Harris County, Texas, 1991-2001.

There are very few syphilis cases missing race/ethnicity data. Rates are highest among African Americans; intermediate among Hispanics, and lowest among Whites and all other race/ethnicity groups. Even with the differences in overall rates, all race/ethnicity groups have experienced similar declines until 2000, and all experienced slight increases in 2001.

Rates per 100,000 persons per year based (Appendix).

C. SYPHILIS: AGE DISTRIBUTION

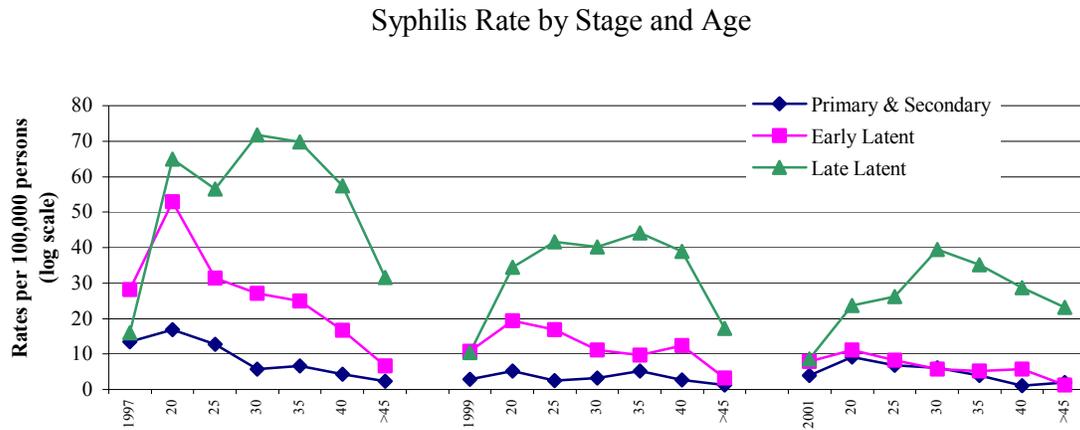


Figure C.8. Rates for primary and secondary and early latent syphilis have declined in each age category. P&S and early latent are most common among those in under age 30, while the majority of late latent syphilis cases seem to be in those over age 30. Data are presented on the log scale so that the patterns are more distinct.

Rates per 100,000 persons per year (Appendix).

C. SYPHILIS: CONGENITAL SYPHILIS

Table C.5. Harris County Congenital syphilis rates per 1,000 live births. 2001 live births are estimated, based on the average increase since 1997.

Year	Total	Hispanic	Black	White	Rate per 1000 live births (total)
1994	85	6	62	16	1.5
1995	88	14	58	18	1.5
1996	122	31	74	18	2.1
1997	108	29	76	5	1.8
1998*	51	23	27	1	0.8
1999	47	20	26	1	0.8
2000	34	12	20	2	0.5
2001	20	10	8	1	0.3

* Race/ethnicity data was not available for 1998.

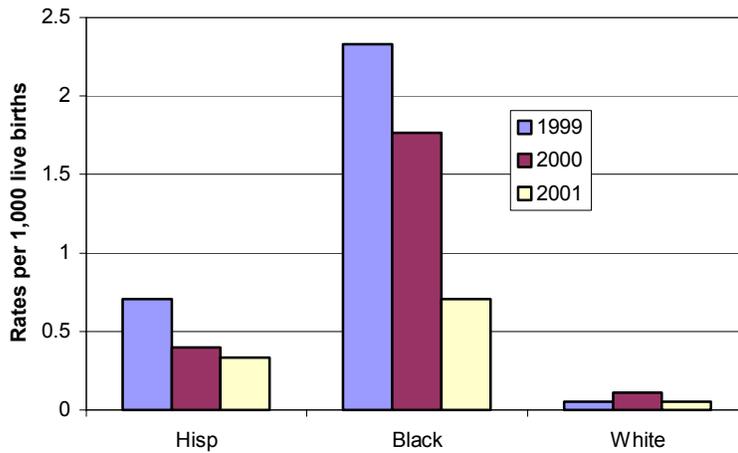


Figure C.9. Rates of Congenital Syphilis by race/ethnicity. The congenital syphilis rates per 1,000 live births has decreased since the peak in 1996. The proportion of cases that are Hispanic has increased; Hispanics now represent nearly half of the congenital syphilis cases. However, nearly half of all births in Harris County in 2000 were Hispanic. By 1,000 live births, congenital syphilis rates are highest among African Americans, followed by Hispanics.

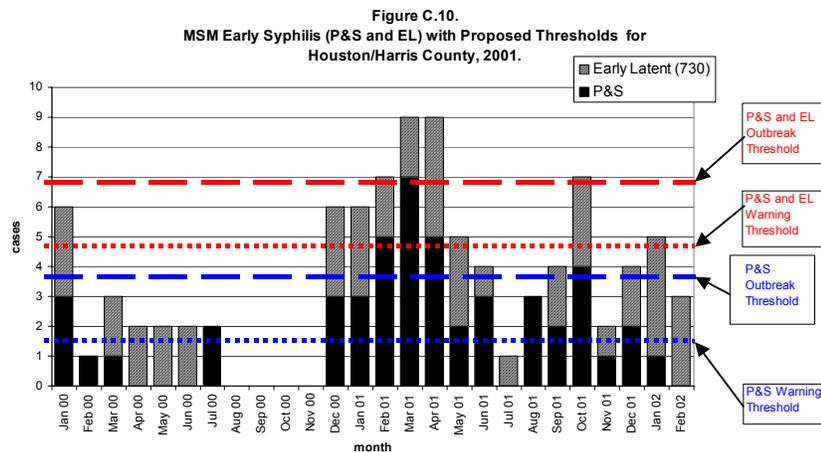
C. SYPHILIS: EPIDEMIC AMONG MEN WHO HAVE SEX WITH MEN²

A dramatic increase in the number of cases of primary and secondary syphilis was noted among men who have sex with men was noted in early 2001. There were 95 cases of primary and secondary syphilis reported in Houston, compared to 73 P&S cases in 2000. The increase was directly due to an outbreak of early syphilis in men who have sex with men. There was more than a 3 fold increase in early syphilis cases in MSM in 2001 (35 cases) compared to 2000 (10 cases). This increase was not observed in women or heterosexual men.

Outbreak trend

- after increasing numbers of syphilis cases among MSMs during December 2000 through March 2001, the number of P&S syphilis cases among MSM has decreased.
- MSM early syphilis cases were about the MSM outbreak threshold from December 2000 through June 2001, but have remained at or below this threshold 4 out of the last 6 months.
- During 2001, MSM accounted for 36% of P&S syphilis cases compared to only 14% in 2000.
- During 2001, 47% of MSM infected with P&S syphilis were known to be HIV positive and after removing those with unknown HIV status, 64% were HIV positive.
- The outbreak has not been limited to any race/ethnicity group.
- The highest percentage of cases are 30-39 years of age.

Although the outbreak slowed after a Spring peak, the number of P&S cases among MSMs remains higher than expected.



² This information is taken from a summary report produced by Liz Lee at the Bureau of HIV/STD Prevention, published in January, 2002.

C: SYPHILIS DISTRIBUTION BY PROVIDER

Syphilis: Percent of Cases by Provider

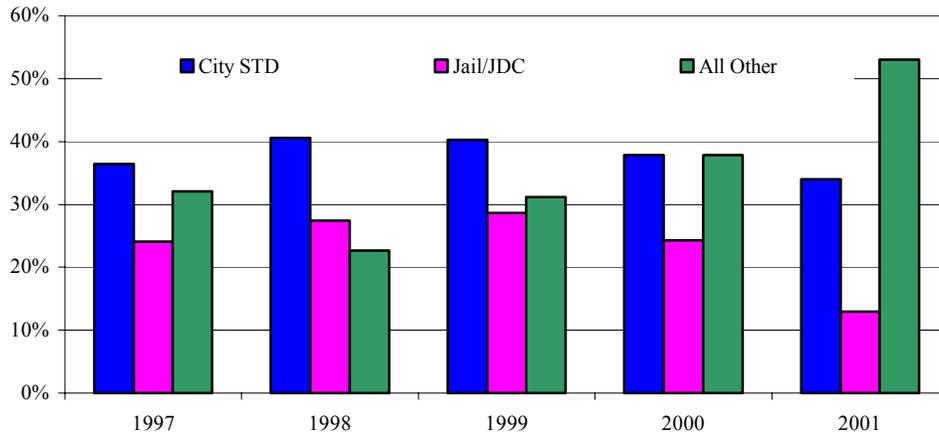


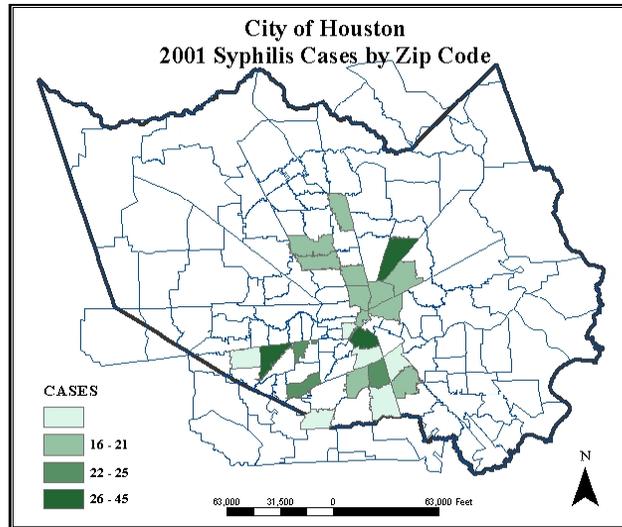
Figure C.10. Distribution of cases among provider types, 1997-2001. HDHHS STD clinics identified nearly 40% of all cases during the last five years and another 20% were identified through correctional facilities. In 2001, private facilities identified almost 25% of all cases; other institutions identifying syphilis include: HIV testing facilities, prenatal clinics, and other public clinics.

C. SYPHILIS: GEOGRAPHIC DISTRIBUTION**Table 3.5** More than 50% of syphilis cases reported in Houston/Harris County, 2001, listed as zip code of residence the following 23 zip code areas.

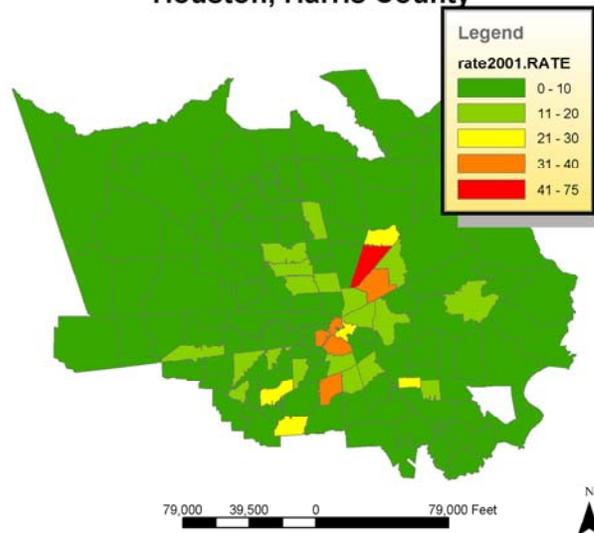
Zip Code	Cases	Percent of Total	Cumulative Percent
77016	45	4.8%	4.8%
77004	39	4.2%	9.0%
77036	33	3.5%	12.6%
77081	25	2.7%	15.3%
77033	23	2.5%	17.7%
77035	22	2.4%	20.1%
77020	21	2.3%	22.3%
77002	20	2.1%	24.5%
77088	20	2.1%	26.6%
77009	19	2.0%	28.7%
77026	19	2.0%	30.7%
77028	19	2.0%	32.8%
77051	18	1.9%	34.7%
77060	18	1.9%	36.6%
77091	18	1.9%	38.6%
77022	17	1.8%	40.4%
77061	17	1.8%	42.2%
77072	15	1.6%	43.8%
77021	14	1.5%	45.3%
77053	14	1.5%	46.8%
77087	14	1.5%	48.3%
77006	13	1.4%	49.7%
77048	13	1.4%	51.1%

C. SYPHILIS: GEOGRAPHIC DISTRIBUTION

Distribution of cases in Houston/Harris County, 2001.



**2001 Rates of Early Syphilis by Zip Code Area:
Houston, Harris County**



D. AIDS/HIV INFECTION

D: HIV/AIDS THE NATURE AND EPIDEMIOLOGY OF HIV/AIDS

Human immunodeficiency virus (HIV) is transmitted by the exchange of infected body fluids, primarily blood, semen, and vaginal fluids. These exchanges take place during sexual activity and the sharing of needles and other injection drug equipment. Information regarding the trends in risk behaviors of the local HIV infected population can help to indicate the direction for prevention efforts. Behaviors that may place individuals at increased risk of HIV and other STDs include: male to male sex; being a female partner of bisexual men; risky sexual behavior, including multiple partners and lack of condom use; injection drug use; and cocaine use.

Estimates for male gay sex can be found from the National Health and Social Life Survey. Of men surveyed:

- 7.3% in urban areas and 4.8% in suburban areas reported at least one same-sex experience since age 18.
- Among men who reported any same-gender sex, 81.6% reported bisexual activity.

There are few population estimates of specific risky sexual behaviors. Two national surveys, The National Health Interview Survey¹⁹ and Behavioral Risk Factor Surveillance Survey²⁰ asked composite questions to which participants could indicate that they had done at least one of a list of risky behaviors.

- 2.5% of males and 1.6% of females answered “yes” that they had done at least one of the following risky behaviors:
 - received clotting factor concentrates, had male to male sex since 1980, taken street drugs by needle, traded sex for money or drugs, or been the sex partner of anyone who could answer “yes” to any of these activities.

Prevalence of injection drug use is difficult to estimate since there are few population based surveys addressing this exposure, and the truth is difficult to elicit. The National Institute on Drug Abuse estimates from the 1998 National Household Survey on Drug Abuse²¹ that there are:

- 2.4 million heroin users (0.9% of the population), the majority of whom inject heroin.

The 2000 Texas Survey of Substance Use Among Adults²², found that:

- 1.2% of the Texas population surveyed reported any lifetime use of heroin and 0.1% report heroin use in the past year.
- Adults 18-24 had higher prevalence of heroine use (2.2%).
- Males had higher rates than females (1.8% compared to 0.7%).

In 1997, the National Institute on Drug Abuse (NIDA) reported that an estimated 1.5 million Americans were current cocaine users. Augmenting this estimate with additional data sources, the number of chronic cocaine users in the U.S. is estimated to be:

- 1.3% of the population (approximately 3.6 million people) were chronic cocaine users.
 - Adults 18-25 had the highest rates of use;
 - Men had higher rates of use than women.

By race/ethnicity:

- 1.4 percent of African Americans,
- 0.8% of Hispanics, and
- 0.6% of Whites were current cocaine users.

In the Third National Health and Nutrition Examination Survey¹, 13.2% of the population admitted having used cocaine or crack in their lifetime (17% of males and 10% of females).

These estimates are similar to those reported by the Texas Commission on Alcohol and Drug Abuse which identified:

- 11.7% of the surveyed population as having used cocaine in their lifetime and
- 1.1% in the past year (1.6% among males and 0.6% among females).

The nature of HIV/AIDS

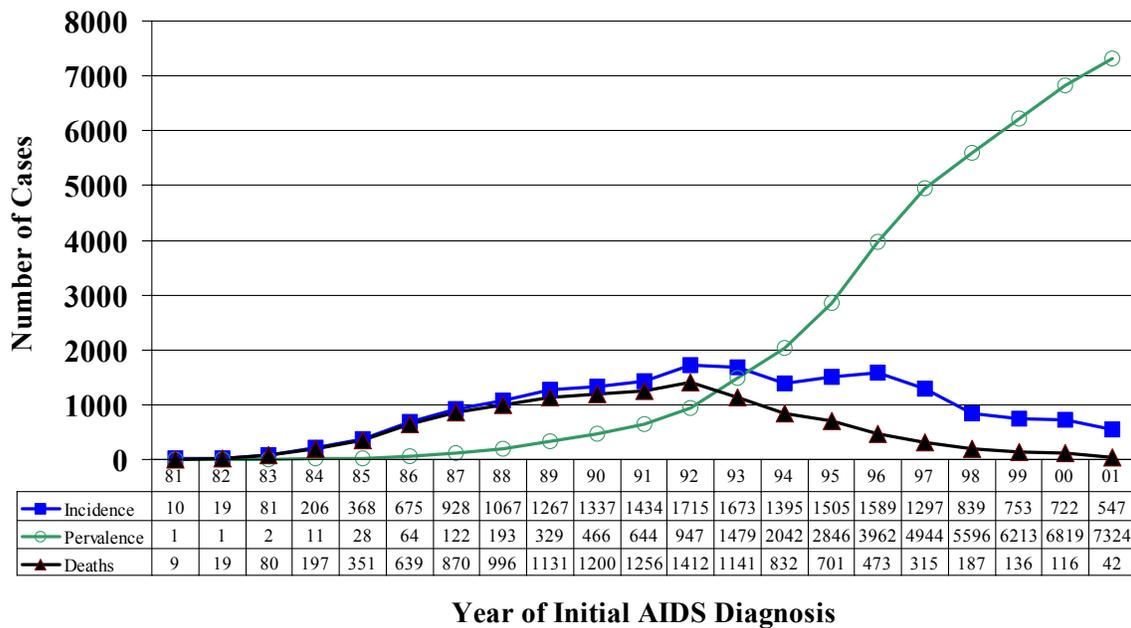
Unlike the treatable STDs described in this epidemiologic profile, once infected with HIV, a person remains infected. Infection with HIV may eventually lead to a diagnosis of acquired immunodeficiency (AIDS). Prior to new therapies for HIV, infected individuals progressed rather steadily to AIDS; with new therapies introduced in 1996, AIDS may be delayed for many years. Both AIDS and HIV are reportable; however, with the advent of these new therapies and enhanced prophylactic regimens, the pattern of AIDS has been altered making comparisons of AIDS prevalence across years difficult to interpret.

¹ National Center for Health Statistics. Third National Health and Nutrition Examination Survey. 1988-1994. US Department of Health and Human Services.

D: AIDS: INCIDENCE, PREVALENCE, MORTALITY

Figure D.1. The prevalence of AIDS (proportion of the population living with AIDS) has increased, not due to increased numbers of persons progressing to AIDS, but rather due to increased survival (decreasing deaths) among persons with AIDS. Similarly, the incidence of AIDS, or the numbers of persons progressing to AIDS is decreasing. However, at this time, the number of persons living with HIV, prior to progression to AIDS, is not known because HIV has only been a reportable disease since 1999.

**Figure D.1. AIDS, Incident Cases (by year of diagnosis),
Prevalent Cases (number living with AIDS), and
Number of Deaths per year.
Houston/Harris County, Texas. 1981-2001,**



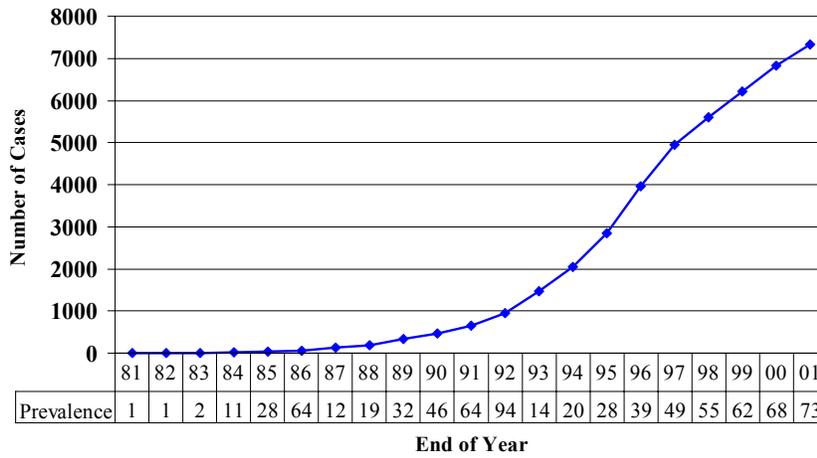
Houston HIV/AIDS Surveillance

Reported Through 6/30/02

D. AIDS: PREVALENE OF AIDS (PERSONS LIVING WITH AIDS)

Although the number of persons progressing to AIDS is decreasing, the number of persons living with AIDS is increasing, primarily due to new therapeutic regiments. There are now similar numbers of Blacks and Whites living with AIDS, and the number of Hispanics living with AIDS is increasing.

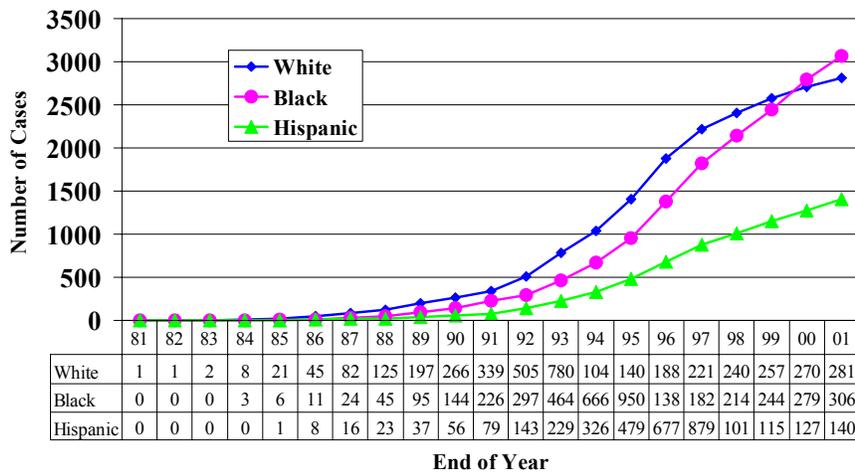
Figure D.2.
Prevalence of AIDS. Number of persons living with AIDS
at the End of Each Year.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Figure D.3.
Prevalence of AIDS. Number of persons living with AIDS
at the End of Each Year, by Race.
Houston/Harris County, Texas. 1981-2001.



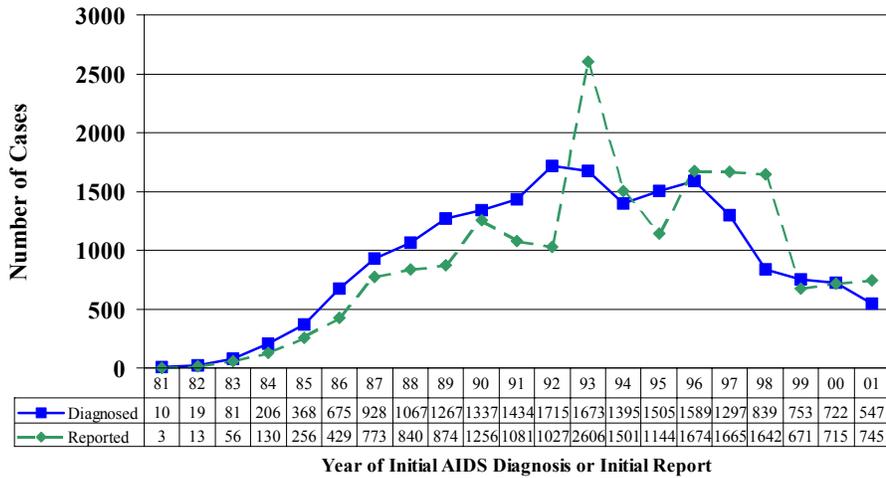
Houston HIV/AIDS Surveillance

Reported Through 6/30/02

D: AIDS: CRUDE INCIDENCE AND INCIDENCE BY SEX

Because AIDS cases may not be reported in the year in which they were diagnosed, information about cases may be compared by year of report, or by year of diagnosis. This report will include data on cases occurring through December 31, 2001 and reported through June 30, 2002. Due to the considerable lag time in the reporting of data, all data is subject to update as new reports are submitted.

Figure D.4.
AIDS Cases By Date of Diagnosis & Date of Report.
Houston/Harris County, Texas. 1981 – 2001.

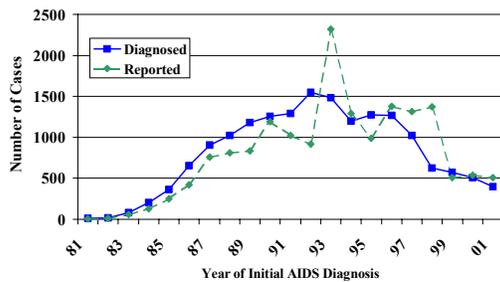


Houston HIV/AIDS Surveillance

Reported Through 6/30/02

The number of diagnosed and reported AIDS cases has decreased steadily among males since the peak in 1992 and among women since 1996. In 2001, there were 396 males reported with AIDS and 151 females.

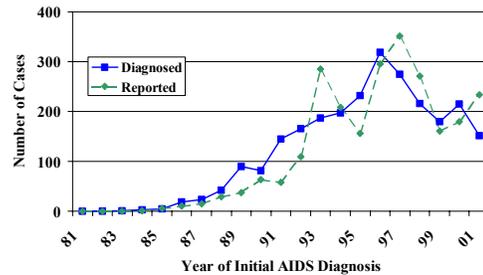
Figure D.5.
AIDS Cases By Date of Diagnosis & Date of Report – MALES.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Figure D.6.
AIDS Cases By Date of Diagnosis & Date of Report – FEMALES.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

D. AIDS: CASES AND RATES BY SEX

In the last 6 years, the number of cases of AIDS has been declining among both males and females (see Figure D.7.).

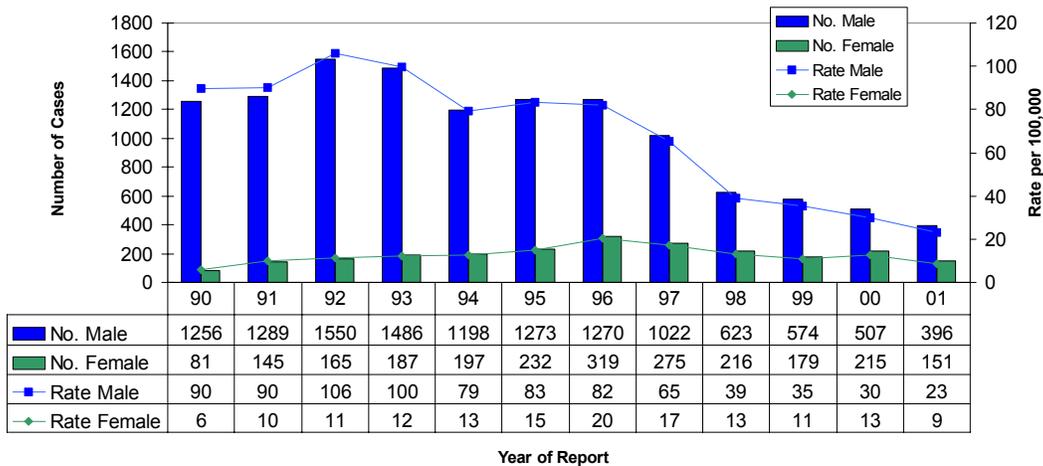
From the peak in 1992, males cases have declined 75%, dropping from 1550 cases to just 396 cases. This represents an average decline of more than 8% per year for the last 9 years.

For females, the highest case number was in 1996, with 319 cases reported; since then, there has been a 50% reduction – down to 151 cases. This represents an average reduction of 10% per year for the last five years.

The numbers of HIV infected individuals progressing to an AIDS diagnosis has decreased in the last 4 years, primarily due to new therapies.

The reduction in rate of AIDS cases is not directly related to a reduction in rates of HIV infection; these changes can be more appropriately attributed to new therapies. Since 1996, rates for AIDS have declined 50% among Blacks, 40% among Hispanics, and 26% among non-Hispanic Whites. Part of the differences may represent when the epidemic peaked among the different race/ethnicity groups. Rates peaked among non-Hispanic Whites in 1992; rates peaked for Hispanics in 1995; rates did not peak for Blacks until 1997.

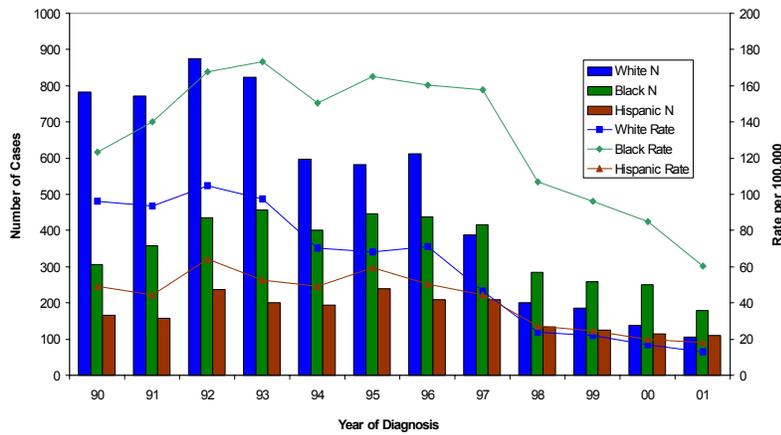
Figure D.7.
AIDS Cases and Rates per 100,000 persons, by SEX.
Houston/Harris County, Texas. 1990-2001.



D. AIDS: CASES AND RATES BY SEX AND RACE/ETHNICITY

The number of AIDS cases and the rate of AIDS development are declining among all race/ethnicity groups in both sexes (see Figure D.8 and D.9.).

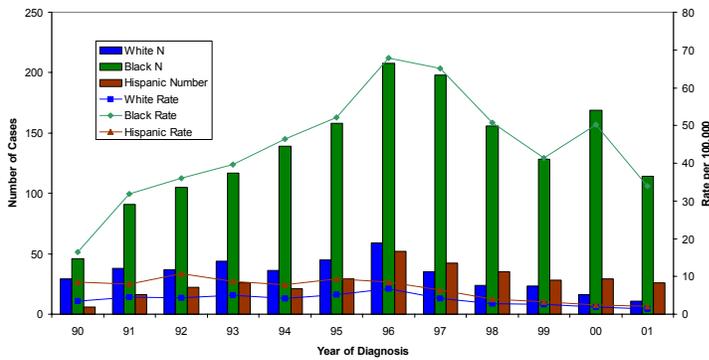
Figure D.8.
AIDS Cases and Rates per 100,000 persons – Male.
Houston/Harris County, Texas. 1990-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Figure D.9.
AIDS Cases and Rates per 100,000 persons – Female.
Houston/Harris County, Texas. 1990-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

In males, the rate of decline among Whites has exceeded the rate of decline among Black and Hispanic groups (see Figure D.8.).

Rates among Black females far exceed the expected, compared to Whites and Hispanics. The rate per 100,000 of AIDS among Black females is 30 times greater than among Whites (33.9 compared to 1.3) and 15 times greater than among Hispanics (33.9 compared to 2.1). Black males have the highest rates in 2001 (60.5/100,000 or nearly 1 per 2,000).

Rates for Black females steadily increased from 1990 through 1996, and have since declined, however, in 2001, Black females have the second highest rates of AIDS (33.9/100,000).

These data show the disproportionate impact of HIV/AIDS on the minority community and in particular Blacks. There was also a slight increase for Hispanic males and females through 1996, but an overall decrease in the rates for White males and females.

For all the population categories, a decrease in the rate of AIDS cases is expected as the impact of improved therapies delays or eliminates the progression to AIDS. At this point in the epidemic, a case of AIDS represents a series of real failures:

- First, a failure to prevent infection.
- Failure to ensure all infected individuals get appropriate care.
- Failure, unfortunately, of current treatment to delay progression of disease in all situations.

D. AIDS: PERCENT OF CASES BY RACE/ETHNICITY

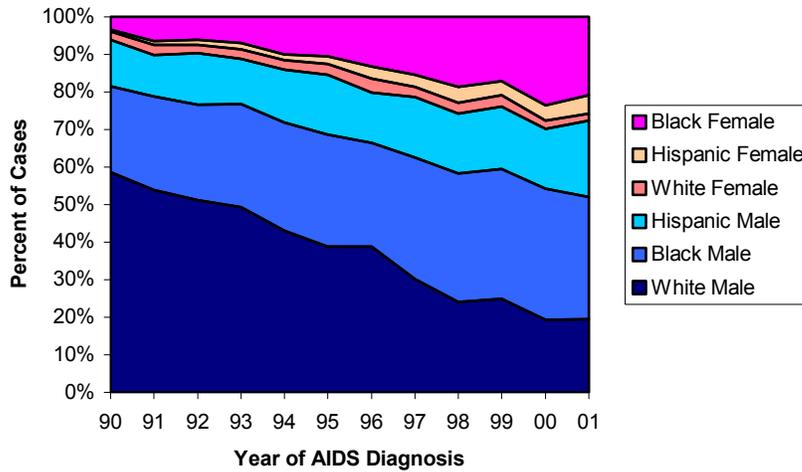


Figure D.10. The distribution of AIDS cases diagnosed each year, by sex and race/ethnicity, Houston/Harris County, Texas. 1990-2001. This figure shows that the proportion of all AIDS cases that are White Males has decreased while the proportion that are Black Males and Black Females has increased. The proportion that are Hispanic Males and Hispanic Females have also increased.

The following table lists the distribution of race/ethnicity and sex in the population and among AIDS cases. If AIDS cases were randomly distributed among the race/ethnic groups the proportion of AIDS cases would be the same as the population distribution. However, Black males represent almost 4 times more AIDS cases than expected; Black females represent twice expected; and White females have only one tenth the proportion of AIDS cases as expected.

Table D.1. Comparison of the distribution of the population by race/ethnicity and sex and the distribution of AIDS cases diagnosed in 2001 by race/ethnicity and sex. Houston/Harris County, Texas. 2001.

Table D.1.	Distribution in the Population – 2001	Distribution of AIDS cases – 2001	Ratio*
Black Male	9%	33%	3.7
Black Female	10%	21%	2.1
Hispanic Male	18%	20%	1.1
Hispanic Female	16%	5%	0.3
White Male	24%	19%	0.8
White Female	24%	2%	0.1
TOTAL	100%	100%	

* indicates if distribution of AIDS cases is more or less than expected given the distribution of the population. Greater than 1 indicates greater proportion of AIDS cases than expected; less than 1 indicates smaller proportion of AIDS cases than expected.

Table D.2. provides a comparison of AIDS cases and rates for the years 1990-2001. Also provided are the distribution of cases among sex-race/ethnic groups. Note that, although the proportion of cases attributed to Black females is increasing, the rate of AIDS among Black females is decreasing. The rate of AIDS development is a better indication of the burden of disease in a population. In 2001, Black males were 4.6 times more likely to be diagnosed with AIDS and Hispanic Males were 1.4 times more likely to be diagnosed with AIDS than White males. Black females were 30 times more likely to be diagnosed with AIDS and Hispanic females were 15 times more likely to be diagnosed with AIDS compared to White females.

Table D.2. For each year of diagnosis, AIDS cases and Rates per 100,000, by race/ethnicity. Rates are calculated with Harris County population estimates. For 1990 and 2000, census data is used. For 1991-1999 and 2001, intercensal estimates. Houston/Harris County, Texas, 1991-2001.

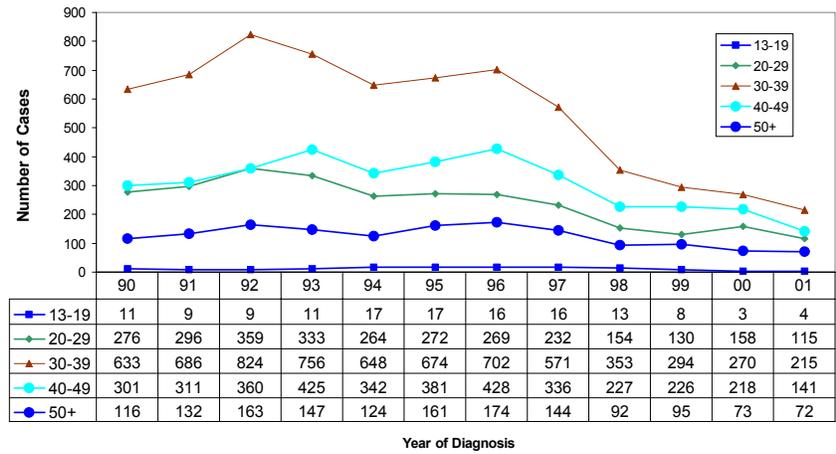
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of AIDS cases diagnosed per year												
White Male	783	772	875	824	596	582	612	389	200	186	139	106
Black Male	307	357	435	456	401	446	438	417	285	258	250	178
Hispanic Male	165	157	236	201	194	239	210	208	133	124	115	110
White Female	29	38	37	44	36	45	59	35	24	23	16	11
Black Female	46	91	105	117	139	158	208	198	156	128	169	114
Hispanic Female	6	16	22	26	21	29	52	42	35	28	29	26
Rates per 100,000 persons of AIDS cases diagnosed per year												
White Male	96.2	93.5	104.7	97.5	70.1	68.2	71.1	46.5	23.9	22.1	17.0	13.1
Black Male	123.1	140.1	167.8	173.1	150.3	165.2	160.3	157.9	106.9	96.1	85.1	60.5
Hispanic Male	49.0	44.5	64.1	52.4	49.3	59.6	50.6	44.6	27.3	24.4	19.7	18.3
White Female	3.5	4.5	4.3	5.1	4.2	5.2	6.7	4.1	2.8	2.6	1.9	1.3
Black Female	16.4	31.8	36.1	39.6	46.4	52.2	67.9	65.1	50.8	41.3	50.2	33.9
Hispanic Female	8.5	7.9	10.7	8.7	7.8	9.3	8.5	6.4	4.0	3.3	2.4	2.1
Percent of AIDS Cases diagnosed per year, by race/ethnicity and gender												
White Male	59%	54%	51%	49%	43%	39%	39%	30%	24%	25%	19%	19%
Black Male	23%	25%	25%	28%	29%	30%	28%	32%	34%	35%	35%	34%
Hispanic Male	12%	11%	14%	12%	14%	16%	13%	16%	16%	17%	16%	20%
White Female	2%	3%	2%	3%	3%	3%	4%	3%	3%	3%	2%	2%
Black Female	3%	6%	6%	7%	10%	11%	13%	15%	19%	17%	24%	23%
Hispanic Female	1%	1%	1%	2%	2%	2%	3%	3%	4%	4%	4%	5%

D. AIDS: AIDS CASES BY AGE CATEGORY

Over this time period (1990-2001), nearly 50% of the AIDS cases diagnosed were 30-39 years of age at diagnosis. Another 40% were between the ages of 20-29 and 40-49. Therefore, 90% of the AIDS cases diagnosed each year were between the ages of 20 and 49. This age distribution is different than seen for chlamydia and gonorrhea, where younger individuals are more likely to be infected, and probably illustrates the lag between HIV infection and AIDS diagnosis.

Total number of cases, by age group, has decreased since 1990. The most pronounced decrease is in the 30-39 age group.

Figure D.11.
AIDS Cases (number of cases) by Age Groups
Houston/Harris County, Texas. 1990-2001.



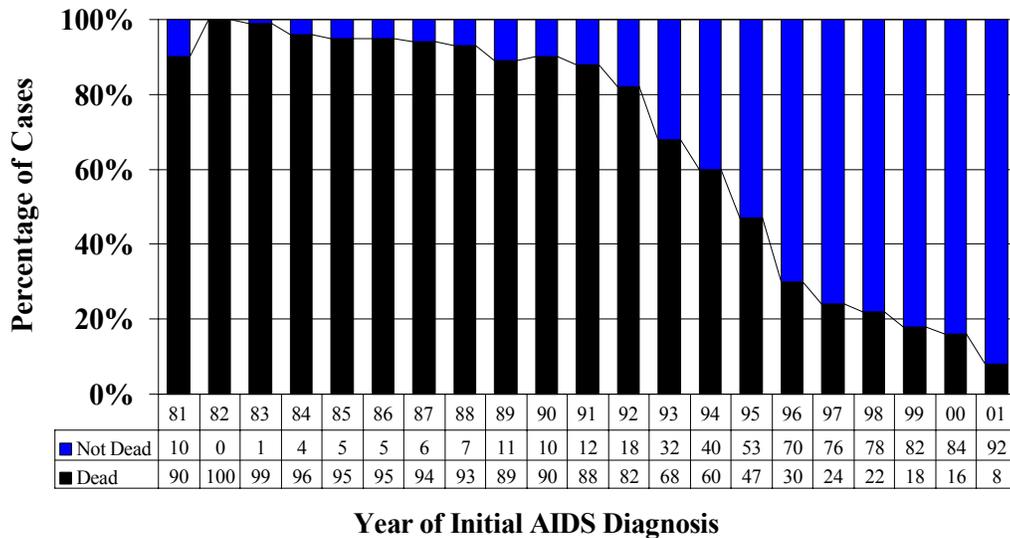
Houston HIV/AIDS Surveillance

Reported Through 6/30/02

D. AIDS: MORTALITY BY SEX

In Houston/Harris County, there were 19,427 cases of AIDS diagnosed through December, 2001 and reported through June 30, 2002. Of the reported AIDS cases, 62% are known to have died. With each succeeding year, there has been a decrease in the proportion of AIDS cases who have subsequently died (see Figure D.12.). The proportion of individuals who have died has been similar for males and females during the last five years (see Figures D.13. and D.14.).

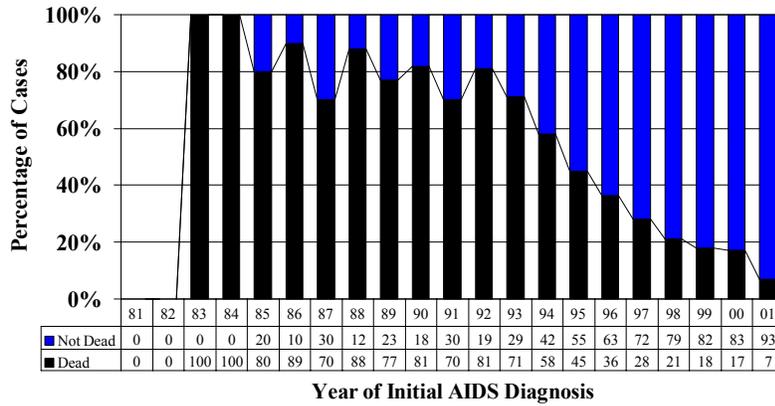
Figure D.12.
AIDS Cases Percent By Mortality Status.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

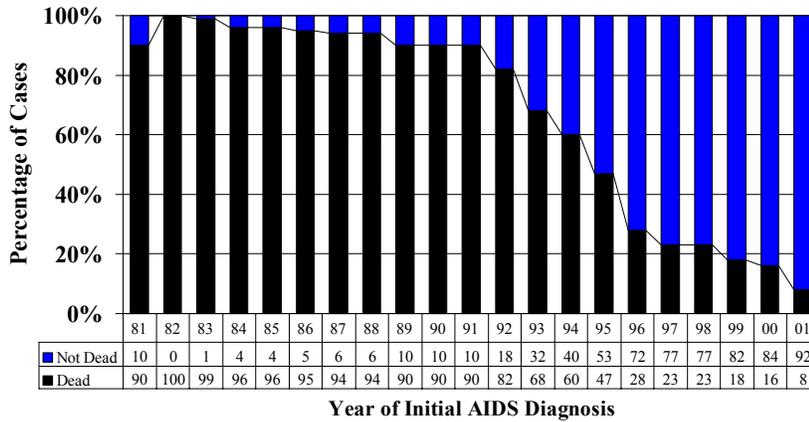
Figure D.13.
AIDS Cases Percent By Mortality Status. Females.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Figure D.14.
AIDS Cases Percent By Mortality Status. Males.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

D. AIDS: MORTALITY BY GENDER AND RACE/ETHNICITY

Since 1992, 65% of males with AIDS and 44% of females with AIDS have died.

The percent of AIDS cases dying, by year of diagnosis, is similar across race/ethnicity groups (see Figure D.8). Since the epidemic began:

- 71% of non-Hispanic White,
- 54% of non-Hispanic Black, and
- 52% of Hispanic HIV infected individuals have died.

Similar patterns are seen by race/ethnicity.

Among males:

72% of Whites,
58% of Blacks, and
54% of Hispanics with HIV have died

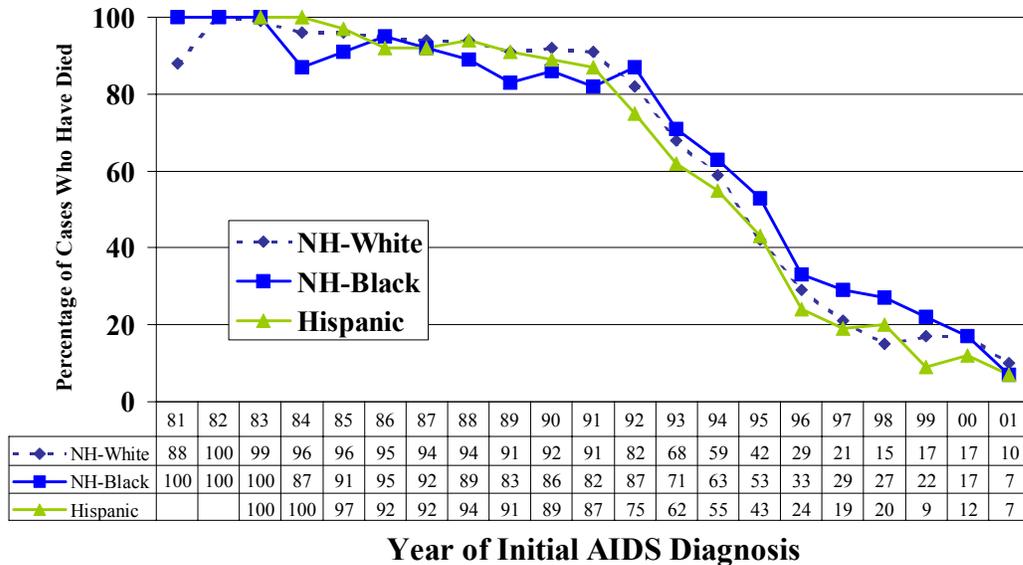
Among females;

53% of Whites,
43% of Blacks, and
35% of Hispanics have died.

D. AIDS: MODE OF TRANSMISSION

Risk factors for infection with HIV and the subsequent development of AIDS are collected

Figure D.15.
AIDS Percent of Cases who have Died, By Race/Ethnicity.
Houston/Harris County, Texas. 1981-2001.



Houston HIV/AIDS Surveillance

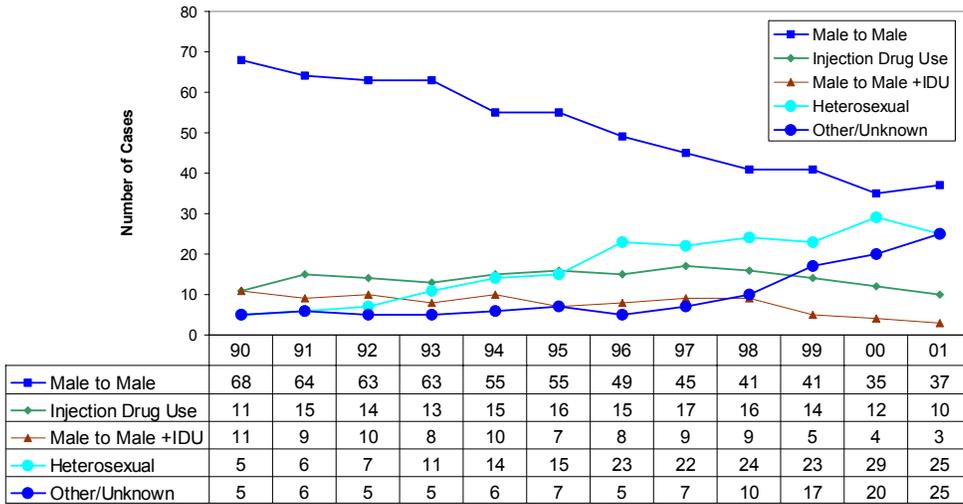
Reported Through 6/30/02

with the basic surveillance information for AIDS cases. The Centers of Disease Control and Prevention has determined a hierarchy of risk factors intended to attribute the “riskiest” of behaviors participated in to each AIDS case. This rating of risk factors designates male to male sexual contact as the highest risk for infection followed by injection drug use and then heterosexual contact with a person who has HIV infection or who participates in one of the higher risk behaviors.

People with an AIDS diagnosis who cannot be interviewed, or who do not divulge their behaviors, or who do not know either the HIV status or the risk behavior of their heterosexual partners are assigned to a *No Reported Risk* category.

The increasing numbers of females with AIDS has led to an increase in the number of *No Reported Risk* cases because the heterosexual contact definition imposed by the CDC requires more knowledge of the behavior of the sex partner than is readily available. For a majority of the women diagnosed with AIDS who have *No Reported Risk*, the admitted risk is heterosexual sex but without the details regarding the partner that are necessary to meet the CDC definition of *Heterosexual Contact*.

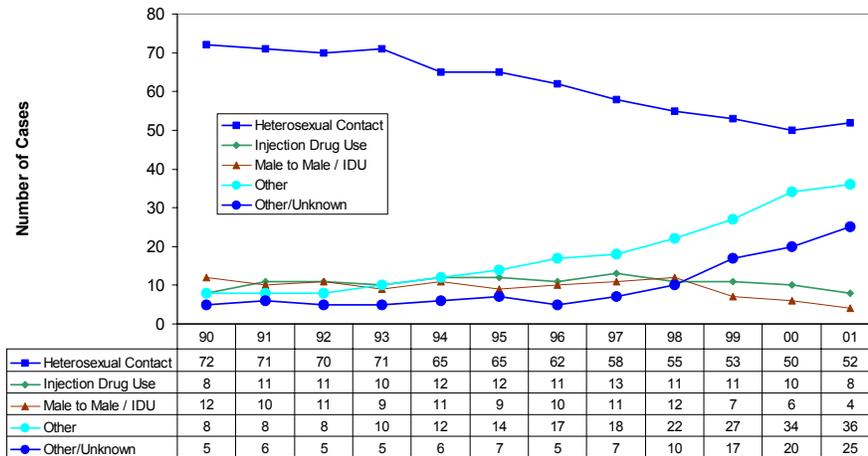
Figure D.16.
Distribution of AIDS Cases by Year of Diagnosis and
by Mode of Transmission.
Houston/Harris County, Texas. 1990-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

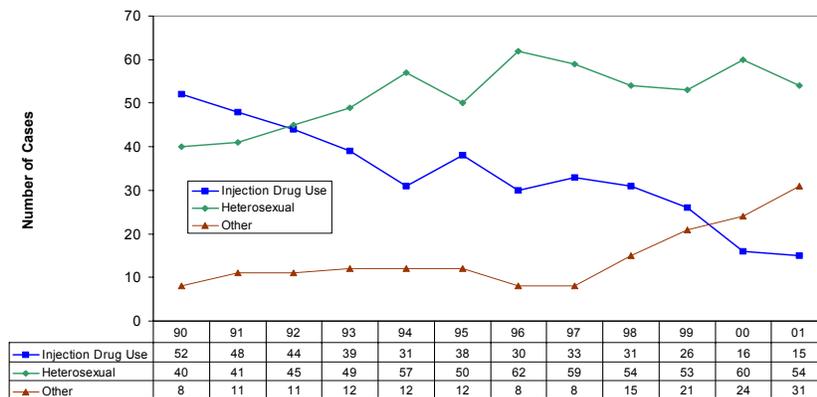
Figure D.17.
Distribution of AIDS by date of diagnosis and by Mode of Transmission – Male.
Houston/Harris County, Texas. 1990-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Figure D.18.
AIDS Distribution by date of diagnosis and by Mode of Transmission – Female.
Houston/Harris County, 1990-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

For males with AIDS, the most common risk behavior remains male to male sexual contact, although as a proportion of all risk behaviors, this continues to decrease.

For both males and females there has been an increase in the proportion of AIDS cases with heterosexual contact as the risk behavior as well as an increase in no reported risk cases.

For women with AIDS, the proportion with injection drug use as a risk factor was 52% in 1990 and fell to 15% in 2001.

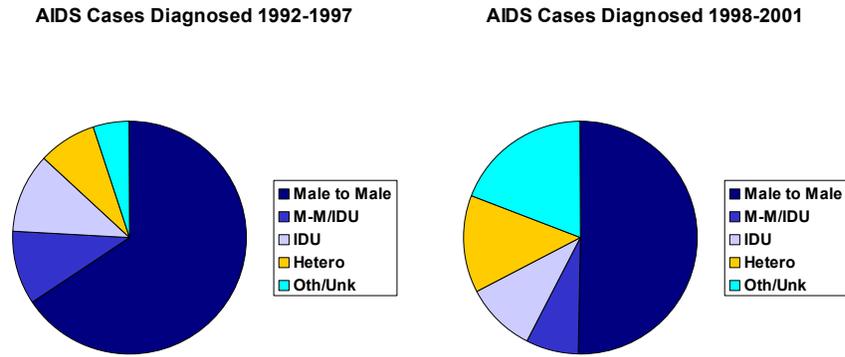
Among males, the proportion reporting injection drug use has remained between 11 and 13%.

Men who have sex with men remain the primary reservoir of infection even though the proportion of cases attributed to male to male sexual contact is decreasing.

A comparison of the risk behaviors of male AIDS cases in the last 10 year of the epidemic shows a decrease in the percentage of cases attributed to male to male sexual contact and to the dual risk category of male to male sexual contact and injection drug use.

There has been an increase in the proportion of male AIDS cases attributed to heterosexual contact – the result of a substantial decrease in the proportion attributed to male to male sex.

Figure D.19.
AIDS Distribution by Mode of Transmission MALES.
Houston/Harris County, Texas. 1992-2001.

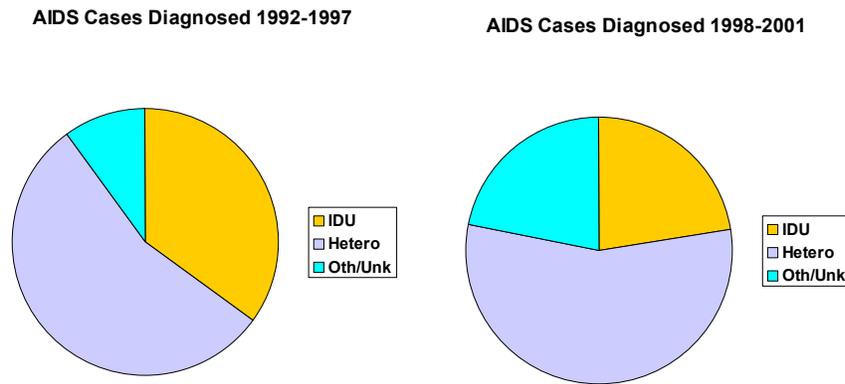


Houston HIV/AIDS Surveillance

Reported Through 6/30/02

A comparison of the risk behaviors of female AIDS cases in the last 10 years of the epidemic, shows a decrease in the percentage of cases attributed to injection drug use and a substantial increase in the proportion of female AIDS cases attributed to heterosexual contact.

Figure D.20.
AIDS Distribution by Mode of Transmission. FEMALES.
Houston/Harris County, Texas. 1982-2001.



Houston HIV/AIDS Surveillance

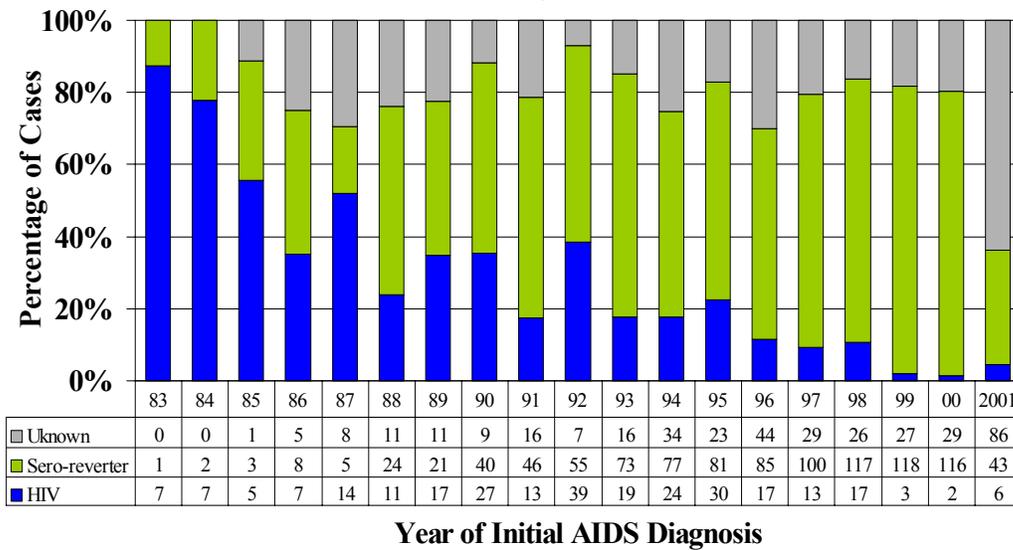
Reported Through 6/30/02

D. AIDS: PEDIATRIC AIDS

Since 1983, there have been 1,684 children exposed to HIV at birth. Of these, 17% have gone on to develop HIV infection and 60% have sero-reverted to normal. Almost 20% have an unknown infection status; the majority of these are unknown because the child, as of June 30, 2002, is less than 18 months or age.

There have been 287 children that developed HIV infection; 152 of these have progressed to AIDS. There has been a substantial decrease in the number of HIV cases due to perinatal transmission. The decrease attributed to the implementation of zidovudine and/or other retroviral therapies therapy to pregnant HIV infected women both during pregnancy and delivery and to the child at birth and for six weeks to prevent perinatal transmission of HIV.

Figure D.21.
Pediatric HIV Infection - Percent of Children With Perinatal HIV Exposure who Sero-Revert or Develop HIV
Houston/Harris County, Texas. 1983-2001.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

Figure D.22. 74% of children born with perinatal exposure to HIV were Black. This points out the disproportionate racial demographics of the children who were exposed to perinatal transmission of HIV. This data is consistent with the AIDS epidemic seen among women: that is, the predominant proportion cases are among Blacks.

Figure 22.
Distribution of Perinatal HIV Exposure By Race/Ethnicity. Houston/Harris County, Texas. 1983-2001.

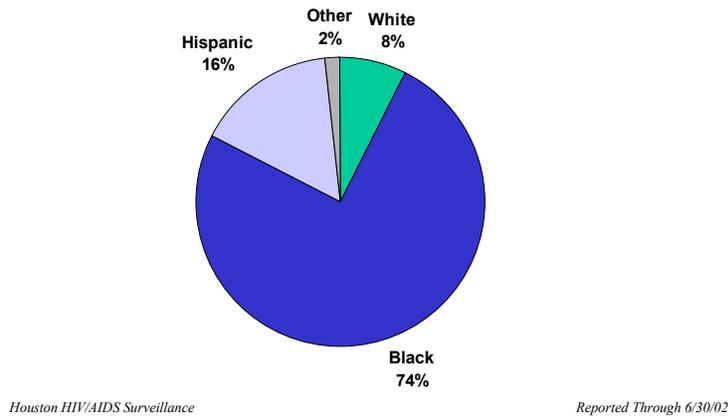


Figure D.24. Of children with perinatal exposure to HIV, 18% of Whites, 16% of Blacks, and 22% of Hispanics progress to HIV infection.

Figure D.24.
Number of Cases and Percent of Children With Perinatal HIV Exposure who Develop HIV (1983-2001), by Race/Ethnicity Houston/Harris County, Texas.

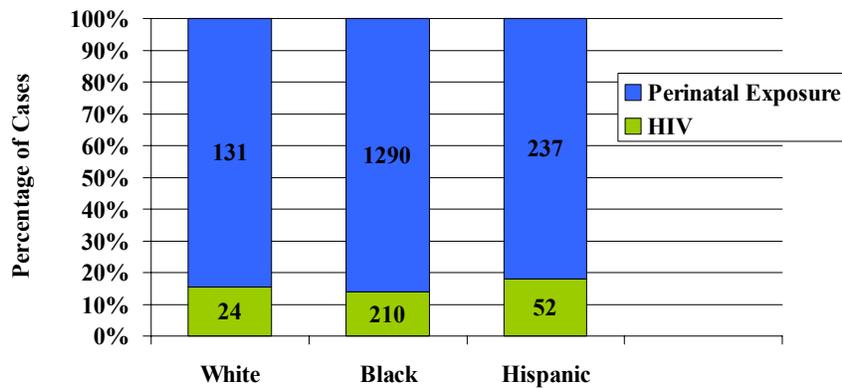
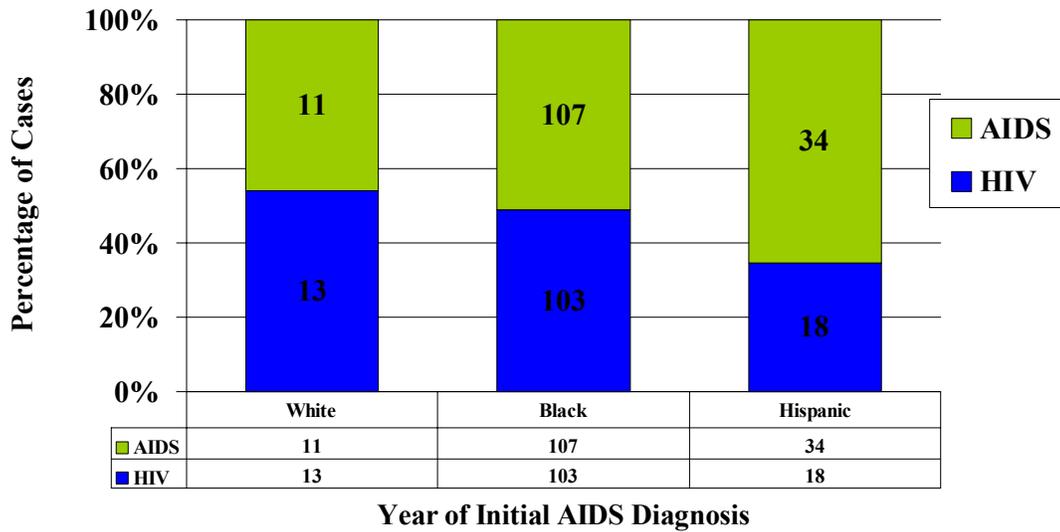


Figure D.25. Of children who were perinatally exposed to HIV and went on to develop acquired HIV infection, 46% of Whites, 51% of Blacks, and 65% of Hispanic children have progressed to AIDS.

Figure D.25.
Number of Cases and Percent of Children With Acquired HIV Exposure who
Develop HIV and then Progress to AIDS
By Race/Ethnicity Houston/Harris County, Texas. 1993-2001.

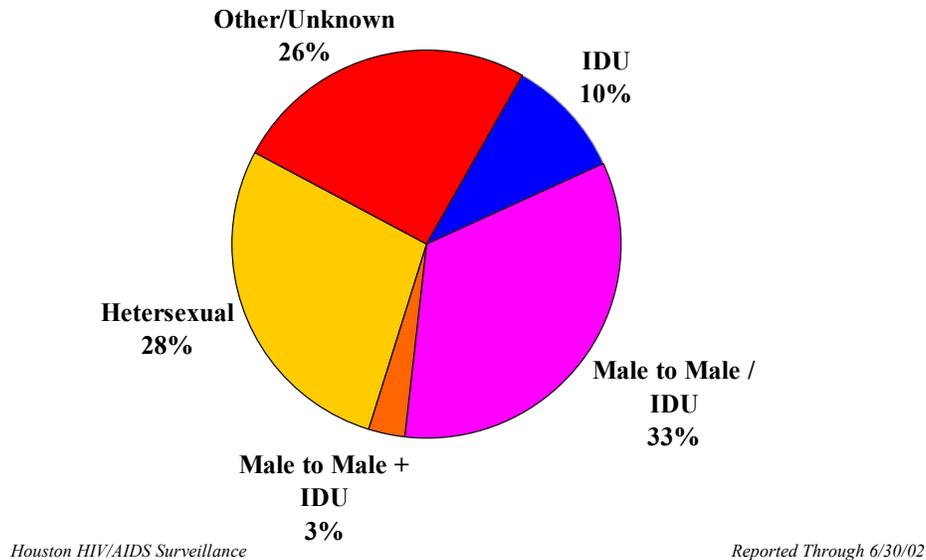


Houston HIV/AIDS Surveillance

Reported Through 6/30/02

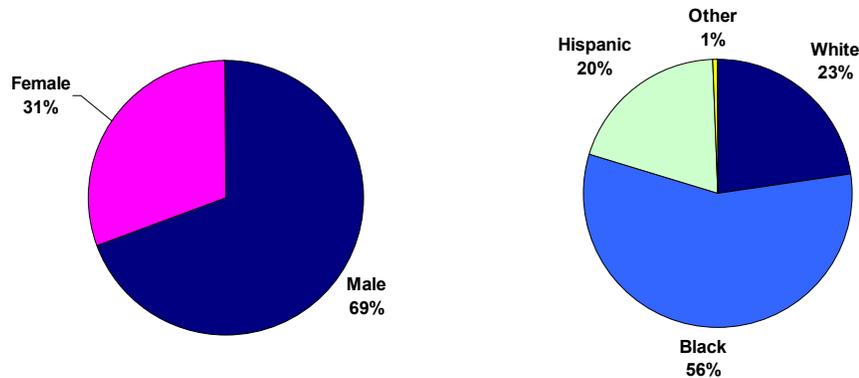
D. HIV: DISTRIBUTION BY SEX

Figure D.26.
Distribution of HIV Infection Diagnosed January 1999
through December 2001.
Houston/Harris County



HIV infection became reportable by name in the State of Texas on January 1, 1999. We have now had two complete years of named HIV infection data collection. The data is still preliminary, primarily because we are still getting data on previously reported infections.

Figure D.27.
HIV Infection Distribution by Sex and by Race/Ethnicity
Diagnosed January 1999 through December 2001.
Houston/Harris County, Texas.



Houston HIV/AIDS Surveillance

Reported Through 6/30/02

The proportion of new HIV infections is increasing from women with a corresponding decrease for men.

The majority of those newly infected with HIV are males. Among new infections, 58 % were Blacks, 16% were Hispanic, and 25% were non-Hispanic Whites.

This data represents the newest diagnosed infections, not necessarily the newest infections, and therefore the most current information as to who is becoming infected with HIV. The trend seen in cumulative AIDS cases and living AIDS cases is continued in this data with an increasing proportion of minorities and a decrease in the proportion of white cases.

D. AIDS INFECTION: SEROSURVEILLANCE DATA

During 1992 through 1999, blinded seroprevalence studies were conducted in various STD clinics in Houston. The following chart reflects the results of those studies through December 1999. This table focuses on adolescents (less than 20 years of age) receiving care at the STD clinics.

Table 4.2 HIV Seroprevalence Survey in Adolescent Clinics.
Houston, Texas. 1992-1999.

	Tests	# Positive	% Positive
Total	17,287	63	0.36
Gender			
Male	678	2	0.29
Female	16,477	61	0.37
Ethnicity			
Black	9,896	61	0.62
White	1,658	0	0.00
Hispanic	5,431	2	0.04
Other	171	0	0.00
Risk Behavior			
Gay/Bisexual Male	3	0	0.00
Reported IDU	17	0	0.00
Hetero Partner at Risk*	31	2	6.45
Blood Recipient	28	0	0.00
Sexual Contact	16,593	57	0.34
Unknown	486	4	0.82

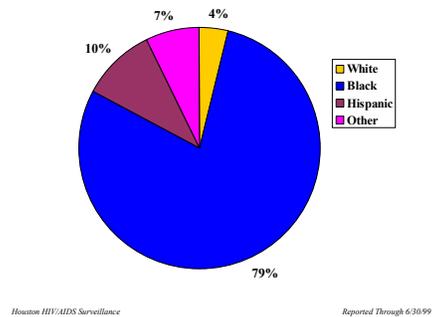
* Risk defined as HIV infected, gay/bisexual male, injection drug user, etc.

D. AIDS INFECTION: SURVEY OF CHILDBEARING WOMEN

The 1997 Survey of Childbearing Women in Texas included 93,992 women giving birth during the three month study period. TDH Region 6 tested 20,143 women with the following rates per 1000 live births in Harris County. The 1997 survey was smaller than in previous years but showed an increase in HIV infection from 1995 (1.05 compared to 0.93)

Table 4.3 Survey of Child Bearing Women, 1997.

Race	Rate per 1,000 live births
White	0.62
Black	12.61
Hispanic	1.60
Other	1.14
All Races	3.06



These rates correspond to the racial breakdown of pediatric AIDS cases reported in Houston. More than 60% of the pediatric AIDS cases are Black, 15% are White and 23% Hispanic.

As the table below indicates, Houston/Harris County continues to have the highest rate of HIV infection among child-bearing women in the state. The rate is increasing significantly in the black community and Houston has currently over twice the rate of other cities among this minority group. In Harris County, the HIV positive rate among Black women giving birth is twenty times than for White women (12.61 vs 0.62) and eight times higher than for Hispanic women (12.61 vs 1.60).

Table 4.4 1997 Texas Survey of Childbearing Women Seroprevalence of HIV per 1000 live births, by Race/ethnicity and county.

County	White	Black	Hispanic	Other	Total
Bexar	0.00	3.64	0.36	0.93	0.52
Dallas	0.53	4.84	0.27	0.00	1.18
El Paso	0.00	0.00	0.36	0.00	0.28
Harris	0.62	12.61	1.60	1.14	3.06
Tarrant	0.00	0.00	0.00	2.90	0.34
Travis	0.00	0.00	0.92	0.00	0.31
All Others	0.16	4.72	0.13	0.45	0.55
Statewide	0.23	6.37	0.48	0.84	1.05

D. AIDS INFECTION: SUMMARY

All data presented in this profile of the HIV/AIDS epidemic in Houston/Harris County show consistency in trends in both numbers and proportions of people infected with the human immunodeficiency virus.

Although the number of new AIDS cases each year is decreasing, the number of people living with HIV and AIDS is increasing. The total number of people needing services as well as the number needing prevention education has risen dramatically over the last several years.

At the same time as the numbers of people living with HIV infection and AIDS is increasing, the demographic mix of those people has changed. Whether examining:

- diagnosed AIDS cases, or
- AIDS population rates, or
- living AIDS cases only, or
- HIV test results,

the data show an epidemic that is increasingly minority, increasingly female, and increasingly heterosexually transmitted.

There remains a large number of white males and men who have sex with men in the new AIDS cases each year, and in those living with AIDS. Without a good number for the denominator, AIDS case rates are not possible for the at risk populations, but seroprevalence rates in the STD clinic population show a 20 percent infection rate in the clients who report male to male sexual contact as a risk behavior for HIV infection.

Pediatric AIDS has decreased considerably in Harris County, but the children who are exposed are disproportionately Black, consistent with the observed trends. The Texas Department of Health's Survey of child-bearing women also shows a high and disproportionate number of black females giving birth who are HIV positive.

The challenge for prevention and service oriented programs in the Houston area will be in maintaining the high quality of activities in the populations who were initially and remain affected by this epidemic, while increasing the focus on, and changing the methodologies to match, the developing epidemic in the minority female and heterosexual communities.

V. ELECTRONIC REFERENCES OF INTEREST¹

Tracking the Hidden Epidemic. Trends in STDs in the United States. 2000

http://www.cdc.gov/nchstp/dstd/Stats_Trends/Trends2000.pdf

Healthy People 2010.

<http://www.health.gov/healthypeople/Document/>

CDC. HIV/AIDS Basic Statistics

<http://www.cdc.gov/hiv/general.htm>

<http://www.cdc.gov/hiv/dhap.htm>

CDC. National Prevention Information Network (NPIN) – HIV/AIDS Resources

<http://www.cdcnpin.org/hiv/start.htm>

CDC. HIV Prevalence Trends in Selected Populations in the United States

<http://www.cdc.gov/hiv/pubs/hivprevalence/HIVPrevalTrendsPop.pdf>

NIAID. NIAID Publications on HIV/AIDS

<http://www.niaid.nih.gov/publications/aids.htm>

National Library of Medicine. HIV/AIDS information

<http://sis.nlm.nih.gov/hiv.cfm>

Journal of the American Medical Association HIV/AIDS Information Center

<http://www.ama-assn.org/special/hiv/hivhome.htm>

SEXUALLY TRANSMITTED DISEASES

CDC. Sexually Transmitted Diseases Facts & Information

http://www.cdc.gov/nchstp/dstd/disease_info.htm

<http://www.cdc.gov/nchstp/dstd/dstdp.html>

NIAID. NIAID Publications on STDs

<http://www.niaid.nih.gov/publications/stds.htm>

¹ Many of these web sites were suggested in the 2000 Epidemiologic Profile for St. Louis, Missouri (http://www.health.state.mo.us/HIV_STD/HIVstatsheet.html)

EPIDEMIOLOGIC PROFILES**St. Louis Missouri:**

http://www.dhss.state.mo.us/HIV_STD/00StlFS.pdf

King County Washington:

<http://www.metrokc.gov/HEALTH/apu/epi/profile.htm>

<http://metrokc.gov/health/apu>

CDC:

http://www.cdc.gov/nchstp/dstd/Stats_Trends/Stats_and_Trends.htm

Los Angeles County:

<http://lapublichealth.org/hiv/reports/epipro/2000/epipro00.pdf>

San Francisco:

<http://www.dph.sf.ca.us/HIVPrevPlan/HPPC01FnlRpt/ch3p61~1.pdf>

Massachusetts:

<http://www.state.ma.us/dph/aids/research/profile2001/eppro2001.htm>

REFERENCE

1. CDC. Suggested Guidelines for Developing an Epidemiologic Profile for HIV Prevention Community Planning. Atlanta, GA: Centers for Disease Control and Prevention, 1995.
2. CDC. Sexually Transmitted Disease Surveillance 2000. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2001.
3. CDC. Health People 2010.
4. American Social Health Association. ASH. Sexually Transmitted Diseases in America: How Many Cases and at What Cost? Menlo Park, CA: Kaiser Family Foundation, 1998.
5. Institute of Medicine. The Hidden Epidemic: Confronting Sexually Transmitted Diseases. Washington, D.C.: National Academy Press, 1997.
6. Oh M, Cloud G, Wallace L. Sexual behavior and sexually transmitted diseases among male adolescents in detention. *Sexually Transmitted Diseases* 194;21(127-132).
7. Blank S, McDonnell D, Rubin. New approaches to syphilis control: Finding opportunities for syphilis treatment and congenital syphilis prevention in a women's correctional setting. *Sexually Transmitted Diseases* 1997;24(4):218-228.
8. Cohen D, Scribner R, Clark J. The potential role of custody facilities in controlling sexually transmitted diseases. *American Journal of Public Health* 1992;82:552-556.
9. Aral SO. Sexually transmitted diseases: magnitude, determinants and consequences. *International Journal of STD & AIDS* 2001;12(4):211-215.
10. Aral SO. Social and behavioral correlates of pelvic inflammatory disease. *Sexually Transmitted Diseases* 1998;25(7):378-385.
11. National syphilis plan aims for under 1,000 cases by 2005. *STD Advisor* 1999;2(2):37.
12. Population Projects. Texas State Data Center, Texas Population Estimates and Projections Program. Texas A&M University.
[HTTP://WWW.TDH.TEXAS.GOV/PROGRAMS/SHD&PA/POPDATA/MENUP.HTM](http://www.tdh.texas.gov/programs/shd&pa/popdata/menup.htm)
13. Risser J, Risser W, Geftler L, Brandsetter D, Cromwell P. Implementation of a screening program for chlamydia infection in incarcerated adolescents. *Sexually Transmitted Diseases* 2001;28(1):43-46.
14. Surveillance 1997 Supplement. Chlamydia Prevalence Monitoring Project Annual Report - 1997. Atlanta: Centers for Disease Control and Prevention, 1997.
15. King Holmes et al, editors. *Sexually Transmitted Diseases*. 3rd ed. New York: McGraw-Hill, 1999.
16. Scholes D, Stergachis A, Heidrich FE, Andrilla H, Holmes K, Stamm WE. Prevention of pelvic inflammatory disease by screening for cervical chlamydial infection. *The New England Journal of Medicine* 1996;334(21):1362-1366.
17. Fox K, Whittington W, Levine W, Moran J, Zaidi A, Nakashima A. Gonorrhea in the United States, 1981-1996: demographic and geographic trends. *Sexually Transmitted Diseases* 1998;25(7):386-393.
18. CDC. Primary and Secondary Syphilis - United States, 2000-2001. *Morbidity and Mortality Weekly Report* 2002;51(43):971-973.
19. National Health Interview Survey (NHIS), 1998. Hyattsville, Maryland: National Center for Health Statistics, 1998.

20. Behavioral Risk Factor Surveillance System (BRFSS). Survey data National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services., 1999.
21. National Household Survey on Drug Abuse. National Institute on Drug Abuse., 1998.
22. Wallisch LS. 2000 Texas Survey of Substance Use Among Adults. Texas Commission on Alcohol and Drug Abuse. <http://www.tcada.state.tx.us/research/AdultHousthhold.pdf>, 2000.4

POPULATION DATA – 1990

1990 Census: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	51,656	26,432	25,224	24,373	12,572	11,801	11,047	5,659	5,388	16,236	8,201	8,035
1-14	634,647	323,902	310,745	312,206	159,661	152,545	132,516	67,073	65,443	189,925	97,168	92,757
15-19	207,364	106,351	101,013	102,605	52,193	50,412	45,497	22,882	22,615	59,262	31,276	27,986
20-24	225,122	113,503	111,619	111,814	55,101	56,713	45,094	21,076	24,018	68,214	37,326	30,888
25-29	280,565	141,845	138,720	154,833	77,541	77,292	51,448	23,546	27,902	74,284	40,758	33,526
30-34	292,717	148,183	144,534	174,930	88,980	85,950	52,334	24,011	28,323	65,453	35,192	30,261
35-39	253,993	128,006	125,987	158,588	80,704	77,884	45,441	20,800	24,641	49,964	26,502	23,462
40-44	211,906	105,661	106,245	141,117	70,850	70,267	34,699	15,999	18,700	36,090	18,812	17,278
>44	660,229	306,260	353,969	462,657	216,691	245,966	111,496	48,389	63,107	86,076	41,180	44,896
TOTAL	2,818,199	1,400,143	1,418,056	1,643,123	814,293	828,830	529,572	249,435	280,137	645,504	336,415	309,089
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1991

1991 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	57,504	29,285	28,219	25,317	12,939	12,378	12,470	6,282	6,188	19,717	10,064	9,653
1-14	655,114	334,265	320,849	319,366	163,317	156,049	136,354	69,068	67,286	199,394	101,880	97,514
15-19	206,304	105,803	100,501	102,287	52,183	50,104	44,324	22,416	21,908	59,693	31,204	28,489
20-24	218,919	110,731	108,188	106,622	52,839	53,783	44,919	21,235	23,684	67,378	36,657	30,721
25-29	269,805	136,274	133,531	145,113	72,305	72,808	49,817	22,928	26,889	74,875	41,041	33,834
30-34	296,476	149,750	146,726	174,336	88,240	86,096	52,775	24,023	28,752	69,365	37,487	31,878
35-39	265,158	134,006	131,152	163,843	83,581	80,262	47,087	21,589	25,498	54,228	28,836	25,392
40-44	226,322	112,660	113,662	148,080	74,251	73,829	38,301	17,528	20,773	39,941	20,881	19,060
>44	689,391	320,500	368,891	481,634	226,162	255,472	114,775	49,660	65,115	92,982	44,678	48,304
TOTAL	2,884,993	1,433,274	1,451,719	1,666,598	825,817	840,781	540,822	254,729	286,093	677,573	352,728	324,845
* White includes all races except Black and all ethnic groups except Hispanic;												
** Black does not include Black Hispanic;												
*** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1992

1992 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	58,235	29,739	28,496	24,652	12,630	12,022	12,484	6,367	6,117	21,099	10,742	10,357
1-14	676,634	345,284	331,350	325,794	166,619	159,175	140,337	71,073	69,264	210,503	107,592	102,911
15-19	207,532	106,178	101,354	102,520	52,312	50,208	43,805	22,154	21,651	61,207	31,712	29,495
20-24	218,039	111,057	106,982	105,425	52,881	52,544	45,244	21,709	23,535	67,370	36,467	30,903
25-29	262,741	132,297	130,444	137,930	68,200	69,730	48,959	22,547	26,412	75,852	41,550	34,302
30-34	294,836	148,777	146,059	170,839	86,136	84,703	52,198	23,718	28,480	71,799	38,923	32,876
35-39	275,619	139,372	136,247	168,732	85,964	82,768	48,794	22,394	26,400	58,093	31,014	27,079
40-44	230,475	114,704	115,771	148,371	74,498	73,873	39,899	18,102	21,797	42,205	22,104	20,101
>44	720,237	335,659	384,578	502,263	236,495	265,768	118,254	51,098	67,156	99,720	48,066	51,654
TOTAL	2,944,348	1,463,067	1,481,281	1,686,526	835,735	850,791	549,974	259,162	290,812	707,848	368,170	339,678
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1993

1993 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	58,304	29,745	28,559	23,977	12,308	11,669	12,392	6,299	6,093	21,935	11,138	10,797
1-14	697,496	356,098	341,398	331,077	169,407	161,670	144,021	73,016	71,005	222,398	113,675	108,723
15-19	209,609	107,131	102,478	102,954	52,592	50,362	43,616	22,068	21,548	63,039	32,471	30,568
20-24	220,121	112,542	107,579	106,533	53,868	52,665	45,933	22,325	23,608	67,655	36,349	31,306
25-29	251,500	126,494	125,006	128,547	63,196	65,351	47,325	21,864	25,461	75,628	41,434	34,194
30-34	293,120	147,680	145,440	166,618	83,643	82,975	51,908	23,475	28,433	74,594	40,562	34,032
35-39	284,025	143,581	140,444	172,320	87,711	84,609	50,093	22,976	27,117	61,612	32,894	28,718
40-44	237,882	118,519	119,363	151,010	75,896	75,114	41,666	18,857	22,809	45,206	23,766	21,440
>44	751,110	350,824	400,286	522,437	246,639	275,798	121,993	52,575	69,418	106,680	51,610	55,070
TOTAL	3,003,167	1,492,614	1,510,553	1,705,473	845,260	860,213	558,947	263,455	295,492	738,747	383,899	354,848
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1994

1994 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	57,104	29,130	27,974	23,004	11,776	11,228	11,817	6,029	5,788	22,283	11,325	10,958
1-14	711,067	363,072	347,995	333,259	170,557	162,702	146,898	74,557	72,341	230,910	117,958	112,952
15-19	211,497	107,961	103,536	103,911	53,137	50,774	44,276	22,332	21,944	63,310	32,492	30,818
20-24	217,498	111,187	106,311	106,005	53,742	52,263	45,715	22,528	23,187	65,778	34,917	30,861
25-29	238,110	119,805	118,305	118,874	58,401	60,473	45,719	21,163	24,556	73,517	40,241	33,276
30-34	288,274	145,130	143,144	160,667	80,312	80,355	51,372	23,216	28,156	76,235	41,602	34,633
35-39	289,481	146,021	143,460	174,147	88,435	85,712	50,998	23,247	27,751	64,336	34,339	29,997
40-44	246,037	122,772	123,265	154,657	77,810	76,847	43,186	19,567	23,619	48,194	25,395	22,799
>44	780,392	365,235	415,157	540,888	255,965	284,923	126,173	54,228	71,945	113,331	55,042	58,289
TOTAL	3,039,460	1,510,313	1,529,147	1,715,412	850,135	865,277	566,154	266,867	299,287	757,894	393,311	364,583
* White includes all races except Black and all ethnic groups except Hispanic;												
** Black does not include Black Hispanic;												
*** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1995

1995 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	56,425	28,807	27,618	22,253	11,391	10,862	11,163	5,703	5,460	23,009	11,713	11,296
1-14	718,903	366,904	351,999	332,611	170,152	162,459	148,630	75,446	73,184	237,662	121,306	116,356
15-19	215,512	109,921	105,591	106,031	54,280	51,751	45,501	22,922	22,579	63,980	32,719	31,261
20-24	213,546	109,348	104,198	104,950	53,432	51,518	45,200	22,636	22,564	63,396	33,280	30,116
25-29	226,793	114,039	112,754	111,226	54,710	56,516	44,575	20,679	23,896	70,992	38,650	32,342
30-34	279,481	140,531	138,950	153,144	76,251	76,893	50,351	22,811	27,540	75,986	41,469	34,517
35-39	293,134	147,432	145,702	174,453	88,133	86,320	51,533	23,317	28,216	67,148	35,982	31,166
40-44	254,317	127,422	126,895	158,493	80,198	78,295	44,657	20,223	24,434	51,167	27,001	24,166
>44	811,248	380,348	430,900	559,805	265,355	294,450	130,927	56,194	74,733	120,516	58,799	61,717
TOTAL	3,069,359	1,524,752	1,544,607	1,722,966	853,902	869,064	572,537	269,931	302,606	773,856	400,919	372,937
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1996

1996 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	57,594	29,492	28,102	22,065	11,399	10,666	10,951	5,520	5,431	24,578	12,573	12,005
1-14	730,468	372,785	357,683	332,593	170,130	162,463	150,094	76,180	73,914	247,781	126,475	121,306
15-19	222,727	113,559	109,168	109,037	55,778	53,259	46,833	23,662	23,171	66,857	34,119	32,738
20-24	212,176	108,635	103,541	104,540	53,341	51,199	44,300	22,288	22,012	63,336	33,006	30,330
25-29	221,490	111,722	109,768	107,079	52,963	54,116	44,476	20,862	23,614	69,935	37,897	32,038
30-34	270,592	135,971	134,621	145,324	72,064	73,260	49,112	22,359	26,753	76,156	41,548	34,608
35-39	295,437	148,362	147,075	173,664	87,412	86,252	51,818	23,317	28,501	69,955	37,633	32,322
40-44	263,026	132,125	130,901	162,656	82,504	80,152	45,942	20,828	25,114	54,428	28,793	25,635
>44	843,866	396,441	447,425	579,383	275,202	304,181	135,966	58,275	77,691	128,517	62,964	65,553
TOTAL	3,117,376	1,549,092	1,568,284	1,736,341	860,793	875,548	579,492	273,291	306,201	801,543	415,008	386,535
* White includes all races except Black and all ethnic groups except Hispanic;												
** Black does not include Black Hispanic;												
*** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1997

1997 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	58,003	29,544	28,459	22,975	11,697	11,278	11,577	5,894	5,683	23,451	11,953	11,498
1-14	717,826	365,457	352,369	318,569	161,964	156,605	148,395	75,485	72,910	250,862	128,008	122,854
15-19	231,372	117,626	113,746	112,846	57,310	55,536	44,869	22,578	22,291	73,657	37,738	35,919
20-24	224,806	113,690	111,116	107,986	53,960	54,026	40,040	19,065	20,975	76,780	40,665	36,115
25-29	274,403	137,253	137,150	137,436	67,321	70,115	45,070	19,738	25,332	91,897	50,194	41,703
30-34	292,327	147,761	144,566	145,082	71,832	73,250	46,316	20,046	26,270	100,929	55,883	45,046
35-39	284,982	142,708	142,274	154,049	77,409	76,640	49,303	21,705	27,598	81,630	43,594	38,036
40-44	257,524	127,740	129,784	150,716	75,273	75,443	46,354	20,875	25,479	60,454	31,592	28,862
>44	822,099	384,933	437,166	546,933	259,085	287,848	136,448	58,638	77,810	138,718	67,210	71,508
TOTAL	3,163,342	1,566,712	1,596,630	1,696,592	835,851	860,741	568,372	264,024	304,348	898,378	466,837	431,541
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1998

1998 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	58,082	29,579	28,503	22,641	11,528	11,113	11,438	5,825	5,613	24,003	12,226	11,777
1-14	726,832	369,796	357,036	316,538	160,824	155,714	149,985	76,214	73,771	260,309	132,758	127,551
15-19	237,518	120,893	116,625	115,108	58,476	56,632	45,276	22,930	22,346	77,134	39,487	37,647
20-24	226,666	114,503	112,163	109,019	54,535	54,484	39,310	18,770	20,540	78,337	41,198	37,139
25-29	277,575	139,320	138,255	137,990	67,901	70,089	45,499	20,124	25,375	94,086	51,295	42,791
30-34	289,100	146,146	142,954	140,333	69,111	71,222	44,874	19,327	25,547	103,893	57,708	46,185
35-39	285,788	143,053	142,735	149,463	74,817	74,646	48,702	21,258	27,444	87,623	46,978	40,645
40-44	263,127	130,539	132,588	150,742	75,225	75,517	47,536	21,467	26,069	64,849	33,847	31,002
>44	850,790	398,647	452,143	560,988	265,943	295,045	141,127	60,653	80,474	148,675	72,051	76,624
TOTAL	3,215,478	1,592,476	1,623,002	1,702,822	838,360	864,462	573,747	266,568	307,179	938,909	487,548	451,361
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 1999

1999 Population Estimate: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	58,261	29,667	28,594	22,399	11,404	10,995	11,294	5,745	5,549	24,568	12,518	12,050
1-14	737,071	375,073	361,998	314,854	159,961	154,893	151,641	77,120	74,521	270,576	137,992	132,584
15-19	240,892	122,701	118,191	116,022	58,906	57,116	45,021	22,850	22,171	79,849	40,945	38,904
20-24	232,027	117,037	114,990	111,705	55,942	55,763	39,710	18,902	20,808	80,612	42,193	38,419
25-29	278,580	140,066	138,514	137,500	67,803	69,697	44,968	20,038	24,930	96,112	52,225	43,887
30-34	286,417	144,818	141,599	136,796	67,178	69,618	43,673	18,729	24,944	105,948	58,911	47,037
35-39	287,516	144,210	143,306	145,129	72,448	72,681	48,048	20,824	27,224	94,339	50,938	43,401
40-44	267,530	132,519	135,011	150,238	74,939	75,299	48,223	21,634	26,589	69,069	35,946	33,123
>44	879,805	412,701	467,104	574,780	272,692	302,088	145,713	62,556	83,157	159,312	77,453	81,859
TOTAL	3,268,099	1,618,792	1,649,307	1,709,423	841,273	868,150	578,291	268,398	309,893	980,385	509,121	471,264
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 2000

2000 Census: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	58,000	29,652	28,348	20,189	10,397	9,792	10,428	5,345	5,083	27,383	13,910	13,473
1-14	770,962	394,358	376,604	295,076	151,218	143,858	158,527	80,666	77,861	317,359	162,474	154,885
15-19	254,828	131,984	122,844	102,284	52,367	49,917	50,913	25,504	25,409	101,631	54,113	47,518
20-24	252,608	128,733	123,875	90,715	44,451	46,264	46,586	21,137	25,449	115,307	63,145	52,162
25-29	293,069	147,950	145,119	121,869	60,629	61,240	51,911	23,271	28,640	119,289	64,050	55,239
30-34	280,870	143,006	137,864	127,637	64,787	62,850	48,797	21,977	26,820	104,436	56,242	48,194
35-39	284,295	142,756	141,539	141,715	71,161	70,554	51,448	22,940	28,508	91,132	48,655	42,477
40-44	278,142	139,607	138,535	153,464	77,600	75,864	50,665	23,067	27,598	74,013	38,940	35,073
>44	927,804	435,836	491,968	597,694	283,680	314,014	160,909	69,749	91,160	169,201	82,407	86,794
TOTAL	3,400,578	1,693,882	1,706,696	1,650,643	816,290	834,353	630,184	293,656	336,528	1,119,751	583,936	535,815
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												

POPULATION DATA – 2001

2001 Census: Harris County, Texas.												
Age	All Races			White and Other*			Black**			Hispanic***		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	57,839	29,562	28,277	20,122	10,359	9,763	10,368	5,312	5,056	27,349	13,891	13,458
1-14	770,771	394,300	376,471	293,370	150,339	143,031	158,300	80,576	77,724	319,101	163,385	155,716
15-19	252,625	130,932	121,693	87,498	43,054	44,444	47,118	21,669	25,449	116,799	63,575	53,224
20-24	292,937	148,375	144,562	117,209	58,051	59,158	50,403	22,553	27,850	125,325	67,771	57,554
25-29	290,096	147,488	142,608	130,070	66,074	63,996	49,837	22,331	27,506	110,189	59,083	51,106
30-34	281,359	141,901	139,458	136,153	68,568	67,585	50,573	22,595	27,978	94,633	50,738	43,895
35-39	281,527	141,264	140,263	151,646	76,522	75,124	51,527	23,434	28,093	78,354	41,308	37,046
40-44	247,969	123,707	124,262	145,000	73,030	71,970	44,821	20,595	24,226	58,148	30,082	28,066
>44	2,368,387	1,169,893	1,198,494	1,195,169	584,509	610,660	423,718	190,802	232,916	749,500	394,582	354,918
TOTAL	4,843,510	2,427,422	2,416,088	2,276,237	1,130,506	1,145,731	886,665	409,867	476,798	1,679,398	884,415	794,983
* White includes all races except Black and all ethnic groups except Hispanic; ** Black does not include Black Hispanic; *** Hispanic includes both Black and White who identified themselves as Hispanic.												