An Integrated Epidemiologic Profile for HIV/AIDS Prevention and Care Planning for Kentucky 2010

Kentucky Cabinet for Health and Family Services
Department for Public Health
HIV/AIDS Branch
chfs.ky.gov

Kentucky
UNBRIDLED SPIRIT

CABINET FOR HEALTH AND FAMILY SERVICES
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Audrey Tayse Haynes
Secretary

June 5, 2012

Dear Colleague:

We are pleased to release the 2010 issue of the HIV integrated epidemiologic profile (IEP) for Kentucky. This profile is the first issue to be published since human immunodeficiency virus (HIV) disease data have become complete, following legislation requiring confidential HIV name-based reporting that was enacted in July of 2004. Prior to that, HIV infections were reported with a unique code. Confidential AIDS reporting started in 1982.

The profile is a comprehensive description of the epidemiology of HIV infections among Kentuckians, regardless of disease progression. It integrates socio-demographic characteristics of the general Kentucky population, indicators of risk for HIV infection, patterns of HIV service utilization and an estimate of HIV positive persons who are not in care. Data presented integrate HIV prevention and care planning needs and serve to guide efforts to meet these needs. Multiple data sources have been incorporated to provide a comprehensive picture of the HIV epidemic in Kentucky. Please read the data sources and technical notes on pages 8 -15 for further information concerning interpretation of the data.

The epidemiologic data presented in this report will be updated annually and all other data will be updated every three to five years. The profile is available online at:
http://chfs.ky.gov/dph/epi/HIVAIDS/surveillance.htm

To receive e-mail updates when new statistical reports are released or updated online, please send a blank e-mail to the following address: subscribe-dph-semiannualreport@listserv.ky.gov.

Sincerely,

Steve Davis, MD
Acting Commissioner

Kentucky HIV Integrated Epidemiologic Production

The IEP is published annually by the HIV/AIDS Program, Division of Epidemiology and Health Planning, Kentucky Department for Public Health, Cabinet for Health and Family Services, Frankfort, Kentucky.

Data are presented for HIV infections diagnosed in Kentucky and reported to the Cabinet for Health and Family Services through June 30, 2010.

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We thank the persons who have been involved in the HIV Prevention Community Planning Groups and the Ryan White Title II regional CARE Consortia for providing feedback over the years regarding which data are most helpful to their respective planning groups. We continue to solicit their input, as our efforts are only as good as the information on which we base our programmatic decisions.

The profile was created with oversight from Dr. Kraig Humbaugh and Sigga Jagne.

This profile was also created in collaboration with the CDC.

HIV/AIDS Reporting Requirements

According to state regulation 902 KAR 2:020, Section 7, health professionals licensed under KRS chapters 311 through 314, health facilities licensed under KRS chapter 216B, and laboratories licensed under KRS chapter 333 are required to report HIV and AIDS cases to the Kentucky Department for Public Health or the Louisville Metro Department of Public Health and Wellness within five business days of diagnosis.

Cases residing in the Kentucky counties of Bullitt, Henry, Jefferson, Oldham, Shelby, Spencer, and Trimble are reported to the Surveillance Nurse Consultant at the Louisville Metro Department of Public Health and Wellness at 502-574-6574. All other cases are reported to the Kentucky Department for Public Health HIV/AIDS Surveillance Program at 866-510-0008. Case information from both sites is combined at the Kentucky Department for Public Health to produce this report. Additional case reporting information can be found on the Kentucky HIV/AIDS Branch web site: http://chfs.ky.gov/dph/epi/HIVAIDS/surveillance.htm.

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Executive Summary

As of June 30, 2010 a cumulative total of 7,224 HIV infections had been reported to the Kentucky Department for Public Health since reporting began in 1982. Of those, 5,211 had progressed to AIDS. Since the mid 1990s, when highly active anti-retroviral treatment (HAART) was introduced, the HIV diagnosis rate in Kentucky has remained fairly steady at 7.5 to 9.3 per 100,000 cases. Over the last decade, the number and rate of new HIV diagnoses was highest in 2007 at 394 infections and 9.3 per 100,000.

At the end of 2009, there were an estimated 4,494 persons living with HIV infection in Kentucky of whom:

- 171 per 100,000 were male and 40 per 100,000 were female.
- 179 per 100,000 were aged 25-44 years, 178 per 100,000 were aged 45-64years, 36 per 100,000 were aged 13-24 years, and ≤5 per 100,000 each were aged less than 13 years or 65+ years.
- 448 per 100,000 were black, 185 per 100,000 Hispanic and 73 per 100,000 white.
- 60% were exposed through MSM contact, 22% Heterosexual, 12% IDU, 5% MSM/IDU, 2% other/ undetermined.

As of June 30, 2010, there were 2,656 cumulative deaths among Kentuckians previously diagnosed with HIV/ AIDS. The death rate through June 30, 2010 was 62 per 100,000 population in Kentucky, regardless of cause of death. The death rate was higher among males (108 per 100,000 population) than females (16 per 100,000 population). Of the 4,144 persons who had AIDS by 2004, 1,929 had died by June, 30, 2010, for a case fatality rate of 47%.

The impact of the HIV epidemic in Kentucky is not uniformly distributed across the state. The distribution is as follows:

- Cumulatively at the county level, 3,117 infections (43% of the total statewide infections) were diagnosed in Jefferson County, 976 (14%) in Fayette County and 336 (5%) in Kenton County.
- At the ADD level, the highest percentages of cumulative infections were diagnosed in KIPDA (47%), Bluegrass (20%) and Northern Kentucky (8%). In 2009, the highest rates of new HIV infections continued to be diagnosed among KIPDA residents- 17.0 per 100,000, Bluegrass residents– 9.5 per 100,000, and Purchase and Northern Kentucky residents– 6.0 per 100,000 population each.
- By statistical area, the rate of infections was highest among metropolitan counties- 58 per 100,000 population, and lowest among nonmetropolitan counties- 18 per 100,000 population. There were 21 per 100,000 infections in micropolitan counties.

Racial disparities among HIV infected Kentuckians exist:

- Black males comprise 7.7% of Kentucky's male population, yet accounted for 32% of new male HIV infections. Black females who also comprise 7.7% Kentucky's female population, accounted for 39% of new female infections in 2009.
- Hispanic males comprise 2.4% of Kentucky's male population, yet accounted for 7% of new male HIV infections. Hispanic females who also comprise 2.4% Kentucky's female population, accounted for 7% of new female infections in 2009.
- The proportion of white males and white females with new infections in 2009 was smaller than their representation in the general population.

Executive Summary-continued

Of racial/ethnic groups, Hispanics had the highest percentage of cases diagnosed concurrently with AIDS within one calendar month– 37% of Hispanics in comparison to 32% of whites and 26% of blacks. As such, Hispanics may benefit the most from early testing interventions to initiate earlier enrollment into care. HIV testing data at CTR sites in 2009 shows slightly higher seropositivity levels among minorities (0.9% among Hispanics and 0.6% among blacks) than whites (0.5%).

The rates of other STDs among Kentuckians can be indicative of unprotected sex, which is also a risk factor for HIV infection. Kentucky's Chlamydia rate in 2008 was 287 per 100,000 population and the gonorrhea rate was 107 per 100,000 population. Rates were disproportionately higher among minorities than whites.

Several risk behavioral surveys highlight direct and indirect measures of risk for HIV transmission. However, the 2009 Behavioral Risk Factor Surveillance System (BRFSS) data indicate that risky behaviors such as using intravenous drugs, being treated for an STD, giving or receiving money or drugs in exchange for sex, or having anal sex without a condom in the past year were higher for:

- Males than females (4.7% vs. 3.2%).
- Blacks (7.3%) than whites (3.3%) and Hispanics (2.2%).
- Respondents aged 18-24 years old– 10.8%
- Respondents with less than a high school education (8.7%)
- Respondents making less than $15,000 (8.1%).

Characteristics of persons enrolled in KADAP are similar to the characteristics of persons known to be living with HIV infection in Kentucky, in terms of race/ethnicity, sex, and age group.

- In 2009, there were a total of 2276 persons served by the care coordination program; 28.4% were served in the Lexington region.
- There were 1244 persons actively enrolled in the Kentucky AIDS Drug Assistance Program (KADAP) as of June 30, 2010. A waiting list of 224 clients was eliminated in November 2010.
- Majority of KADAP clients are male- 83%
- By age, the largest numbers of enrollees are aged 40-49 years old, immediately followed by the 50+ and 30-39 age groups respectively.
- White males comprise the highest number of enrollees, nearly 3 times the number of black males and 12.5 times the number of Hispanic males enrolled.
- Women enrollees are distributed differently in terms of age and race in that black, non-Hispanic women lead age categories 20-29 years and 30-39 years. White, non-Hispanic women overtake utilization beginning in the 40-49 age bracket.

The unmet need estimate for calendar year 2009 shows that there were 1,573 (33%) Kentuckians living with HIV/AIDS estimated to be out of care. Of these, 903 (57%) were living with HIV not-AIDS and 670 (43%) were living with AIDS.

- By sex, 84% of Kentuckians with unmet need were male.
- Among males, 47% of Hispanic males had unmet need, compared to 42% of black males and 30% of white males living with HIV at the end of 2009. Among females, 33% of Hispanic females had unmet need, compared to 27% of black females and 26% of white females living with HIV at the end 2009.
- By current age as of January 25, 2011, the majority (51%) were aged 45-64 years, followed by 25-44 years (41%).
- Residents of the Louisville region and Northern Kentucky Region at time of residence at time of diagnosis had the highest proportions of unmet need (38% of living cases each).

Organization of Profile

The IEP was prepared in accordance with the Integrated Guidelines for Developing Epidemiologic Profiles for HIV Prevention and Ryan White CARE Act Community Planning developed by CDC and HRSA. Multiple data sources were used to create this profile (as described under data sources) and it address five core questions as listed below.

Section 1: Core Epidemiologic Questions:

Question 1: What are the Sociodemographic Characteristics of Kentucky's General Population?

This section includes basic demographic data from the 2000 Census. Population demographics and sociodemographic characteristics are discussed.

Question 2: What is the Scope of the HIV/AIDS Epidemic in Kentucky?

The epidemiology of HIV infection is described, including new, cumulative and living cases, annual trends, transmission routes, deaths and geographic distributions with focus on the beginning of the infection (HIV) instead of later stages (AIDS).

Question 3: What are the Indicators of Risk for HIV Infection and AIDS in the Kentucky population?

This question addresses various indicators of risk for acquisition of HIV from multiple data sources. Direct measures of risk behaviors associated with HIV transmission and indirect measures that may serve as indicators of high risk behaviors are examined.

Section 2: Ryan White HIV/AIDS CARE Act Special Questions and Considerations

Question 1: What are the patterns of utilization of HIV services of persons in Kentucky?

This section details the services provided to those individuals living with HIV/AIDS in Kentucky. The data presented in this section are from HRSA funded programs within the state of Kentucky. They show how services are being utilized for those living with HIV/AIDS and in need of care.

Question 2: What are the numbers and characteristics of persons who know they are HIV-positive, but who are not receiving primary medical care?

This section assesses the number of individuals who are aware of their HIV status that have an unmet need regarding primary health care. Data from HIV surveillance, the HRSA care coordinator program and Medicaid are used to provide this estimate.

Technical Notes

1. Reporting Delays- Delays exist between the time HIV infection is diagnosed and the time the infection is reported to the HIV/AIDS Surveillance Program. As a result of reporting delays, case statistics for the most recent years of diagnosis may not be complete and therefore the data from 2009 are considered provisional and will not be presented in the analysis of trends. The data presented in this report have not been adjusted for reporting delays.

2. Place of Residence- Data are presented based on the residence at the time HIV infection was diagnosed. Therefore, no data are presented for persons who are currently living with HIV infection in Kentucky, but were originally diagnosed in another state. Data presented on living cases reflect those originally diagnosed in Kentucky that are still presumed to be living, regardless of their current residence.

3. Vital Status- Cases are presumed to be living unless the HIV/AIDS Surveillance Program has received notification of death. Current vital status information for cases is ascertained through routine site visits with major reporting sites, reports of death from providers, reports of death from other states' surveillance programs, routine matches with Kentucky death certificates and social security death master files.

4. Transmission Category- Despite possible existence of multiple methods through which HIV was transmitted, cases are assigned a single most likely transmission category based on a hierarchy developed by the Centers for Disease Control and Prevention (CDC). See the "Key Terminology" list on page 9 for a description of the transmission categories. A limitation of the dataset is the large number of cases reported with an undetermined transmission category. Currently, surveillance data are collected through hard copy case reports, telephone reports and chart reviews, which sometimes result in missing information. Enhanced surveillance activities have been implemented to attempt to resolve case reports with missing risk factor information.

5. Routine Interstate Duplicate Review (RIDR)- Case duplication between states can occur and has become more of an issue due to the mobility of our society. To help respond to potential duplication problems, the CDC initiated the Interstate Duplication Evaluation Project (IDEP), now called Routine Interstate Duplicate Review (RIDR), in 2004. RIDR compares patient records throughout the nation in order to identify duplicate cases. The states with duplicate cases contact one another to compare patient profiles in order to determine the state to which the case belongs, based on residence at the earliest date of diagnosis. Because of this process, the cumulative number of cases within Kentucky may change, but the process has increased the accuracy of Kentucky's data by reducing the chance that a case has been counted more than once nationally.

6. Small Numbers- Data release limitations are set to ensure that the information cannot be used to inadvertently identify an individual. When the population size for the smallest unit of analysis presented is less than 1,000 and the cell size is less than or equal to five, the specific number will not be released. Information on any geographic region lower than the county level has not been presented. Rates will not be released when the numerator is less than 10 cases because of the low reliability of rates based on a small number of cases. Changes in rates are considered significant at a 5% or higher increase or decrease.

7. Difference between HIV Infection, HIV without AIDS, and concurrent diagnosis of HIV with AIDS- HIV infection includes all individuals diagnosed with the HIV virus regardless of the stage of disease progression. The data are presented based on the date of the first diagnosis reported to the HIV/AIDS Surveillance Program. HIV without AIDS includes individuals that were not diagnosed with AIDS during the same calendar month as the initial HIV diagnosis. Concurrent diagnosis with AIDS includes those newly diagnosed with HIV and AIDS during the same calendar month. See "Key Terminology" on page 9 for a description of how HIV and AIDS are diagnosed.

Key Terminology

Date of Report: The date HIV infection or AIDS diagnosis is reported to the Kentucky HIV/AIDS Surveillance Program. All HIV data in this report are current as of June 30, 2010.

Date of Diagnosis: The date HIV infection or AIDS is diagnosed.

HIV (Human Immunodeficiency Virus): A retrovirus that infects the helper T cells of the immune system, resulting in immunodeficiency. HIV is diagnosed by a positive confirmatory antibody test or positive/detectable viral detection test.

AIDS (Acquired Immunodeficiency Syndrome): Advanced stage of HIV infection characterized by severe immune deficiency. Diagnosed by the presence of at least one of 26 opportunistic illnesses or a CD4 laboratory test less than 200 cells/ml of blood or <14% of the total white blood cells (lymphocytes).

Residence at HIV infection: Cases are classified as diagnosed in Kentucky if they had a residential address in Kentucky at time of diagnosis.

Living HIV infections (prevalence): HIV prevalence is the number of infected persons living in a certain place at a given time, here reflects persons diagnosed while living in Kentucky regardless of current residence.

Transmission Category: Classification used to summarize the risk factor most likely responsible for disease transmission. Each case is only included in a single transmission category.

- **Men Who Have Sex With Men (MSM)**: Men who report having sexual contact with other men.
- **Injection Drug Use (IDU):** Individuals that report injecting nonprescription drugs.
- **MSM/IDU:** Men who report having sex with other men and also inject nonprescription drugs.
- **High-Risk Heterosexual Contact (HRH):** A person reporting heterosexual relations with an injection drug user, a bisexual male (females only), a person with hemophilia/coagulation disorder, or a person with documented HIV infection.
- **Hemophilia:** Individuals receiving clotting factor for hemophilia/coagulation disorder.
- **Blood Transfusion/Organ Transplant:** Individuals who received blood transfusions or organ transplants. Individuals with a transfusion date listed after March 1985 are considered cases of public health importance and are followed to verify the mode of transmission.
- **Perinatal:** Individuals born to a mother with HIV or a mother with an exposure history listed in the transmission category hierarchy.
- **Undetermined/No Identified Risk (NIR):** Individuals reporting no exposure history to HIV through any of the modes listed in the transmission category hierarchy.

Abbreviations

ADD	Area Development District
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
CTR	Counseling Testing and Referral Sites
eHARS	HIV/AIDS Reporting System (enhanced)
FPL	Federal Poverty Level
HAART	Highly Active Antiretroviral Therapy
HRSA	Health Resources and Services Administration
PLWH	Persons living with HIV (non AIDS)
PLWA	Persons living with AIDS
PLWHA	Persons living with HIV/AIDS
SES	Socioeconomic Status
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TB	Tuberculosis
YRBS	Youth Risk Behavioral Survey

Data Sources

In creating the integrated epidemiologic profile for Kentucky, several data sources were used in order to help visualize the overall picture of HIV disease within the state of Kentucky. All data sources have strengths and weaknesses that should be kept in mind when looking through the data. A brief description of all the data sources follows.

HIV Infections and AIDS Data

In 1982, the Kentucky Cabinet for Health and Family Services (CHFS) established a surveillance system to track diagnosed AIDS cases. Additionally, in 2004, state regulation 902 KAR 2:020 was enacted to facilitate the reporting of name-based HIV infections. Data are collected on standardized reporting forms and include information on demographics, laboratory and clinical information, mode of exposure, opportunistic infections and treatment and referral services. Data are obtained from mandatory laboratory reporting and medical record abstractions. All data are stored in the enhanced HIV/AIDS Reporting System (eHARS). eHARS data are only representative of reported infections. Consequently, persons tested and not reported, persons testing anonymously, and persons undiagnosed/untested are not included in surveillance data. No adjustments have been made to the data to account for reporting delay or missing mode of transmission, unless indicated. CDC estimates data were used for persons living with HIV disease in Kentucky and by transmission category.

Kentucky State Census Data Center

Kentucky population estimates used to describe socio-demographic characteristics and calculate rates were obtained from the Kentucky State Data Center. The Kentucky State Data Center Program is a cooperative effort among the University of Louisville, the Commonwealth of Kentucky and the U.S. Census Bureau. Kentucky Population Research is the applied demographic research program of the University of Louisville's Urban Studies Institute that provides technical assistance to the Kentucky State Data Center. The Kentucky State Data Center and Kentucky Population Research are housed at the University of Louisville. Data can be accessed at http://ksdc.louisville.edu/kpr/popest/est.htm. This website includes current population estimates and projections, income and poverty levels, education levels, and housing data. Profiles for Kentucky are divided by state, Area Development District (ADD), county, and city. This website also provides links to the U.S. Census Bureau to obtain further census information.

Vital Statistics Data

The Kentucky Office of Vital Statistics (OVS) is housed within CHFS. It maintains a database of vital records, including birth and death data. Mortality data can be used to monitor and evaluate health status in terms of current mortality levels and long-term mortality trends, as well as to identify segments of the population at greatest risk of death from specific diseases and injuries. Mortality data are useful for HIV surveillance in ascertaining deaths of persons diagnosed with HIV infection, including leading and underlying causes of death. These data are linked with HIV/AIDS data at least annually. HIV /AIDS data are also linked with Social Security Death Master Files annually.

Teen Pregnancy Data

Data on teen pregnancies in Kentucky are collected by the Adolescent Health Initiatives (AHI) section of the Division of Women's Health within CHFS. AHI coordinates with multiple partners across the commonwealth to promote adolescent health and well being. Additional information on the program is available at http://chfs.ky.gov/dph/info/dwh/teenpregnancy.htm

Data Sources (continued)

Behavioral Surveys

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a telephone health survey sponsored by the Centers for Disease Control and Prevention (CDC). The survey is randomly administered to non-institutionalized civilian adults aged 18 and older who are living in a household with a telephone. Participation in the survey is strictly voluntary. Personal identifying information, such as name or address, is not collected. In Kentucky, the BRFSS has been conducted continuously since 1985. The Kentucky BRFSS Program is located organizationally within CHFS. Data from this survey are used to identify HIV risk factor indicators among persons in Kentucky.

Youth Risk Behavioral Survey (YRBS)

Kentucky participates in the CDC YRBS, administered every two years to a randomly selected sample of middle and high schools across the state. Students answer questions regarding their participation in risky behavior. All answers are confidential. Areas of interest include sexual risk behavior, alcohol and drug use, injury and violence, tobacco use, nutrition and physical activity. Kentucky data are compared to other states' data. Data are used to note areas of need, affect policies and improve and structure programs on both the national and state level.

National Survey on Drug Use and Health (NSDUH)

The NSDUH is sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). NSDUH is an ongoing survey of the civilian, noninstitutionalized population of the United States aged 12 years or older. Conducted by the Federal Government since 1971, the survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence. Interview data from 136,606 persons were collected in 2007-2008. State estimates presented in this report have been developed using a small area estimation (SAE) procedure in which state-level NSDUH data are combined with local-area county and census block group/tract-level data from the state. This model-based methodology provides more precise estimates of substance use at the state level than those based solely on the sample, particularly for states with smaller samples. Additional information on the survey data are available at http://oas.samhsa.gov/2k7State/Kentucky.htm#Tab2

Title I Statewide HIV/AIDS Needs Assessment

A needs assessment is performed by the Ryan White program every three to five years to examine the changing face of HIV infection in Kentucky and identify service gaps in the provision of HIV related services statewide. The Care Coordinator program does not reach all Kentuckians infected with HIV due to income requirements to quality for the program, though it does attend to the most financially needy Kentuckians living with HIV who are often dependent upon the state for care. The Kentucky 2007 needs assessment survey was administered by the Department for Public Health's Care Coordinator program and was completed by 1,206 HIV positive and negative clients receiving care or prevention services in the six care coordinator regions. The sampling frame comprised agencies in the following regions: AIDS Volunteers Lexington, Barren River District Health Department, Bluegrass Care Clinic, Cumberland Valley District Health Department, Heartland Cares, Paducah, Lexington-Fayette County Health Department, Louisville Metro Health Department, Mathew 25 AIDS Services, Bowling Green and Henderson, Northern Kentucky District Health Department, Purchase District Health Department, Volunteers of America, Louisville, and Wings Clinic. Due to confidentiality concerns, study recruitment, follow-up and data collection rested with the care coordinators. The University of Kentucky Center for Prevention Research created the survey instrument and performed data analyses of de-identified data. Data collected included information on demographics, HIV testing, HIV prevention services and programs, risky sexual behaviors and HIV care services. [Jeff Jones, PhD, 2007 HIV/AIDS Needs Assessment , KY Department for Public Health HIV/AIDS Care Coordinator Program]

Data Sources (continued)

Ryan White Comprehensive AIDS Resources Emergency (CARE) Act Data

Data in this section were obtained from the Cabinet for Health and Family Services' Ryan White Comprehensive AIDS Resources Emergency (CARE) Act program. The Ryan White Comprehensive AIDS Resources Emergency (CARE) Act was passed by Congress in 1990 and was amended to include Titles I-IV and consolidated all CARE ACT programs under the HIV/AIDS Bureau within HRSA. Title II funding is given to states, territories and Emerging Metropolitan Areas (EMAs) to provide health care and support services for persons living with HIV infection. Funding may be used for a variety of services, which vary by region all across the state. There are six agencies that provide Ryan White funded services in Kentucky, including but not limited to primary outpatient medical care, medications, case management, mental health services, transportation and other supportive services that link people to care. Title II is also the primary source for ADAP funding. Client data are collected and stored separately by each of the six agencies, through uniform data software called CAREWare.

STD Surveillance Data

STD data are collected by the STD program within CHFS. The primary goal of the Kentucky Sexually Transmitted Disease/Human Immunodeficiency Virus Counseling and Testing (STD/HIVCT) Program is to prevent the spread and resultant sequelae of sexually transmitted diseases (STD), including HIV infection. Local health departments offer patients tests for gonorrhea, Chlamydia and syphilis, and provide treatment for patients diagnosed with, exposed to, or suspected of having these diseases. There is a strong association between HIV and other sexually transmitted diseases, as they have similar modes of transmission. Certain risk behaviors for other STDs also place people at risk for HIV. Therefore STD rates are a useful indicator of risky sexual behaviors at the population level. By examining rates of STD infections in the state, additional insight on behavioral groups to target for HIV prevention may be discovered. Kentucky STD data can be located at http://chfs.ky.gov/dph/diseases/std.htm and http://www.cdc.gov/hiv/surveillance/resources/reports/2007report/

Tuberculosis (TB) Surveillance Data

The Kentucky TB Control Program is authorized by state law to coordinate TB control activities in Kentucky. Local health departments and private providers conduct TB control activities. State-level public health personnel provide program planning, implementation and evaluation, technical assistance and disease surveillance among other services. TB cases are reported using the CDC Report of a Verified Case of Tuberculosis (RVCT) Form. TB surveillance information was maintained in Tuberculosis Information Management System (TIMS) prior to 2009. Currently, data are maintained in the Electronic Report of Verified Case of Tuberculosis (eRVCT) database. Newly diagnosed TB cases co-infected with HIV are reported to the HIV surveillance program on a regular basis. Additional information on the TB program is located at http://chfs.ky.gov/dph/epi/tb.htm

Counseling, Testing and Referral (CTR) Data

The Counseling, Testing and Referral (CTR) database is housed within the HIV/AIDS program and stores information on testing done at sites affiliated with the CHFS program. Local health departments in Kentucky offer free counseling and testing for the Human Immunodeficiency Virus (HIV). Patients can choose to be tested either confidentially or anonymously. Counseling and testing sites, including mobile sites, collect information regarding age, gender, race/ethnicity, risky behaviors and referral services. Data from the CTR system on HIV testing and sexual risk behaviors can be used to make inferences about prevalence of HIV testing and risky sexual behaviors among populations targeted for HIV prevention initiatives. The limitation of using voluntary counseling and testing sites is that persons attending these sites are volunteering to be tested and may not be representative of the general population.

Data Sources (continued)

Department of Corrections Data

Data on inmates diagnosed with HIV were obtained from the Department of Corrections at the Cabinet for Health and Family Services. Data are inclusive of inmates reported to the Department and recorded in the corrections system. Data describe the offender population as of September 17, 2010, across 13 state facilities and the 2 privately operated facilities.

Data on Unmet Need

Information on persons living with HIV infection who are not receiving regular HIV- related care were obtained from HIV surveillance data, Ryan White Part B Program data and Medicaid data. Persons estimated to be living with unmet need were those without evidence of HIV– related care accessed through any one of these systems. Additional elaborations on data sources and methodology are provided within this section.

General Limitations

The profile is comprehensive and utilizes data from a number of data sources. However, there are some limitations.

HIV prevalence data presented are not inclusive of persons who have not been tested, persons who have been tested anonymously, or persons who have been tested but not reported. The Surveillance Program is also in the process of resolving all HIV cases reported by unique codes as was required prior to June 2004. Therefore HIV prevalence data presented in this report, though representative of majority of diagnosed and reported infections, are not inclusive of all living HIV cases. The next profile will be more complete and representative of Kentucky's HIV infections than in this issue.

Several data sources have been utilized for compilation of this profile. The classification of some demographic groups may not be similar to classifications of HIV infections to allow direct comparisons, though this is very minimal. Additionally, some of the data sources may not be as recent as the presented HIV data.

Lastly, behavioral risk group (BRG) categories in some of the surveys under question 3 (section 1) were not necessarily collected in the same format as HIV surveillance risk behaviors. This makes direct comparison of risk groups to HIV data challenging. Additionally, there are 13% cumulative HIV infections without a known mode of transmission, which further complicates direct comparison of data sources. Enhanced surveillance activities have been implemented to resolve case reports with missing risk factor information. Some tables have been supplemented with CDC data using statistical adjustments to re-distribute cases with missing risk factors.

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Section 1

CORE EPIDEMIOLOGIC QUESTIONS

Question 1: What are the sociodemographic characteristics of the general population in Kentucky?

Question 2: What is the scope of the HIV/AIDS epidemic in Kentucky?

Question 3: What are the indicators of risk for HIV/AIDS infection in Kentucky?

Question **1**

What are the Socio-demographic Characteristics of the General Population in Kentucky?

The first step in completing an integrated epidemiologic profile is to determine the sociodemographic characteristics of Kentucky. Determining the demographics and socioeconomic indicators of the state provides a reference point from which to compare the HIV infection related statistics presented under Question 2 of this section.

Demographics

Total Population and Area Development Districts (ADD)

According to U.S. Census estimates provided by the State Data Center, part of the Urban Studies Institute at the University of Louisville, the 2009 Kentucky population was 4,314,113. The population has increased 6.7% from the 2000 Census listing of 4,041,769. Kentucky has 120 counties that have been divided into 15 Area Development Districts (ADDs) for planning and development. From 2000 to 2009, the ADDs with the highest percentage of growth in population were Bluegrass (12.6%), Northern Kentucky (11.5%), Barren River (9.3%), and KIPDA (8.2%). The ADDs that experienced a reduction in population were Kentucky River (-3.8%) and Big Sandy (-1.9 %). The 2009 population estimates by ADD are displayed in Table 1.1 and Figure 1.1 and the ADD population change data are displayed in Table 1.2. In 2009, the highest percentage of Kentuckians (21.8%) resided in the KIPDA ADD. This ADD includes the city of Louisville. The Bluegrass ADD that includes the city of Lexington had the second highest percentage of residents (17.9%). The Northern Kentucky ADD that borders Cincinnati, Ohio, and contains the cities of Covington and Florence had the third highest percentage of residents (10.1%).[1]

Table 1.1. Kentucky Population and Percent Distribution by Area Development District (ADD) of Residence, 2009 Estimate

ADD	Population	%
Purchase	196,182	4.5%
Pennyrile	223,791	5.2%
Green River	211,362	4.9%
Barren River	278,874	6.5%
Lincoln Trail	258,865	6.0%
KIPDA	940,175	21.8%
Northern Kentucky	436,442	10.1%
Buffalo Trace	56,687	1.3%
FIVCO	138,974	3.2%
Gateway	81,010	1.9%
Big Sandy	157,408	3.6%
Kentucky River	116,030	2.7%
Cumberland Valley	242,576	5.6%
Lake Cumberland	203,339	4.7%
Bluegrass	772,398	17.9%
TOTAL	4,314,113	100.0%

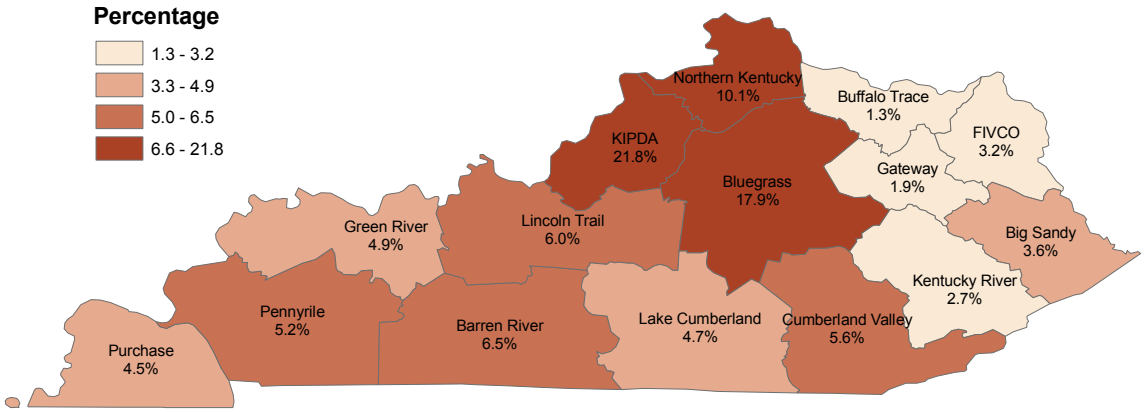
Source: Kentucky State Data Center Population Files, 2009 Estimate

Table 1.2. Kentucky Population Change from the 2000 Census to the 2009 Population Estimate by Area Development District (ADD)

ADD	2000 Census	2009 Estimate	% Change
Purchase	193,495	196,182	1.4%
Pennyrile	215,519	223,791	3.8%
Green River	207,377	211,362	1.9%
Barren River	255,225	278,874	9.3%
Lincoln Trail	243,202	258,865	6.4%
KIPDA	869,306	940,175	8.2%
Northern Kentucky	391,417	436,442	11.5%
Buffalo Trace	55,229	56,687	2.6%
FIVCO	135,849	138,974	2.3%
Gateway	76,237	81,010	6.3%
Big Sandy	160,532	157,408	-1.9%
Kentucky River	120,656	116,030	-3.8%
Cumberland Valley	238,270	242,576	1.8%
Lake Cumberland	193,452	203,339	5.1%
Bluegrass	686,003	772,398	12.6%
TOTAL	4,041,769	4,314,113	6.7%

Source: Kentucky State Data Center Population Files, 2000 Census and 2009 Estimate

Figure 1.1. Percentage of Population by Area Development District (ADD) of Residence, Kentucky, 2009 Estimate

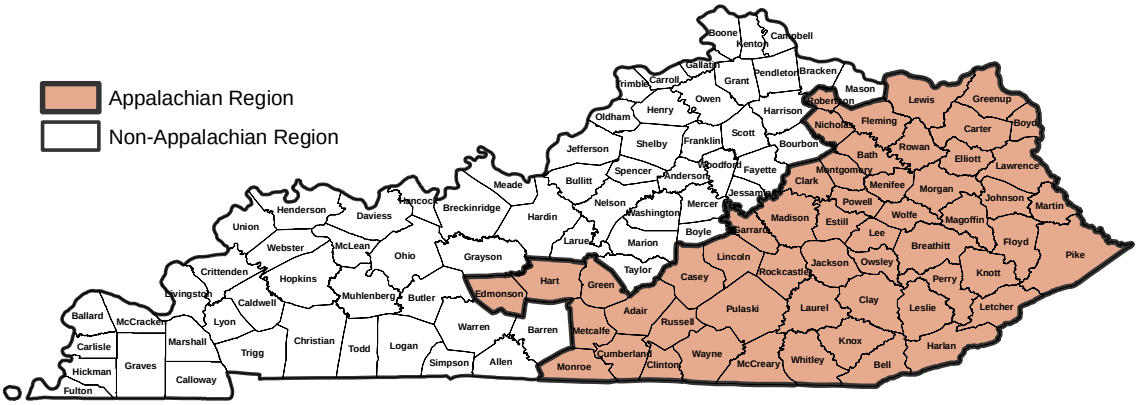


A listing of Kentucky Counties by ADD are presented in Appendix I

Appalachian Region

The Appalachian Region consists of 420 counties in 13 states that include or border the Appalachian mountains. The region stretches from southern New York to northern Mississippi.[2] In Kentucky, 54 counties belong to the Appalachian Region, representing 27.7% of the state's population.[1] See Figure 1.2. Based on factors which place these counties at particular risk for economic distress, these counties are designated as part of Appalachia by Appalachian Regional Commission.

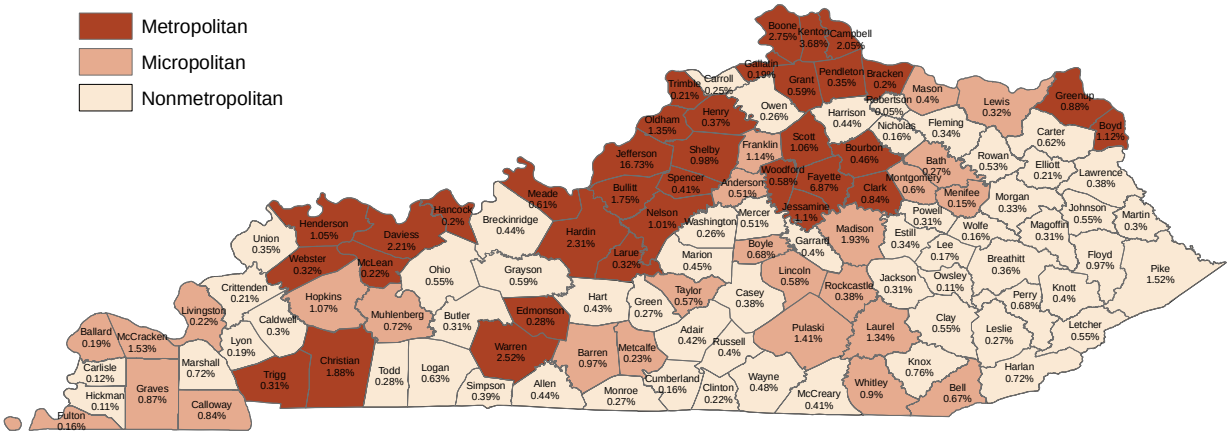
Figure 1.2. Kentucky Counties in the Appalachian Region



Metropolitan Statistical Areas

Groups of counties are defined as metropolitan, micropolitan, or nonmetropolitan areas by the U.S. Census Bureau, based on the population size of a core urban area. A metropolitan area contains a core urban area with a population of at least 50,000. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. A micropolitan area contains a core urban area with a population between 10,000-49,999. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area.[3] An area that does not meet the population requirements for the metropolitan or micropolitan area is referred to as a nonmetropolitan area. In 2009, 35 counties were classified as part of a metropolitan statistical area, 26 counties were classified as part of a micropolitan statistical area, and 59 counties were classified as nonmetropolitan. Metropolitan Statistical Area classifications and percentages of population by county are displayed in Figure 1.3. Among Kentucky residents, 60.3% reside in metropolitan counties, 19.5% reside in micropolitan counties and 20.3% reside in nonmetropolitan counties.[1]

Figure 1.3. Metropolitan Statistical Area Classification and Percentage of the Population and by County, Kentucky, 2009



Age and Gender

In Table 1.3 below, the age groups presented are those used most often in describing the demographics of HIV cases. In 2009, the age group that contained the largest portion of the population was the 25-44 group (26.9%). The percentage of males exceeded females in the <2, 2-12, 13-24, and 25-44 age groups while the percentage of females was higher than males in the 45-64 and >65 age groups. The percentage of females in the overall Kentucky population was slightly higher than the percentage of males (50.9% vs. 49.1%).[1]

Table 1.3. Distribution of the General Population of Kentucky by Age Group and Gender, 2009 Estimate

Age Group	Male % N= 2,117,406	Female % N= 2,196,707	Total % N= 4,314,113
<2	2.8%	2.5%	2.6%
2-12	14.9%	13.7%	14.3%
13-24	17.0%	15.5%	16.2%
25-44	27.6%	26.3%	26.9%
45-64	26.4%	26.9%	26.7%
≥65	11.3%	15.0%	13.2%

Data Source: Kentucky State Data Center Population Files, 2009 Estimate

Race and Ethnicity

The racial distribution of Kentucky's population is presented in Table 1.4. In order to make population data comparable to the racial demographics captured by the enhanced HIV/AIDS Reporting System (eHARS), 2009 population data have been collapsed into the categories of white, African American, other, and Hispanic. Among Kentuckians, 87.2% report themselves as White. African Americans comprise 7.7% of the population. The 2009 population estimates on Hispanic origin are in a separate category. According to these data, 2.7% of the Kentucky population are of Hispanic origin. The number of Hispanic Kentucky residents increased 92.5% from 59,939 in 2000 to 115,416 in 2009. Kentucky residents in the other race category represent 2.4% of the population.

Table 1.4. Percent Distribution of Kentucky Population by Race/ Ethnicity, 2009 Estimate

Race/Ethnicity	Males % N= 2,117,406	Females % N= 2,196,707	KY Total % N= 4,314,113
White Non-Hispanic	86.8%	87.6%	87.2%
African American Non-Hispanic	7.7%	7.7%	7.7%
Other Non-Hispanic	2.4%	2.4%	2.4%
Hispanic	3.0%	2.3%	2.7%

Source: Kentucky State Data Center Population Files, 2009 Estimate

Table 1.5 displays the racial distribution of each of Kentucky's Area Development Districts. The ADD with the highest percentage of African American residents is KIPDA (16.2%), followed by Pennyrile (11.5%), then Bluegrass (8.2%). The ADD with the highest percentage of Hispanic residents is Bluegrass (3.9%) followed closely by KIPDA (3.6%).[1]

Table 1.5. Percent Distribution of Kentucky Population by Race and Area Development District of Residence, 2009 Estimate

ADD	White NH % N=3,763,087	African American NH % N=332,436	Other NH % N=103,174	Hispanic % N=115,416
Purchase	88.8%	6.8%	2.1%	2.3%
Pennyrile	83.8%	11.5%	1.9%	2.8%
Green River	91.0%	5.3%	1.7%	2.1%
Barren River	89.2%	6.1%	2.0%	2.8%
Lincoln Trail	87.6%	7.0%	2.8%	2.6%
KIPDA	77.0%	16.2%	3.2%	3.6%
Northern Kentucky	91.9%	3.2%	2.5%	2.4%
Buffalo Trace	95.0%	2.8%	1.3%	1.0%
Gateway	94.4%	2.8%	1.5%	1.3%
FIVCO	95.9%	1.7%	1.3%	1.1%
Big Sandy	96.9%	1.2%	1.1%	0.8%
Kentucky River	97.0%	1.1%	1.2%	0.7%
Cumberland Valley	95.8%	1.7%	1.6%	0.9%
Lake Cumberland	94.8%	2.0%	1.3%	1.8%
Bluegrass	84.8%	8.2%	3.1%	3.9%

NH = Non-Hispanic, Source: Kentucky State Data Center Population Files, 2009 Estimate

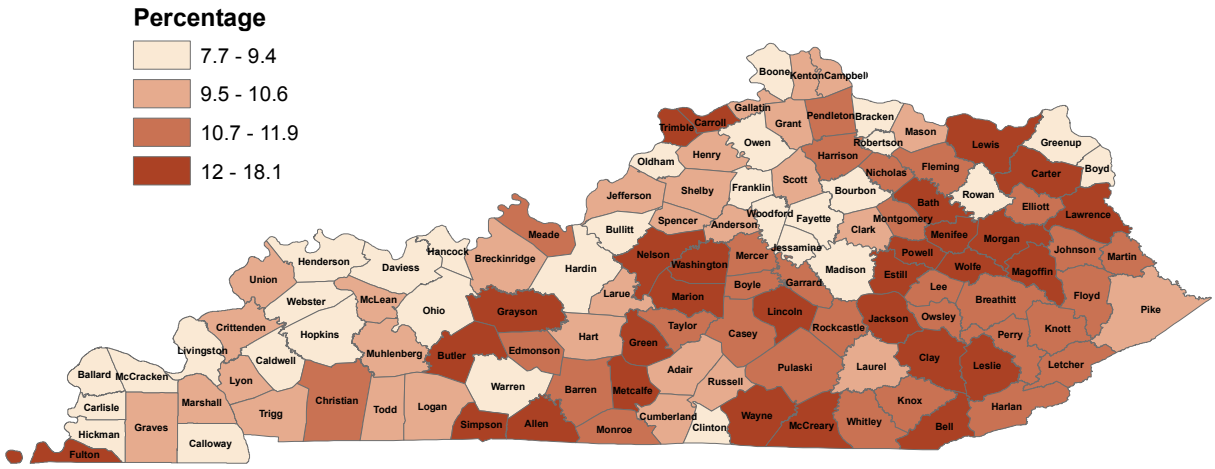
Socioeconomic Indicators

In Kentucky economic progress has been challenged by high unemployment and poverty rates, as well as low median household income and educational attainment. In general, Kentucky lags behind the nation regarding these indicators. According to the 2009 Quarterly Census of Employment and Wages, approximately 0.5% of Kentuckians are working in agriculture.[4] Among those employed in non-farm related jobs, the highest percentage are employed in the service industries (37%) followed by trade, transportation and utilities (22%), then government and public education (16%). The industries that have experienced the most growth from 2000-2009 are those involving natural resources and mining. Employment increased 23.2% in this sector. The services industry experienced the second highest percentage of growth at 11.9%. The greatest decline in employment, 31.3%, occurred in the manufacturing sector, followed by the information sector, 18.1%, then construction, 16.3%.[5]

Unemployment Rate

During this past decade Kentucky's unemployment rate was at its lowest point at 4.2% in 2000. The rate increased to 6.3% in 2003 and then showed a decline from 2005 to 2007. During the last three years of the decade the unemployment rate increased dramatically from 5.5% in 2007 to 6.4% in 2008 to 10.5% in 2009, corresponding to the recession.[4] According to the July 2010 estimate, the unemployment rate for Kentuckians was 10.0%, slightly above the national rate of 9.7%. The counties with the highest unemployment rates were Magoffin at 18.1%, Jackson at 16.2%, Metcalfe at 15.5%, and Menifee at 15.4%. Boyd County had the lowest percentage of unemployment at 7.7% followed by Fayette and Oldham Counties both at 7.8% (Figure 1.4). [6]

Figure 1.4. Percentage of Unemployed Kentuckians by County, July 2010

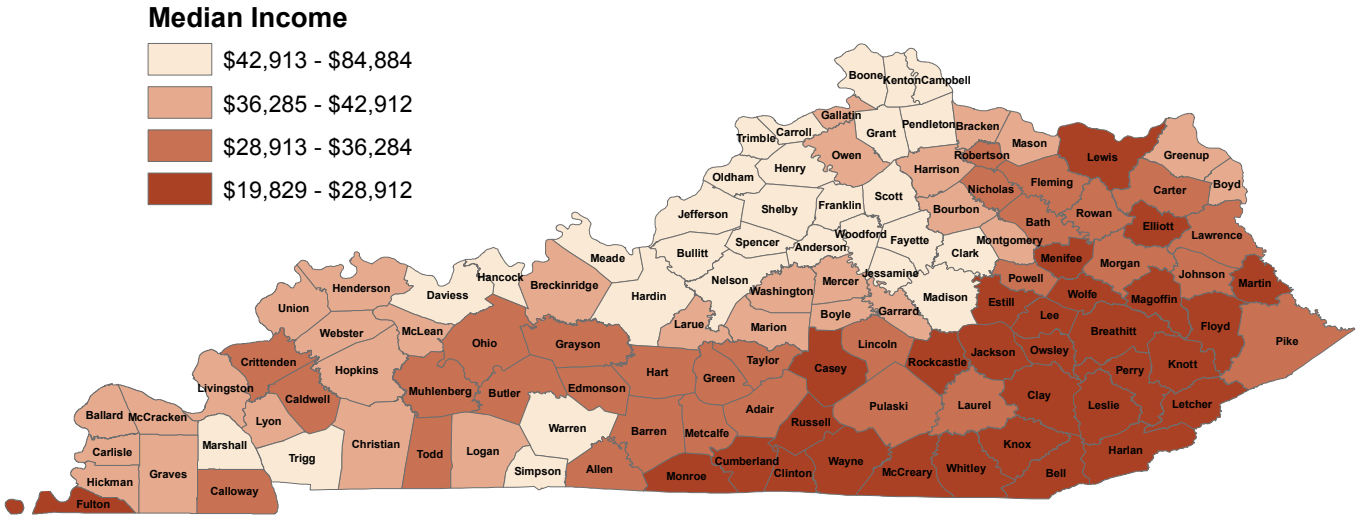


Quarterly Census of Employment and Wages data include only workers covered by the state unemployment insurance laws and federal workers covered by the unemployment compensation for federal employees program. Agricultural workers not covered under unemployment insurance programs were not included in the percentage employed in agriculture.

Median Household Income

According to U.S. Census estimates, the Kentucky median household income was $41,189 in 2008 compared to $52,029 for the United States. The three counties with the highest median household income were Oldham County at $84,884, Boone County at $66,178, and Spencer County at $64,286. The three counties with the lowest median household income were Owsley County at $19,829, McCreary County at $22,253, and Clay County at $22,365.[7] See Figure 1.5. Please note that the counties presented in the darkest shade have the lowest income levels.

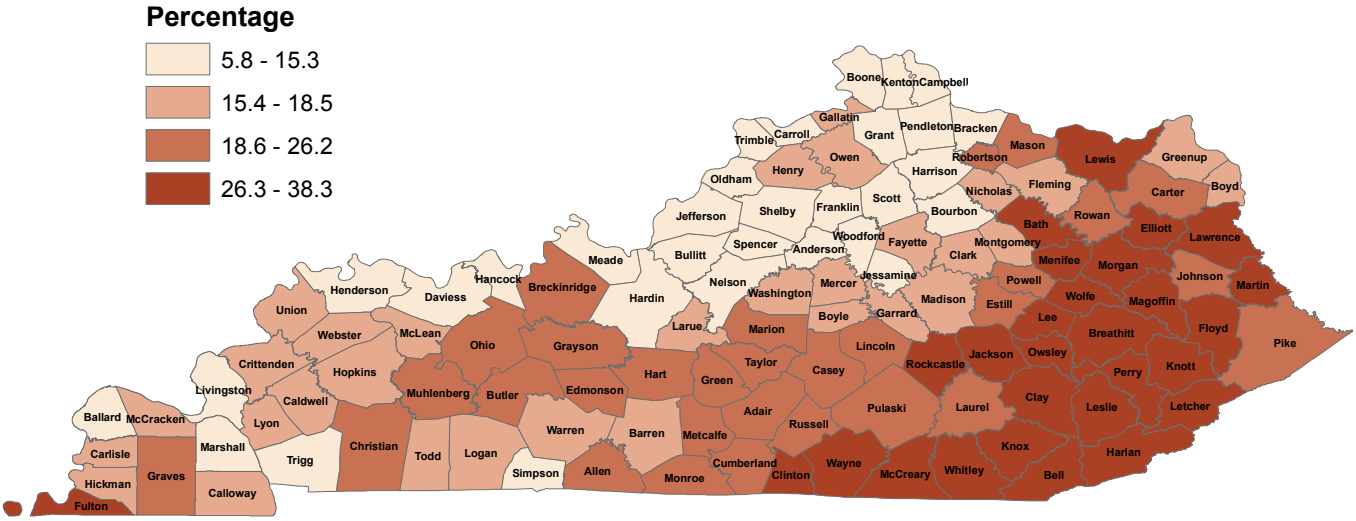
Figure 1.5. Median Household Income by County, Kentucky, 2008



Poverty Rate

In 2008, the percent of Kentuckians with income below the poverty level was 17.3% compared to 13.2% of United States residents. The counties with the highest poverty rate were Clay (38.3%), Owsley (37.6%), and Wolfe (36.1%) while the counties with the lowest poverty rate were Oldham (5.8%), Boone (6.1%) and Spencer (8.8%).[7] See the Figure 1.6.

Figure 1.6. Percentage in Poverty by County, Kentucky, 2008



Uninsured

According to the U.S. Census Bureau's Small Area Health Insurance Estimates database, 16.5% of Kentuckians aged less than 65 years were uninsured in 2007. This percentage compares to the national median of 15.1%. The distribution of Kentuckians in this age category by race/ethnicity and age is displayed in Table 1.6. Slightly more males (17.2%) than females (15.9%) were uninsured in 2007. In all race/ethnicity categories a higher percentage of males were uninsured. Among the three categories provided for race/ethnicity, a higher percentage of Hispanics were uninsured (36.7%) compared to African Americans (22.2%) and whites (15.3%).

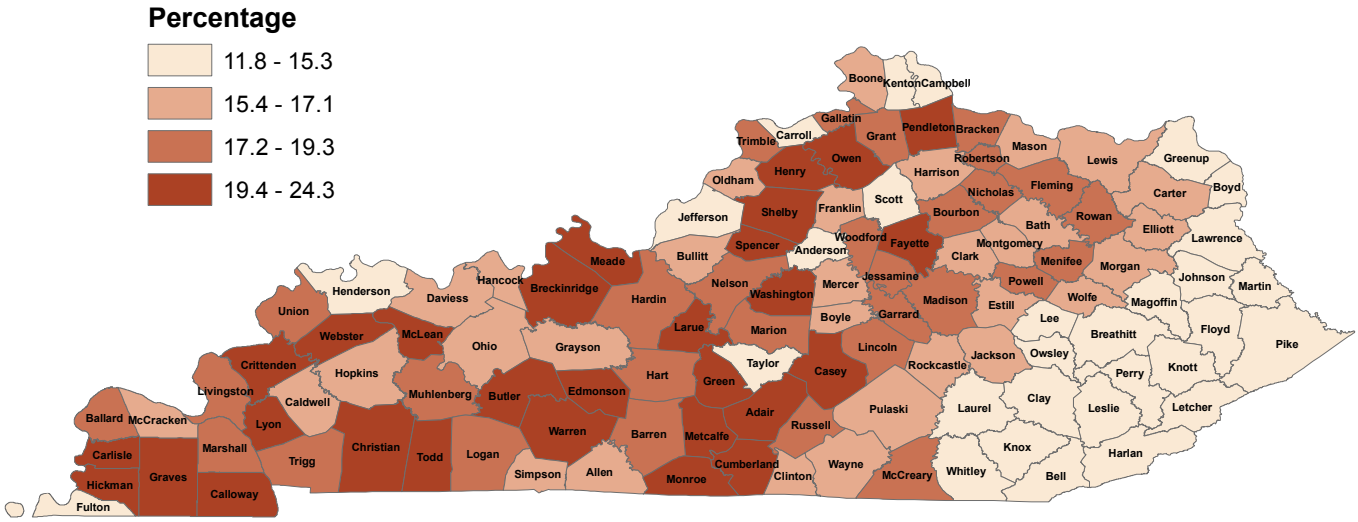
Table 1.6. Percentage Uninsured by Gender and Race, Age <65, Kentucky 2007

Race/Ethnicity	Gender		
	Male %	Female %	KY Total %
White Non-Hispanic	15.7	14.9	15.3
African American Non-Hispanic	24.2	20.4	22.2
Hispanic	40.3	32.3	36.7
KY Total	17.2	15.9	16.5

Source: U.S. Census Bureau, Small Area Health Insurance Estimates for Counties and States, 2007

Figure 1.7 below displays the percentage of uninsured by county. In 2007 the counties with the highest percentage uninsured were Carlisle (24.3%), Calloway (23.6%) and Todd (23.4%) while the counties with the lowest percentage uninsured were Owsley (11.8%), Breathitt (11.9%) and Lee (12.1%).[8]

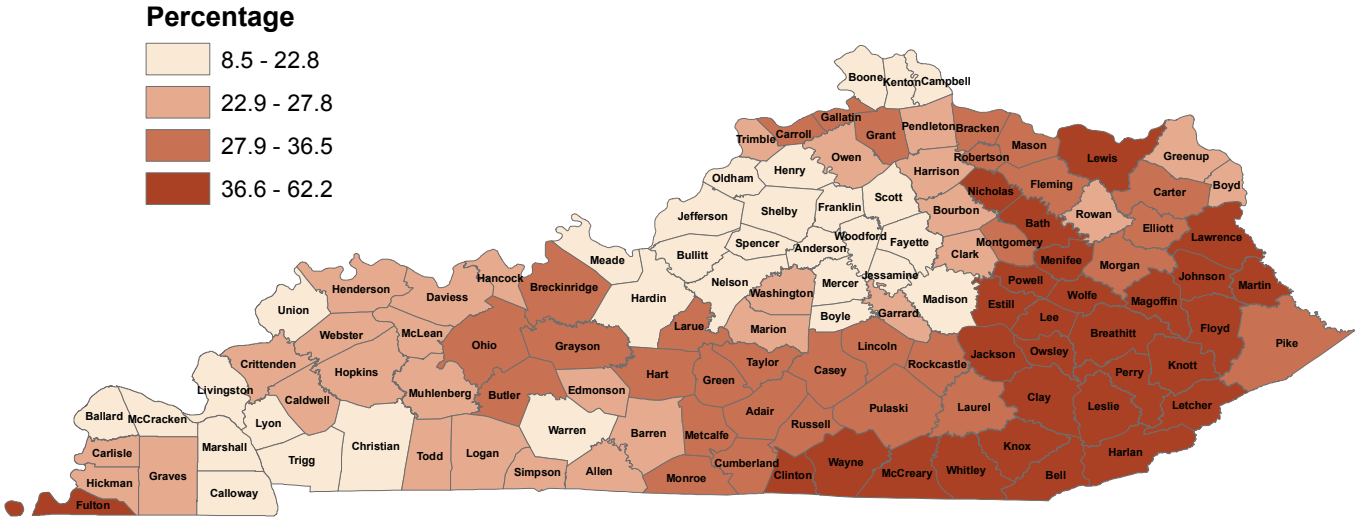
Figure 1.7. Percentage of Uninsured Kentuckians Aged Less than 65, by County, 2007



Medicaid Coverage

One of the possible reasons that the many of eastern Kentucky counties have a lower percentage of uninsured persons is because a higher percentage of residents in those counties are covered by Medicaid. See Figure 1.8. During Fiscal Year 2010, 24.3% of Kentuckians were enrolled in Medicaid. The two counties with the highest percentage enrolled in Medicaid were Owsley County at 62.2% and Wolfe County at 57.9%, followed by Lee County at 47.8%.[9]

Figure 1.8. Percentage of Population Enrolled in Medicaid by County, Kentucky, State Fiscal Year 2010



Educational Attainment

The educational attainment levels for Kentuckians 25 years of age and older are represented in Table 1.7. Twenty percent of Kentuckians have received a bachelor's degree or higher and approximately 80% have received a high school diploma or general education diploma (GED equivalency). Approximately the same percentage of males (20.1%) and females (19.9%) age 25 and older have received a bachelor's degree or higher. A slightly higher percentage of females (81.6%) have received a high school diploma or GED equivalency or higher compared to males (79.1%). The data source for the educational attainment data is the U.S Census Bureau's American Community Survey. Data were combined for the survey years 2006-2008. Educational attainment data were only available for counties with greater than 20,000 population; therefore, a county map is not included.[10]

Table 1.7. Percentage of Educational Attainment for Ages 25 Years and Older, Kentucky, 2006-2008

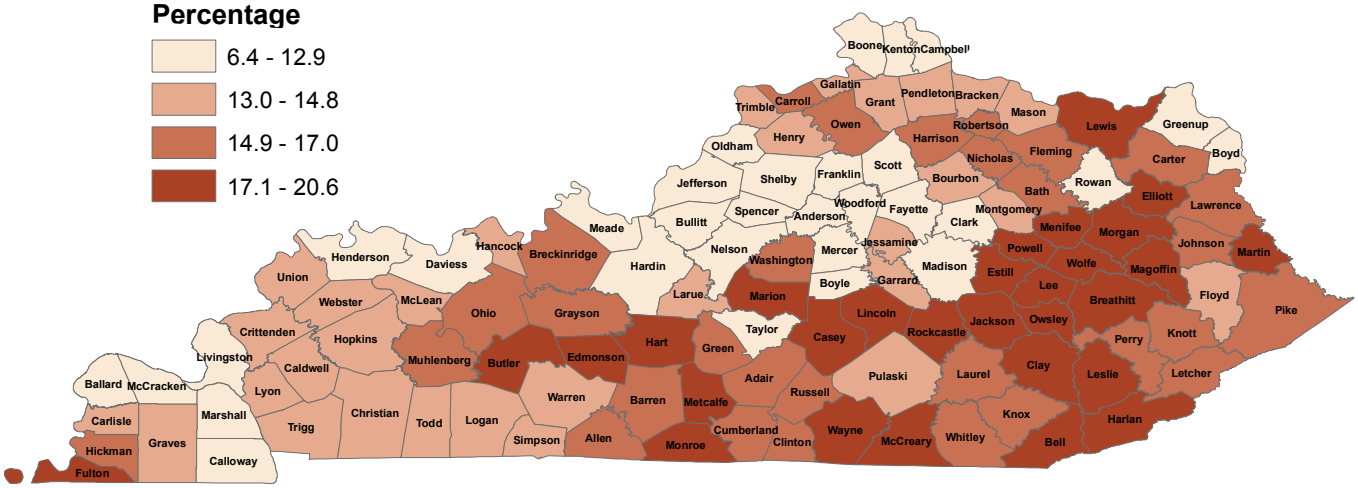
Gender and Age	Educational Level	
	High School Graduate or Higher	Bachelor's Degree or Higher
Gender		
Male	79.1	20.1
Female	81.6	19.9
Age Group		
25-34	87.0	22.8
35-44	86.3	22.7
45-64	83.0	20.7
65+	61.6	12.8
Total Kentucky	80.4	20.0

Source: U.S. Census Bureau, American Communities Survey, 2006-08

Adult Literacy

Literacy is a key component to understanding and properly responding to health prevention and treatment messages. According to the 2003 National Assessment of Adult Literacy, 12.2% of Kentucky adults (age 16 and older) lack basic prose literacy skills.[11] This percentage is similar to the national average (12%). The counties with the highest percentage of adults without basic prose literacy skills are Clay (20.6%), Estill (20.5%) and Lee (19.7%), and the counties with the lowest percentage are Oldham (6.4%), Fayette (7.5%), and Jefferson (8.4%). See Figure 1.9 below.

Figure 1.9. Percentage of Adults Age 16 and Older Lacking Basic Prose Literacy Skills, Kentucky, 2003



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[10]U.S. Census Bureau, 2006-08 American Community Survey, http://www.census.gov/acs/www/. Accessed November 30, 2010.

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Question **2** **What is the Scope of the HIV/AIDS Epidemic in Kentucky?**

Part 1: Newly reported HIV diagnoses

As of June 30, 2010, there were a total of 7,224 HIV infections reported to the Kentucky Department for Public Health's HIV/AIDS Surveillance Program since 1982. Of these, 4,568 persons (63%) are still presumed to be living with a diagnosis of HIV infection or AIDS. Table 1.8 shows reported HIV infections by diagnostic status and year of diagnosis for the most recent decade. The highest number of infections reported since 2000 was in 2007 (394 cases).

Figure 1.10 on the next page shows the differences in reported HIV infections and AIDS cases pre and post implementation of mandatory laboratory reporting in June 2004. At that time, confidential HIV name-based reporting was also enacted. Prior to 2005 very low numbers of HIV infections were reported to the HIV surveillance program, but after 2005, there is an upward trend in reported HIV infections, which signifies improved HIV reporting and surveillance activities. In 2006, there were ten more reported AIDS cases than HIV infections, but reported AIDS cases have been less than HIV infections since. This is likely due to enhanced testing efforts and enrolment of infected persons in care to prevent or delay progression to AIDS.

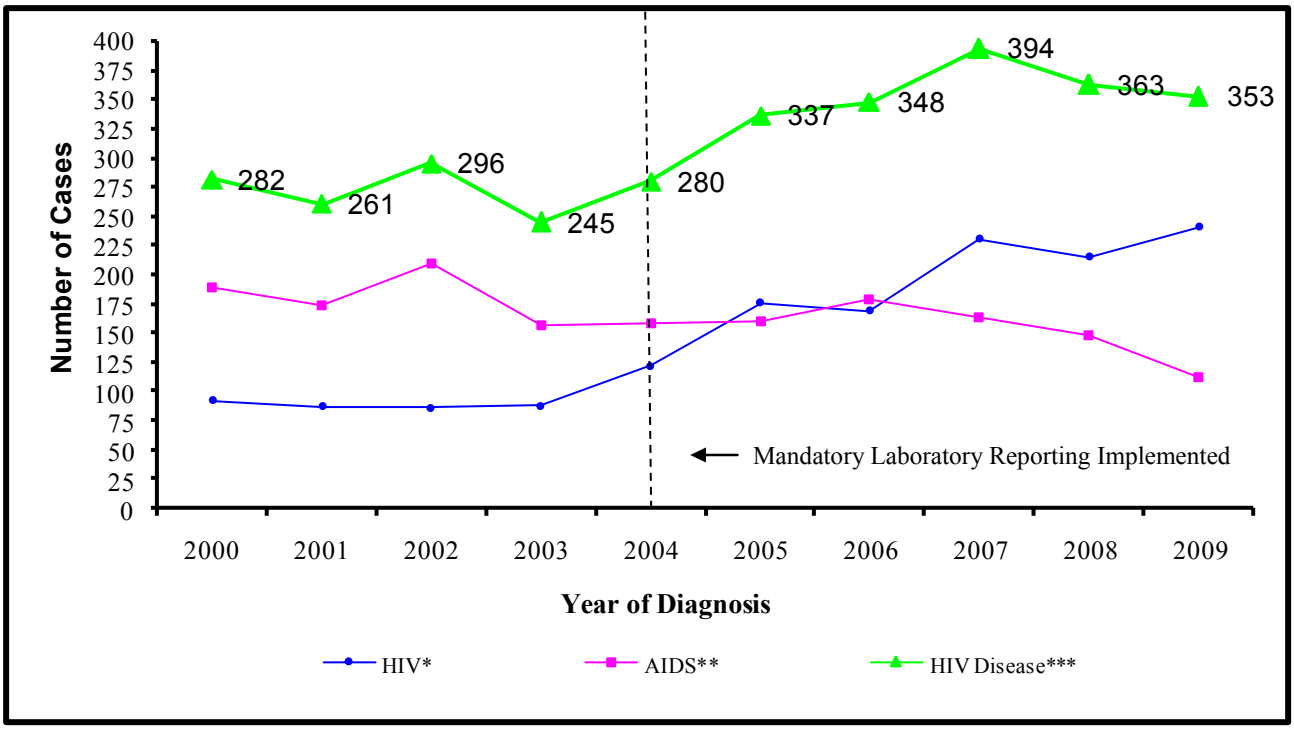
Table 1.8. HIV Infections Diagnosed in Kentucky by Current Status and Year of HIV Diagnosis

Year of HIV Diagnosis	HIV Infection *without* AIDS	AIDS	TOTAL**
	No.	No.	No.
2000	92	190	282
2001	87	174	261
2002	86	210	296
2003	88	157	245
2004	122	158	280
2005	176	161	337
2006	169	179	348
2007	231	163	394
2008	215	148	363
2009*	241	112	353
TOTAL	**1,507**	**1,652**	**3,159**

*Data reported through June 30, 2010

**Total HIV infections regardless of disease progression

Figure 1.10. New HIV Infections by Diagnostic Status and Year of HIV Diagnosis, Kentucky- 2000-2009



*HIV Infection (without AIDS)
**HIV Infection with AIDS
***HIV Infection regardless of progression to AIDS

Figure 1.11 presents trends of annual diagnosis rates of HIV infection (regardless of progression to AIDS) among persons diagnosed in Kentucky, 1994-2008. The highest annual HIV diagnosis rate was in 2007 at 9.3 per 100,000 population but has remained fairly steady overall, with slight fluctuations. The rate of new HIV diagnoses increased by 58% between 2003 and 2007 and decreased by 8.6% between 2007 and 2008.

Figure 1.11. HIV Infection Diagnosis Rates Among Persons Diagnosed in Kentucky, 1994-2008

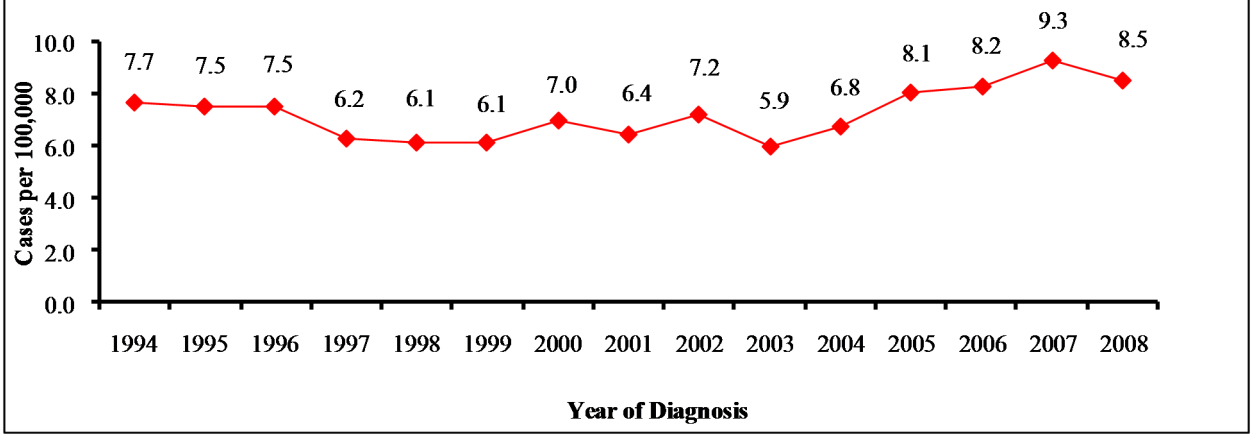
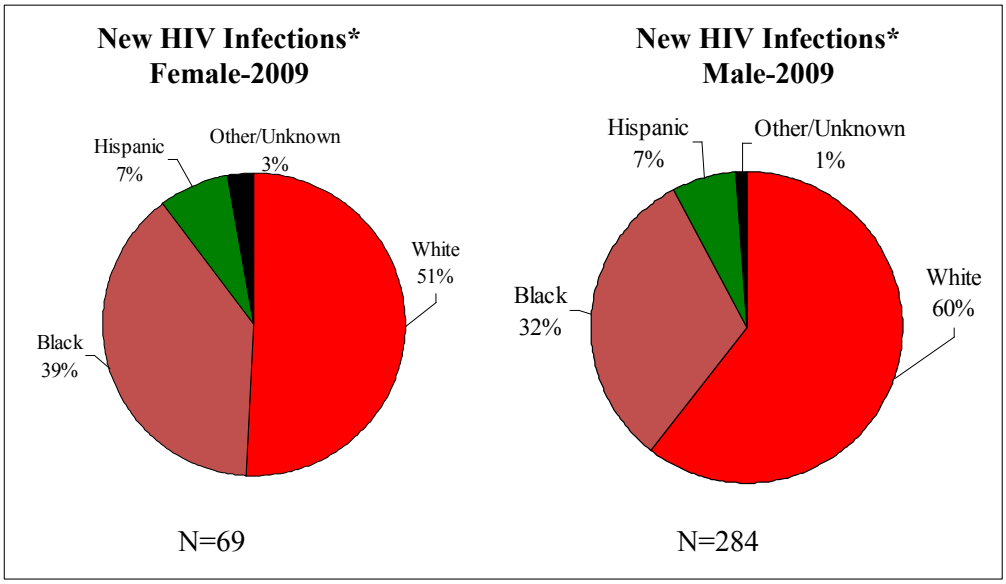


Figure 1.12. New HIV Infections Diagnosed in Kentucky by Sex and Race, 2009

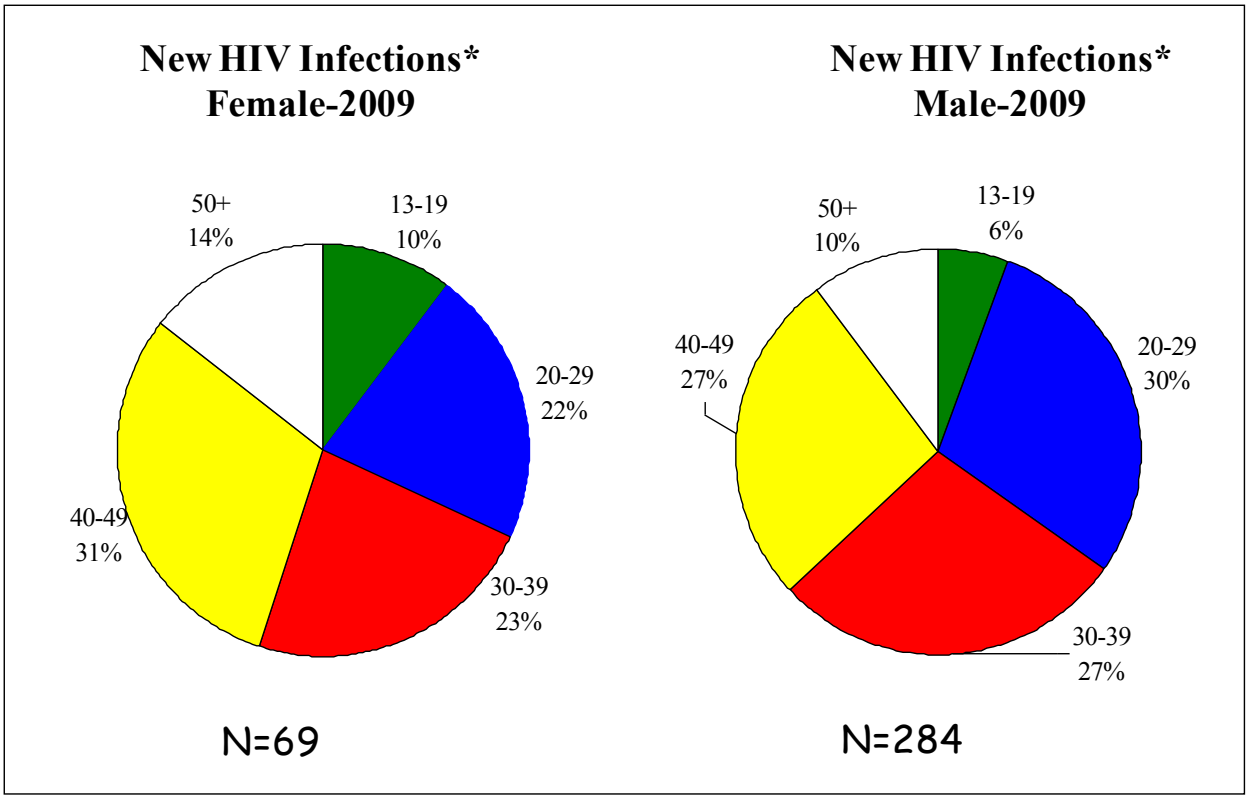


*HIV infections regardless of progression to AIDS. 2009 data are incomplete due to reporting delays and are subject to change. Data represent reported diagnoses as of June 30, 2010

In 2009, there were 353 newly diagnosed HIV infections in Kentucky, and the majority were male (80%). Among both sexes, the majority of newly reported diagnoses in 2009 were white non-Hispanics, as shown in Figure 1.12 above. The proportion of newly diagnosed infections among Hispanics in 2009 was similar among Hispanic males and Hispanic females at 7% each.

By race/ethnicity, blacks are most likely to be impacted by HIV. In 2009, black males and black females comprised 7.7% and 7.6% of Kentucky's male and female population respectively, yet accounted for over a quarter of newly diagnosed HIV infections, 32% were black males and 39% were black females. Hispanics are also disproportionately impacted by HIV disease, with only 3% Hispanic males and 2.3% Hispanic females in the general population by sex in 2009, yet representing higher proportions of new HIV infections at 7% each for both Hispanic males and Hispanic females.

Figure 1.13. New HIV Infections Diagnosed in Kentucky by Sex and Age- 2009

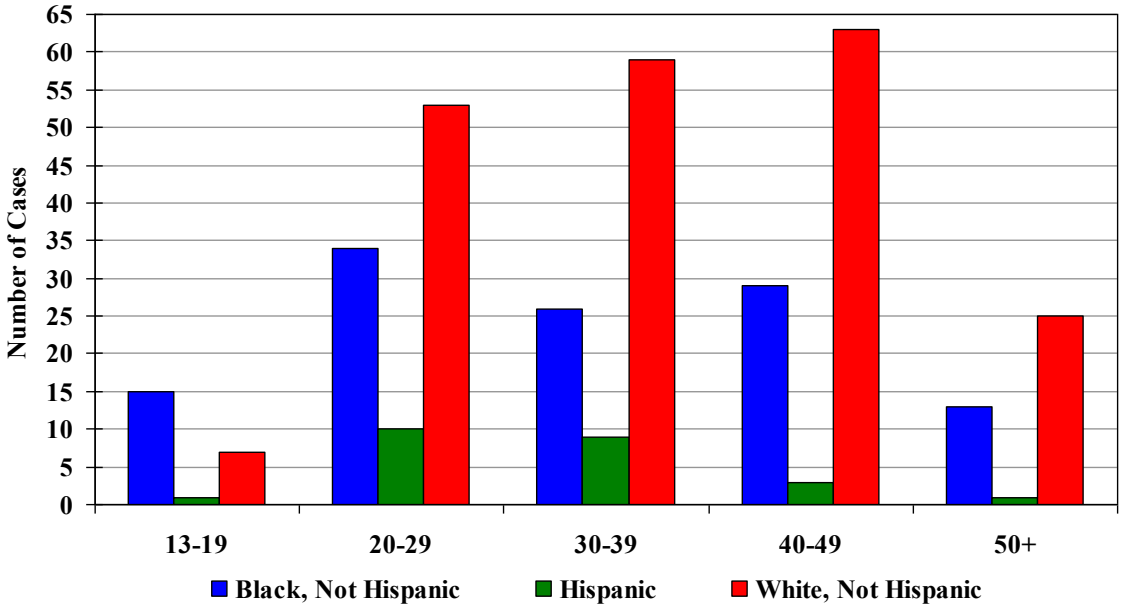


*HIV infections regardless of progression to AIDS. 2009 data are incomplete due to reporting delays and are subject to change. Data represent reported diagnoses as of June 30, 2010

New HIV infections by sex and age at HIV diagnosis show some differences among males and females (Figure 1.13). Females were generally diagnosed at later ages than males: 31% of females in their 40s in comparison to 30% of males in their 20s. Females also showed higher percentages of new infections among teens (13-19 years old) and among persons aged 50+, at 10% and 14% respectively, in comparison to 6% and 10% new male infections in those same age categories.

If both sexes are combined, similar percentages of persons were diagnosed in 2009 in each of the three largest age categories: 20-29, 30-39 and 40-49 at 27.8%, 27.2% and 27.5% respectively. The median age at diagnosis in 2009 was 35 years.

Figure 1.14. New HIV Infections Diagnosed in Kentucky by Race/Ethnicity and Age-2009



Note: Due to the small numbers of HIV infections reported, data are not presented for other races and age groups 0-12 years old.
2009 data are incomplete due to reporting delays and are subject to change.
Data represent reported diagnoses as of June 30, 2010.

Data for 2009 by race/ethnicity and age (Figure 1.14) show that the highest number of newly diagnosed infections among teens were in blacks (15 cases), whereas the highest number of infections diagnosed at age 20 and older was reported among whites.

Among blacks and Hispanics, the highest number of newly diagnosed infections in 2009 was reported among persons in their 20s: 34 blacks and 10 Hispanics, while among whites, the highest number of newly diagnosed infections was reported among persons in the age range of 40-49 years old (63 cases).

Part 2: Cumulative Adult/Adolescent HIV Infections

Table 1.9. Cumulative Adult/Adolescent[1] HIV Infections by Year of HIV Diagnosis, Kentucky

Characteristics	1982-04	%	2005	%	2006	%	2007	%	2008	%	2009	%	2010[2]	%	Total	%[3]
SEX																
Male	4404	84%	269	81%	289	84%	299	76%	309	85%	284	80%	95	80%	5949	83%
Female	854	16%	63	19%	57	16%	93	24%	53	15%	69	20%	24	20%	1213	17%
TOTAL[3]	5258	100%	332	100%	346	100%	392	100%	362	100%	353	100%	119	100%	7162	100%
AGE AT DIAGNOSIS																
13-19	149	3%	13	4%	9	3%	27	7%	22	6%	23	7%	6	5%	249	3%
20-29	1533	29%	88	27%	83	24%	101	26%	98	27%	98	28%	41	34%	2042	29%
30-39	2127	40%	99	30%	94	27%	112	29%	95	26%	96	27%	30	25%	2653	37%
40-49	1070	20%	89	27%	114	33%	110	28%	101	28%	97	27%	29	24%	1610	22%
50+	379	7%	43	13%	46	13%	42	11%	46	13%	39	11%	13	11%	608	8%
TOTAL[3]	5258	100%	332	100%	346	100%	392	100%	362	100%	353	100%	119	100%	7162	100%
RACE/ETHNICITY																
White, Not Hispanic	3474	66%	199	60%	189	55%	202	52%	195	54%	207	59%	55	46%	4521	63%
Black, Not Hispanic	1624	31%	102	31%	132	38%	154	39%	137	38%	117	33%	53	45%	2319	32%
Hispanic	128	2%	24	7%	18	5%	30	8%	24	7%	24	7%	7	6%	255	4%
Other/Unknown	32	1%	7	2%	7	2%	6	2%	6	2%	5	1%	4	3%	67	1%
TOTAL[3]	5258	100%	332	100%	346	100%	392	100%	362	100%	353	100%	119	100%	7162	100%
TRANSMISSION CATEGORY																
MSM[4]	2981	57%	176	53%	191	55%	169	43%	159	44%	149	42%	49	41%	3874	54%
IDU[5]	684	13%	25	8%	25	7%	28	7%	22	6%	14	4%	4	3%	802	11%
MSM and IDU	329	6%	11	3%	10	3%	6	2%	7	2%	8	2%	1	1%	372	5%
Hemophilia/Blood Disorder	81	2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	81	1%
Heterosexual[6]	826	16%	80	24%	52	15%	56	14%	17	5%	24	7%	7	6%	1062	15%
Transfusion/Transplant	35	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	35	<1%
Undetermined[7]	322	6%	40	12%	68	20%	133	34%	157	43%	158	45%	58	49%	936	13%
TOTAL[3]	5258	100%	332	100%	346	100%	392	100%	362	100%	353	100%	119	100%	7162	100%

(1) Cases are classified as Adult/Adolescent if they are 13 years of age or older at time of diagnosis
(2) Data reported through June 30, 2010
(3) Percentages may not total 100% due to rounding
(4) MSM = Men Having Sex With Men
(5) IDU = Injection Drug Use
(6) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV
(7) "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, deceased, lost to invesitgation, refused interview, and persons whose mode of exposure remains undetermined after investigation

Table 1.9 presents a breakdown of cumulative HIV diagnoses by year of diagnosis and demographic characteristics among adults/adolescents. Annual data are presented for the last six years though June 30, 2010. Cumulatively, the majority of adult/adolescent infections are male (83%), white (63%) and transmitted through MSM exposure (54%). By age at diagnosis, the largest reported percentage of adult/adolescent infections (37% of all diagnoses) was among persons aged 30-39 years.

Table 1.10. Cumulative Adult/Adolescent[1] HIV Infections By Age at Diagnosis, Race/Ethnicity, and Sex through June 30, 2010, Kentucky

	Age Group at Diagnosis	White, Not Hispanic		Black, Not Hispanic		Hispanic		Other/ Unknown		TOTAL	
		No.	%	No.	%	No.	%	No.	%	No.	%[(2)]
Male	13-19	81	2%	87	5%	3	1%	4	9%	175	3%
	20-29	1082	27%	507	29%	76	37%	8	17%	1673	28%
	30-39	1542	39%	594	34%	84	41%	19	41%	2239	38%
	40-49	916	23%	410	24%	26	13%	11	24%	1363	23%
	50+	340	9%	141	8%	14	7%	4	9%	499	8%
	TOTAL[(2)]	**3961**	**100%**	**1739**	**100%**	**203**	**100%**	**46**	**100%**	**5949**	**100%**
Female	13-19	35	6%	33	6%	4	8%	2	10%	74	6%
	20-29	167	30%	172	30%	24	46%	6	29%	369	30%
	30-39	195	35%	198	34%	14	27%	7	33%	414	34%
	40-49	111	20%	126	22%	6	12%	4	19%	247	20%
	50+	52	9%	51	9%	4	8%	2	10%	109	9%
	TOTAL[(2)]	**560**	**100%**	**580**	**100%**	**52**	**100%**	**21**	**100%**	**1213**	**100%**

(1) Cases are classified as Adult/Adolescent if they were 13 years of age or older at time of diagnosis

(2) Percentages may not total 100 due to rounding

The adult/adolescent male median age at diagnosis is 34 years, which is similar to the overall adult/ adolescent median age at diagnosis. For adult/adolescent females, however, the median age at diagnosis is slightly lower at 33 years. The racial/ethnic and age distributions for adult/adolescent males and females are displayed in Table 1.10.

The highest numbers of male HIV infections were diagnosed in their 30s (2,239, 38%) and 20s (1,673, 28%). For all male race/ethnicity categories, the largest percentages of infections were diagnosed in the age group 30-39 years: Hispanic males, 41%, white males, 39% and blacks males, 34%. Hispanic males had the highest percentage of infections diagnosed while in their 20s (37%), in comparison to white males (27%) and black males (29%) in the same age group. Conversely, white males (23%) and black males (24%) had higher percentages of infections diagnosed in the 40-49 year age group, in comparison to 13% of Hispanic males in this older age group. The percentage of infections among Hispanic males aged 40 or older (20%) was smaller than the total percentage of HIV infections among all males in that age group (31%). Almost half (41%) of male infections with unknown/ other race were 30-39 years old, but due to small numbers, the percentages should be interpreted with caution.

Similar trends exist among female racial/ ethnic and age groups. The highest percentage of all female HIV infections were women diagnosed in their 30s (34%). Thirty four percent of black females and 35% of white females were diagnosed in the same decade of life. Hispanic females tend to be younger at the time of diagnosis than their racial and ethnic counterparts. Forty six percent of Hispanic female infections were diagnosed in their 20s.

Table 1.11. Cumulative Pediatric[1] HIV Infections by Risk and Race/Ethnicity through June 30, 2010, Kentucky

Transmission Category	White, Not Hispanic		Black, Not Hispanic		Other/ Unknown		TOTAL	
	No.	%	No.	%	No.	%	No.	%[2]
Pediatric Hemophilia/Coagulation Disorder	10	33%	1	3%	0	0%	11	18%
Perinatal Exposure, Mother with HIV	18	60%	27	90%	2	100%	47	76%
Pediatric Transfusion/Transplant	2	7%	0	0%	0	0%	2	3%
Pediatric, No Risk Reported	0	0%	2	7%	0	0%	2	3%
TOTAL	**30**	**100%**	**30**	**100%**	**2**	**100%**	**62**	**100%**

(1) Cases are classified as Pediatric if they are less than 13 years of age at time of diagnosis

(2) Percentages may not total to 100 due to rounding

Table 1.12. Pediatric[1] HIV Infections by Year of Diagnosis and Diagnosis Status, Kentucky

Disease Status	1982-04	%	2005	%	2006	%	2007	%	2008	%	2009	%	2010[2]	%	Total	%[3]
HIV Infection without AIDS	9	18%	4	80%	2	100%	2	100%	1	100%	0	0%	1	100%	19	31%
AIDS	42	82%	1	20%	0	0%	0	0%	0	0%	0	0%	0	0%	43	69%
Total	**51**	**100%**	**5**	**100%**	**2**	**100%**	**2**	**100%**	**1**	**100%**	**0**	0%	**1**	**100%**	**62**	**100%**

(1) Cases are classified as Pediatric if they are less than 13 years of age at time of diagnosis

(2) Data reported through June 30, 2010

(3) Percentages may not total 100 due to rounding

Overall, there have been 62 pediatric HIV infections diagnosed in Kentucky (Table 1.11 and Table 1.12) since 1982. The first pediatric HIV infection reported was diagnosed in 1986. Fifty one (82%) of these infections were diagnosed prior to 2005. The majority of reported pediatric infections (47, 76%) were due to perinatal transmission through an HIV infected mother, 11 infections were reported with a primary mode of exposure of pediatric hemophilia or coagulation disorder, and 2 infections were reportedly due to pediatric transfusion or transplant (Table 1.11). Since 1991 there have been no pediatric HIV infections with hemophilia or coagulation disorders as the reported mode of exposure. The two pediatric infections reported with pediatric transfusion or transplant as the risk factor were diagnosed by 1987.

There have been 11 pediatric HIV infections diagnosed since 2005, of whom only one had progressed to AIDS by June 30, 2010.

Among both blacks and whites, a similar number of pediatric cases has been reported (n=30), though almost all black cases were due to perinatal exposure (27, 90%) in comparison to 18 (60%) of HIV infections among whites due to this route of transmission. Only one pediatric HIV infection has been reported among Hispanics.

Table 1.13. Cumulative Living HIV Infections[1] By Current Age[2], Race/Ethnicity, and Sex through June 30, 2010, Kentucky

	Current Age	White, Not Hispanic		Black, Not Hispanic		Hispanic		Other/ Unknown		TOTAL	
		No.	%	No.	%	No.	%	No.	%	No.	%
Male	<13	1	<1%	8	1%	0	0%	0	0%	9	<1%
	13-24	67	3%	119	11%	8	5%	4	11%	198	5%
	25-44	1023	43%	462	42%	115	67%	17	45%	1617	44%
	45-64	1225	52%	489	44%	46	27%	17	45%	1777	48%
	65+	60	3%	26	2%	3	2%	0	0%	89	2%
	TOTAL[(3)]	**2376**	**100%**	**1104**	**100%**	**172**	**100%**	**38**	**100%**	**3690**	**100%**
Female	<13	3	1%	5	1%	1	2%	1	5%	10	1%
	13-24	26	7%	22	5%	4	9%	2	11%	54	6%
	25-44	192	49%	214	51%	29	64%	9	47%	444	51%
	45-64	162	41%	175	41%	9	20%	7	37%	353	40%
	65+	8	2%	7	2%	2	4%	0	0%	17	2%
	TOTAL[(3)]	**391**	**100%**	**423**	**100%**	**45**	**100%**	**19**	**100%**	**878**	**100%**

[1]HIV infection regardless of progression to AIDS

[2]Current age as of June 30, 2010

[3]Percentages may not total 100 due to rounding

Cumulatively, there are 4,568 persons living with HIV infection diagnosed in Kentucky, regardless of current residence, at a prevalence rate of 106 per 100,000 population. Overall, 47% of persons living with HIV infection are aged 45-64 years old and a majority are male– 81%, and white– 61%. The median current age of persons living with HIV disease was 44 years as of June 30, 2010.

Among males currently living with HIV disease, the 45-64 year age group had the highest percentage of cases among both whites (52%) and blacks (44%), whereas two thirds of Hispanics living with the disease were in the age range of 25-44 years old. For females, the highest percentage of living cases among all race/ethnicity categories were aged 25-44 years old (Table 1.13).

Table 1.14. Cumulative Living AIDS Cases By Current Age[1], Race/Ethnicity, and Sex through June 30, 2010, Kentucky

	Current Age	White, Not Hispanic		Black, Not Hispanic		Hispanic		Other/ Unknown		TOTAL	
		No.	%	No.	%	No.	%	No.	%	No.	%
Male	<13	0	0%	4	1%	0	0%	0	0%	4	<1%
	13-24	14	1%	26	4%	3	2%	0	0%	43	2%
	25-44	511	36%	235	38%	80	65%	7	35%	833	38%
	45-64	852	60%	333	54%	37	30%	13	65%	1235	57%
	65+	50	4%	16	3%	3	2%	0	0%	69	3%
	TOTAL[(2)]	**1427**	**100%**	**614**	**100%**	**123**	**100%**	**20**	**100%**	**2184**	**100%**
Female	<13	1	<1%	1	<1%	0	0%	0	0%	2	<1%
	13-24	5	2%	9	4%	2	8%	0	0%	16	3%
	25-44	92	44%	107	45%	14	58%	6	75%	219	46%
	45-64	102	49%	117	49%	6	25%	2	25%	227	47%
	65+	7	3%	5	2%	2	8%	0	0%	14	3%
	TOTAL[(2)]	**207**	**100%**	**239**	**100%**	**24**	**100%**	**8**	**100%**	**478**	**100%**

[1]Current age as of June 30, 2010

[2]Percentages may not total 100 due to rounding

Cumulatively, there were 2,662 persons living with HIV infection that had progressed to AIDS as of June 30, 2010, for an AIDS prevalence rate of 62 per 100,000 population. Overall, the majority (55%) of persons living with AIDS are aged 45-64 years old and majority are male– 82%, and white– 61%. The median current age of persons living with HIV disease was 46 years as of June 30, 2010.

Among males currently living with AIDS, the majority among both whites (60%) and blacks (54%) were aged 45-64 years old, where as almost two thirds of Hispanics living with AIDS were in the age range of 25-44 years old. Similar trends exist among females living with AIDS, with the highest percentages among black and white females in the age range of 45-64 years old– 49% each. Hispanic females living with AIDS were younger than other race/ethnicity groups on the whole (Table 1.14).

Estimated Living HIV Infections-Year End 2009

Table 1.15. Estimated† Living HIV Diagnoses by Sex, Current Age¶, Race/Ethnicity, and Transmission Category, Kentucky*

Characteristics	N	%(1)	Rate**
SEX			
Male	3625	81%	171
Female	869	19%	40
CURRENT AGE¶			
<13	19	<1%	3
13-24	252	6%	36
25-44	2080	46%	179
45-64	2045	46%	178
65+	98	2%	2
RACE/ETHNICITY			
White, Not Hispanic	2738	61%	73
Black, Not Hispanic	1488	33%	448
Hispanic	214	5%	185
Other	52	1%	50
TRANSMISSON CATEGORY			
MSM(2)	2694	60%	N/A
IDU(3)	519	12%	N/A
MSM and IDU	233	5%	N/A
Heterosexual(4)	983	22%	N/A
Perinatal Exposure	39	1%	N/A
Other/Undetermined(5)	26	1%	N/A
TOTAL	**4494**	**100%**	

†Estimated numbers resulted from statistical adjustment that accounted for missing risk factor information

*Data include estimated living cases regardless of stage of disease through December 31, 2009

¶Current age as of June 30, 2010

**Rate per 100,000 population

(1) Percentages may not total to 100 due to rounding

(2) MSM = Men Having Sex With Men

(3) IDU = Injection Drug Use

(4) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(5)Includes hemophilia, blood transfusion and risk factor not reported or not identified

The numbers and rates of persons estimated to be living with HIV infection diagnosed in Kentucky in Table 1.15 have been adjusted for missing risk factor information. Therefore, they should not be compared directly with other data in this report representing unadjusted reported numbers and rates of infection.

At the end of 2009, there were 4,494 persons estimated to be living with HIV infection diagnosed in Kentucky, with an estimated prevalence rate of 104 per 100,000 population.

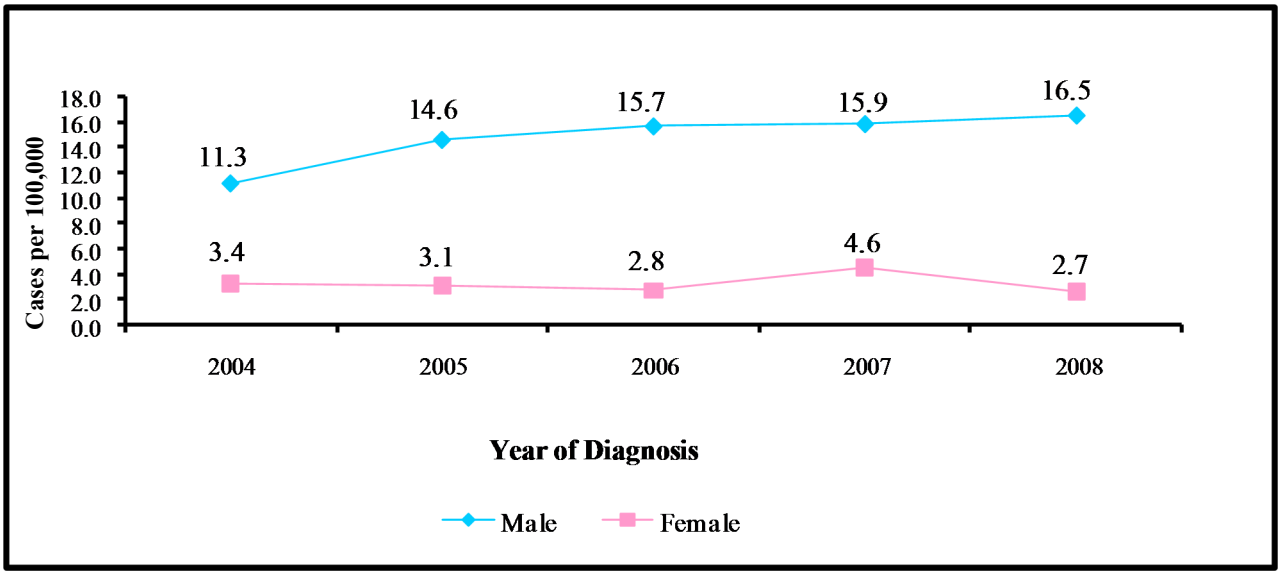
There are 3,625 males and 869 females estimated to be living with HIV infection diagnosed in Kentucky. The estimated prevalence rate for males with HIV infection is 171 per 100,000 population and for females is 40 per 100,000 population.

The estimated prevalence rate at the end of 2009 was highest among persons aged 25-44 and 45-64 years old.

Estimated rates by race/ ethnicity show that minorities are most impacted by HIV infection. Estimated prevalence rates are 448 per 100,000 population among blacks and 185 per 100,000 population among Hispanics, in comparison to 73 per 100,000 population among whites. The estimated rate for blacks is six times higher and that for Hispanics 2.5 times higher than for whites, which further highlights the disproportionate impact of HIV disease on minorities.

Part 3: Annual Trends in diagnosed HIV Infections

Figure 1.15. Adult/Adolescent HIV Diagnosis Rates by Sex and Year of Diagnosis, Kentucky 2004-2008

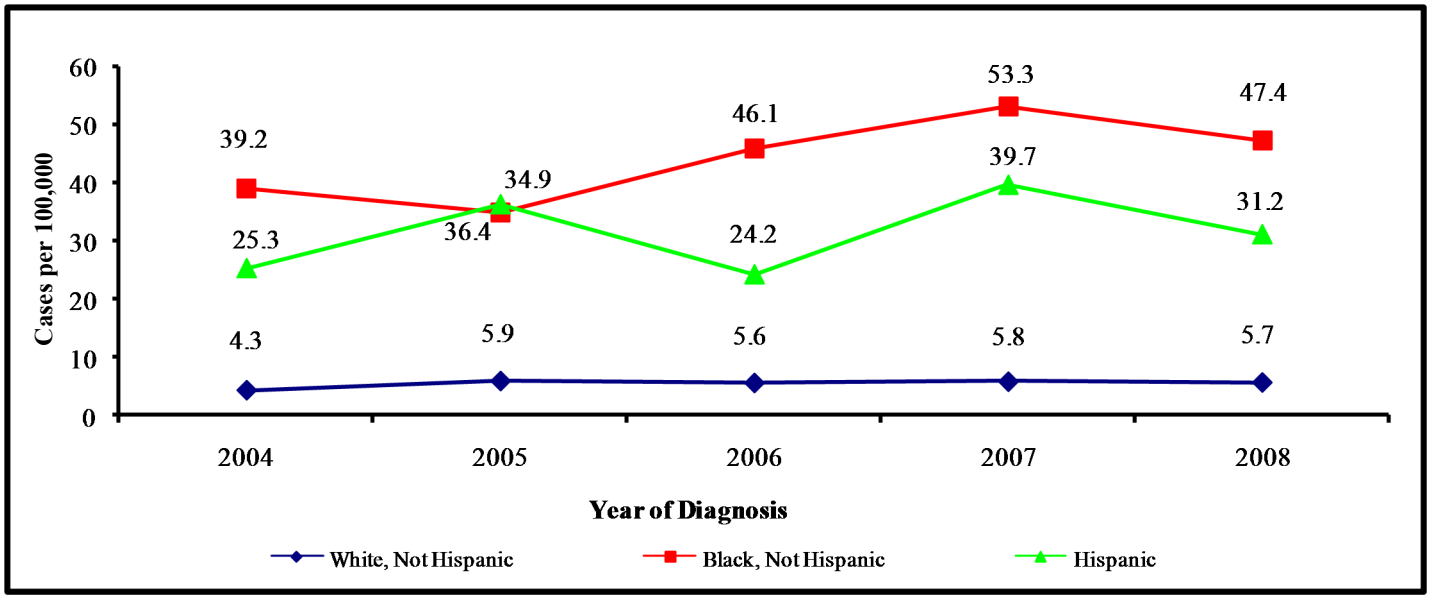


Note: Data for 2009 and 2010 are not included in trend analyses since they are considered provisional due to reporting delays; all data are subject to change due to reporting delays.

Males represent the majority (83%) of cumulative HIV infections diagnosed among adults/adolescents in Kentucky. Males had consistently higher rates of infection from 2004 to 2008. The male annual HIV diagnosis rates were between three to six times higher than the female annual HIV diagnosis rates within this period.

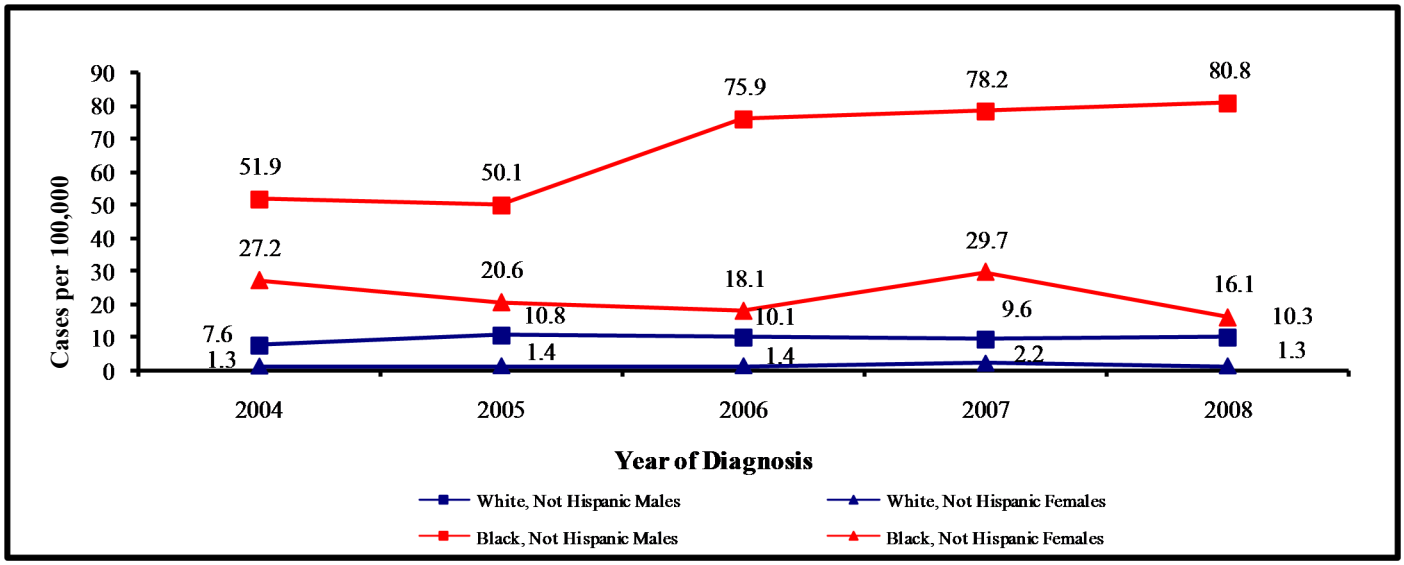
Among males, there is an upward trend in the annual HIV diagnosis rate, from 11.3 per 100,000 population in 2004 to 16.5 per 100,000 population in 2008, representing a 46% increase (Figure 1.15). Among females however, the annual HIV diagnosis rate has remained fairly steady over the last five years, with the highest increase in 2007. This represents a 35% increase between 2004 and 2007 and a 41% decrease in 2008. The highest sex specific HIV diagnosis rate within the last five years was in 2008 at 16.5 per 100,000 males in Kentucky. These trends will continue to be monitored as more data become available.

Figure 1.16. Adult/Adolescent HIV Diagnosis Rates by Race and Year of Diagnosis, Kentucky 2004-2008



*Data for 2009 and 2010 are not included in trend analyses, since they are considered provisional due to reporting delays; all data are subject to change due to reporting delays.

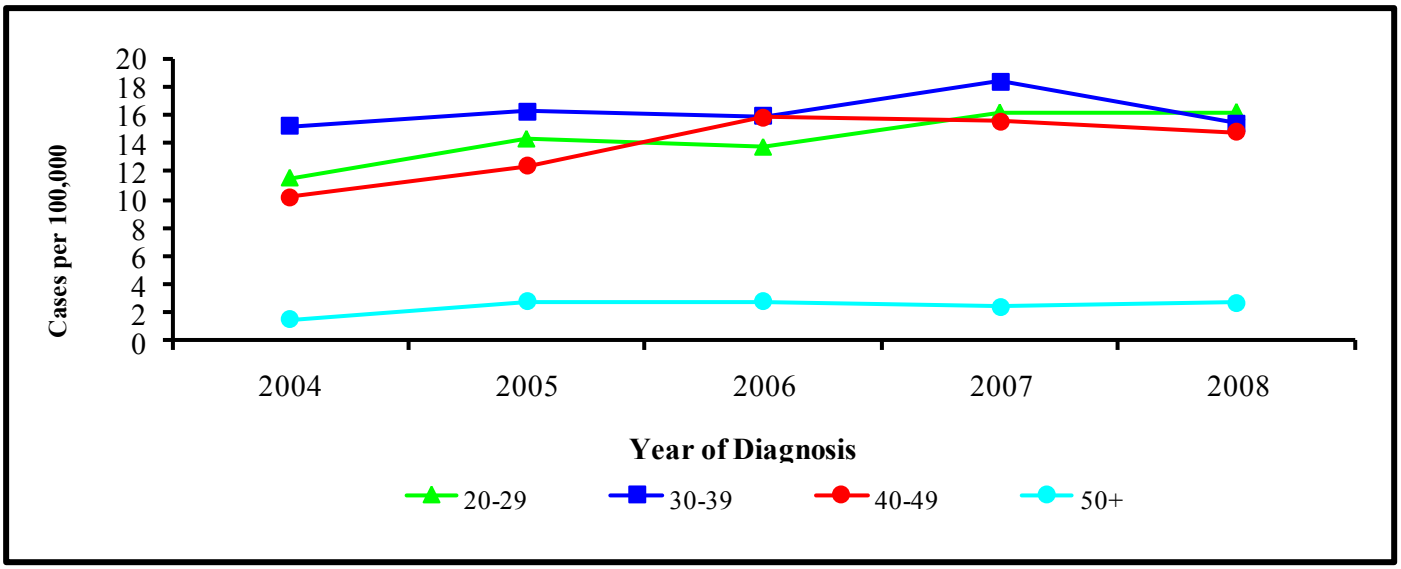
Figure 1.17. Adult/Adolescent HIV Diagnosis Rates by Race, Sex and Year of Diagnosis, Kentucky 2004-2008



On average between 2004 and 2008, the HIV diagnosis rate for blacks fluctuated between 6 to 9 times higher than for whites. The HIV diagnosis rate among Hispanics also fluctuated from 2004-2008, but remained between 4 to 7 times higher than for whites. In 2008, there was a drop in diagnosis rates across all racial/ethnic groups, though it was highest for blacks at 11.1% and for Hispanics at 21.4%. (Figure 1.16).

The HIV diagnosis rate among black males and black females fluctuated over the last five years, whereas among white males and white females, it remained fairly steady, with white females having 2.2 new cases or less per 100,000 white females and among white males between 7.6 and 10.8 new cases per 100,000 white males. The HIV diagnosis rate fluctuated between 4.6 to 8 times higher for black males in comparison to white males and between 12 to 21 times higher for black females in comparison to white females (Figure 1.17). Data for Hispanics are not stratified by sex due to small numbers.

Figure 1.18. Adult/Adolescent HIV Diagnosis Rates by Age and Year of Diagnosis, Kentucky 2004-2008

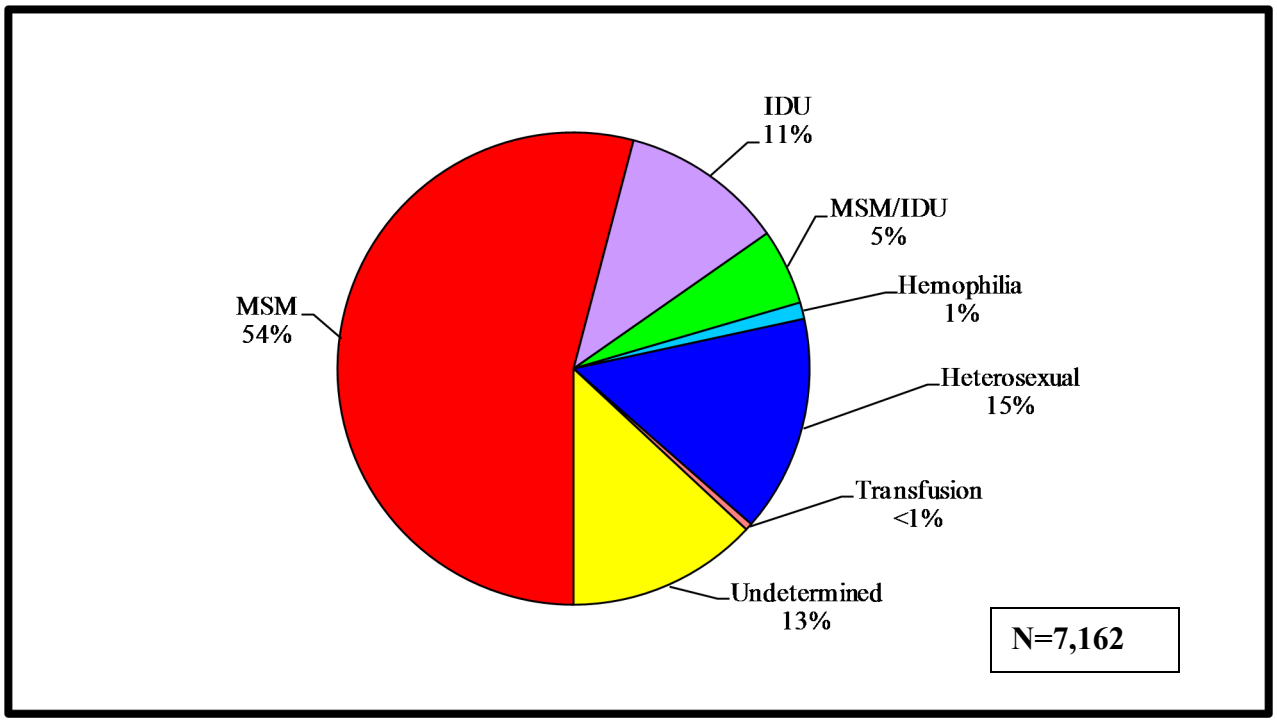


Age represents current age at time of diagnosis and data are not presented for those aged 13-19 years old at time of diagnosis, due to small numbers.

Over the last five years, the HIV diagnosis rate was highest among those in their 30s at time of diagnosis (Table 1.18). The highest overall age–specific HIV diagnosis rate in 2007 (18.4 per 100,000 population) occurred among people in their 30s at time of diagnosis. The second highest rates over this period fluctuated among those aged 20-29 years old and those aged 40-49 years old. In 2008 however, all three age groups had about the same annual HIV diagnosis rate. Lastly, those aged 50+ had the lowest annual HIV diagnosis rates over the last five years.

Part 4: Reported and Estimated HIV Infections by Transmission Category

Figure 1.19. Percentage of Cumulative Adult/Adolescent HIV Infections by Mode of Transmission, Kentucky



Note: 62 pediatric cases not included

Of the 7,162 cumulative adult/adolescent HIV infections diagnosed in Kentucky, 54% identified their primary transmission category as men who have sex with men (MSM). Fifteen percent of adult/adolescent HIV infections reported their primary transmission category as heterosexual contact with an HIV positive person or with a person at high risk for HIV infection, 11% reported injection drug use (IDU), and 5% reported both MSM and IDU. Thirteen percent of cumulative adult/ adolescent HIV cases were reported without a risk factor identified (Figure 1.19).

Table 1.16. Cumulative Adult/Adolescent[1] HIV Infections By Transmission Category, Race/Ethnicity, and Sex through June 30, 2010, Kentucky

	Transmission Category	White, Not Hispanic		Black, Not Hispanic		Hispanic		Other/ Unknown		TOTAL	
		No.	%	No.	%	No.	%	No.	%	No.	%[2]
MALE	MSM[3]	2911	73%	850	49%	87	43%	26	57%	3874	65%
	IDU[4]	226	6%	287	17%	27	13%	7	15%	547	9%
	MSM and IDU	245	6%	119	7%	6	3%	2	4%	372	6%
	Hemophilia/Coagulation Disorder	70	2%	9	1%	0	0%	0	0%	79	1%
	Heterosexual[5]	175	4%	184	11%	27	13%	4	9%	390	7%
	Transfusion/Transplant	18	<1%	4	<1%	0	0%	0	0%	22	<1%
	Undetermined[6]	316	8%	286	16%	56	28%	7	15%	665	11%
	TOTAL	**3961**	**100%**	**1739**	**100%**	**203**	**100%**	**46**	**100%**	**5949**	**100%**
FEMALE	IDU[4]	118	21%	126	22%	8	15%	3	14%	255	21%
	Hemophilia/Coagulation Disorder	2	<1%	0	0%	0	0%	0	0%	2	<1%
	Heterosexual[5]	311	56%	318	55%	30	58%	13	62%	672	55%
	Transfusion/Transplant	10	2%	3	1%	0	0%	0	0%	13	1%
	Undetermined[6]	119	21%	133	23%	14	27%	5	24%	271	22%
	TOTAL	**560**	**100%**	**580**	**100%**	**52**	**100%**	**21**	**100%**	**1213**	**100%**

(1) Cases are classified as Adult/Adolescent if they were 13 years of age or older at time of diagnosis

(2) Percentages may not total to 100 due to rounding

(3) MSM = Men Having Sex With Men

(4) IDU = Injection Drug Use

(5) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(6) "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, refused interview, and persons whose mode of exposure remain undetermined after investigation

The majority (65%) of male HIV infections were reported with MSM as the primary mode of exposure, while among women, the majority (55%) were exposed through heterosexual contact with a person with HIV or at high risk for HIV contraction, e.g., a person who injects drugs. Minority males (17% of black cases and 13% of Hispanic cases) reported higher percentages of IDU as the mode of transmission, in comparison to non-minorities (6% of white male cases). Conversely, more white males (73%) reported MSM as the primary mode of transmission in comparison to 49% of black males and 43% of Hispanic males.

Among the race/ethnicity categories, Hispanic males had the highest percentage of infections reported without identified risk factors (28%), in comparison to black males (16%) and white males (8%). Among females, 27% of Hispanic, 23% of black and 21% of white infections were reported with no risk factor identified. Overall, a higher percentage of infections with undetermined modes of transmission was reported among females (22%) than males (11%). The existence of large percentages of infections without known modes of transmission poses a barrier to provision of effective responses to the epidemic within the groups in question, because risk factor information forms the basis for program planning and service provision and guides resource allocation.

Table 1.17. Estimated Numbers of Men who have Sex with Men (MSM)* 18 Years and Older, Numbers† and Rates‡ of MSM Living with HIV, and Rate Ratios by Race/Ethnicity, Kentucky, through 2007

State, Race/ethnicity	Estimated MSM*		MSM Living with HIV		Estimated Rate MSM Living With HIV Per 100,000 MSM	Rate Ratio	P-value
	Number	% of Total	Number	% of Total			
Kentucky							
Black/African American	3,967	6%	782	23%	19,712.6	5.3	<0.001
Hispanic/Latino§	1,648	2%	136	4%	8,252.4	2.2	<0.001
White	65,634	92%	2,431	73%	3,703.9	1.0	referent
Total¶	71,249	100%	3,349	100%	4,700.4		

*Men who have sex with men (includes men who have sex with men and inject drugs)
† These numbers are point estimates adjusted for delays in reporting cases and deaths and missing risk-factor information, but not for incomplete reporting. Data include persons with a diagnosis of HIV infection (regardless of stage of disease) living at the end of 2007and reported to CDC as of June 2008. The District of Columbia, Delaware, Kentucky, and Maryland do not have mature, confidential name-based HIV reporting systems (confidential name-based HIV reporting since at least 2003). To extrapolate the number of MSM living with HIV for those areas the ratio of MSM living with HIV to MSM living with AIDS in the 13 states with mature, confidential name-based HIV reporting systems was applied to the number of MSM living with AIDS by race and 5-year age group in each of the four states without such systems. The estimated number of MSM living with HIV in these states may under- or over-estimate the true number of MSM living with HIV by up to 15%.
‡Rate is per 100,000 MSM
§Hispanics/Latinos can be of any race
¶Total excludes MSM of all other races/ethnicities (i.e., Asian, Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, unknown race, and multiple races) as the numbers of MSM living with HIV for these racial/ethnic groups were too small to provide stable estimates of the rates

A study on HIV prevalence rates among adult MSM in the southern United States by Lieb et al[1] estimated that there were 71,249 MSM in Kentucky (Table 1.17). Of these MSM in Kentucky, 3,349 were living with HIV infection, for an estimated HIV prevalence rate of 4,700.4 per 100,000. In other words an estimated one in 21 MSM were living with HIV infection in Kentucky at the end of 2007. The HIV prevalence rate among Kentucky MSM was lower than that of the southern United States as a whole- 7,280.4 per 100,000 MSM.

Among all MSM living with HIV at the end of 2007, 73% were white, 23% black and 4% Hispanic. There were significant racial/ethnic disparities in rates of MSM living with HIV in Kentucky. The estimated HIV prevalence rates among MSM living with HIV in Kentucky by race and ethnicity showed a rate ratio of 5.3 for black MSM and 2.2 for Hispanic MSM in comparison to white MSM. Rate ratios compare the rates of disease in two groups that differ by demographics. It was calculated by dividing the rate for blacks and Hispanics by that for whites (comparison group).

[1]Lieb S, Prejean J, Thompson DR, et al. (2010). HIV prevalence rates among Men who have Sex with Men on the southern United States: Populations-based estimates by race/ethnicity. *AIDS Behav*, online First™. doi: 10.1007/s10461-010-9820-y

Table 1.18. Cumulative HIV Infections* among Adult/Adolescent Men who have Sex with Men (MSM) by Age at HIV Diagnosis and Race/ Ethnicity, Kentucky, June 2010**

	White		Black		Hispanic		Total	
Age at Diagnosis	**No.**	**%**	**No.**	**%**	**No.**	**%**	No.	%
13-24	384	12%	237	24%	15	16%	636	15%
25-44	2288	72%	617	64%	69	74%	2974	71%
45-64	473	15%	108	11%	9	10%	590	14%
65+	11	<1%	7	1%	0	0%	18	<1%
Total	3156	100%	969	100%	93	100%	4218	100%

*Regardless of disease progression
**Includes persons with MSM/IDU mode of transmision
Data not inclusive of persons with other/unknown race/ethnicity
Note: Percentages may not total 100% due to rounding

Whites accounted for the highest number of infections diagnosed among MSM and MSM/IDU (3,156 cases). The majority were aged 25-44 years old at time of diagnosis (Table 1.18). This trend is common across all racial/ethnic groups, with the majority of black (64%) and Hispanic (74%) infections also being in this age group at time of diagnosis. Among black and Hispanic MSM and MSM/IDU, the second highest percentage of infections was in the 13-24 age group (24% and 16% respectively), whereas among white MSM and MSM/IDU, the second highest percentage of infections was among those aged 45-64 years old.

Table 1.19. Cumulative HIV Infections* among Adult/Adolescent Injection Drug Users (IDU) by Age at HIV Diagnosis and Race/ Ethnicity, Kentucky, June 2010

	White		Black		Hispanic		Total	
Age at Diagnosis	**No.**	**%**	**No.**	**%**	**No.**	**%**	No.	%
13-24	39	11%	25	6%	4	11%	68	9%
25-44	264	77%	297	72%	26	74%	587	74%
45-64	39	11%	91	22%	5	14%	135	17%
65+	2	1%	0	0%	0	0%	2	<1%
Total	344	100%	413	100%	35	100%	792	100%

*Regardless of disease progression

Data not inclusive of persons with other/unknown race/ethnicity

Note: Percentages may not total 100% due to rounding

Table 1.19 profiles adult/ adolescent infections transmitted through IDU. There were more black IDU cases reported than any other race/ethnicity. Cumulatively and across all racial/ethnic groups, the majority of cases with IDU mode of exposure were among those aged 25-44 years old at time of diagnosis. Cumulatively, there were more cases reported with IDU exposure in the 45-64 year age group compared to those aged 13-24 years old. Persons aged 65+ years accounted for <1% of IDU cases.

Table 1.20. Cumulative HIV Infections* among Adult/Adolescent Heterosexual Contacts by Age at HIV Diagnosis and Race/ Ethnicity, Kentucky, June 2010**

	White		Black		Hispanic		Total	
Age at Diagnosis	**No.**	**%**	**No.**	**%**	**No.**	**%**	No.	%
13-24	74	15%	84	17%	15	26%	173	17%
25-44	316	65%	328	65%	34	60%	678	65%
45-64	90	19%	87	17%	8	14%	185	18%
65+	6	1%	3	1%	0	0%	9	1%
Total	486	100%	502	100%	57	100%	1045	100%

*Regardless of disease progression

**Includes heterosexual contact with a person with HIV or at high risk for HIV

Data not inclusive of persons with other/unknown race/ethnicity

Note: Percentages may not total 100% due to rounding

Adults/adolescents with heterosexual mode of transmission are presented in Table 1.20. There were more blacks (502 cases) with HIV who reported with heterosexual contact as a risk factor than any other race. Across all racial/ethnic groups, the majority of cases due to heterosexual transmission were aged 25-44 years old at time of diagnosis. For those infected through heterosexual transmission, a higher percentage of persons aged 13-24 years old at the time of diagnosis was reported among Hispanics (26%), in comparison to 17% among blacks and 15% among whites.

Estimated New HIV Infections by Transmission Category– 2009

Table 1.21. Estimated Number of Newly Diagnosed HIV Disease Cases in KY, by Sex and Transmission Category, 2009						
	Male		Female		Total	
Transmission category	No.	%	No.	%	No.	%
Male-to-male sex	230	80	0	0.0	230	64
Injection drug use (IDU)	17	6.0	18	25	35	9.7
Male-to-male sex and IDU	15	5.1	0	0.0	15	4.1
Heterosexual contact	27	9.2	53	75	80	22
Perinatal exposure	0	0.0	0	0.0	0	0.0
Other/unknown	0	0.0	0	0.0	0	0.0
Total	289	100	71	100	360	100

Data adjusted for missing risk information using multiple imputation, a statistical approach in which each missing risk factor is replaced with a set of plausible values that represent the uncertainty about the true, but missing value.

During 2009, there were an estimated 360 new HIV infections diagnosed in Kentucky (Table 1.21). Of the 289 male diagnoses, the majority were exposed thorough male-to-male sexual contact (80%). Of the 71 female diagnoses, the majority were exposed through heterosexual contact (75%). There were no newly diagnosed estimated perinatal infections in 2009.

By race/ ethnicity (Table 1.22), the highest percentages of infections across all groups had male-to-male sexual exposure, followed by heterosexual exposure. There were higher percentages of blacks and Hispanics exposed through heterosexual contact in comparison to whites and to the overall total percentages. Additionally, a higher percentage of blacks were exposed through IDU in comparison to all other racial/ethnic groups. There were 4 new infections reported among Asians, 3 of whom were exposed through heterosexual contact and one through MSM. The one infection among American Indian/ Alaskan Natives was exposed through IDU.

Table 1.22. Estimated Number of Newly Diagnosed HIV Disease Cases in KY, by Race/ Ethnicity and Transmission Category, 2009																
	White, not Hispanic		Black, not Hispanic		Hispanic		Asian, not Hispanic		Native Hawaiian/ Pacific Islander, not Hispanic		American Indian/ Alaskan Native, not Hispanic		Multiple Race, not Hispanic		Total	
Transmission category	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male-to-male sex	149	70	70	60	10	40	1	25	0	0	0	0.0	0	0	230	64
Injection drug use (IDU)	17	7.9	15	13	2	8.0	0	0.0	0	0	1	100	0	0	35	9.8
Male-to-male sex and IDU	10	4.7	3	2.5	2	8.0	0	0.0	0	0	0	0.0	0	0	15	4.1
Heterosexual contact	37	18	29	25	11	44	3	75	0	0	0	0.0	0	0	80	22
Perinatal exposure	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0	0	0	0.0
Other/unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0	0	0	0.0
Total	213	100	117	100	25	100	4	100	0	0	1	100	0	0	360	100

Part 5: Deaths among Persons with a Diagnosis of HIV Infection or AIDS

Table 1.23. Cumulative Number of Deaths among Persons with HIV Infection or AIDS and Death Rates in Kentucky, by Race/Ethnicity and Sex, as of June 30, 2010

	Males			Females			Total		
Race/Ethnicity	**No.**	**%**	**Rate***	**No.**	**%**	**Rate***	**No.**	**%**	**Rate***
White, not Hispanic	1603	70%	87	181	50%	9	1784	67%	47
Black, not Hispanic	655	29%	401	167	47%	99	822	31%	247
Hispanic	31	1%	48	8	2%	16	39	1%	34
Other	8	<1%	16	3	1%	6	11	0%	11
Total	2297	100%	108	359	100%	16	2656	100%	62

*Rate per 100,000 popultion as of June 30, 2010

Table 1.23 shows the reported number of deaths and death rates among persons diagnosed with HIV infection in Kentucky who were reported as deceased by health care providers, the Office of Vital Statistics, or an alternate data source as of June 30, 2010. Death data include deaths reported among persons diagnosed with HIV infection or AIDS regardless of cause of death. There were 62 deaths among persons with HIV per 100,000 population in Kentucky as of June 30, 2010. In this group, the mortality rate was higher among males (108 per 100,000 population) than females (16 per 100,000 population), which is consistent with higher proportions of HIV infections being male. Among both males and females, blacks had a higher mortality rate in comparison to whites: black females 11 times higher than white females and black males 4.6 times higher than white males. Hispanics had the lowest mortality rate in comparison to other races, though Hispanic females had a higher mortality rate than white females.

Overall, black males, black females and white males with HIV had higher mortality rates than the state mortality rate of 62 per 100,000 population.

Table 1.24. Kentucky HIV infection or AIDS Deaths, All Ages, 2009

	White, Not Hispanic			Black, Not Hispanic			Hispanic			Total		
	Deaths	Rate*	Rank	Deaths	Rate*	Rank	Deaths	Rate*	Rank	Deaths	Rate*	Rank
Male	28	1.5	32nd	17	9.8	14th	2	3.1	16th**	47	2.2	30th
Female	6	0.3	37th**	6	3.4	21st**	0	N/A	N/A	12	0.5	37th
Total	34	0.9	36th	23	6.5	17th	2	1.73	17th**	59	1.4	33rd

Table 1.25. Kentucky HIV Infection or AIDS Deaths, Age Group 25-44, 2009

	White, Not Hispanic			Black, Not Hispanic			Hispanic			Total		
	Deaths	Rate*	Rank	Deaths	Rate*	Rank	Deaths	Rate*	Rank	Deaths	Rate*	Rank
Male	6	1.2	16th**	9	19.8	5th	2	8.7	4th**	17	2.9	13th**
Female	3	0.6	19th**	3	6.6	6th**	0	N/A	N/A	6	1.0	17th**
Total	9	0.9	19th**	12	13.2	6th	2	5.3	4th**	23	2.0	15th**

Data Source: Office of Vital Statistics, Kentucky Department for Public Health/Cabinet for Health & Family Services

* Rate per 100,000 population and 2009 death data are preliminary

**Tied with at least one other cause of death

Data in Tables 1.24 and 1.25 from the previous page are from the Kentucky Office of Vital Statistics and represent deceased persons for whom an HIV infection or AIDS was listed as the leading cause of death. In 2009, HIV infection or AIDS was the 33rd leading cause of death for all Kentuckians, though data are preliminary. HIV infection or AIDS was the 17th leading cause of death among blacks and Hispanics and 36th among whites in Kentucky. The mortality rate for blacks was 7.2 times higher than for whites and that for Hispanics almost two times higher than for whites. For black males of any age in Kentucky, HIV infection or AIDS ranked as the 14th leading cause of death.

In 2009, among Kentuckians aged 25-44 years, HIV infection or AIDS was the 15th leading cause of death (Table 1.25). Among those aged 25-44 years, HIV infection or AIDS ranked as the 5th leading cause of death for black males, 6th for black females, 16th for white males and 19th for white females. Among Hispanic males aged 25-44 years, HIV infection or AIDS was the 4th leading cause of death.

Table 1.26. Kentucky AIDS Case Fatality Rate Five Years Following AIDS Diagnosis

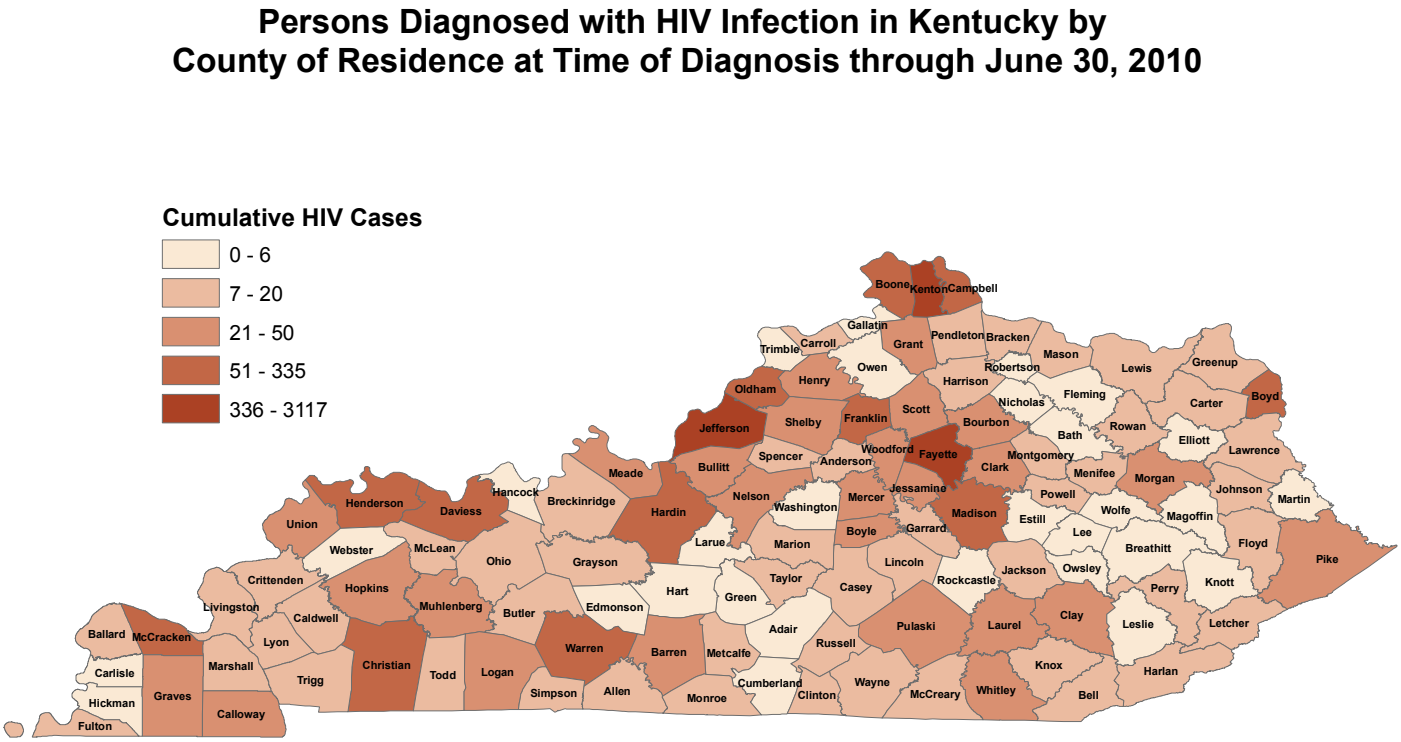
		Status 5 Years Following AIDS Diagnosis		
Diagnosis Year	**Total Cases**	**Living**	**Deceased**	**Case Fatality Rate(1)**
1982	3	0	3	100%
1983	7	1	6	86%
1984	15	1	14	93%
1985	31	3	28	90%
1986	36	4	32	89%
1987	66	10	56	85%
1988	121	12	109	90%
1989	161	30	131	81%
1990	174	24	150	86%
1991	214	40	174	81%
1992	279	66	213	76%
1993	304	102	202	66%
1994	305	146	159	52%
1995	327	198	129	39%
1996	322	233	89	28%
1997	258	195	63	24%
1998	233	161	72	31%
1999	228	171	57	25%
2000	208	153	55	26%
2001	216	169	47	22%
2002	239	174	65	27%
2003	189	152	37	20%
2004	208	170	38	18%
TOTAL	**4144**	**2215**	**1929**	**47%**

(1) Proportion of HIV disease cases with AIDS that died within 5 years of AIDS diagnosis.

Table 1.26 examines the proportion of individuals who died within five years of their AIDS diagnosis (i.e., case fatality rate). The total case fatality rate since the beginning of the epidemic is less than half of all AIDS cases- 47%. The data show a decline in case fatality rates over time. For example, of the 305 individuals diagnosed with AIDS in 1994, 52% died within 5 years, while only 18% of those diagnosed in 2004 died within 5 years. The decline in case fatality rates since 1982 is likely due to an increased understanding of the virus, which has resulted in new medical monitoring techniques, improved supportive care and better treatment strategies, such as antiretroviral therapy.

Part 6: Geographic Distribution of HIV Infections in Kentucky

Figure 1.20. Cumulative HIV Infections among all Persons Diagnosed in Kentucky by County



Three cases are missing county of residence information.

Figure 1.20 displays the geographic distribution of cumulative HIV infections diagnosed in Kentucky by county. The largest numbers of HIV infections diagnosed in Kentucky were among persons residing in Jefferson, Fayette and Kenton counties, with 3117, 976 and 336 cases respectively.

Table 1.27. Cumulative Diagnoses of HIV Infection and AIDS By Area Development District (ADD) and County at Time of Diagnosis and Diagnosis Status, Kentucky, June 30, 2010

ADD/County	HIV Diagnosis Only[1]	AIDS Diagnosis[2]
Barren River	**81**	**184**
Allen	3	11
Barren	10	25
Butler	2	5
Edmonson	1	4
Hart	0	6
Logan	4	18
Metcalfe	3	5
Monroe	4	9
Simpson	6	10
Warren	48	91
Big Sandy	**13**	**42**
Floyd	5	12
Johnson	0	7
Magoffin	0	2
Martin	2	3
Pike	6	18
Bluegrass	**405**	**1014**
Anderson	5	12
Bourbon	8	14
Boyle	4	22
Clark	15	24
Estill	0	4
Fayette	278	698
Franklin	22	53
Garrard	2	6
Harrison	0	8
Jessamine	17	31
Lincoln	2	10
Madison	21	50
Mercer	7	19
Nicholas	2	3
Powell	1	9
Scott	15	32
Woodford	6	19

(1) HIV Diagnosis that has *not* progressed to AIDS.
(2) HIV Diagnosis that has progressed to AIDS.
Note: Residence at HIV diagnosis missing for 3 cases.

ADD/County	HIV Diagnosis Only[1]	AIDS Diagnosis[2]
Buffalo Trace	**9**	**36**
Bracken	4	3
Fleming	0	5
Lewis	2	11
Mason	3	17
Robertson	0	0
Cumberland Valley	**39**	**100**
Bell	4	14
Clay	4	20
Harlan	7	11
Jackson	3	5
Knox	8	7
Laurel	4	21
Rockcastle	2	3
Whitley	7	19
FIVCO	**29**	**89**
Boyd	17	56
Carter	4	12
Elliott	1	3
Greenup	6	12
Lawrence	1	6
Gateway	**18**	**57**
Bath	0	4
Menifee	5	3
Montgomery	3	14
Morgan	6	25
Rowan	4	11
Green River	**51**	**171**
Daviess	18	89
Hancock	1	4
Henderson	9	45
McLean	4	3
Ohio	3	9
Union	16	17
Webster	0	4

Continued on next page

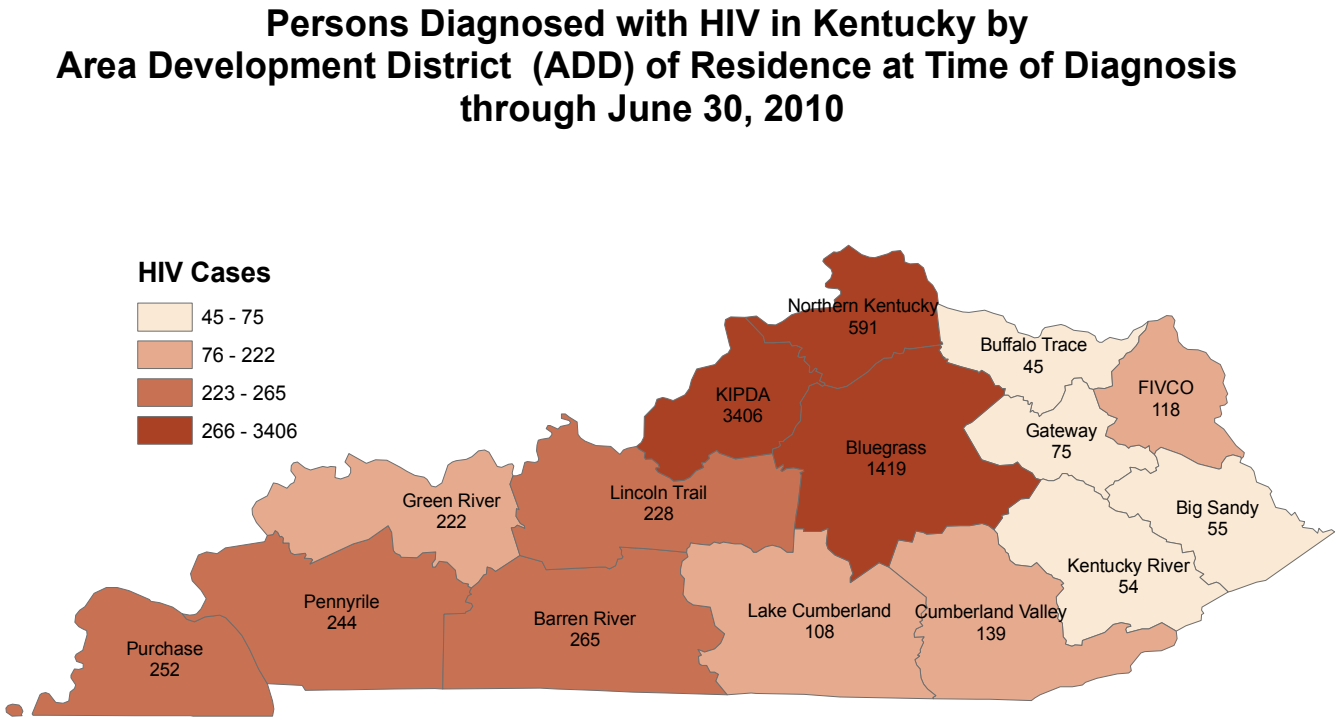
Table 1.27. Diagnoses of HIV Infection and AIDS By Area Development District (ADD) and County at Time of Diagnosis and Diagnosis Status, Kentucky, June 30, 2010 (continued)

ADD/County	HIV Diagnosis Only(1)	AIDS Diagnosis(2)
Kentucky River	**8**	**46**
Breathitt	0	4
Knott	1	2
Lee	1	5
Leslie	0	2
Letcher	2	16
Owsley	0	3
Perry	2	10
Wolfe	2	4
KIPDA/North Central	**989**	**2417**
Bullitt	23	23
Henry	6	16
Jefferson	912	2205
Oldham	29	132
Shelby	17	31
Spencer	2	5
Trimble	0	5
Lake Cumberland	**38**	**70**
Adair	2	3
Casey	3	4
Clinton	4	3
Cumberland	1	3
Green	2	4
McCreary	6	4
Pulaski	12	30
Russell	1	7
Taylor	5	7
Wayne	2	5
Lincoln Trail	**79**	**149**
Breckinridge	2	10
Grayson	3	10
Hardin	42	87
Larue	4	1
Marion	7	8
Meade	7	15
Nelson	14	15
Washington	0	3

ADD/County	HIV Diagnosis Only(1)	AIDS Diagnosis(2)
Northern Kentucky	**151**	**440**
Boone	29	61
Campbell	31	86
Carroll	2	8
Gallatin	1	1
Grant	8	17
Kenton	79	257
Owen	0	4
Pendleton	1	6
Pennyrile	**43**	**201**
Caldwell	2	16
Christian	19	75
Crittenden	4	4
Hopkins	7	29
Livingston	2	11
Lyon	2	16
Muhlenberg	4	23
Todd	1	19
Trigg	2	8
Purchase	**59**	**193**
Ballard	1	7
Calloway	6	23
Carlisle	3	2
Fulton	1	6
Graves	13	26
Hickman	1	5
Marshall	4	13
McCracken	30	111

(1)HIV Diagnosis that has *not* progressed to AIDS
(2)HIV Diagnosis that has progressed to AIDS.
Note: Residence at diagnosis missing for 3 cases.

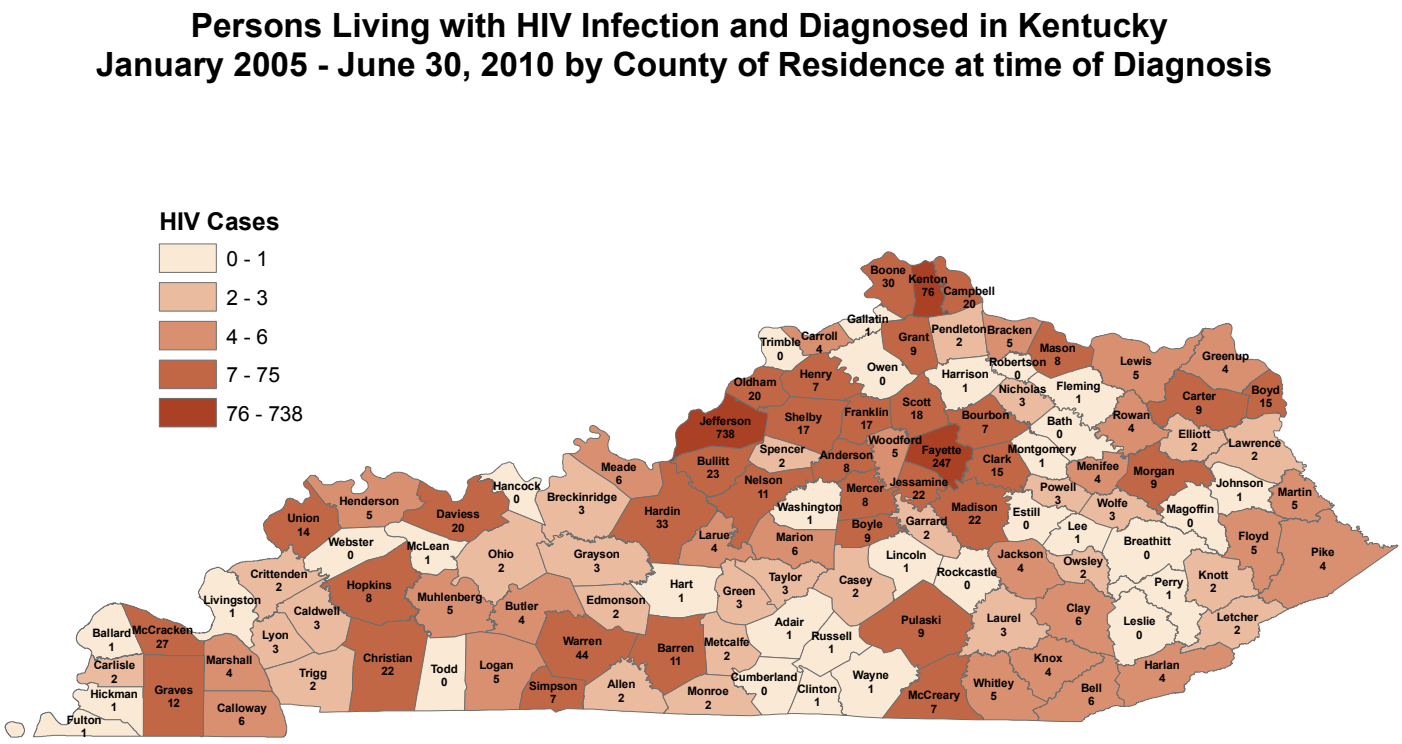
Figure 1.21. Cumulative HIV Infections among All Persons Diagnosed in Kentucky by Area Development District



Three cases are missing information on ADD of residence at time of diagnosis.

Figure 1.21 shows the distribution of cumulative HIV infections diagnosed in Kentucky by Area Development District, ranging from 45 infections in Buffalo Trace ADD to 3,406 infections in KIPDA ADD. The highest percentages of cumulative infections were diagnosed in the KIPDA ADD (47%), Bluegrass ADD (20%) and Northern Kentucky ADD (8%). The lowest percentages, however, were diagnosed in the eastern Kentucky region, with only 1% of all total infections reported each in the Buffalo Trace ADD and Big Sandy ADD.

Figure 1.22. Living HIV Infections Diagnosed in Kentucky by County– January 2005 - June 30, 2010

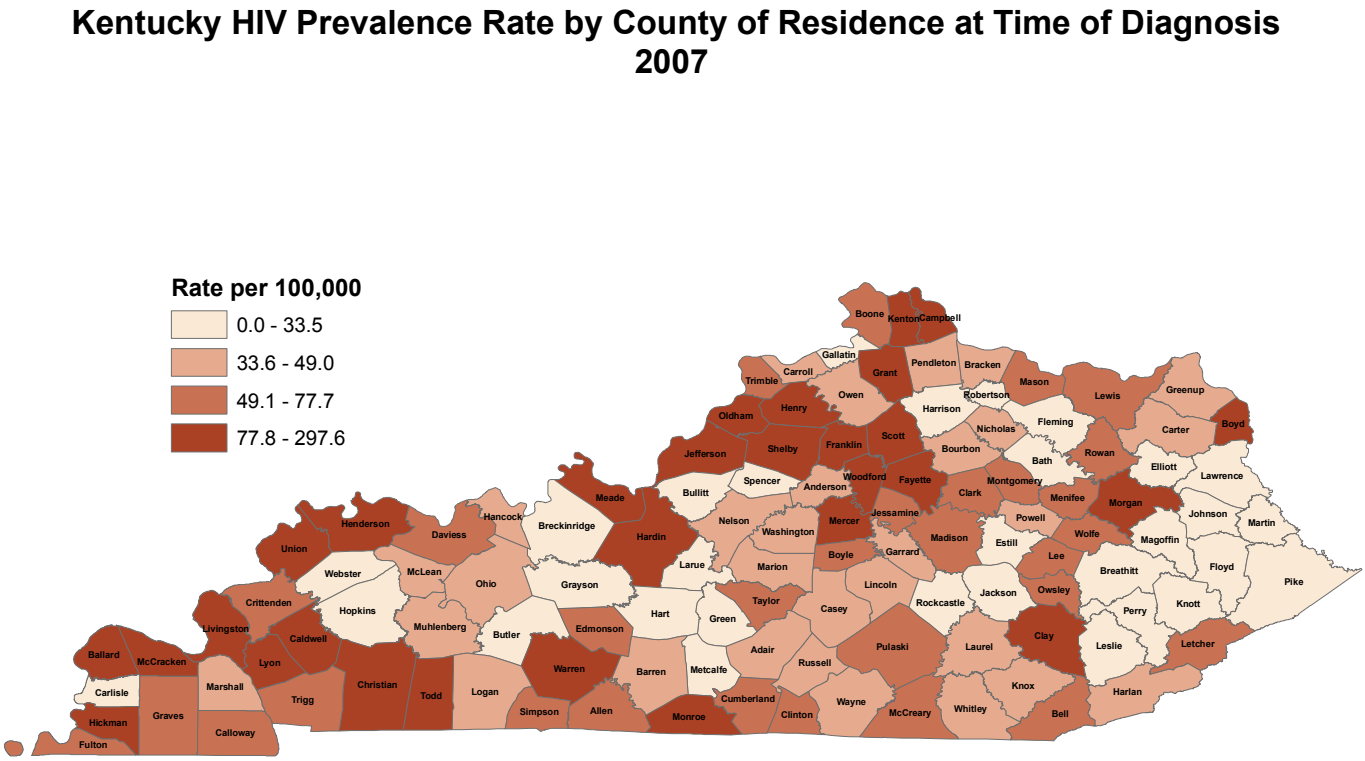


One case is missing county of residence information.

There were 1,782 HIV infections diagnosed in Kentucky between January 2005– June 30, 2010. Data are presented for this period, as the most recent five years of HIV data are more complete than previously reported data under the coded system (which was in effect through mid 2004). Cases were living as of June 30, 2010, and county represents residence at time of HIV diagnosis.

The distribution of these infections is displayed by county in Figure 1.22. The largest number of persons living with HIV were residing in the central and north central counties of Kentucky at time of HIV diagnosis. Similar to the distribution of cumulative HIV infections, the counties with the largest numbers of living cases in this time period were Jefferson County– 738 infections, Fayette County– 247 infections and Kenton County– 76 infections.

Figure 1.23. HIV Prevalence by County, as of December 31, 2007



Prevalence rates calculated by the county health rankings project: (link to site http://www.countyhealthrankings.org/).

The map in Figure 1.23 above presents prevalence rates of persons living with HIV infection diagnosed while residing in Kentucky, by county of residence at HIV diagnosis, as analyzed by the county health rankings project. At the end of 2007, Kentucky's HIV prevalence rate by county ranged from 0 per 100,000 cases in Estill, Leslie and Robertson Counties to 297.6 per 100,000 population in Jefferson County.

Table 1.28. HIV Infections and Diagnosis Rates by Year of Diagnosis and Area Development District (ADD) of Residence at Time of Diagnosis, Kentucky

DISTRICT	CASES & RATES[1]	1982-2004	2005	2006	2007	2008	2009	2010[2]	TOTAL CASES[3]	%
1. Purchase	Cases	193	12	12	9	12	12	2	252	3%
	Rate per 100,000		6.2	6.2		6.1	6.1			
2. Pennyrile	Cases	193	15	5	5	10	12	4	244	3%
	Rate per 100,000		6.8			4.5	5.4			
3. Green River	Cases	178	8	5	12	9	9	1	222	3%
	Rate per 100,000				5.7					
4. Barren River	Cases	181	17	11	19	18	16	3	265	4%
	Rate per 100,000		6.4	4.1	6.9	6.5	5.7			
5. Lincoln Trail	Cases	155	14	12	20	12	10	5	228	3%
	Rate per 100,000		5.5	4.7	7.8	4.7	3.9			
6. KIPDA/ North Central	Cases	2525	144	162	185	174	160	56	3406	47%
	Rate per 100,000		15.9	17.8	20.0	18.6	17.0			
7. Northern Kentucky	Cases	439	19	36	27	29	26	15	591	8%
	Rate per 100,000		4.6	8.5	6.3	6.7	6.0			
8. Buffalo Trace	Cases	26	8	1	2	4	4	0	45	1%
	Rate per 100,000									
9. Gateway	Cases	56	2	1	2	7	5	2	75	1%
	Rate per 100,000									
10. FIVCO	Cases	85	6	5	12	3	7	0	118	2%
	Rate per 100,000				8.7					
11. Big Sandy	Cases	40	3	0	1	6	5	0	55	1%
	Rate per 100,000									
12. Kentucky River	Cases	41	1	4	4	3	0	1	54	1%
	Rate per 100,000									
13. Cumberland Valley	Cases	101	6	8	7	6	9	2	139	2%
	Rate per 100,000									
14. Lake Cumberland	Cases	78	8	6	8	3	5	0	108	1%
	Rate per 100,000									
15. Bluegrass	Cases	1016	74	79	81	67	73	29	1419	20%
	Rate per 100,000		10.1	10.6	10.7	8.8	9.5			
TOTAL CASES		**5,307**	**337**	**347**	**394**	**363**	**353**	**120**	**7,221**	**100%**

(1) Rates are only listed for years of diagnosis 2005 - 2009. Data for 2009 are provisional due to reporting delays and are subject to change. Due to the small numbers of HIV infections reported in some ADDs, please interpret the corresponding rates with caution. Rates are not published when cell size is less than 10.

(2) Data reported through June 30, 2010.

(3) Total HIV infections both Living and Deceased; Total HIV infections reported are 7,224—3 with unknown residential information.

HIV Infections Diagnosed in KIPDA Area Development District (Kentucky)

Table 1.29. KIPDA ADD (Kentucky) Cumulative HIV Diagnoses by Sex, Age at Diagnosis, Race/Ethnicity, and Transmission Category through June 30, 2010, Kentucky

	Total HIV Diagnoses		HIV only*		AIDS**	
Characteristics	**N**	**%(1)**	**N**	**%(1)**	**N**	**%(1)**
SEX						
Male	2814	83%	783	79%	2031	84%
Female	592	17%	206	21%	386	16%
AGE AT DIAGNOSIS						
<13	32	1%	6	1%	26	1%
13-19	130	4%	64	6%	66	3%
20-29	985	29%	317	32%	668	28%
30-39	1217	36%	297	30%	920	38%
40-49	772	23%	231	23%	541	22%
50+	270	8%	74	7%	196	8%
RACE/ETHNICITY-Females						
White, Not Hispanic	179	30%	69	33%	110	28%
Black, Not Hispanic	383	65%	124	60%	259	67%
Hispanic	16	3%	6	3%	10	3%
Other/Unknown	14	2%	7	3%	7	2%
RACE/ETHNICITY-Males						
White, Not Hispanic	1563	56%	403	51%	1160	57%
Black, Not Hispanic	1157	41%	349	45%	808	40%
Hispanic	72	3%	23	3%	49	2%
Other/Unknown	22	1%	8	1%	14	1%
TRANSMISSON CATEGORY						
MSM(2)	1799	54%	508	51%	1291	53%
IDU(3)	367	11%	57	6%	310	13%
MSM and IDU	167	5%	28	3%	139	6%
Heterosexual(4)	504	15%	133	14%	371	15%
Perinatal Exposure	NR	NR	≤5	≤5%	23	1%
Other(5)	NR	NR	≤5	≤5%	37	2%
Undetermined(6)	504	15%	258	26%	246	10%
TOTAL	**3406**	**100%**	**989**	**100%**	**2417**	**100%**

*HIV Diagnosis *without* AIDS as of June 30, 2010

** HIV Diagnosis *with* AIDS as of June 30, 2010

(1) Percentages may not total to 100 due to rounding

(2) MSM = Men Having Sex With Men

(3) IDU = Injection Drug Use

(4) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(5) Other includes Hemophilia and Transplants/Blood Transfusions

(6) "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, refused interview, and persons whose mode of exposure remains undetermined after investigation

NR=Not released for confidentiality reasons

HIV Infections Diagnosed in Bluegrass Area Development District (Kentucky)

Table 1.30. Bluegrass ADD Cumulative HIV Diagnoses by Sex, Age at Diagnosis, Race/Ethnicity, and Transmission Category through June 30, 2010, Kentucky

Characteristics	Total HIV Diagnoses*	
	N	%[1]
SEX		
Male	1213	85%
Female	206	15%
AGE AT DIAGNOSIS		
<13	11	1%
13-19	30	2%
20-29	390	27%
30-39	562	40%
40-49	306	22%
50+	120	8%
RACE/ETHNICITY-Females		
White, Not Hispanic	91	45%
Black, Not Hispanic	93	46%
Hispanic	20	10%
RACE/ETHNICITY-Males		
White, Not Hispanic	861	71%
Black, Not Hispanic	275	23%
Hispanic	69	6%
TRANSMISSON CATEGORY		
MSM[2]	837	59%
IDU[3]	173	12%
MSM and IDU	79	6%
Heterosexual[4]	163	11%
Perinatal Exposure	7	<1%
Other[5]	16	1%
Undetermined[6]	144	10%
TOTAL	**1419**	**100%**

*Total HIV disease cases regardless of progression to AIDS

(1) Percentages may not total to 100 due to rounding

(2) MSM = Men Having Sex With Men

(3) IDU = Injection Drug Use

(4) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(5) Other includes Hemophilia and Transplants/Blood Transfusions

(6) "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, refused interview, and persons whose mode of exposure remains undetermined after investigation

HIV Infections Diagnosed in Northern Kentucky Area Development District (Kentucky)

Table 1.31. Northern Kentucky ADD Cumulative HIV Diagnoses by Sex, Age at Diagnosis, Race/Ethnicity, and Transmission Category through June 30, 2010, Kentucky

Characteristics	Total HIV Diagnoses*	
	N	%(1)
SEX		
Male	503	85%
Female	88	15%
AGE AT DIAGNOSIS		
<2	≤5	NR
2-12	≤5	NR
13-19	19	3%
20-29	157	27%
30-39	242	41%
40-49	127	22%
50+	42	7%
RACE/ETHNICITY-Females		
White, Not Hispanic	60	68%
Black, Not Hispanic	22	25%
Hispanic	6	7%
RACE/ETHNICITY-Males		
White, Not Hispanic	433	87%
Black, Not Hispanic	52	10%
Hispanic	14	3%
TRANSMISSON CATEGORY		
MSM(2)	358	61%
IDU(3)	42	7%
MSM and IDU	26	4%
Heterosexual(4)	78	13%
Other(5)	15	3%
Undetermined(6)	72	12%
TOTAL	**591**	**100%**

*Total HIV disease cases regardless of progression to AIDS

(1) Percentages may not total to 100 due to rounding

(2) MSM = Men Having Sex With Men

(3) IDU = Injection Drug Use

(4) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(5) Other includes Pediatric, Hemophilia and Transplants/Blood Transfusions

(6) "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, refused interview, and persons whose mode of exposure remains undetermined after investigation

NR= Not released for confidentiality reasons

Part 7: Special Populations:

Special Population I: Persons Diagnosed Concurrently with HIV Infection and AIDS

Table 1.32. Kentucky's Cumulative Concurrent HIV Diagnoses by Sex, Age at Diagnosis, Race/Ethnicity, and Transmission Category, as of June 30, 2010

Characteristics	HIV *with* Concurrent AIDS Diagnosis*		HIV *without* Concurrent AIDS Diagnosis**		Total HIV Diagnoses	
	N	%(1)	N	%(1)	N	%(1)
SEX						
Male	1881	86%	4106	82%	5987	83%
Female	307	14%	930	18%	1237	17%
AGE AT DIAGNOSIS						
<13	18	1%	44	1%	62	1%
13-19	14	1%	235	5%	249	3%
20-29	391	18%	1651	33%	2042	28%
30-39	872	40%	1781	35%	2653	37%
40-49	625	29%	985	20%	1610	22%
50+	268	12%	340	7%	608	8%
RACE/ETHNICITY						
White, Not Hispanic	1461	67%	3090	61%	4551	63%
Black, Not Hispanic	618	28%	1731	34%	2349	33%
Hispanic	94	4%	162	3%	256	4%
Other/Unknown	15	1%	53	1%	68	1%
TRANSMISSON CATEGORY						
MSM(2)	1170	53%	2704	54%	3874	54%
IDU(3)	261	12%	541	11%	802	11%
MSM and IDU	120	5%	252	5%	372	5%
Heterosexual(4)	302	14%	760	15%	1062	15%
Perinatal	17	1%	30	1%	47	1%
Other(5)	50	2%	79	2%	131	2%
Undetermined(6)	268	12%	670	13%	936	13%
TOTAL	**2188**	**100%**	**5036**	**100%**	**7224**	**100%**

*Concurrent is defined as having an HIV and AIDS diagnosis in the same calendar month

**Without AIDS diagnosis in the same calendar month as the HIV diagnosis

(1) Percentages may not total to 100 due to rounding

(2) MSM = Men Having Sex With Men

(3) IDU = Injection Drug Use

(4) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(5) Other includes Hemophilia and Transplants/Blood Transfusions

(6) "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, refused interview, and persons whose mode of exposure remains undetermined after investigation

Cases are classified as concurrent if HIV infection was reported to have progressed to AIDS within the same calendar month as the initial HIV diagnosis date. Of the 7,224 cumulative HIV infections reported in Kentucky as of June 30, 2010, 30% had a concurrent AIDS diagnosis. The majority of concurrent diagnoses were male-86%, white-67%, and transmitted through MSM exposure-53%. By age, the highest percentages of cases diagnosed with AIDS in the same calendar month as the HIV infection were in their 30s (40%) and 40s (29%) at time of diagnosis (Table 1.32).

Figure 1.24 presents the percentage of cases in each race/ethnicity group by sex, that were a concurrent HIV infection and AIDS diagnosis. Except for white females (24%), in all race/ethnicity groups, more than a quarter of HIV infections were concurrently diagnosed with AIDS in the same calendar month. Among black males and females, 26% of HIV infections were diagnosed concurrently with AIDS. For whites and Hispanics, more males (33% for white males and 38% for Hispanic males) were diagnosed concurrently in comparison to females (23% for white females and 32% for Hispanic females).

Figure 1.24. Percentage of Cumulative HIV Infections Diagnosed Concurrently with AIDS by Race/Ethnicity and Sex as of June 30, 2010, Kentucky

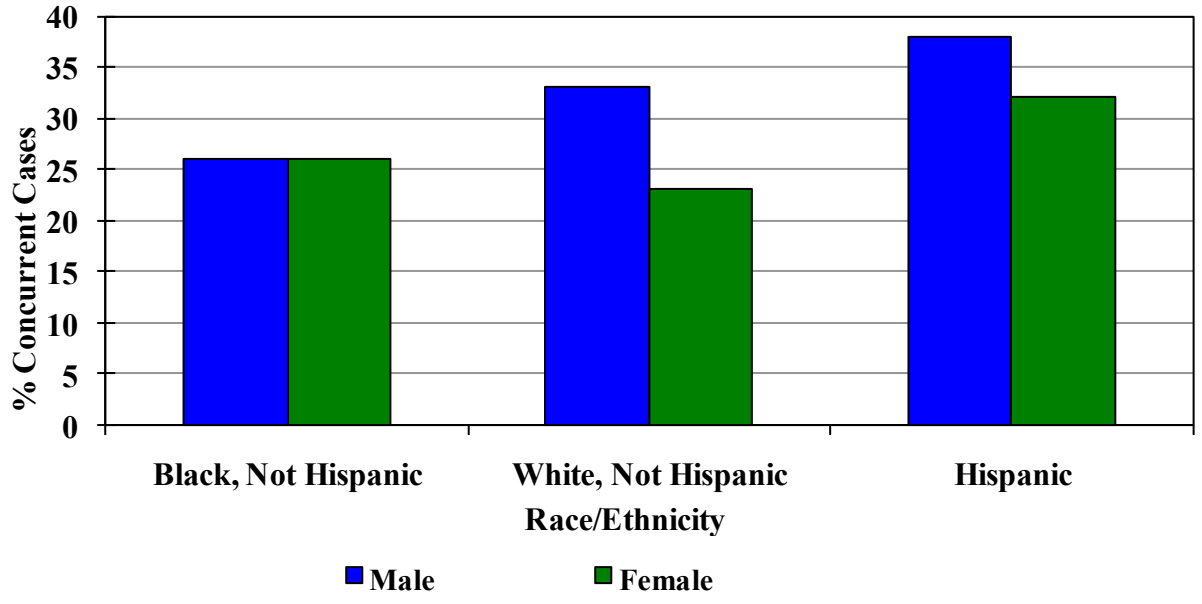
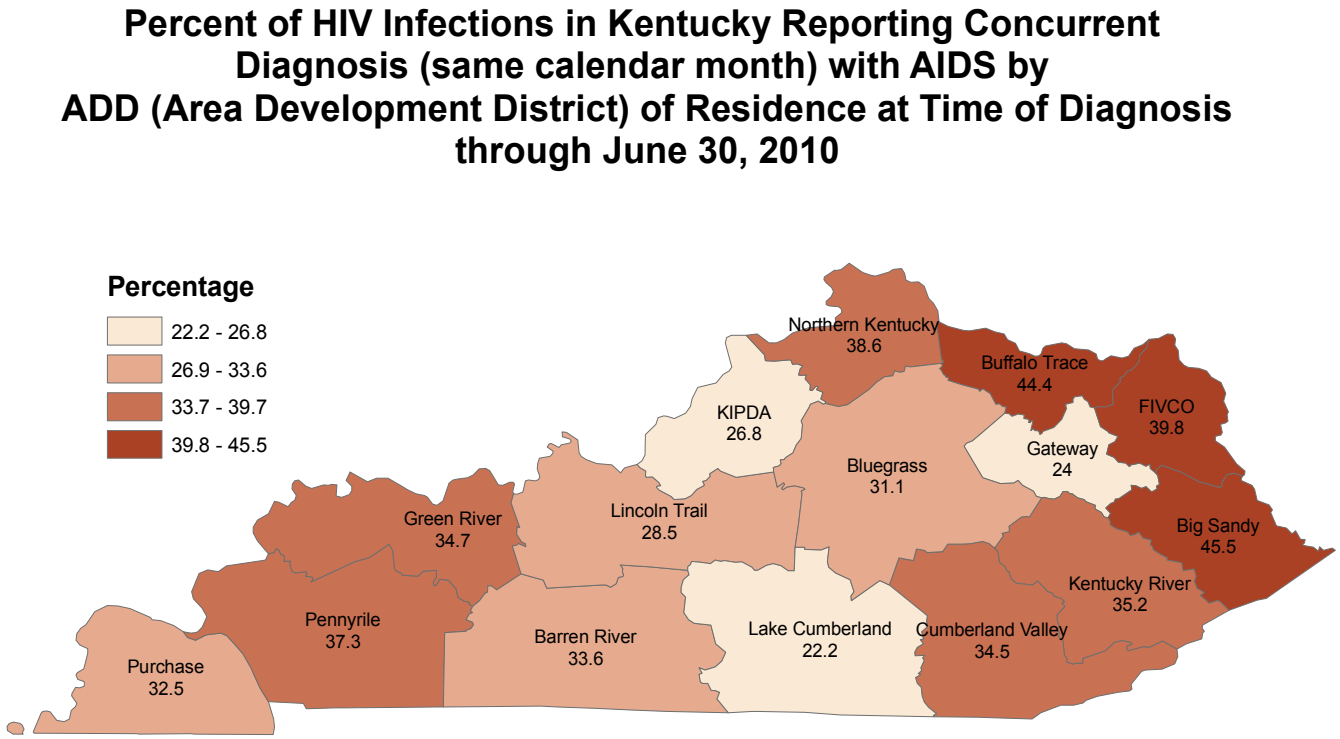


Figure 1.25. Percentage of Cumulative Concurrently Diagnosed HIV Infections in Kentucky by Area Development District



Three cases are missing information on ADD of residence at time of diagnosis.

Note: Percentages are of the total HIV infections within each ADD. Some ADDs have small case counts, therefore data should be interpreted with caution.

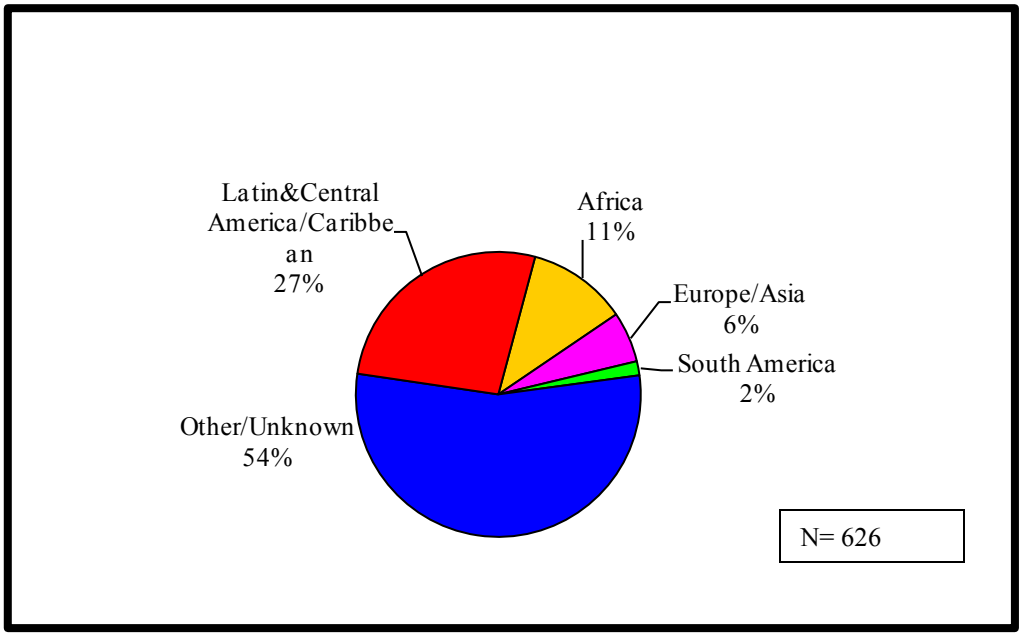
Figure 1.25 shows the percentage of HIV infections within each ADD that were concurrently diagnosed with AIDS in the same calendar month through June 30, 2010. The percentage of concurrent HIV and AIDS infections diagnosed ranged from 22.2% to 45.5%. The ADDs with the highest percentages of concurrent HIV and AIDS infections were in the eastern Kentucky region: Big Sandy (45.5%), Buffalo Trace (44.4%) and FIVCO (39.8%). However, there were 55, 45 and 118 total cases in each of these ADDs respectively, so percentages in ADDs with small numbers of cumulative cases should be interpreted with caution due to small numbers. Northern Kentucky ADD also had a comparatively high percentage of infections diagnosed concurrently, with 38.6% of its 591 infections diagnosed concurrently.

Special Population II: Foreign Born Population

Of the 7,224 cumulative HIV infections diagnosed in Kentucky, the majority (91%) were U.S. born. Four percent (287 cases) of the total HIV infections diagnosed in Kentucky were born in a country other than the U.S. and 339 (5%) of total cases have been reported with missing or unknown country of birth.

Of the 626 non U.S. born cases (Figure 1.26), 27% were born in Latin and Central America/ Caribbean; 11% in Africa; 6% in Europe/Asia; 2% in South America and 54% had an unknown or other country/region of birth.

Figure 1.26. Region of Birth for non U.S. Born Persons Diagnosed with HIV Infection in Kentucky, Based on Cumulative Infections Through June 30, 2010



Note: 626 persons diagnosed with HIV in Kentucky were non U.S. born

In the last ten years presented in Figures 1.27 and 1.28 (next page), there were 212 total HIV infections diagnosed in Kentucky among persons born in any of the four regions presented: Africa, Europe/Asia, Latin and Central America/Caribbean and South America. The number of foreign born diagnoses increased from 12 cases in 2000 to 30 cases in 2009. The highest number of foreign born HIV infections diagnosed in Kentucky within this time frame was in 2007 (35 cases) and the lowest number in 2002 (11 cases). There were more Kentucky cases diagnosed among residents born in Latin and Central America/Caribbean (115 cases) than any other foreign region in the last decade: 63 persons born in Africa, 28 persons European/Asian born and 6 persons born in South America. However, missing or unknown country of birth data were recorded on 246 (54%) infections diagnosed within the last ten years. Therefore data on foreign born persons should be interpreted with caution.

Figure 1.27. HIV Infections in Foreign-born Residents of Kentucky, by Region of Birth and Year of Diagnosis

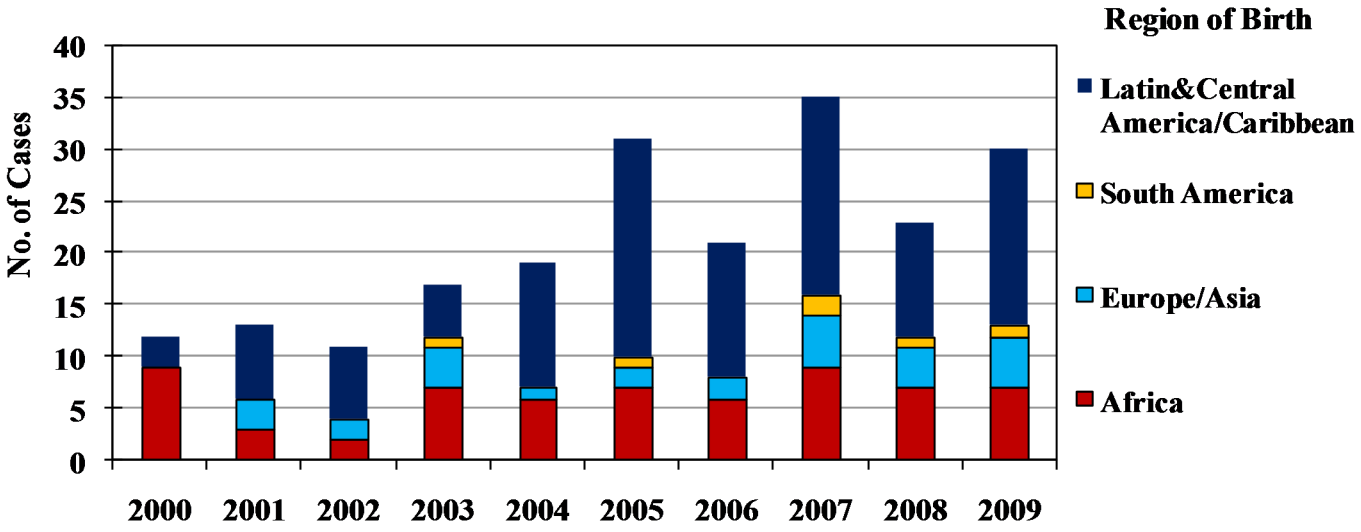
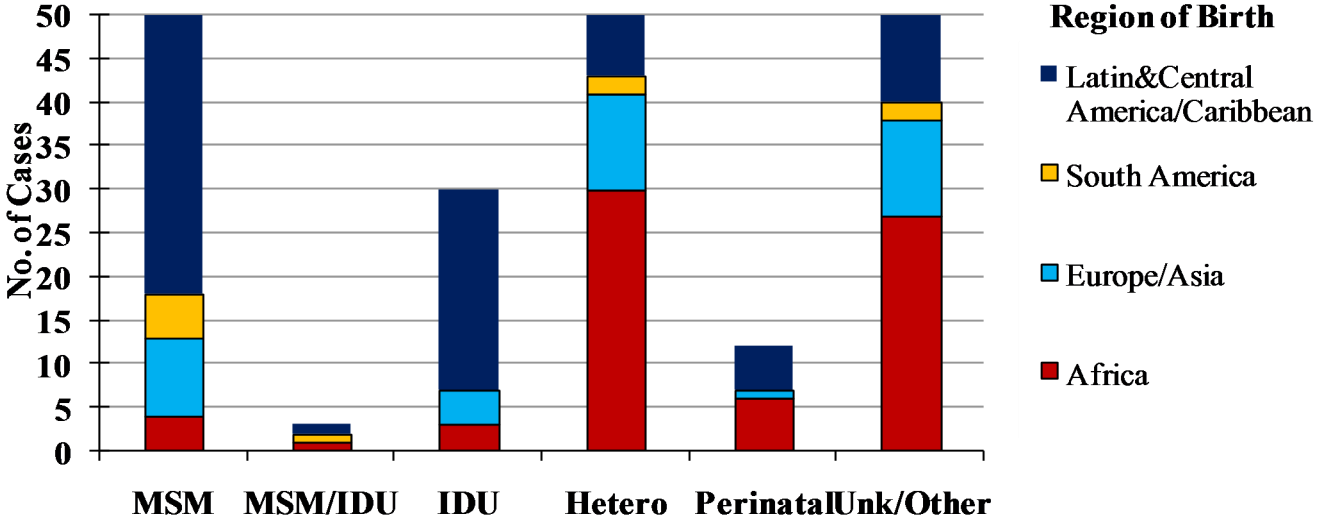


Figure 1.28. HIV Infections in Foreign-born Residents of Kentucky, by Region of Birth and Transmission Category



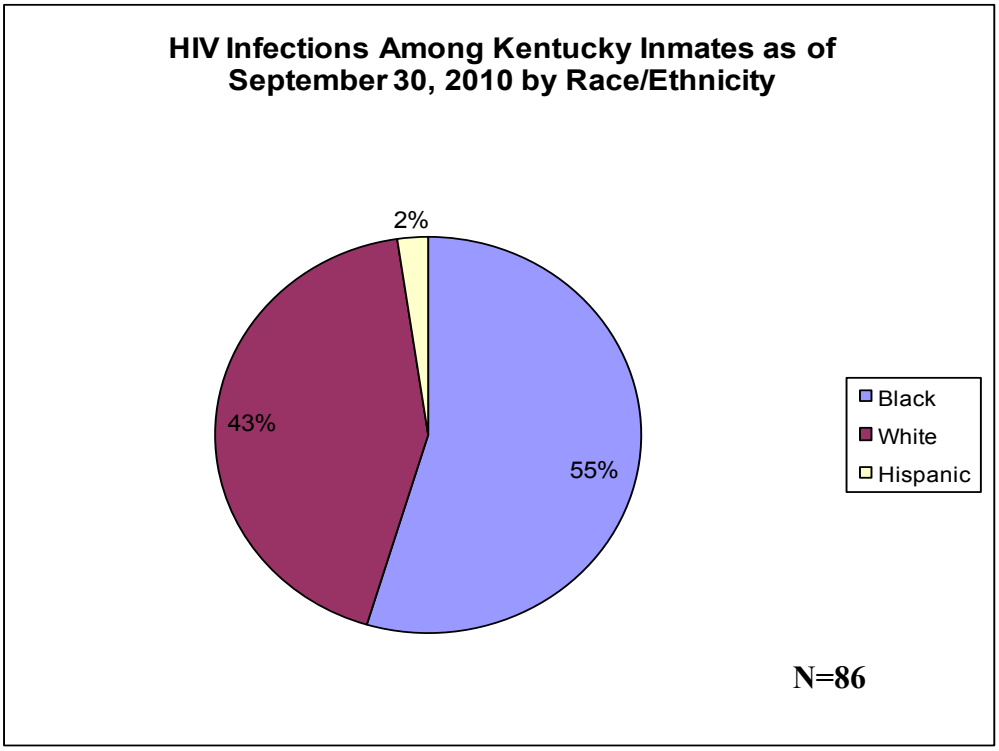
Special Population III: Incarcerated Population in Kentucky

Data in this section are from the Kentucky Department of Corrections (DOC) and represent reports on the offender population from thirteen correctional facilities and the 2 privately operated facilities as of September 17, 2010. There are 11,000 inmates screened per year on average. The majority of inmates are diagnosed with HIV infection prior to incarceration. Less than 0.5% are newly diagnosed while in the correctional system. Testing is governed by risk factors and clinical indicators alone. All inmates receive education upon admission regarding the risks, modes of transmission and prevention of HIV. Kentucky only has routine discharge testing and positive inmates are referred to the nearest Ryan White Care Coordinator Program. All care for HIV inmates is conducted through a chronic care clinic established for that disease entity in accordance with the American Correctional Association (ACA) standards. Exiting inmates are referred into care through private providers or local health departments.

As of September 17, 2010, there were 86 inmates with a reported HIV diagnosis. The majority of inmates reported with HIV were male– 88%. Blacks represented the highest proportion of infections among inmates as shown in Figure 1.29. Almost all infections among blacks were male (97.8%). Of the 37 infections among whites, 76% were male, and among Hispanics, all infections were in male inmates.

By age as of September 30, 2010, the highest percentages of inmates with HIV were aged 35-44 years old– 35% and 45-54 years old-30%.

Figure 1.29. HIV Infections Among Kentucky Inmates as of September 30, 2010 by Race/ Ethnicity



Data on inmates by Area Development District (ADD) represent location of inmate as of September 30, 2010 and not county of origin of inmates. Data show that the majority (56%) of inmates with HIV infection were residing in the KIPDA ADD (Table 1.33). Bluegrass ADD had the second highest percentage of inmates with HIV (9%), followed by Purchase ADD (8%). By county, Jefferson County had the majority of reported HIV infections among inmates at 52%.

Table 1.33. HIV Infections Among Kentucky Inmates by Area Development District of Correctional Facility as of September 30, 2010

Area Development District	Number of Cases	Percent
Barren River	6	7.0
Big Sandy	≤5	NR
Bluegrass	8	9.3
Cumberland Valley	≤5	NR
Green River	≤5	NR
KIPDA	48	55.8
Kentucky River	≤5	NR
Lake Cumberland	≤5	NR
Lincoln Trail	≤5	NR
Northern Kentucky	≤5	NR
Pennyrile	≤5	NR
Purchase	7	8.1
Total	86	100.0

NR= Nor reported for confidentiality reasons

HIV positive inmates in Kentucky co-infected with an STD in the Department of Corrections

Of the 86 inmates infected with HIV, seven also had an STD as of September 30, 2010. Of the seven inmates, four were female and three were males. By county, the majority of reported inmates co-infected with HIV and an STD were in Jefferson county (6 cases).

Special Population IV: Persons Co-Infected with HIV and TB

Global trends show that *mycobacterium tuberculosis* (TB) is the most common opportunistic disease and cause of death among those infected with HIV[1]. According to the CDC, there were 11,545 new TB cases reported in the United States in 2009 at a morbidity rate of 3.8 per 100,000[2]. According to the Kentucky TB Control Program, Kentucky's TB diagnosis rate in 2009 was 1.8 per 100,000, which was lower than the national rate and also represented a 25% decrease from the previous year– 2.4 per 100,000 in 2008.

TB cases reported to the TB Control Program:

The TB Control program reported 77 new active TB infections diagnosed among Kentuckians in 2009. The highest percentage of new TB cases were aged 25-44 years old (33%). Similar racial/ethnic disparities exist for both TB cases and HIV infections, with 9.5 per 100,000 of infections being diagnosed among Hispanics, 5.4 per 100,000 among blacks and only 1.1 per 100,000 among whites.

There have been five or less new HIV/TB co-infected Kentuckians reported to the TB Control program in Kentucky for each of the last five years (2005-2009). HIV/TB co-infections in Kentucky over the last five years have declined, from 5 cases reported in 2005 to 2 cases in 2009.

Note: Residence is a time of TB diagnosis, not at time of HIV diagnosis like the HIV program data, hence the difference in case counts.

TB cases reported to the Department of Corrections:

Additionally, data from the Department of Corrections show that less than five of the 86 HIV infections among inmates were co-infected with active TB as of September 30, 2010.

TB cases reported to the HIV/AIDS Program:

Table 1.34. Estimated New HIV Disease and TB Co-infections in Kentucky by Sex, 2009

	Male		Female		Total	
Tuberculosis diagnosis	No.	%	No.	%	No.	%
Not Co-infected	288	99.7	71	100	359	99.7
Definitive case	1	0.3	0	0.0	1	0.3
Presumptive case	0	0.0	0	0.0	0	0.0
Total	289	100	71	100	360	100

Additional data from the HIV/AIDS surveillance program show few co-infections with TB (Table 1.34). Of the 360 estimated new Kentuckians diagnosed with HIV in 2009, an estimated one case was co-infected with definitive TB. This case was male.

[1]Corbett, E. L., Watt, C. J., Walker, N., Maher, D., Williams, B.G., et al. (2003). The growing burden of tuberculosis: global trends and interactions with the HIV epidemic. *Archives of Internal Medicine,* 163, 1009–1021.

[2]CDC. Reported Tuberculosis in the United States, 2009. Atlanta, GA: U.S. Department of Health and Human Services, CDC, October 2010

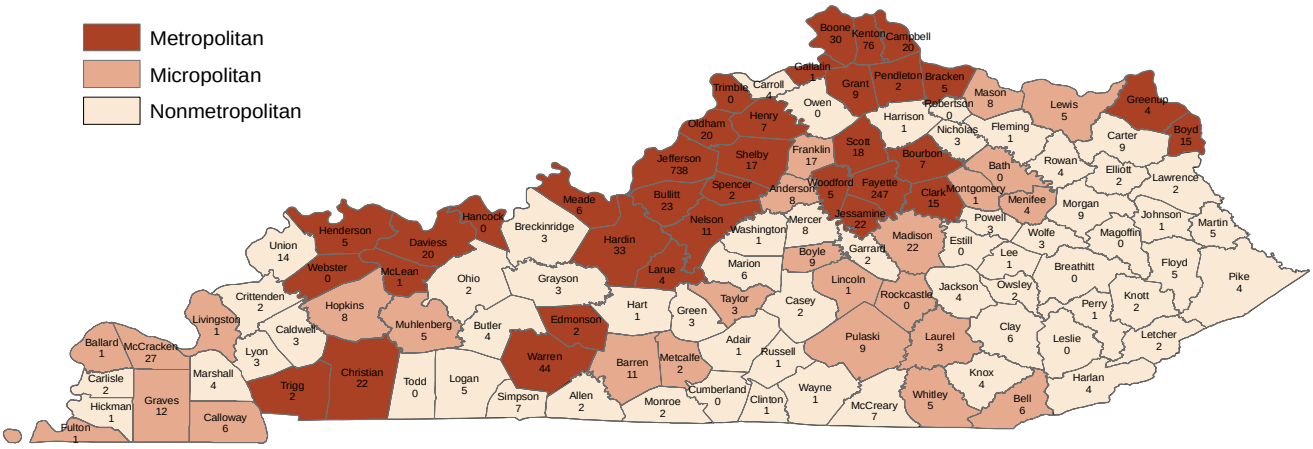
Special Population V: Data by Statistical Area

The U.S. Census Bureau defines groups of counties as metropolitan, micropolitan, or nonmetropolitan areas based on the population size of a core urban area. A metropolitan area contains a core urban area with a population of at least 50,000. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. A micropolitan area contains a core urban area with a population between 10,000-49,999. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. An area that does not meet the population requirements for the metropolitan or micropolitan area is referred to as a nonmetropolitan area. Appendix II shows Kentucky's counties by statistical area as defined by the Office of Management and Budget, December 2009. Of the 120 Kentucky counties, 37 counties were classified as part of a metropolitan statistical area; 23 counties were classified as part of a micropolitan statistical area; and 60 counties were classified as nonmetropolitan areas.

Figure 1.30 shows the number of people living with HIV infection diagnosed in Kentucky between January 1, 2005 and June 30, 2010. Data are only inclusive of living persons as of June 30, 2010. County represents residence at time of HIV diagnosis, and not current residence. HIV infection between January 1, 2005-June 30, 2010 was most prevalent in Kentucky's metropolitan counties.

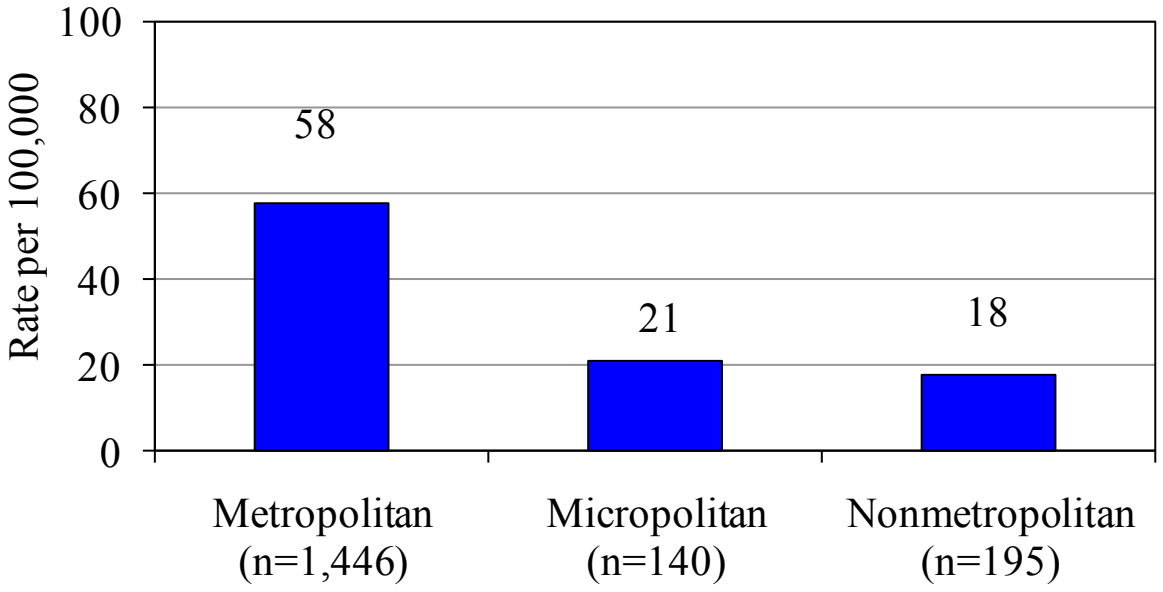
Figure 1.30. Map of Persons Living with HIV in Kentucky who were diagnosed January 2005-June 2010, assessed on June 30, 2010 by MSA

Persons Living with HIV Infection and Diagnosed in Kentucky
January 30, 2005 - June 30, 2010 by
Metropolitan Statistical Area Classification and County



One case is missing county of residence information

Figure 1.31. Rates of Persons Living with HIV Infection Diagnosed among Kentuckians in Metropolitan, Micropolitan and Nonmetropolitan Areas, January 1, 2005- June 30, 2010



Note: One Kentucky case missing county of residence at diagnosis.

Of the 1,782 Kentuckians living with HIV infection diagnosed between January 2005 and June 30, 2010; the rate of infection was highest among metropolitan counties- 58 per 100,000 population and lowest among nonmetropolitan counties- 18 per 100,000 population (Figure 1.31). This is consistent with national data showing that the epidemic continues to be primarily concentrated in urban areas[1]- 82% of reported acquired immune deficiency syndrome (AIDS) cases in the U.S. in 2006 were among persons who resided in metropolitan areas with population greater than 500,000.

Demographics data in Table 1.35 (next page) show that majority of infections in all three areas were male, white and aged 25– 44 years. By transmission category, the highest percentages of living cases were infected through MSM exposure and heterosexual contact, though heterosexual contact was highest in micropolitan areas. IDU and MSM/IDU exposures were slightly higher in nonmetropolitan areas. The percentage of cases reported with missing risk factor information was highest in metropolitan and nonmetropolitan areas in comparison to micropolitan areas.

[1]Centers for Disease Control and Prevention. (2008). Cases of HIV Infection and AIDS in Urban and Rural Areas of the United States, 2006. *HIV/AIDS Surveillance Supplemental Report,* 13, (No. 2). Retrieved October 29, 2010 from http://ww.cdc.gov/hiv/topics/surveillance/resources/reports/2008supp_vol13no2/default.htm.

Table 1.35. Kentucky Living HIV Diagnoses in Metropolitan, Micropolitan and Nonmetropolitan Counties by Demographics: 2005-June 30, 2010

Characteristics	Metropolitan*		Micropolitan*		Nonmetropolitan*		Total HIV Diagnoses	
	N	%(1)	N	%(1)	N	%(1)	N	%(1)
SEX								
Male	1174	81%	108	77%	163	84%	1445	81%
Female	272	19%	32	23%	32	16%	336	19%
CURRENT AGE								
<13	8	1%	0	0%	0	0%	8	<1%
13-24	172	12%	19	14%	36	18%	227	13%
25-44	803	56%	73	52%	101	52%	977	55%
45-64	449	31%	47	34%	56	29%	552	31%
65+	14	1%	1	1%	2	1%	17	1%
RACE/ETHNICITY								
White, Not Hispanic	743	51%	98	70%	141	72%	982	55%
Black, Not Hispanic	568	39%	34	24%	44	23%	646	36%
Hispanic	104	7%	6	4%	8	4%	118	7%
Other/Unknown	31	2%	2	1%	2	1%	35	2%
TRANSMISSON CATEGORY								
MSM(2)	694	48%	66	47%	92	47%	852	48%
IDU(3)	80	6%	9	6%	18	9%	107	6%
MSM and IDU	30	2%	2	1%	7	4%	39	2%
Heterosexual(4)	174	12%	28	20%	18	9%	220	12%
Perinatal	7	0%	0	0%	2	1%	9	1%
Other/Undetermined(5)	461	32%	35	25%	58	30%	554	31%
TOTAL	**1446**	**100%**	**140**	**100%**	**195**	**100%**	1781	100%

*U.S. Census Bureau statistical groups, defined in appendix 1

(1) Percentages may not total to 100 due to rounding

(2) MSM = Men Having Sex With Men

(3) IDU = Injection Drug Use

(4) "Heterosexual" includes persons who have had heterosexual contact with a person with HIV or at risk for HIV

(5) Other includes Hemophilia and Transplants/Blood Transfusions. "Undetermined" refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, refused interview, and persons whose mode of exposure remain undetermined after investigation

Note: 1 HIV case missing MSA at diagnosis

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Question 3 What are the Indicators of Risk for HIV/AIDS Infection in Kentucky?

This section examines data on the direct and indirect risk behaviors associated with the spread of HIV infection among the general population; factors associated with acquiring HIV infection among HIV-negative persons and factors associated with transmission of HIV infection among HIV-positive persons. Direct measures of risk provide information about risk behaviors that are directly associated with HIV transmission. High risk behaviors that predispose people to HIV infection will be discussed from various data sources and include: sexual activity, number of sex partners, sexual orientation, age at coitus, substance use, condom use, HIV testing and HIV or sex education among others.

Indirect measures on the other hand do not directly describe HIV risk behaviors. However, they serve as indicators of possible HIV risk that may need further investigation. STD data are indirect indicators of HIV risk as they may serve as a surrogate marker for unsafe sexual practices in a specific at risk population which increases that population's risk for acquiring and/or transmitting HIV infection. Individuals who are infected with STDs are at least two to five times more likely than uninfected individuals to acquire HIV infection if they are exposed to the virus through sexual contact. In addition, if an HIV-infected individual is also infected with another STD, that person is more likely to transmit HIV through sexual contact than other HIV-infected persons[1].

Counseling, Testing and Referral (CTR) Data

Table 1.36. Persons Testing for HIV at a CTR Site in Kentucky by Demographics and Risk Category-2009*

Characteristics	Total Tests[1]	HIV Positive Tests	% Seropositivy*
SEX			
Male	10194	102	1.0
Female	14222	29	0.2
M2F	19	2	10.5
F2M	5	0	0.0
Declined	148	3	2.0
RACE/ETHNICITY			
White, Not Hispanic	15857	77	0.5
Black, Not Hispanic	6592	41	0.6
Hispanic	1285	12	0.9
Other/Unknown	854	6	0.7
RISK			
Sex with Male	15003	96	0.6
Sex with Female	9228	49	0.5
Oral sex with male	8234	68	0.8
Oral sex with female	5286	25	0.5
Sex without a condom	21433	116	0.5
Sex with person who's IDU	1200	6	0.5
Sex with person who's known MSM	230	5	2.2
Sex with person who's HIV+	496	27	5.4
IDU	545	5	0.9
Shared drug injection equipment	302	5	1.7
TOTAL[1]	**24588**	**136**	**0.6**

*Seropositivity is the proportion of tests that were positive

[1]Total tests include duplciate people testing multiple times throughout 2009

Table 1.36 shows seropositivity among total tests performed at CTR sites in Kentucky in 2009. Overall HIV seropositivity was 0.6%. Seropositivity was higher among males than females and among Hispanics than other races.

By risk group, seropositivity was highest among persons having sex with a known HIV positive person.

Of the 15,003 tests among persons who had sex with a male, 1,698 were male and of the 230 persons having sex with a known MSM, 54 were male– accounting for 1,752 MSM tests completed in 2009. Overall seropositivity among MSM tests in 2009 was

Counseling, Testing and Referral (CTR) Data– continued

This section profiles risk behaviors from persons testing at Kentucky's Counseling, Testing and Referral (CTR) sites offering free or minimal cost anonymous or confidential HIV testing. These sites include local health departments, community health centers and community based organizations around the state. The CTR database stores testing information on clients at these sites for every single test performed at each visit. Therefore, there is duplication of individuals who test at multiple sites and multiple times.

In 2009, the CTR database confirmed 24,588 total HIV tests reported to the HIV prevention program during that year. Of these, 136 tests were resulted as positive, accounting for 0.6% seropositivity. Self reported risk factors (within the last 12 months) of persons testing at CTR sites are presented in Table 1.37. Although persons may have engaged in more than one risk behavior, the highest percentage of responses from people in the CTR system engaging in risky behaviors was reported among persons having sex without a condom (87%) with a male or female partner. There were 15,003 (61%) responses to having sex with a male– of whom 1,698 were male, meaning they had MSM exposure. Additionally, of the 230 responses to having sex with a person who was MSM, 54 were male, indicating MSM exposure as well.

Table 1.37. Risk Behaviors (within the last 12 months) Among Persons who Tested at CTR Sites in Kentucky-2009*

	N	%**
Sex with Male	15003	61%
Sex with Female	9228	38%
Oral sex with male	8234	34%
Oral sex with female	5286	22%
Person IDU/ shares needles	847	3%
Sex with person who is HIV positive	496	2%
Sex with person who is IDU	1200	5%
Sex with person who is MSM	230	1%
Sex without a condom	21433	87%
Exchanged sex for drugs/money/something they needed	366	2%
Sex while intoxicated and/or high on drugs	1790	7%
TOTAL*	**64113**	

*Total has duplicates with persons engaging in multiple behaviors

**Percentages are row percentages

2007 Kentucky Needs Assessment Data

Table 1.38. Selected Risk Indicators Among HIV Care Clients[1] Participating in the Kentucky Needs Assessment Survey, 2007

Characteristics	Number	%(1)
Sexual Orientation-Overall		
Gay, Lesbian or homosexual	199	47%
Bisexual	48	11%
Heterosexual or Straight	173	41%
Sexual Orientation among MSM*		
MSM- Gay male	140	81%
MSM- Bisexual	27	16%
MSM- Heterosexual	6	3%
Education		
Less than high school degree or GED	74	17%
High school diploma or GED	126	29%
Some college	145	34%
College degree	55	13%
Graduate/Professional degree	29	7%
Substance Used in past 2 years¶		
Tobacco	308	71%
Alcohol	295	68%
Marijuana (recreational)	156	36%
Pain pills not belonging to client	104	24%
Marijuana (health)	96	22%
Cocaine	74	17%
Ecstacy	35	8%
Methamphetamines	35	8%
Any illegal injected drug	30	7%
Heroin	13	3%
Sexual Behaviors in past 2 years¶		
Multiple sex partners	209	45%
Unsafe oral sex	190	41%
Unsafe anal sex	130	28%
Sex with someone who was jailed	102	22%
Celibate	102	22%
Unsafe vaginal-penile sex	102	22%
Sex in exchange for drugs or money	46	10%
Sex while jailed	23	5%
TOTAL**	**434**	

[1] HIV care clients were HIV positive

*Self reported sexual orientation identity among male respondents reporting having sex with a man in past 2 years

**Total respondents

¶Percentages total 100% for each indivudual substance or behavior. Respondents may have engaged in multiple behaviors

The Kentucky 2007 needs assessment survey was completed by HIV positive clients receiving care services (*HIV care clients*) and HIV negative clients receiving prevention services (*HIV prevention clients*) at any of the thirteen government funded agencies in Kentucky, Tables 1.38 and 1.39 respectively.

Table 1.38 shows that over half (58%) of HIV positive respondents self identified as gay, lesbian, homosexual or bisexual. Among males engaging in MSM behavior, 81% self identified as gay males, and 19% did not identify as gay, but as either bisexual or heterosexual.

More than half of HIV positive clients had received at least some college education (54%).

The majority of clients reported they had consumed tobacco (71%) and/or alcohol (68%) in the past two years. More than one in three clients reported using marijuana recreationally. One in five reported using marijuana for medical purposes. Prescription drug abuse was also high. Almost one in four clients reported they took pain pills that did not belong to them. One in fourteen reported injecting illegal drugs in the past two years.

Almost half of HIV positive respondents had multiple sex partners (45%) and another 41% reported having unprotected oral sex with another person in the past two years. More than a quarter of clients reported having unsafe anal sex and over one in five clients had unsafe vaginal-penile sex. A tenth were involved in exchanging sex for money or drugs.

2007 Kentucky Needs Assessment Data– continued

Table 1.39. Selected Risk Indicators among HIV Prevention Clients[1] Participating in the Kentucky Needs Assessment Survey, 2007

Characteristics	Number	%
Sexual Orientation		
Gay, Lesbian or homosexual	290	25%
Bisexual	123	10%
Heterosexual or Straight	768	65%
Frequency of HIV testing*		
None	208	18%
1 or 2 times	533	45%
3 times or more	443	37%
Education		
Less than high school degree or GED	178	15%
High school diploma or GED	398	34%
Some college	358	30%
College degree	183	15%
Graduate/Professional degree	69	6%
Substance Used in past 2 years¶		
Tobacco	784	65%
Alcohol	832	69%
Marijuana (recreational)	507	42%
Pain pills not belonging to client	289	24%
Marijuana (health)	169	14%
Cocaine	217	18%
Ecstacy	145	12%
Methamphetamines	121	10%
Any illegal injected drug	72	6%
Heroin	60	5%
Sexual behaviors in past 2 years¶		
Unsafe oral sex	724	60%
Multiple sex partners	699	58%
Unsafe vaginal-penile sex	543	45%
Unsafe anal sex	374	31%
Sex with someone who was jailed	265	22%
Celibate	169	14%
Sex in exchange for drugs or money	145	12%
Sex while jailed	60	5%
TOTAL**	**1206**	

[2]HIV prevention clients were HIV negative

*How many times have you been tested for HIV?

**Total respondents

¶Percentages total 100% for each individual substance or behavior. Respondents may have engaged in multiple behaviors

The majority of HIV negative respondents (*HIV prevention clients*) self identified as heterosexual, unlike the HIV positive clients who mostly self-identified as gay lesbian or homosexual, Table 1.39.

Almost 1 in 5 HIV negative respondents had never been tested for HIV in their lifetime. Forty five percent had been tested at least 2 times in their lifetime and 37% of respondents had been tested 3 times or more in their lifetime.

More than half of HIV positive clients had received at least some college education (51%).

Alcohol, tobacco and marijuana made up the most common substances used by respondents. More than half of respondents had used tobacco (65%) and/or alcohol (69%) in the past two years. Almost half of clients reported using marijuana recreationally. Prescription drug abuse was also high with almost a quarter of clients reporting they took pain pills that did not belong to them (24%). Six percent reported injecting illegal drugs in the past two years.

A sizable proportion of HIV negative respondents were sexually active within the previous 2 years before the survey: the majority of clients had multiple sex partners (58%), and/or reported having unsafe oral sex (60%). Almost half of clients had unsafe vaginal-penile sex (45%) and more than a quarter reported having unsafe anal sex (31%). Over a tenth were involved in exchanging sex for money or drugs.

Behavioral Risk Factor Surveillance System (BRFSS) Data

Table 1.40. HIV Testing in Kentucky's General Population, BRFSS, 2009

Characteristics	Ever tested for HIV*, %[1]	Recently tested* in 2009, %[1]
Sex		
Male	32.2%	17.3%
Female	40.5%	8.9%
Race		
White	34.6%	9.8%
African-American	-	-
Age		
18-24	24.7%	-
25-34	49.2%	14.2%
35-44	47.2%	8.8%
45-54	31.4%	8.2%
55-64	18.6%	8.7%
Education level		
Less than H.S.	33.7%	-
H.S. or G.E.D.	31.1%	10.7%
Some post- H.S.	40.2%	13.3%
College graduate	39.2%	11.4%
Income level		
Less than $15,000	42.7%	17.0%
$15,000-24,999	38.1%	11.7%
$25,000-34,999	38.2%	7.1%
$35,000-49,999	42.6%	-
$50,000-74,999	33.5%	6.4%
$75,000+	33.6%	12.5%
TOTAL**	**6,101**	**220**

[1]Percentages are row percentages

*Not including blood donations

**Total respondents who answered yes or no

Denominator excludes: Respondents with do not know/refused/missing responses and those aged 65+

The Behavioral Risk Factor Surveillance System is a state-based on-going telephone health survey system that tracks health conditions and risk behaviors in the United States. Data collected in 2009 in the sexual behavior module can be examined to determine the extent to which the general Kentucky population is engaging in behaviors that could put them at risk for HIV or other STDs.

The 2009 BRFSS survey showed that over a third of respondents in Kentucky had ever been tested for HIV (36.4%). A higher percentage of females reported ever having been tested for HIV than males (Table 1.40).

HIV testing data by race/ethnicity were only available for whites, due to a low number of responses. Thirty five percent of whites had ever been tested for HIV, and only a tenth of whites had tested recently in 2009.

The 25-34 age group had the highest percentage of respondents having ever been tested for HIV or having been tested recently in 2009.

HIV testing was also more prevalent among persons with a post high school education or higher: 40.2% of persons with some post high school and 39.2% of college graduates reported having ever tested for HIV.

Persons with income levels less than $15,000 and in the range of $35,000-$49,000 were more likely to have ever been tested for HIV than those in other income levels.

Behavioral Risk Factor Surveillance System (BRFSS) Data- continued

Table 1.41. Demographics of Kentuckians Engaging in Selected Risk Behaviors[1], BRFSS, 2009

Characteristics	Respondent Total**	Percentage of Total*
Sex		
Male	1958	4.7%
Female	4258	3.2%
Race		
White (non- Hisp)	5143	3.3%
Hispanic	92	2.2%
Black or African-American (non-Hisp)	707	7.3%
Age		
18-24	227	10.8%
25-34	704	5.0%
35-44	1206	4.5%
45-54	1915	1.9%
55-64	2164	0.9%
Education level		
Less than H.S.	732	8.7%
H.S. or G.E.D.	2182	3.0%
Some post- H.S.	1689	5.1%
College graduate	1610	2.2%
Income level		
Less than $15,000	838	8.1%
$15,000-24,999	1105	6.3%
$25,000-34,999	650	2.5%
$35,000-49,999	902	3.1%
$50,000-74,999	990	5.1%
$75,000+	1246	2.1%
TOTAL**	**6216**	

[1]Risk behaviors included: using intravenous drugs, being treated for an STD, giving or receiving money or drugs in exchange for sex, or having anal sex without a condom in the past year

*Percentages are row percentages

**Total respondents who answered yes or no

Denominator excludes: Respondents with do not know/refused/missing responses and those aged 65+

The core HIV risk behavior question examined respondents engaging in any of the following behaviors: using intravenous drugs, being treated for an STD, giving or receiving money or drugs in exchange for sex, or having anal sex without a condom in the past year. The results are presented in Table 1.41.

Overall, 174 (2.8%) of the 6216 respondents engaged in any one of the selected risk behaviors within the past year.

A higher percentage of males and blacks had engaged in risky behaviors within the previous year. Younger respondents engaged in risky behaviors at higher percentages than older respondents. The percentage of persons engaging in these behaviors reduced with age.

Respondents with less than a high school education and those with income levels less than $15,000 were more likely to engage in selected risky behaviors compared to other education and income level groups.

Youth Risk Behavioral Survey (YRBS) Data

Kentucky Youth Risk Behavioral survey (YRBS) is a questionnaire administered every odd year to high school students. The survey monitors priority health risk behaviors among youth and young adults. Data are also available at the national level from the CDC.

Table 1.42 shows results from the Kentucky YRBS sexual behavior questions for the last several years of data available. Results from the Kentucky YRBS indicate an upward trend in the percentage of high school students engaging in alcohol or drug use before last sexual intercourse, lack of condom use during last sexual intercourse and lack of education on HIV infection or AIDS. The percentage of high school students who had ever had sexual intercourse over the last four odd years was consistently about 50%. The percentages of students who had sexual intercourse for the first time before age 13 and those having four or more lifetime sexual partners were relatively stable over the time frame presented. There was a smaller percentage of students who had been sexually active in the preceding 3 months to the survey in 2007 and 2009, compared to 2003 and 2005, where over a quarter of students had sex with at least 1 person 3 months prior to taking the survey.

Table 1.42. Risky Behaviors among Kentucky High School Students for the Most Recent Four Odd Years, 2003 through 2009, Youth Risk Behavior Survey

Risk Behavior Question	2003	2005	2007	2009
Ever had sexual Intercourse	52.1 (46.4-57.7)	46.3 (42.8-49.9)	50.3 (46.1-54.4)	48.3 (43.8-52.7)
	1489	3055	3160	1608
Had sexual Intercourse for the first time before age 13 years	5.6 (4.3-7.2)	7.9 (6.6-9.3)	7.8 (6.6-9.3)	6.7 (4.9-9.0)
	1485	3049	3160	1609
Had sexual Intercourse with 4 or more persons (during their life)	14.8 (11.6-18.6)	13.6 (12.1-15.4)	14.4 (12.6-16.5)	12.7 (10.6-15.2)
	1478	3048	3160	1612
Had sexual intercourse with at least one person (during 3 months before survey)	38.7 (32.8-45.0)	33.5 (15.8-23.3)	19.0 (16.1-22.3)	22.9 (18.8-27.6)
	1493	1024	1139	540
Drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active)	21.9 (18.2-26.1)	19.3 (15.8-23.3)	19.0 (16.1-22.3)	22.9 (18.8-27.6)
	553	1024	1139	540
Did not use a condom during last sexual intercourse (among students who were sexually active)	38.3 (32.7-44.3)	34.8 (31.4-38.5)	41.0 (37.6-44.5)	40.1 (33.6-46.9)
	547	1011	1128	544
Were never taught in school about HIV infection or AIDS	9.6 (7.7-12.0)	12.6 (10.9-14.5)	13.2 (11.4-15.2)	15.1 (12.7-18.0)
	1578	3185	3381	1740

*Percentage, confidence interval (in parenthesis), cell size

Youth Risk Behavioral Survey (YRBS) Data– Narrative

Sexual intercourse:
The Youth Risk Behavior Survey for 2009 reported that almost one in two respondents had ever had sexual intercourse. Forty nine percent of male students and 47.8% of female students reported ever having sexual intercourse, though there was no difference between male and female students. By race, 59.1% of black students and 46.6% of white students reported ever having sexual intercourse. With almost three out of five black students reporting a history of sexual intercourse, blacks were more likely than white students to have ever engaged in sexual intercourse.

Age at coitus:
Seven percent of respondents in 2009 reported having sex for the first time before age 13. Male students were more likely to have engaged in sex before 13 than females. Data by race showed that black students were more likely to have had sex before age 13 than white students: 12.8% and 5.5% respectively.

Number of partners (four or more):
In 2009, more male students (14.7%) had ever had multiple partners in their life compared to female students (10.7%) though there was no difference by sex. Results by race also showed no difference between black and white students in the number of lifetime partners.

Alcohol and drug use:
Almost a quarter of respondents who were sexually active drank alcohol or used drugs before last sexual intercourse. Male students were more likely to have had sex after using drugs or while intoxicated with alcohol. By race, 22% of white students had sex after drinking alcohol or using drugs but data for other races are not available due to the small number of respondents.

Condom use:
Among sexually active students in 2009, more female students than males reported not using a condom during the last sexual intercourse: 45.5% and 33.7% respectively. Female students were significantly more likely not to have used a condom during the last sexual intercourse. By race, 41.3% of white students reported sexual intercourse without condom use. Data are not available for other races to make comparisons due to the small number of respondents.

HIV infection or AIDS education:
In 2009, 15.1% of respondents reported never being taught HIV infection or AIDS education. By sex, more males than females reported never receiving this education-17.1% of male students and 13% of females students, though differences in results were not statistically significant. By race however, blacks were significantly more likely not to have reported receiving this education in comparison to whites (24.1% blacks and 13% whites).

Limitations of YRBS:
One important limitation about YRBS data is that the survey is administered in school settings. Therefore high school age students at the highest risk may be more likely to be absent from school or to drop out, and thus be underrepresented in the survey, especially older grade students. . There is also potential for reporting bias since data are self-reported.

Note: Sub stratifications by demographics such as age, race, and sex are not shown in Table 1.42

National Survey on Drug Use and Health Data

Injection drug use is a risk factor for HIV transmission and substance abuse has also been shown to be a risk factor for HIV transmission[2]. Additionally, persons using illicit drugs and consuming large amounts of alcohol are at risk due to impaired judgment that may increase risk of engaging in risky behaviors.

The National Survey on Drug Use and Health (NSDUH) collects data on 22 measures of substance use or mental health. Table 1.43 examines data on selected measures by age in Kentucky, comparing data from the previous 2 surveys– 2005-2006 and 2006-2007.

Among respondents aged 12 and older, there was a significant increase in responses over the last 2 surveys in the percentage estimates of persons engaging in illicit drug use over the past month and marijuana use over the past year and month. There were 42.5% and 41.4% of respondents using alcohol in the last month in the 2005-2006 and 2006-2007 surveys respectively.

Among teens aged 12-17 years old in Kentucky, the percentage change in illicit drug use and alcohol use in the past month, and marijuana use in the past year increased, even though none of the estimates of illicit drug and alcohol use over the last 2 surveys were statistically different.

Among Kentuckians aged 18-25 years old, there was a statistically significant increase in the estimated percentages of persons using illicit drugs over the past month, marijuana use over the past month and illicit drug use other than marijuana over the past month. Alcohol use in the past month and binge alcohol use in the past month increased in the 2006-2007 survey, though the differences were not significant.

Lastly, among adults 26 years and older, the only behavior that significantly increased in the 2006-2007 survey was marijuana use over the past year. However, alcohol in the past month was high in both surveys.

Table 1.43. Percentage Change Between the 2005-2006 and the 2006-2007 Model-Based Estimates of Illicit Drug Use and Alcohol Use in Kentucky by Age

Characteristics	12+ years			12-17 years			18-25 years			26+ years		
	2005-2006	2006-2007	*p* value	2005-2006	2006-2007	p value	2005-2006	2006-2007	p value	2005-2006	2006-2007	p value
ILLICIT DRUGS												
Past month illicit drug use[1]	6.98[a]	8.05	0.019	10.08	10.21	0.898	17.22[a]	21.11	0.008	4.91	5.72	0.121
Past year marijuana use	8.74[a]	10.03	0.009	12.15	13.76	0.101	24.56[b]	27.39	0.063	5.72[a]	6.82	0.045
Past month marijuana use	4.93[a]	5.79	0.01	6.59	7.06	0.519	13.96[a]	17.08	0.016	3.24[b]	3.85	0.089
Past month use of illicit drugs other than marijuana[1]	3.48	3.92	0.101	5.7	5.15	0.42	8.92[a]	10.13	0.041	2.41	2.79	0.251
Past year cocaine use	2.14	2.12	0.946	1.58	1.52	0.796	6.66	6.99	0.673	1.47	1.43	0.9
ALCOHOL												
Past month alcohol use	42.47	41.38	0.385	15.84	15.98	0.897	55.53	57.81	0.184	43.68	42.01	0.291
Past month binge alcohol use[2]	21.79	21.29	0.547	10.1	9.63	0.592	38.77	40.68	0.247	20.48	19.7	0.462

[1] Illicit Drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically. Illicit Drugs Other Than Marijuana include cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically. These estimates are based on data from original questions, excluding those on the use of over-the-counter drugs or new methamphetamine items that were added in 2005 and 2006.

[2] Binge Alcohol Use is defined as drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

NOTE: p value: Bayes posterior probability of no change.

NOTE: Illicit Drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically; these estimates are based on data from original questions, excluding those on the use of over-the-counter drugs or new methamphetamine items that were added in 2005 and 2006. See Section B.4.6 in Appendix B of the Results from the 2007 National Survey on Drug Use and Health: National Findings.

NOTE: Estimates are based on a survey-weighted hierarchical Bayes estimation approach.

a Difference between the 2006-2007 estimate and the 2005-2006 estimate is statistically significant at the 0.05 level.

b Difference between the 2006-2007 estimate and the 2005-2006 estimate is statistically significant at the 0.10 level.

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2005, 2006, and 2007.

CDC Sexually Transmitted Disease (STD) Kentucky Data

The STD data profiled is from the CDC and shows numbers and rates of infection in Kentucky in comparison to national trends over a five year period. According to the CDC, the reported Chlamydia U.S. rate was 401 per 100,000 population in 2008. Kentucky ranked 40th with a Chlamydia rate of 287 per 100,000 population in 2008 (Figure 1.32).

The Chlamydia rate was higher among Kentucky females in 2008- 399 per 100,000 population, in comparison to Kentucky males-169 per 100,000 population. Nationally, the Chlamydia rate in 2008 was almost nine times higher for African-Americans (1,519.3 per 100,000) and three times higher for Hispanics (510 per 100,000) in comparison to whites (173 per 100,000). Those aged 15-19 years and 20-24 years had the highest Chlamydia rates nationally (1,956.4 and 2,084 per 100,000 population respectively).

Figure 1.32. CDC Reported Kentucky and U.S. Chlamydia Rates– 2004-2008

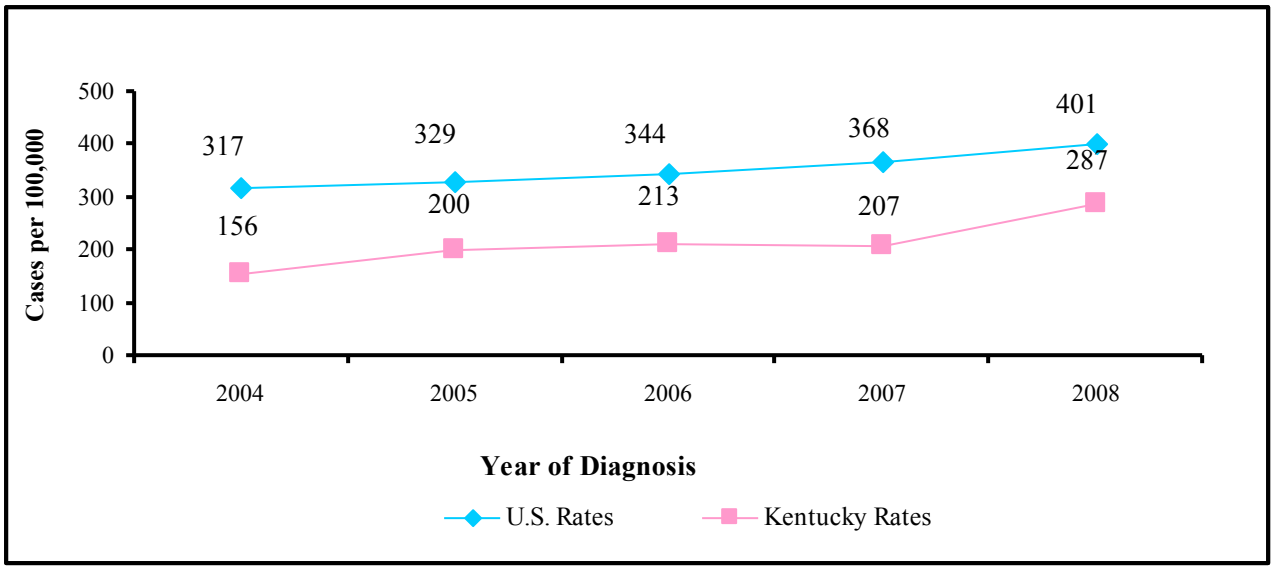
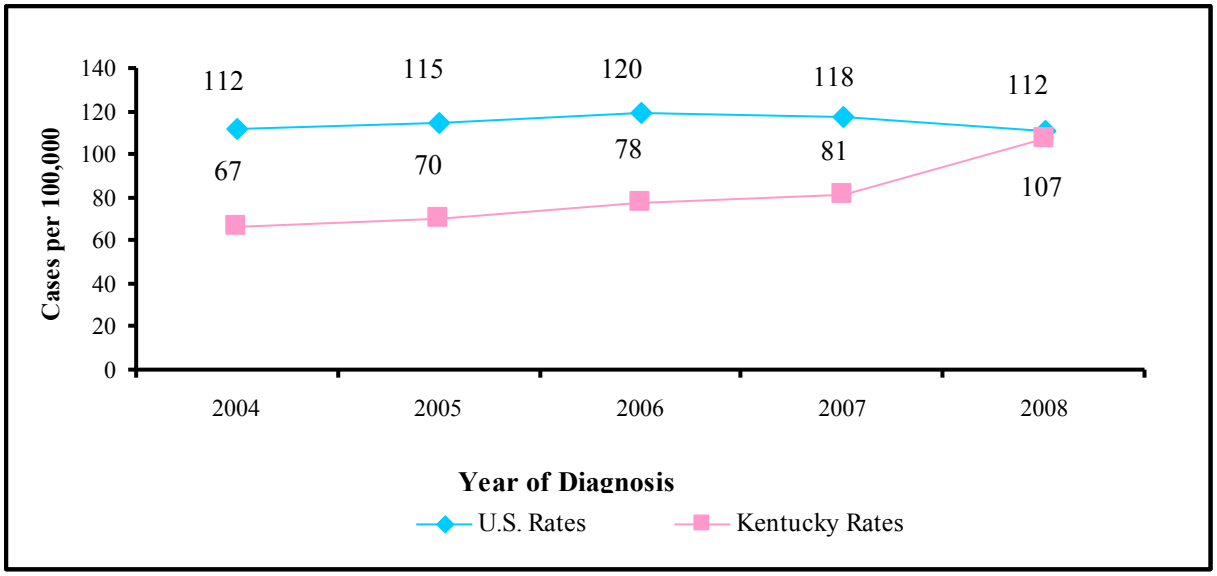


Figure 1.33. CDC Reported Kentucky and U.S. Gonorrhea Rates– 2004-2008



The reported gonorrhea U.S. rate was 112 per 100,000 population in 2008. Kentucky ranked 21st in the nation, with a gonorrhea rate of 107 per 100,000 population in 2008 (Figure 1.33). This was a 31% increase from the previous year. There has been a linear upward trend in overall gonorrhea rates over the five year period from 2004 through 2008. Jefferson County ranked 33rd among U.S. counties and independent cities with a rate of 288 per 100,000 population. Among Kentucky males, the gonorrhea rate in 2008 was 98 per 100,000 population, whereas among Kentucky females, the gonorrhea rate was higher than the state rate at 116 per 100,000 population. Nationally, gonorrhea rates were highest among minorities at 625 per 100,000 population for African-Americans and 66 per 100,000 population for Hispanics, in comparison to 31 per 100,000 population among whites. Across all races, the highest gonorrhea rates were among those aged 15-24 years old.

According the CDC, Kentucky's rate for all stages of syphilis was 5.1 per 100, 000 population in 2008, which was lower than the national syphilis rate of 15 per 100,000 population (Figure 1.34 on next page).

For primary and secondary syphilis (P&S), Kentucky ranked 29th among states, with an increased rate of 2.2 per 100,000 population in 2008. The P&S syphilis rate in Kentucky has remained low and stable over the five year period presented, with two cases or less per 100,000 population (Figure 1.35). Among Kentucky women, the P&S syphilis rates have consistently remained below 1 case per 100,000 population over the presented time frame, with a rate of 0.6 per 100,000 in 2008. Among Kentucky males, the P&S syphilis rates were slightly higher than for females, ranging between 2-4 cases per 100,000 population and at 4 per 100,000 population in 2008. Nationally, minorities had higher P&S syphilis rates per 100,000 (African-Americans– 17.3, Hispanics-4.7) in comparison to whites (2.2 per 100,000 population).

For early latent syphilis, Kentucky's rate in 2008 was 1.1 per 100,000 population, which was lower than the national rate of 4.1 per 100,000 population. Kentucky's early latent syphilis trend remained at one case or less over the presented time period (Figure 1.36). Similar low– level trends exist among Kentucky's late and late latent syphilis cases at two cases or less per 100,000 population (Figure 1.37).

Figure 1.34. CDC Reported Kentucky and U.S. Syphilis (all stages) Rates– 2004-2008

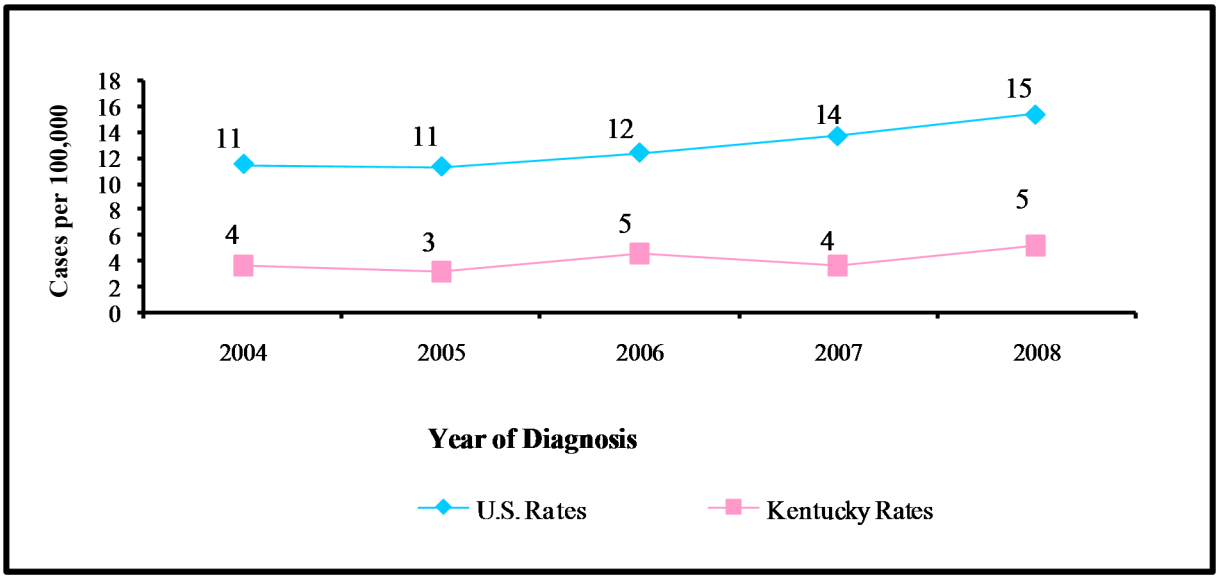


Figure 1.35. CDC Reported Kentucky and U.S. Primary and Secondary Syphilis Rates– 2004-2008

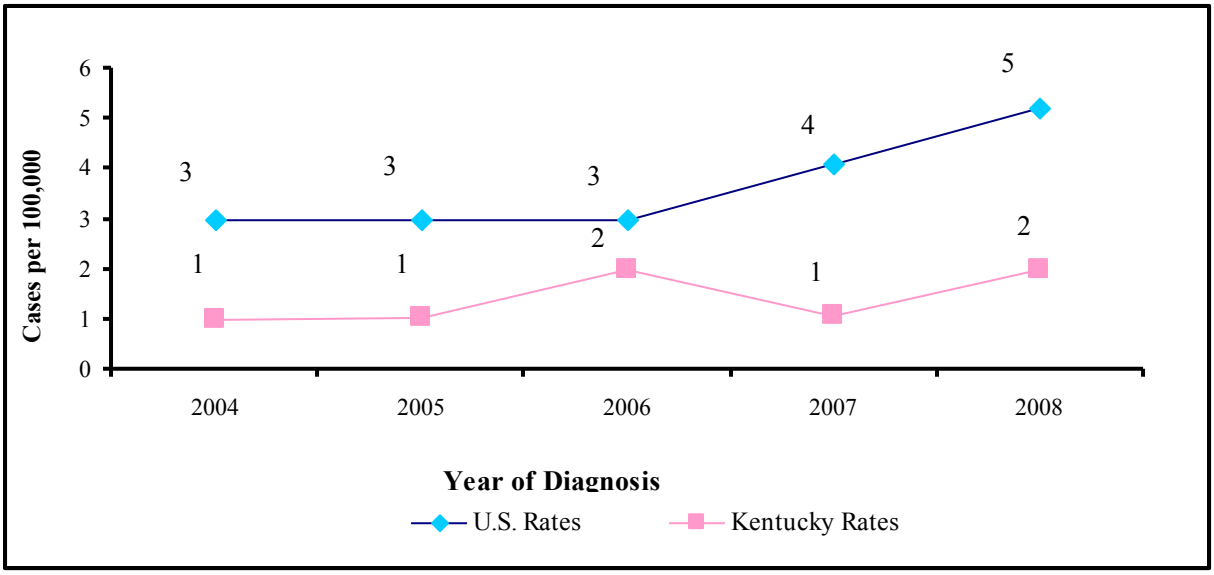


Figure 1.36. CDC Reported Kentucky and U.S. Early Latent Syphilis Rates– 2004-2008

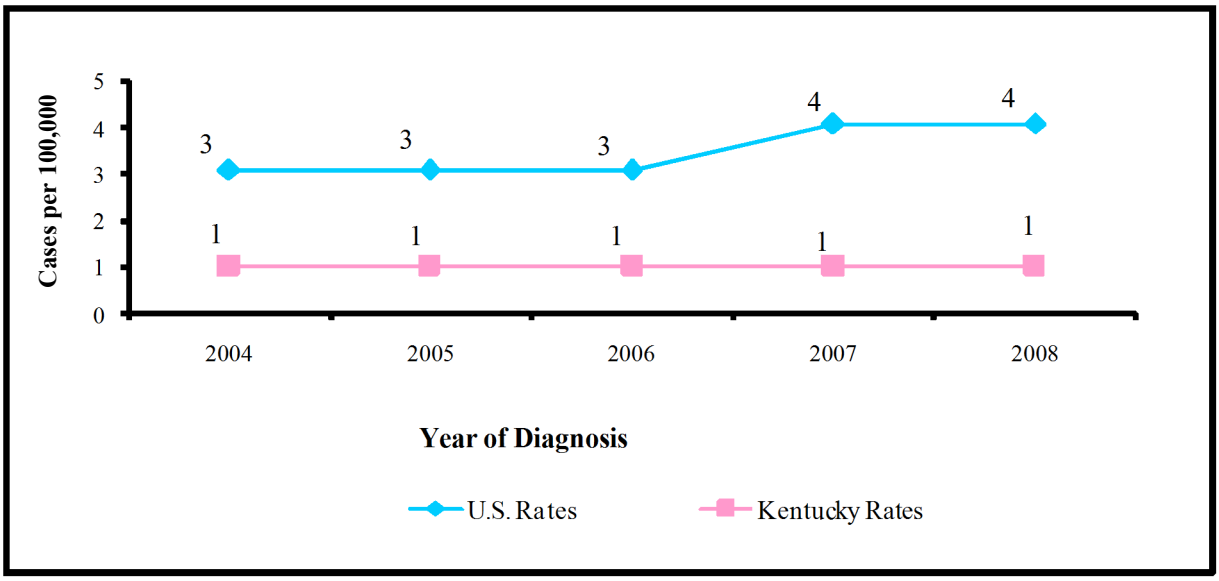


Figure 1.37. CDC Reported Kentucky and U.S. Late and Late Latent Syphilis Rates– 2004-2008

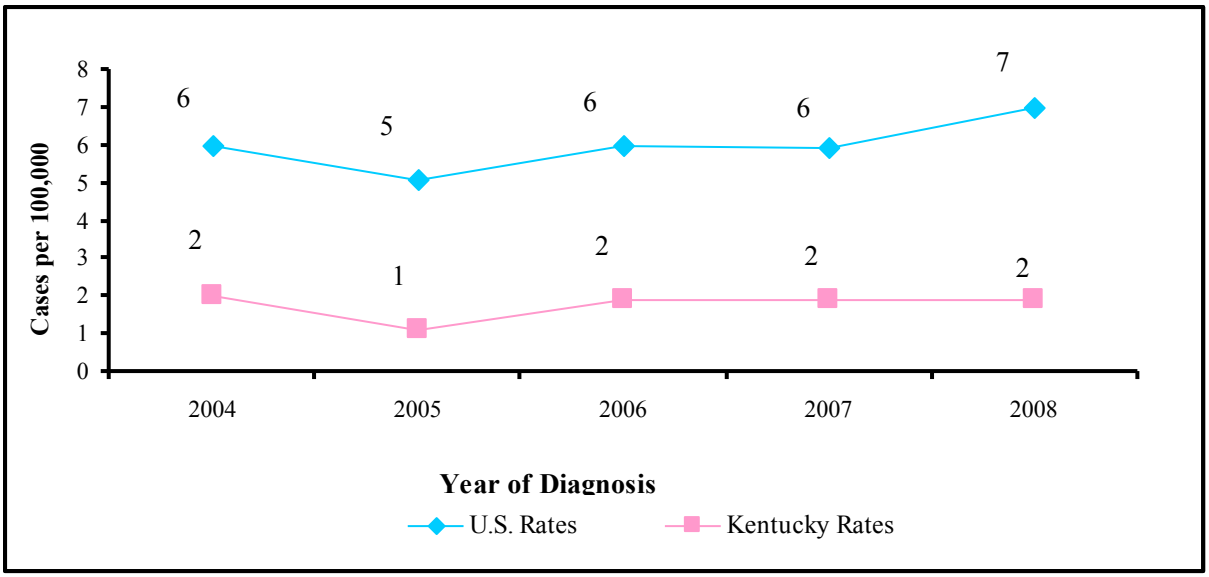
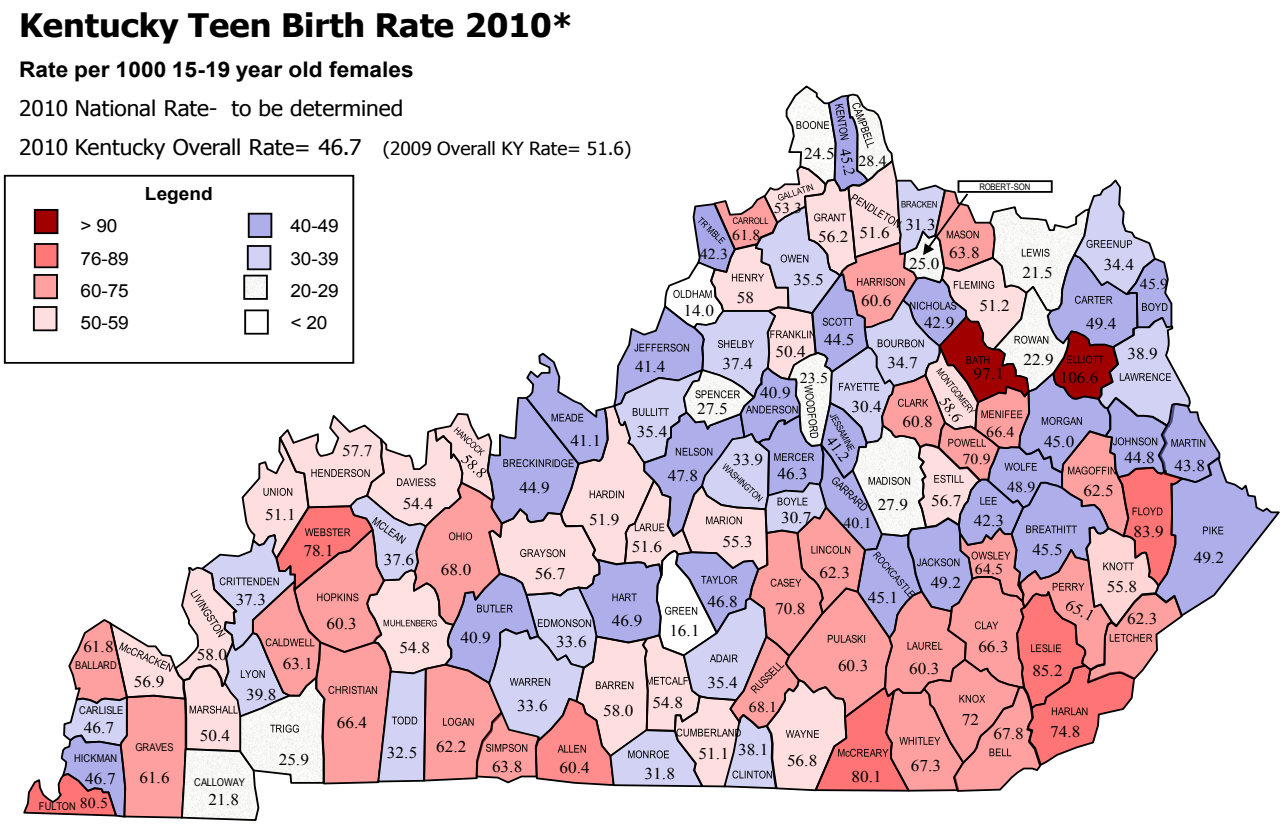


Figure 1.38. Kentucky Teen Birth Rates by County– 2010



Source: KY Vital Statistics

*Preliminary Data

The prevalence of teen pregnancy can be used to better understand the prevalence of unprotected sex among teens, which is a risk factor for HIV infection. There are significant consequences of unprotected sex among teens including HIV infection, other sexually transmitted diseases (STDs) and pregnancy. In 2009, a tenth of new HIV infections among females in Kentucky were among teens aged 13-19 years old at time of diagnosis. Teen birth trends can offer useful insight into where the HIV epidemic may grow among this population.

The Kentucky teen birth rate among females aged 15-19 years old dropped from 51.6 per 100,000 population in 2009 to 46.7 per 1,000 population in 2010, although 2010 data are still considered preliminary. During 2010, teen pregnancy rates ranged from 14.0 per 1,000 in Oldham County to 106.6 per 1,000 in Elliott County (Figure 1.38). Teen birth rates were generally higher in counties in the eastern region of Kentucky, though some counties in northern and western Kentucky had comparably higher rates as well.

References:

[1] Wasserheit, J, N. (1992). Epidemiologic synergy: Interrelationships between human immunodeficiency virus infection and other sexually transmitted diseases. *Sexually Transmitted Diseases,* 9,61-77 .

[2] Merenstein, D. J., Hu, H., Robison, E., Levine, A. M., Greenblatt, R., Schwartz, R., et al. (2010) Relationship Between Complementary/Alternative Treatment Use and Illicit Drug Use Among a Cohort of Women with, or at Risk for, HIV Infection. *Journal Of Alternative And Complementary Medicine*, 16 (9), 989-993.

STD Data obtained from:
Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2008. Atlanta, GA: U.S. Department of Health and Human Services; November 2009. Retrieved November 1, 2010 from http://www.cdc.gov/std/stats08/default.htm

YRBS Data obtained from:
Centers for Disease Control and Prevention (2010). Youth Risk Behavior Surveillance-United States, 2009. *Morbidity and Mortality Weekly Report,* 59, No. SS-5.

BRFSS data interpretations obtained from:
Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. Youth Risk Behavioral Surveillance System. Retrieved November 12, 2010 from http://www.cdc.gov/healthyyouth/yrbs/index.htm

Section

2

RYAN WHITE HIV/AIDS CARE ACT SPECIAL QUESTIONS AND CONSIDERATIONS

Question 4: What are the patterns of utilization of HIV services of persons in Kentucky?

Question 5: What are the number and characteristics of persons who know they are HIV-positive, but who are not receiving care?

Question 4 What are the Patterns of Utilization of HIV Services of Persons in Kentucky?

The Kentucky HIV/AIDS Branch Services Program is funded through the Ryan White HIV/AIDS Treatment Modernization Act of 2006. The Ryan White Part B Program (RW Program) is a federal mandate that was created to address health care and service needs of people living with HIV/AIDS in the United States. This program facilitates a provision of care and services to HIV infected individuals across a continuum of care. These include: Kentucky Health Insurance Continuation Program (KHICP), Kentucky AIDS Drug Assistance Program (KADAP), Kentucky HIV/AIDS Care Coordination Program (KHCCP)[1].

Kentucky HIV/AIDS Care Coordination Program (KHCCP) [2,3]

The KHCCP is funded by Part B dollars under the RW Program. Core Services are defined by the Health Resources and Services Administration (HRSA) as direct health care services. Support Services are defined as services needed to achieve outcomes that affect the HIV-related clinical status of a person with HIV/AIDS. Under federal statute, the 75/25 rule must be adhered to for all Part B programs. Part B Programs must spend 75% of federal funds on Core Services, and up to 25% of federal funds can be spent on support services. KHCCP assistance is contingent upon funding.

Core Services include the following:

- ***Outpatient/Ambulatory Medical Care*** includes the provision of professional diagnostic and therapeutic services rendered by a medical professional where clients generally do not stay overnight.
- ***Primary Medical Care*** for the treatment of HIV infection must include access to antiretroviral and other drug therapies, including prophylaxis and treatment of opportunistic infections.
- ***Local AIDS Pharmaceutical Assistance (APA, not ADAP)*** includes local pharmacy assistance programs that provide HIV/AIDS medications to clients.
- ***Oral Health Care*** includes diagnostic, preventive, and therapeutic services provided by general dental practitioners and other trained primary care providers.
- ***Early Intervention Services (EIS) for Parts A and B-*** includes counseling individuals with respect to HIV testing, referrals and other clinical and diagnostic services.
- ***Health Insurance Premium & Cost Sharing Assistance*** is the provision of financial assistance for eligible individuals living with HIV to maintain a continuity of health insurance or to receive medical benefits under a health insurance program.
- ***Home Health Care*** includes the provision of services in the home by licensed health care workers.
- ***Home and Community-based Health Services*** include services based on the individual's written plan of care established by a case management team. Services include intravenous and aerosolized drug therapy, routine diagnostics and rehabilitation services delivered in the home.
- ***Hospice Services*** include room, board, nursing care, counseling, physician services, and palliative therapeutics provided to clients in the terminal stages of illness in a residential setting.

- ***Mental Health Services*** are psychological and psychiatric treatment and counseling services offered to individuals with a diagnosed mental illness.
- ***Medical Nutrition Therapy*** can be provided by a licensed registered dietitian outside of a primary care visit and includes the provision of nutritional supplements.
- ***Medical Case Management Services (including treatment adherence)*** are a range of client-centered services that link clients with health care, psychosocial, and other services. Key activities include (1) initial assessment of service needs; (2) development of a comprehensive, individualized service plan; (3) coordination of services required to implement the plan; (4) client monitoring to assess the efficacy of the plan; and (5) periodic re-evaluation and adaptation of the plan as necessary over the life of the client. It includes client-specific advocacy and/or review of utilization of services.
- ***Substance Abuse Services (Outpatient)*** include the provision of medical or other treatment and/or counseling to address substance abuse problems (i.e., alcohol and/or legal and illegal drugs) in an outpatient setting.

Support Services include the following:

- ***Case Management (non-Medical***) includes the provision of advice and assistance in obtaining medical, social, community, legal, financial, and other needed services.
- ***Child Care Services*** are provided for clients who are attending medical appointments, other appointments or RW Program related meetings, groups or trainings.
- ***Pediatric Developmental Assessment and Early Intervention Services*** involve the assessment of an infant or child's developmental status and needs in relation to the involvement with the education system, including early assessment of educational intervention services.
- ***Emergency Financial Assistance*** is the provision of short-term payments to agencies or establishment of voucher programs to assist with emergency expenses related to essential utilities, housing, food (including groceries, food vouchers, and food stamps), and medication when other resources are not available.
- ***Food Bank/Home-Delivered Meals*** include the provision of actual food or meals or vouchers to purchase food.
- ***Health Education Risk Reduction*** is the provision of services that educate HIV positive clients about transmission and how to reduce the risk of HIV transmission.
- ***Housing Services*** provide short-term assistance to support emergency, temporary or transitional housing to enable an individual or family to gain or maintain medical care.
- ***Legal Services*** are the provision of services to individuals with respect to powers of attorney, do-not-resuscitate orders and interventions necessary to ensure access to eligible benefits, including discrimination or breach of confidentiality litigation as it relates to services eligible for funding under the Ryan White Program.

- ***Linguistics Services*** include the provision of interpretation and translation services.
- ***Permanency Planning*** is the provision of services to help clients or families make decisions about placement and care of minor children after the parents/caregivers are deceased or are no longer able to care for them.
- ***Psychosocial Support Services*** are the provision of support and counseling activities. Examples of such are HIV support groups, pastoral care, caregiver support, and bereavement counseling.
- ***Referral for Health Care/Supportive Services*** is the act of directing a client to a service in person or through telephone, written, or any other type of communication.
- ***Rehabilitation Services*** are services provided by a licensed or authorized professional in accordance with an individualized plan of care intended to improve or maintain a client's quality of life and optimal capacity for self-care. Services include physical and occupational therapy, speech pathology, and low-vision training.
- ***Respite Care*** is the provision of community or home-based, non-medical assistance designed to relieve the primary caregiver responsible for providing day-to-day care of a client with HIV/AIDS.
- ***Substance Abuse Services (residential)*** is the provision of treatment to address substance abuse problems (including alcohol and/or legal and illegal drugs) in a residential health service setting (short-term).
- ***Treatment Adherence Counseling*** is the provision of counseling or special programs to ensure readiness for, and adherence to complex HIV/AIDS treatments by non-medical personnel outside of the medical case management and clinical settings.

Service Utilization– 2007 HIV Needs Assessment Survey

Table 2.1. displays data from the 2007 HIV needs assessment and shows responses by HIV positive clients regarding service utilization. The majority of services that clients viewed as needed were clinical and care coordination. In fact 82% of clients said they learned about new or current HIV services from their care coordinator. At least a third of clients reported receiving all services needed, except for help with health care in the home and hospice services. The highest percentages of services received but not needed included hospice services, help with alcohol or drug problems and help with health care in home. The highest percentages of services needed but not received included help with clothing, help paying for health insurance and assistance with dental services. Clients also suggested that having multiple services under one roof would help to make access to services easier (3 out of 4 respondents).

Table 2.1. Responses from HIV Positive clients at Kentucky Care Coordination Sites on Use, Need and Unmet Needs of Various Services

	Get This Service and Need It (Frequency)	Get This Service and Need It (%)	Get This Service But Don't Think Need It (Frequency)	Get This Service But Don't Think Need It (%)	Need But Do Not Get (Frequency)	Need But Do Not Get (%)
Help with clothing	162	35	153	33	153	33
Help paying for health insurance	283	61	60	13	125	27
Dental services	302	65	46	10	116	25
Help with health care in home	144	31	213	46	111	24
Help paying for transportation	274	59	84	18	107	23
Mental health services	223	48	139	30	97	21
Hospice services	102	22	269	58	93	20
Help with food	288	62	84	18	93	20
Help with alcohol or drug problems	153	33	232	50	84	18
HIV information, counseling, and testing	316	68	102	22	51	11
Health care in a clinic or health office (other than a hospital)	390	84	28	6	42	9
Help getting medications	394	85	37	8	32	7
HIV Care Coordination	399	86	37	8	28	6
Case manager/Care coordinator	404	87	32	7	28	6

Barriers to Care

The needs assessment asked about barriers to care utilization among HIV positive clients in Kentucky. Table 2.2 shows responses from clients accessing local HIV services through the Ryan White Care Coordination Program. The most common barrier to care was lack of transportation, with almost a third of respondents reporting transportation as the biggest barrier.

Clients at Volunteers of America and Matthew 25 AIDS Services (Bowling Green) were the most likely to report transportation problems and clients at Cumberland Valley the least likely to report this problem. Additionally, 24% of respondents listed concern for privacy of health care records as a barrier to care.

Table 2.2. Responses from HIV Positive Clients at Kentucky Care Coordination Sites on Barriers to Accessing Local HIV Services

Barriers to Using Local Services	Frequency	Percentage
Lack of transportation	144	31
Afraid will be seen or lack of privacy for records	111	24
Don't feel respected or safe	84	18
Fear staff will know client is using drugs	37	8

Care Coordinator Program

Care coordination in Kentucky encompasses case management, entitlement benefits, medical care, prevention counseling, housing, transportation, legal services, and nutrition services. Clients are required to maintain a care coordinator and follow all guidelines in order to be eligible for any assistance programs such as KADAP and KHICP. Throughout Kentucky there are six care coordinator regions, whose locations were chosen to provide clients with local access to needed services. The distribution of clients served by each region is displayed in Table 2.3. The six regions include[4]:

- Cumberland Valley- Cumberland Valley District Health Department, Manchester, KY.
- Lexington- Bluegrass Care Clinic, Lexington, KY.
- Louisville- Volunteers of America, Louisville, KY.
- Northern Kentucky- Northern Kentucky District Health Department, Ft Mitchell, KY.
- Barren- Matthew 25, Henderson, KY.
- Purchase- Heartland Cares, Paducah, KY.

Several factors contribute to the basic eligibility criteria for the care coordination program. Proof of income must be equal to or less than 300% of the federal poverty level (FPL). Cash assets should be less than $10,000. The resident must live in Kentucky and provide proof of residence. HIV status must be confirmed with appropriate documentation. Also, the client must be ineligible for assistance from other third party payers for the assistance being requested.[5]

Table 2.3. Persons Enrolled in Kentucky's Care Coordinator Program by Region, 2009

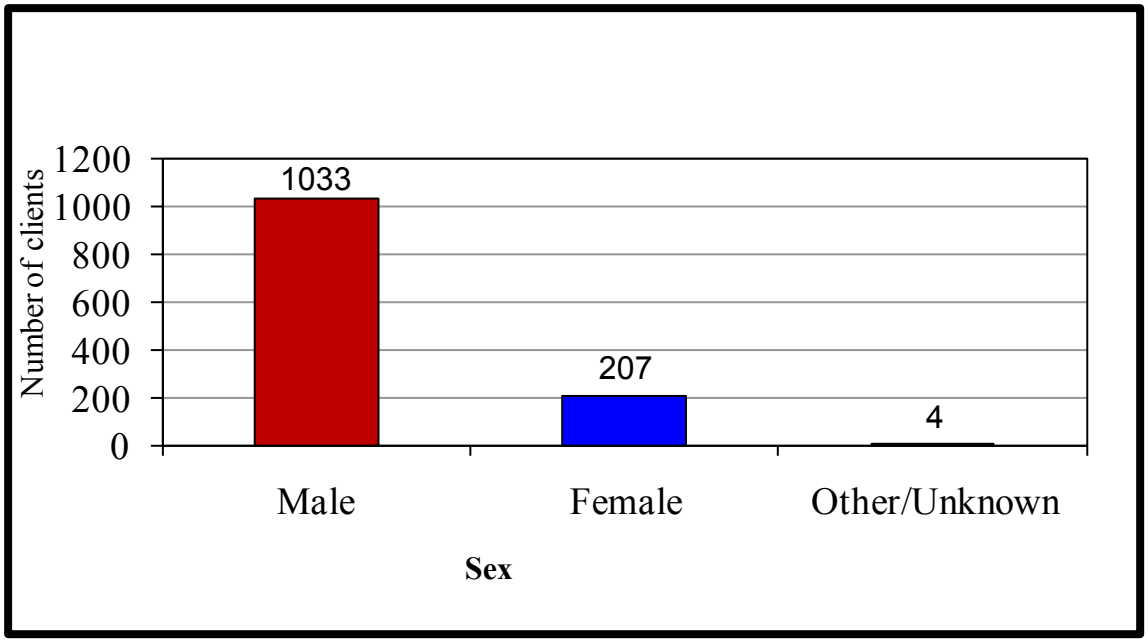
Region	# Served	% Served
Lexington	647	28.4%
Cumberland Valley	168	7.4%
Louisville	235	10.3%
Northern Kentucky	837	37%
Barren	209	9.2%
Purchase	180	8%
TOTAL	2,276	100.0%

Kentucky AIDS Drug Assistance Program (KADAP)

The Kentucky AIDS Drug Assistance Program (KADAP) is arguably the most well-recognized program of assistance within the HIV Services program. This program is responsible for helping to obtain AIDS-related medicines. KADAP is multifaceted in that it is responsible for: managing all protocols; contracts, payments, negotiations with pharmaceutical companies; legislative inquiries; federal reports; programmatic decisions; database management; mailings; KADAP formulary committee and client files. Applications for the statewide program are processed centrally in Frankfort, KY. Recertification occurs six months from the client's birth month.

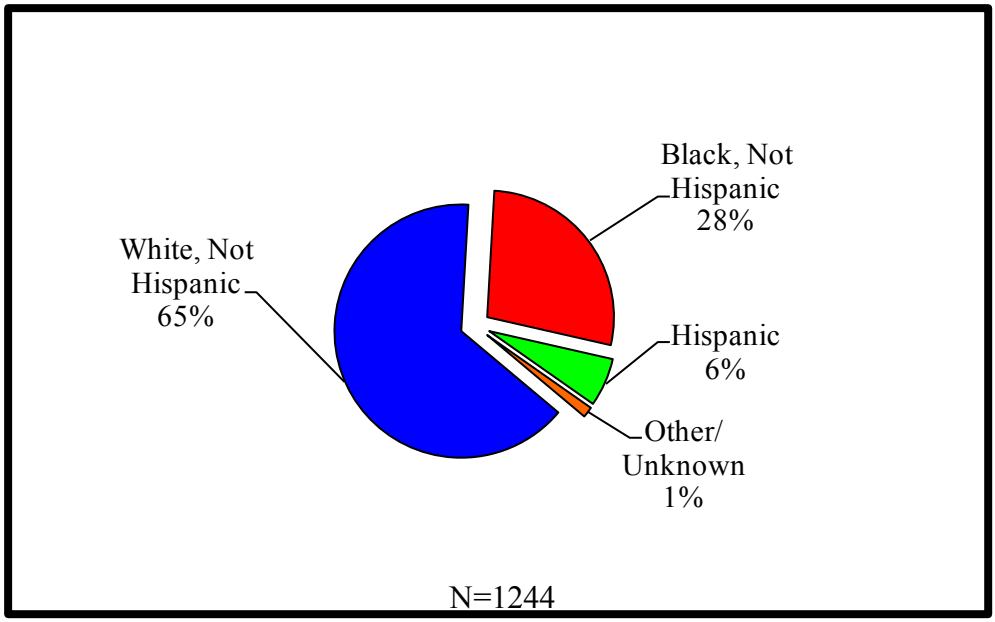
As of June 30, 2010, there were 1,244 persons actively enrolled in the Kentucky AIDS Drug Assistance Program (KADAP). The figures that follow examine the various distributions of the population served.

Figure 2.1. Persons Actively Enrolled in Kentucky AIDS Drug Assistance Program by Sex, June 30, 2010



There are approximately 5 times more males in Kentucky enrolled in KADAP than females (Figure 2.1). This mirrors the epidemic in Kentucky, since 82% of living HIV cases through June 30, 2010 were among males. Other sex includes persons that do not identify as male or female, e.g. transgendered.

Figure 2.2. Persons Actively Enrolled in Kentucky AIDS Drug Assistance Program by Race, June 30, 2010



Data by race alone (Table 2.2) show that white non-Hispanics make up the largest percentage of KADAP enrollees, which coincides with the racial/ethnic distribution of persons living with HIV disease and with the general population of Kentucky. Black non-Hispanics make up the second largest percentage of enrollees (28%). Hispanics of all races account for 6% of the total, and there are 1% of enrollees who are of unknown or other races (including Native Hawaiian or Pacific Islander and Asian).

Figure 2.3. Persons Actively Enrolled in Kentucky AIDS Drug Assistance Program by Sex and Race, June 30, 2010

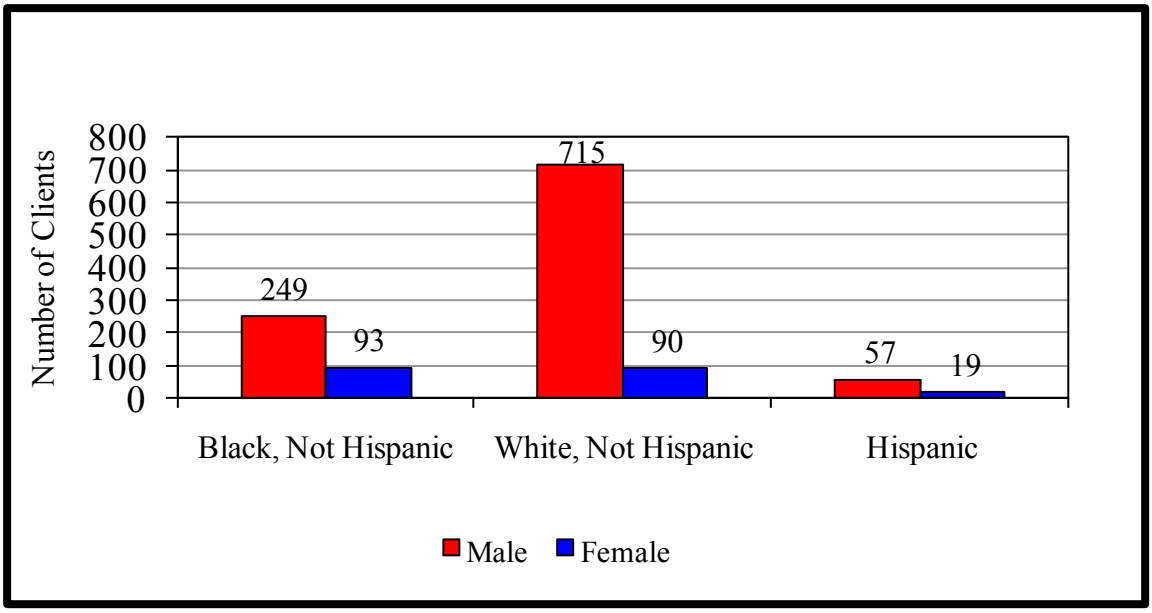
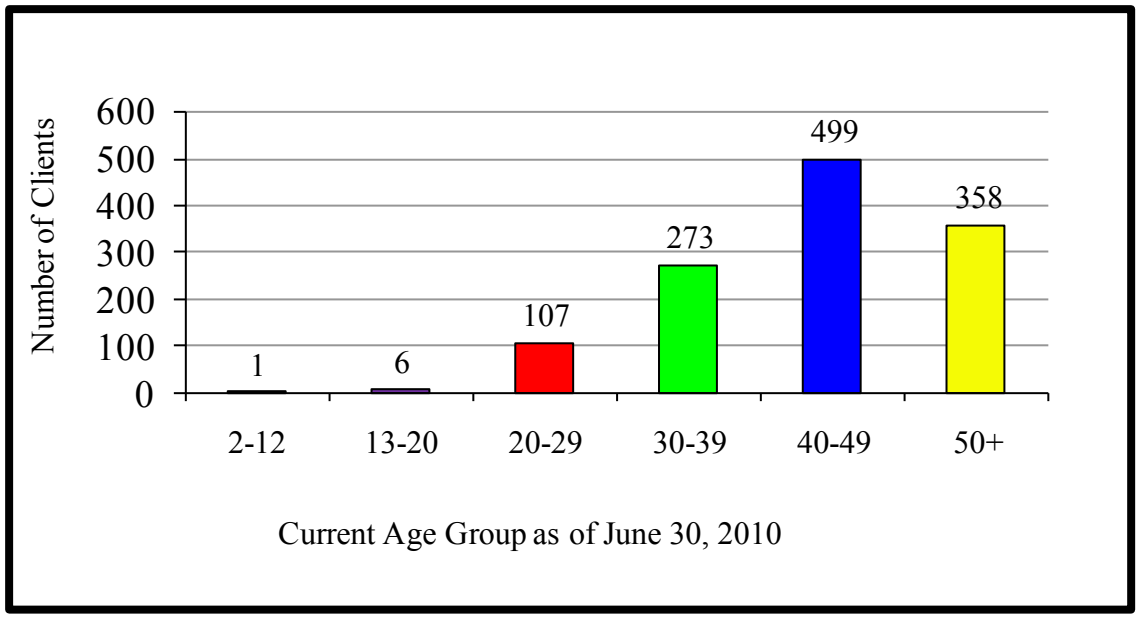


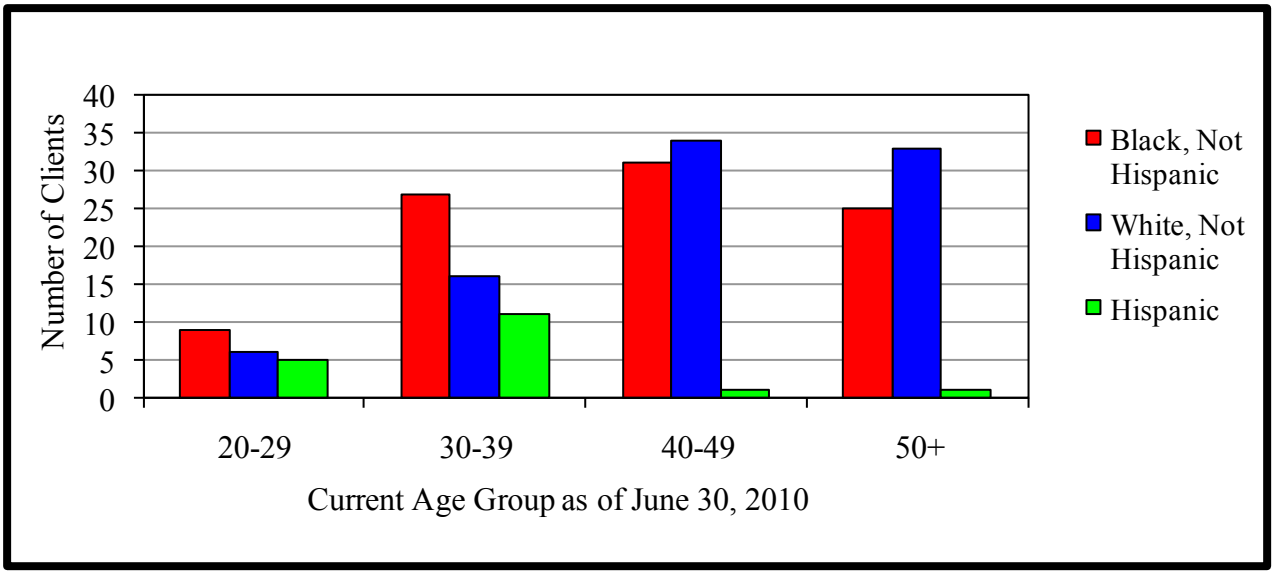
Figure 2.3 demonstrates that most of the program's enrollees are white non-Hispanic males. The number is nearly three times the number of black, non Hispanic males enrolled and 12.5 times the number of Hispanic males enrolled. Women are distributed almost evenly among white non-Hispanics and black non-Hispanics. Hispanic males and females are the least represented in the program, which is consistent with the demographics of persons living with HIV disease in Kentucky.

Figure 2.4. Persons Actively Enrolled in Kentucky AIDS Drug Assistance Program by Current Age, June 30 2010



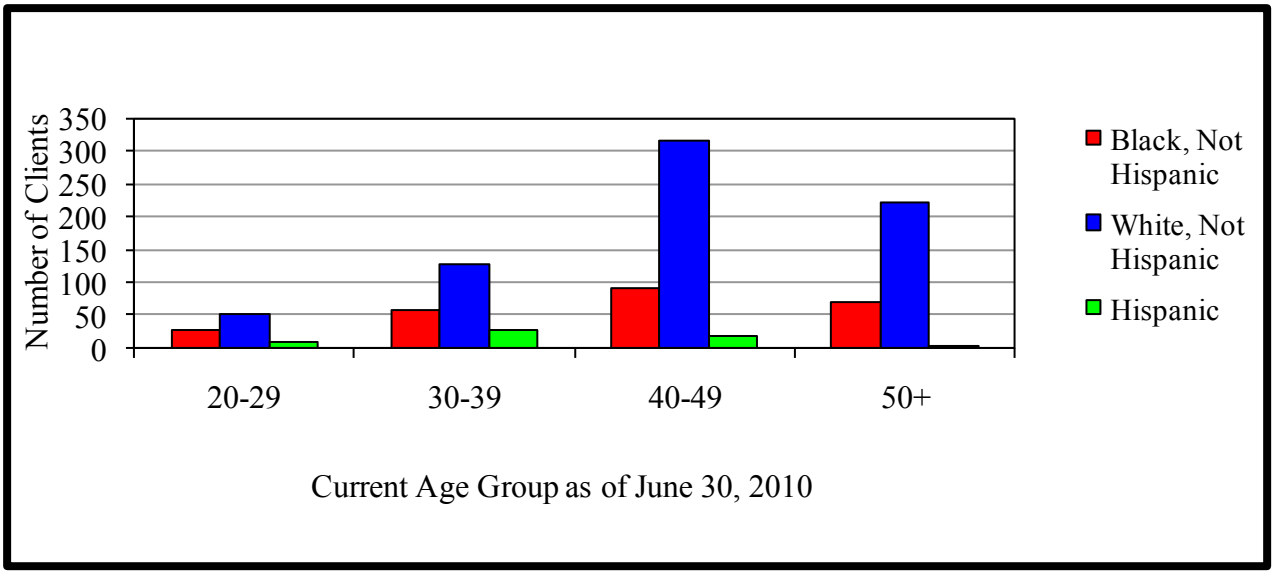
The largest number of enrollees are in the 40-49 year age bracket, immediately followed by the 50+ years and 30-39 year age groups respectively (Figure 2.4). The highest estimated percentages of adult/adolescents living with HIV infections diagnosed in Kentucky are aged 25-44 years and 45-64 years.

Figure 2.5. Females Actively Enrolled in the Kentucky AIDS Drug Assistance Program by Race and Current Age as of June 30, 2010



In terms of distribution of female KADAP clients by race and current age (Figure 2.5), black non-Hispanic women lead utilization in the 20-29 year and 30-39 year age brackets. However in the 40-49 year and 50+ year brackets, more white non-Hispanic women utilized the program. Enrollment among Hispanic women peaked among 30-39 year olds. Data for persons aged less than 20 years are not shown due to small numbers.

Figure 2.6. Males Actively Enrolled in the Kentucky AIDS Drug Assistance Program by Race and Current Age as of June 30, 2010



KADAP utilization among males is highest among white non-Hispanic males who have the largest number of enrollees in each age category presented. Black non-Hispanic males are second in terms of KADAP utilization and Hispanic males are a distant third. KADAP utilization among males peaks in the 40-49 year age group with 426 enrollees. The 50+ year category is second with 296 enrollees (Figure 2.6). Data for persons aged less than 20 years are not shown due to small numbers.

Kentucky AIDS Drug Assistance Program clients by poverty levels and insurance status

The average monthly income for clients enrolled in KADAP in 2010 was $2,096.95. All KADAP participants were at or below 300% of the Federal Poverty Level as per the program requirement. In 2011, the FPL was at $10,890 for one person. Those whose incomes are at or below 100% FPL rely on KADAP to cover all prescription costs. To help contain costs, they are also enrolled in the Kentucky Prescription Drug Assistance Program (KPAP). KPAP helps the public access prescription drug programs offered by drug manufacturers, discount drug programs and discount pharmacy programs. This program helps the client access prescription drug programs offered by the drug manufacturers who offer free or reduced cost medicines.

Of the 1,244 clients on KADAP, only 602 had insurance of any kind. Between 80%-90% of KADAP clients are at or below 200% FPL (making $21,780 annually or less per one person household). Kentucky has 796,208 persons who live in poverty (approximately 18% of total population)[6,7].

KADAP Waiting List[8]

In 2009, need exceeded resources and a KADAP waiting list was implemented. There had been considerable reductions in federal and state funding. In the Commonwealth, there has been no funding for the program at the state level since FY 2007. This was compounded by enrollment increasing from an average of 11 persons monthly in 2008 to 59 enrollees a month in 2009, when the waiting list was implemented. Enrollment has increased due to increasing dependency on safety-net programs with the economic downturn. There has been an emphasis on expanded testing efforts, but with it comes increased numbers of identified HIV infected persons. Those already infected are now living longer with access to care and medication. Drug costs are increasing as newer and more effective antiretroviral classes are made available.

The factors that caused this increase in demand for KADAP services were several. The most notable are the expensive Medicare part D prescription plans, high Federal Poverty Levels, and high numbers of uninsured persons in Kentucky. KADAP serves approximately 400 clients enrolled in Medicare Part D prescription coverage (approximately 1/3 of all active enrollees).

As of September 2010, Kentucky was able to eliminate its waiting list for the program and at the time of this publication, there is still no waiting list. Some cost containment strategies were implemented to enable this to happen. Clients who enroll in KADAP must now be screened for Medicaid, Medicare or private/employer insurance. All who may have access to Veteran's Administration (VA) benefits are strongly encouraged to utilize those benefits. Those who are on Medicare and are eligible for Part D must enroll in a plan. As such, KADAP is a safety-net program and is a payer of last resort.

Summary

Care coordination in Kentucky encompasses case management, entitlement benefits, medical care, prevention counseling, housing, transportation, legal services, and nutrition services. Clients are required to maintain a care coordinator and follow all guidelines in order to be eligible for any assistance programs such as KADAP and KHICP throughout six Kentucky regions.

KADAP is multifaceted in that it is responsible for: managing all protocols; contracts, payments, negotiations with pharmaceutical companies; legislative inquiries; federal reports; programmatic decisions; database management; mailings; KADAP formulary committee and client files. The largest age group for active enrollment in KADAP is 40-49 years. For males the clientele is overwhelmingly white, non-Hispanics. Women clients have a different distribution in that black, non Hispanic women in age categories 20-29 years and 30-39 years predominate. White, non-Hispanic women, however, overtake black, non-Hispanic women beginning in the 40 -49 year age bracket.

Demographics of clientele enrollment in KADAP mirror demographics of the HIV epidemic in the state of Kentucky as a whole. The majority of enrollees are male (84%) and white non-Hispanic (64%). Among both males and females, the largest percentages of enrollees were aged 40-49 years, whereas among Hispanic males and females, the largest percentages were aged 30-39 years. Racial disparities also exist, with a slightly higher number of black non-Hispanic female enrollees compared to white non-Hispanic females.

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Question 5 What are the numbers and characteristics of persons who know they are HIV-positive, but who are not receiving primary medical care?

Background:
The calculation of the number of persons with unmet need has a legislative basis. The Care Act amendments of 2000 required the Secretary of Health and Human Services (HHS) to develop epidemiologic measures "for establishing the number of individuals living with HIV disease who are not receiving HIV-related health services" and prepare state and national estimates of unmet need as input to Congress.

Consequently, Part A and B grantees of the Ryan White Care Act are required to assess service needs and gaps among persons living with HIV "with particular attention to individuals with HIV disease who know their HIV status and are not receiving HIV-related services" and "disparities in access and services among affected subpopulations and historically underserved communities".

Data Sources and Estimation Methods Used in Kentucky:

The following methodology was used to estimate unmet need in 2009 for HIV-related primary care for persons living in Kentucky at time of HIV diagnosis.

First: Definition of Care;
"Care" was defined as having a laboratory result within the 12 month reporting period (January 1, 2009, through December 31, 2009), assessed at 13 months after the reporting period. Test results may include a Western blot, P24 antigen or HIV culture, viral load assay, CD4+ assay among persons in the HIV registry (eHARS). Use of antiretroviral therapy (HAART) was not included in the definition of care because HIV Surveillance does not collect this information routinely. However, it is believed that majority of patients on HAART regularly have CD4 and/or viral load tests to measure efficacy. Therefore, the number of patients in care who may be missed using laboratory data alone is expected to be minimal.

Second: Three databases were selected;

The enhanced HIV/AIDS Reporting System (eHARS). eHARS is the surveillance database that contains information on reported HIV infections and AIDS cases in Kentucky. Cases entered in eHARS were either diagnosed in the Commonwealth of Kentucky or have resided in the state since being diagnosed. eHARS contains population-based data needed to determine the population of HIV-infected persons and their demographic distribution. Mandatory laboratory reporting in Kentucky exists for all HIV positive tests including Elisa, Western blot, PCR, HIV antigen or HIV culture, absolute CD4+ cells and CD4%, HIV detectable viral load assays, positive serologic test results for HIV infection and a diagnosis of AIDS that meets the definition established within CDC guidelines. These laboratory results are imported into eHARS routinely and maintained by the HIV Surveillance program.

CAREWare database. CAREWare is free, scalable software used to manage and monitor HIV clinical and supportive care within the Ryan White part B program. It houses data from the Kentucky HIV/AIDS Care Coordination Program (KHCCP) that tracks demographics and client utilization of the core and supportive services through the Ryan White part B program as well as Kentucky AIDS Drug Assistance Program (KADAP) data.

The Medicaid database. Medicaid is a state administered program available only to those low-income individuals and families who fit into an eligibility group that is defined by federal and state law. Certain requirements that must be met include age, pregnancy, disability, blindness, personal income and re sources (like bank accounts, real property, or other items that can be sold for cash), and U.S. citizenship or a lawful immigrant status. Additional information available at: http://www.cms.hhs.gov/MedicaidGenInfo/

Third: Methodology and Population Estimates;

1. Laboratory data in eHARS were used to determine whether or not each person diagnosed with HIV disease as of December 31, 2009, had a Western blot, P24 antigen or HIV culture, viral load assay, or CD4+ assay collected in the calendar year 2009. These eHARS data were then analyzed for cases living by December 31, 2009, with residence at time of HIV infection in Kentucky. Kentucky cases in eHARS *without* a laboratory test done in 2009 were then matched with data from the Ryan White Part B Program, and Medicaid data. Persons diagnosed after December 31, 2009 were excluded from analysis. Data were assessed 13 months after the reporting period to account for reporting delays among persons who were diagnosed closer to the end of 2009 and had not yet established care.

2. Medicaid data were used to further determine Kentucky cases in eHARS who had no record of laboratory tests collected in 2009, but received medical attention through Medicaid services and were classified as having any one of the following International Classifications of Disease (ICD-9CM codes- 2008 book) for HIV infection: 042- HIV disease, V08- asymptomatic HIV infection status, V01.79- exposure to HIV virus and 795.71- non specific serologic evidence of HIV. Persons with lab procedures related to HIV disease were also considered as having met need, including Current Procedural Terminolgy (CPT) codes: 86701 HIV-1, 86702 HIV-2, 86703 HIV-1 and HIV-2 single assay, 87390 HIV-1 antigen, 87391 HIV-2 antigen, and 86689 Western Blot.

3. Ryan White Part B Care Coordinator Program data were used for the final analysis to determine Kentucky cases in eHARS who had no record of laboratory tests collected in 2009 and had not received care through the Medicaid Program, but who received HIV related primary care through the Part B Program. All eligible cases with no laboratory tests in eHARS and absent from Medicaid data were matched against CAREWare to confirm whether or not they had received care in the mentioned time period.

Population Estimate: Unmet need was calculated by determining the number of living persons in eHARS who were diagnosed as of December 31, 2009, lived in Kentucky at the time of HIV diagnosis, did not have a laboratory result collected in 2009 reported to the surveillance office by January 21, 2011, and were not enrolled in Medicaid services in 2009 or in the Kentucky HIV/AIDS Care Coordination Program (KHCCP).

Limitations:

While the combination of surveillance, Ryan White Part B and Medicaid data offers a suitable way to measure unmet need, there are some limitations to the data that should be noted. The estimate does not account for in and out migration because the surveillance program isn't always notified when people move out of the state. Reports on people who move into Kentucky are mainly received if care is established, therefore presenting a limitation in the ability to identify Kentucky cases being served in other states and out of state cases served in Kentucky. Consequently, since in and out migrations were unaccounted for, this may have slightly adjusted the unmet need estimate due to the mobility of persons receiving care in and out of Kentucky. Similarly, if a person died and the surveillance program was not notified, this person is assumed to be out of care, although this effect should be small due to annual death ascertainment activities carried out by the program.

Additionally, Kentucky is bordered by seven states and it is common for treatment to be sought at the nearest medical facility, which may be in a neighboring state. Unless the tests are done by a reference laboratory, there is no way to guarantee that all laboratory tests being performed in private institutions are being reported to Kentucky surveillance. However, the surveillance program participates in inter-state de-duplication with other surveillance programs nationwide, with guidance from the CDC, therefore some information on migrant cases is obtained that way.

Lastly, although the Framework requests the number of persons who are aware of their status, HIV/AIDS surveillance has not captured HIV status awareness routinely. Thus, the estimates in the Framework include persons who meet the described criteria above, whether aware of their status or not. The numbers in the framework are different than the data presented in the epidemiologic section of this report due to different HIV/AIDS diagnosis date restrictions (only persons living and diagnosed with HIV disease by December 31, 2009).

Table 2.4. HRSA Framework for Unmet Need: An Estimate of Kentuckians Living with an HIV Infection with Unmet Need in 2009, reported as of January 25, 2011*

Population Sizes		Number		Data Source(s)
Row A	PLWA[1]	2,589		eHARS
Row B	PLWH[2], non-AIDS	2,178		eHARS
Row C	Total PLWH/A[3]	4,767		eHARS
	Care Patterns	**Value**		**Data Source(s)**
Row D	Number of PLWA who received HIV primary medical care during the 12-month period January 1, 2009-December 31, 2009	1,919		eHARS database, Ryan White Part B program and Medicaid data. Number of persons living with AIDS who had a Western blot, P24 antigen or HIV culture, viral load assay, CD4+ assay in eHARS, care through the Ryan White Part B Program, or care through Medicaid in the 12 month period.
Row E	Number of PLWH/non-AIDS who received the specified HIV primary medical care during the 12-month period January 1, 2009 - December 31, 2009	1,275		eHARS database, Ryan White Part B program and Medicaid data. Number of persons living with HIV/non AIDS who had a Western blot, P24 antigen or HIV culture, viral load assay, CD4+ assay in eHARS, care through the Ryan White Part B Program, or care through Medicaid in the 12 month period.
Row F	Total number of HIV+ who received the specified HIV primary medical care during the 12-month period January 1, 2009 - December 31, 2009	3,194		eHARS database, Ryan White Part B program and Medicaid data. Number of persons living with HIV disease who had a Western blot, P24 antigen or HIV culture, viral load assay, CD4+ assay in eHARS, care through the Ryan White Part B Program, or care through Medicaid in the 12 month period.
	Calculated Results	**Number**	**Percentage**	**Calculation**
Row G	Number of PLWA who did *not* receive the specified HIV primary medical care	670	26%	Number = A - D Percentage= G/A
Row H	Number of PLWH/non-AIDS who did *not* receive the specified HIV primary medical care	903	41%	Number: B - E Percentage: H/B
Row I	Total HIV+ *not* receiving the specified HIV primary medical care (quantified estimate of unmet need)	1,573	33%	Number: G + H Percentage: I/C

[1] Persons living with AIDS, who had a Kentucky residence at time of HIV diagnosis
[2] Persons living with HIV- not AIDS, who had a Kentucky residence at time of HIV diagnosis
[3] Persons living with HIV and/or AIDS, who had a Kentucky residence at time of HIV diagnosis
*Data are current as of Jan 25, 2011, therefore not similar to data presented in the epidemiologic section

The Unmet Need Framework (Table 2.4) shows that for the time period January 1, 2009 through December 31, 2009 there were an estimated 2,178 Kentuckians reported living with HIV non-AIDS (PLWH) and 2,589 living with AIDS (PLWA) for a total of 4,767 persons living with HIV/AIDS (PLWHA). There were 3,194 (67%) persons estimated to have been in care during calendar year 2009. Of these, 1,275 (40%) were living with HIV (non-AIDS) and 1,919 (60%) were living with AIDS. There were 1,573 (33%) persons estimated to be out of care. Of these, 903 (57%) were living with HIV (non-AIDS) and 670 (43%) were living with AIDS.

Table 2.5. An Estimate of Persons Living with HIV/AIDS with Unmet Need in Kentucky by Demographics, 2009

	Overall	Percent (%) in Care (*Met Need*)	Percent (%) *not* in Care (*Unmet Need*)
	(N=4,767)	(N=3,194)	(N=1,573)
Persons living with HIV	2,178	59%	41%
Persons living with AIDS	2,589	74%	26%
Male	3,858	66%	34%
White (non- Hispanic)	2,469	70%	30%
Black (non- Hispanic)	1,177	58%	42%
Hispanic	173	53%	47%
Other†	39	59%	41%
Female	909	73%	27%
White (non- Hispanic)	407	74%	26%
Black (non- Hispanic)	437	73%	27%
Hispanic	45	67%	33%
Other†	20	75%	25%
Age at HIV Diagnosis			
≤13	46	83%	17%
13-19	212	65%	35%
20-29	1,481	62%	38%
30-39	1,675	67%	33%
40-49	1,018	73%	27%
50+	335	69%	31%
Current Age as of 1/25/2011			
≤13	16	81%	19%
13-24	192	67%	33%
25-44	2,043	68%	32%
45-64	2,384	66%	34%
65+	132	58%	42%
Risk			
MSM	2,507	70%	30%
MSM/IDU	224	63%	37%
IDU	452	65%	35%
Heterosexual	770	76%	24%
No Identified Risk (NIR)*	750	49%	51%
Perinatal Exposure, Mother with HIV	39	82%	18%
Other**	25	72%	28%
Region‡ (Care Coordinator Program)			
Lexington Region	1,065	75%	25%
Cumberland Valley Region	221	74%	26%
Purchase Region	282	72%	28%
Barren Region	431	72%	28%
Northern Kentucky Region	349	62%	38%
Louisville Region	2,415	62%	38%

Table 2.5 Notes:

†Other race includes: American Indian/Alaskan Native (non Hispanic), Asian/Native Hawaiian/Pacific Islander (non Hispanic) and persons of multiple races (non Hispanic)
‡Region represents residence at time of HIV diagnosis. Four cases missing residence at diagnosis information
*NIR includes persons whose mode of exposure is unknown, including pediatric cases whose birth mother's HIV status was unknown
**Other includes persons whose mode of exposure is hemophilia, transfusion/transplant
Percentages total 100% by row. Percentages may not total 100% or be consistent due to rounding
Data are current as of January 25, 2011, therefore not similar to data presented in the epidemiologic section of this report. These tables compare persons living with HIV and/or AIDS with met need to those with unmet need through eHARS Database, Ryan White Part B Program data and Medicaid data
For a list of care coordinator regions by county and ADD served, see appendix III

Table 2.5 Narrative:

Of the 4,767 Kentuckians living with HIV/AIDS at the end of 2009, 3,194 (67%) had at least one primary medical care visit (met need). Persons with AIDS (74%) were more likely to be in care than persons with HIV (59%).

Unmet need was higher among males (34%) compared to females (27%). Among males, unmet need was highest among minority groups. Almost half of Hispanic males (47%), and 42% of black males had unmet need, compared to 30% of white males with unmet need. Although females had lower percentages of unmet need, a similar racial/ethnic trend exists. Hispanic females had the highest percentage of unmet need (33%), followed by blacks at 27% and whites at 26%. Hispanics were less likely to be in care than whites or blacks in 2009.

By age, persons diagnosed in their 20s had the highest percentage of unmet need (38%), where as persons aged 65+ as of Jan 25, 2011 had the highest percentage of unmet need (42%). All age groups currently had an unmet need percentage above or close to the statewide percentage of 33%, except for those aged 12 or younger. Persons of other races had small numbers so percentages should be interpreted with caution.

By known risk category among adults/adolescents, MSM/IDU had the highest percentage of unmet need (37%), while persons with heterosexual contact had the lowest percentage of unmet need (24%). Over half of persons with No Identified Risk (NIR) had unmet need.

The Northern Kentucky and Louisville regions had the highest percentage of clients with unmet need (38% each), which were both higher than the statewide percentage of 33%. The Lexington region had the lowest percentage of its clients having unmet need in 2009 (25%).

Table 2.6. An Estimate of Kentuckians Living with HIV Disease with Unmet Need by Demographics, 2009

	Met Need		Unmet Need		Total	
Sex	N	%(1)	N	%(1)	N	%(1)
Male	2529	79%	1329	84%	3858	81%
Female	665	21%	244	16%	909	19%
Total	3194	100%	1573	100%	4767	100%
Age at Diagnosis						
<13	38	1%	8	1%	46	1%
13-24	536	17%	328	21%	864	18%
25-44	2091	65%	1034	66%	3125	66%
45-64	517	16%	198	13%	715	15%
65+	12	<1%	5	<1%	17	<1%
Total	3194	100%	1573	100%	4767	100%
Current Age as of 1/25/2011						
<13	13	<1%	3	<1%	16	<1%
13-24	129	4%	63	4%	192	4%
25-44	1397	44%	646	41%	2043	43%
45-64	1579	49%	805	51%	2384	50%
65+	76	2%	56	4%	132	3%
Total	3194	100%	1573	100%	4767	100%
Race/Ethnicity-Females						
White, Not Hispanic	300	45%	107	44%	407	45%
Black, Not Hispanic	320	48%	117	48%	437	48%
Hispanic	30	5%	15	6%	45	5%
Other†	15	2%	5	2%	20	2%
Total	665	100%	244	100%	909	100%
Race/Ethnicity-Males						
White, Not Hispanic	1736	69%	733	55%	2469	64%
Black, Not Hispanic	678	27%	499	38%	1177	31%
Hispanic	92	4%	81	6%	173	4%
Other†	23	1%	16	1%	39	1%
Total	2529	100%	1329	100%	3858	100%
Transmission Category						
MSM(2)	1759	55%	748	48%	2507	53%
IDU(3)	295	9%	157	10%	452	9%
MSM and IDU	141	4%	83	5%	224	5%
Heterosexual(4)	584	18%	186	12%	770	16%
Perinatal Exposure, Mother with HIV	32	1%	7	<1%	39	1%
Other**	17	1%	6	<1%	23	0%
Undetermined*	366	11%	386	25%	752	16%
TOTAL	**3194**	**100%**	**1573**	**100%**	**4767**	**100%**

Table continued on next page

Table 2.6. An Estimate of Kentuckians Living with HIV Disease with Unmet Need by Demographics, 2009 (continued)

Region (Care Coordinator Program)‡	Met Need		Unmet Need		Total	
	N	%(1)	N	%(1)	N	%(1)
Lexington Region	800	25%	265	17%	1065	22%
Cumberland Valley Region	163	5%	58	4%	221	5%
Purchase Region	202	6%	80	5%	282	6%
Barren Region	310	10%	121	8%	431	9%
Northern Kentucky Region	216	7%	133	8%	349	7%
Louisville Region	1501	47%	914	58%	2415	51%
TOTAL	**3192‡**	**100%**	**1571‡**	**100%**	**4763**	**100%**

†Other race includes: American Indian/Alaskan Native (non Hispanic), Asian/Native Hawaiian/Pacific Islander (non Hispanic) and persons of multiple races (non Hispanic)

‡Region represents residence at time of HIV diagnosis. Four cases missing residence at diagnosis information

*Undermined includes persons whose mode of exposure is unknown, including pediatric cases whose birth mother's HIV status was unknown

**Other includes persons whose mode of exposure is hemophilia, transfusion/transplant

[1]Percentages total 100% by column. Percentages may not total 100% or be consistent due to rounding

Data are current as of January 25, 2011, therefore not similar to data presented in the epidemiologic section of this report. These tables compare persons living with HIV and/or AIDS with met need to those with unmet need through eHARS Database, Ryan White Part B Program data and Medicaid data

For a list of care coordinator regions by county and ADD served, see appendix II

Table 2.6 Narrative:

Of the 4,767 Kentuckians living with HIV/AIDS at the end of 2009, 3,194 (67%) had at least one primary medical care visit (*had met need*) and 1573 (33%) were out of care (*had unmet need*).

Of the 1573 persons living with HIV disease with unmet need, 1,329 (84%) were male and 244 (16%) were female.

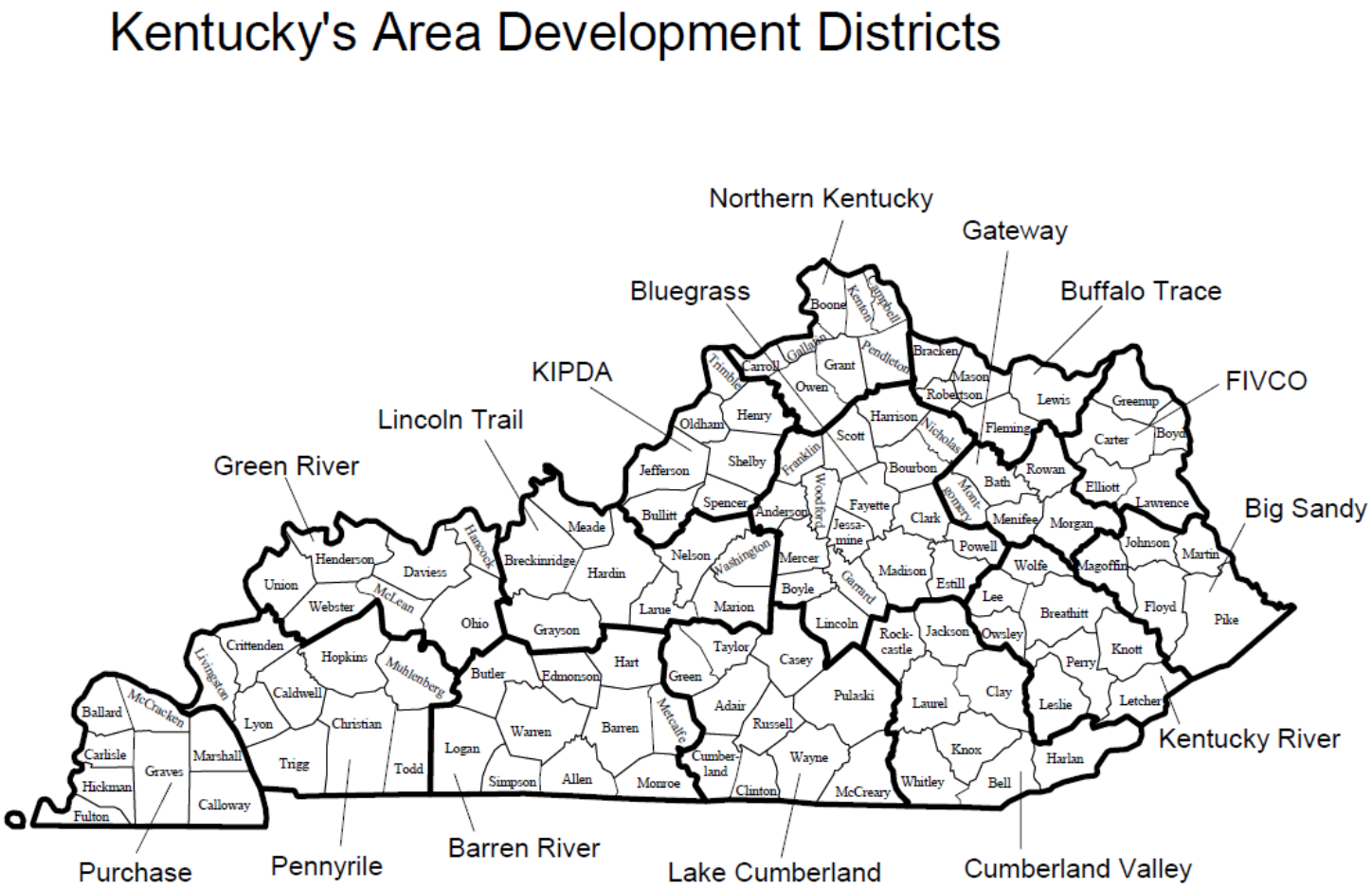
In terms of age at time of HIV diagnosis, the majority of cases with unmet need were aged 25-44 years (1034, 66%), followed by those aged 13-24 years (328, 21%). Persons aged 45-64 years at time of HIV diagnosis accounted for 13% of unmet need. By current age as of January 25, 2011, over half of Kentuckians with unmet need were aged 45-64 years (51%), and those aged 25-44 years accounted for 41% of unmet need. Persons aged 13-24 years and 65+ years accounted for 4% each of unmet need, and pediatric cases for less than 1%.

Among females, unmet need was highest among black females (48%) followed by white females (44%). Hispanic females accounted for 6% of persons with unmet need. Conversely, among males, white males accounted for the majority of persons with unmet need (55%), compared to 38% black males. Hispanic males with unmet need were comparable to Hispanic females with unmet need (6%).

By transmission category, 48% of cases with unmet need identified their mode of transmission as MSM, followed by 12% identifying heterosexual contact and 10% identifying IDU as their mode of transmission. A quarter of persons with unmet need had no risk factor identified.

Lastly, unmet need by geographic location was analyzed by care coordinator region of residence at time of HIV diagnosis. The geographic distribution of the 1,573 persons with unmet need is similar to that of persons living with HIV in the state, with the majority living in the Louisville region at time of HIV diagnosis (58%), followed by residents of the Lexington region (17%). The proportions of persons with unmet need within each individual region provide better insight on whether or not HIV care needs were met (see table 2.5).

Appendix I: Kentucky's 15 Area Development Districts



Appendix II: Kentucky's Statistical Area County Groupings

Metropolitan Counties:

BARREN CO
BOONE CO
BOURBON CO
BOYD CO
BRACKEN CO
BULLITT CO
CAMPBELL CO
CHRISTIAN CO
CLARK CO
DAVIESS CO
EDMONSON CO
FAYETTE CO
GALLATIN CO
GRANT CO
GREENUP CO
HANCOCK CO
HARDIN CO
HENDERSON CO
HENRY CO
JEFFERSON CO
JESSAMINE CO
KENTON CO
LARUE CO
MCLEAN CO
MEADE CO
METCALFE CO
NELSON CO
OLDHAM CO
PENDLETON CO
SCOTT CO
SHELBY CO
SPENCER CO
TRIGG CO
TRIMBLE CO
WARREN CO
WEBSTER CO
WOODFORD CO

Micropolitan Counties

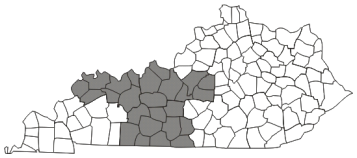
ANDERSON CO
BALLARD CO
BATH CO
BELL CO
BOYLE CO
CALLOWAY CO
FRANKLIN CO
FULTON CO
GRAVES CO
HOPKINS CO
LAUREL CO
LEWIS CO
LINCOLN CO
LIVINGSTON CO
MASON CO
MCCRACKEN CO
MENIFEE CO
MONTGOMERY CO
MUHLENBERG CO
PULASKI CO
ROCKCASTLE CO
TAYLOR CO
WHITLEY CO

Nonmetropolitan Counties:

ADAIR CO
ALLEN CO
BREATHITT CO
BRECKINRIDGE CO
BUTLER CO
CALDWELL CO
CARLISLE CO
CARROLL CO
CARTER CO
CASEY CO
CLAY CO
CLINTON CO
CRITTENDEN CO
CUMBERLAND CO
ELLIOTT CO
ESTILL CO
FLEMING CO
FLOYD CO
GARRARD CO
GRAYSON CO
GREEN CO
HARLAN CO
HARRISON CO
HART CO
HICKMAN CO
JACKSON CO
JOHNSON CO
KNOTT CO
KNOX CO
LAWRENCE CO
LEE CO
LESLIE CO
LETCHER CO
LOGAN CO
LYON CO
MADISON CO
MAGOFFIN CO
MARION CO
MARSHALL CO
MARTIN CO
MCCREARY CO
MERCER CO
MONROE CO
MORGAN CO
NICHOLAS CO
OHIO CO
OWEN CO
OWSLEY CO
PERRY CO
PIKE CO
POWELL CO
ROBERTSON CO
ROWAN CO
RUSSELL CO
SIMPSON CO
TODD CO
UNION CO
WASHINGTON CO
WAYNE CO
WOLFE CO

Appendix III: Kentucky's HIV/AIDS Care Coordinator Program by Region

Barren Region

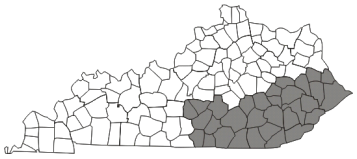


Matthew 25
452 Old Corydon Road
Henderson, KY 42420
(270) 826-0200
(877) 428-1231
fax: (270) 826-0212

Counties Covered:

Allen	Grayson	Logan	Nelson
Barren	Hancock	McLean	Ohio
Breckinridge	Hardin	Marion	Simpson
Butler	Hart	Meade	Union
Daviess	Henderson	Metcalfe	Warren
Edmonson	Larue	Monroe	Washington
			Webster

Cumberland Valley Region

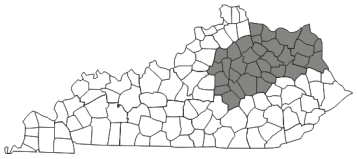


Cumberland Valley Dist. HD
PO Box 158
Manchester Square Shopping Ctr
Manchester, KY 40962
(606) 599-0112
(888) 425-7282 (for client use only)
fax: (606) 596-0266
Some Cumberland Valley clients are covered by Lexington Region

Counties Covered:

Adair	Green	Leslie	Pulaski
Bell	Harlan	Letcher	Rockcastle
Breathitt	Jackson	Magoffin	Russell
Casey	Johnson	Martin	Taylor
Clay	Knott	McCreary	Wayne
Clinton	Knox	Owsley	Whitley
Cumberland	Laurel	Perry	Wolfe
Floyd	Lee	Pike	

Lexington Region

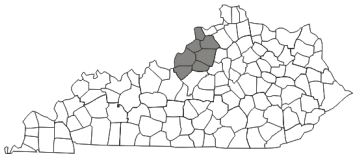


Bluegrass Care Clinic, UK
740 S. Limestone, 5D Room L528
UK Medical Center
Lexington, KY 40536
(859) 323-5544
fax: (859) 323-1694

Counties Covered:

Anderson	Elliott	Jessamine	Montgomery
Bath	Estill	Lawrence	Morgan
Bourbon	Fayette	Lewis	Nicholas
Boyd	Fleming	Lincoln	Powell
Boyle	Franklin	Madison	Robertson
Bracken	Garrard	Mason	Rowan
Carter	Greenup	Menifee	Scott
Clark	Harrison	Mercer	Woodford

Louisville Region

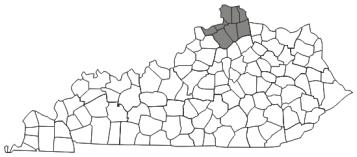


Volunteers of America
850 Barret Ave., Suite 302
Louisville, KY 40204
(502) 574-0161
fax: (502) 574-8484

Counties Covered:

Bullitt	Jefferson	Shelby	Trimble
Henry	Oldham	Spencer	

Northern Kentucky Region

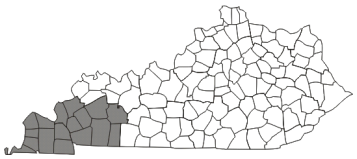


Northern Kentucky District Health Dept
2388 Grandview Drive
Ft. Mitchell, KY 41017
(859) 341-4264
fax: (859) 578-3689

Counties Covered:

Boone	Carroll	Grant	Owen
Campbell	Gallatin	Kenton	Pendleton

Purchase Region



Heartland Cares, Inc.
619 N. 30th Street
Paducah, KY 42001
(270) 444-8183
(877) 444-8183
fax: (270) 444-8147

Counties Covered:

Ballard	Christian	Hickman	McCracken
Caldwell	Crittenden	Hopkins	Marshall
Calloway	Fulton	Livingston	Muhlenberg
Carlisle	Graves	Lyon	Todd
			Trigg