

Kentucky State Epidemiological Outcomes Workgroup

# Prescription Drug Trends in Kentucky Short Report

December 2011



*Prepared for:*

Division of Behavioral Health  
Department for Behavioral Health,  
Developmental and Intellectual Disabilities  
Kentucky Cabinet for Health and Family Services  
Frankfort, Kentucky

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Rockville, Maryland

*Prepared by:*

REACH of Louisville, Inc.  
Louisville, Kentucky





*Prescription Drug Trends in Kentucky, Short Report, December 2011* is a collaborative product of the Kentucky State Epidemiological Outcomes Workgroup (SEOW), the Kentucky Office of Drug Control Policy (ODCP), and the Division of Behavioral Health within the Kentucky Department for Behavioral Health, Developmental and Intellectual Disabilities (DBHDID).

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# 1 Acronyms and Glossary

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## Acronyms

**CDC**—Centers for Disease Control and Prevention

**DBHDID**—Department for Behavioral Health, Developmental and Intellectual Disabilities

**KASPER**—Kentucky All Schedule Electronic Reporting System

**NSDUH**—National Survey on Drug Use and Health

**ODCP**—Office of Drug Control Policy

**SEOW**—State Epidemiologic Outcomes Workgroup

**TEDS-A**—Treatment Episode Dataset - Admissions

**US**—United States

**WONDER**—Wide-ranging Online Data for Epidemiologic Research

## Glossary

**Alprazolam**—A short-acting tranquilizer (anxiolytic) of the benzodiazepine drug class available as an orally active tablet typically under the trade name Xanax.

**Diazepam**—A long-acting tranquilizer of the benzodiazepine drug class available as an orally active tablet typically under the trade name Valium.

**Hydrocodone**—A semi-synthetic opioid derived from codeine and thebaine available as an orally active analgesic (pain reliever) and antitussive (cough suppressant). It can come in tablet, capsule, and syrup form under a number of trademarks, including Vicodin, Lorcet, Lortab, and Panacet.

**Mortality rate**—A measure of the number of deaths in a population, scaled to the size of the population, during a specified period of time. It can be age-adjusted to allow for the comparison of populations with different age structures.

**Opioid analgesic**—Any psychoactive prescription drug that binds to opioid receptors in the brain to decrease the perception of pain, decrease the reaction to pain, and increase pain tolerance.

**Oxycodone**—A semi-synthetic opioid derived from thebaine available as an orally active or intravenous analgesic. It typically comes in tablet form under a number of trademarks, including Endocet, OxyContin, Percodan, Percocet, and Roxicet.

**Percentage change**—The measure of change from one number to another to infer increases or decreases in trends. It may be calculated as the difference between two numbers divided by the first number, then multiplying this figure by 100 to derive a percent. The average annual change may be calculated by dividing the percentage change by the total number of specified years.

**Percentage difference**—The measure of difference between two numbers when there is no direction of change. It may be calculated as the absolute value of the difference in values divided by the average of the two numbers, then multiplying this figure by 100 to derive a percent.

**Prescription rate**—A measure of the number of prescriptions in a population, scaled to the size of the population, during a specific period of time.

**Prevalence rate**—The number of cases who engage in a behavior at a specified time divided by the total number of individuals in the population.

# 2 Executive Summary

## Report Development

*Prescription Drug Trends in Kentucky, Short Report, December 2011* is a collaborative product of the Kentucky State Epidemiological Outcomes Workgroup (SEOW), the Kentucky Office of Drug Control Policy (ODCP), and the Division of Behavioral Health within the Kentucky Department for Behavioral Health, Developmental and Intellectual Disabilities (DBHDID). This report expands on prescription drug data included in the Kentucky State Profile originally developed to include mental and behavioral health indicators to substance abuse monitoring and surveillance efforts.

Based on comprehensive findings in the Kentucky State Profile, prescription drug abuse and mortality was identified as a top priority in the Commonwealth of Kentucky. This report summarizes the data from the State Profile related to this priority. Figures are used throughout the document to illustrate epidemiologic trends and geographic patterns pertaining to prescription drugs. Similarly, bullet points for each illustration are included to provide concise descriptions of the indicator.

A variety of data sources were utilized to describe epidemiologic trends and geographic patterns pertaining to prescription drugs. The types of data and the sources utilized are listed below:

- Demographic statistics used to calculate rates for prescriptions, treatment admissions, and mortality are from the United States (US) Census.
- Data regarding nonmedical use of opioid analgesics are from the 2008-2009 National Survey on Drug Use and Health (NSDUH).
- Prescription rates for hydrocodone, oxycodone, alprazolam, and diazepam are from the 2003-2010 Kentucky All Schedule Electronic Reporting (KASPER) system.

- Treatment admission data were extracted from the 1999-2008 Treatment Episode Dataset-Admissions.
- Mortality data from 1999 to 2007 were synthesized from the Centers for Disease Control and Prevention Wide-ranging Online Data for Epidemiologic Research (CDC WONDER).

Detailed information regarding each data source and its indicators may be found in the appendix.

## Major Findings

Opioid analgesics and tranquilizers possess significant addictive potential. Illicit use of these prescription drugs remains a multifaceted issue that leads to adverse consequences: namely drug dependence, treatment admissions, and mortality. The medical and psychosocial burden of illicit use of these drugs is particularly acute in Kentucky:

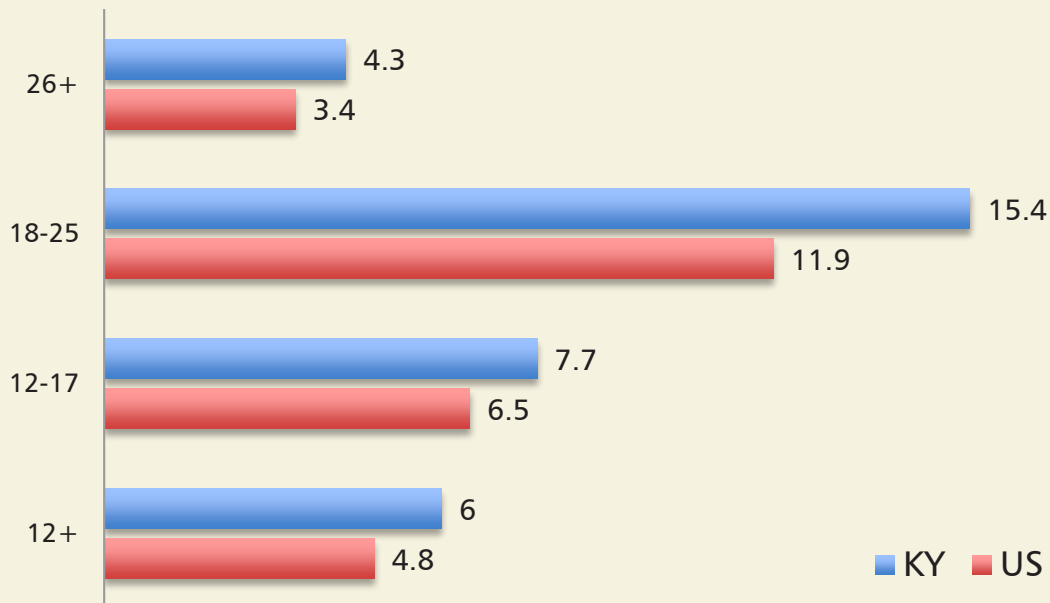
- Kentucky has higher rates of past-year illicit use of opioid analgesics than the US for all age groups. (Source: NSDUH 2008-2009)
- Past-year use was highest among 18-25 year olds, with approximately 15.4% reporting use compared to 11.9% nationally. The higher use among Kentuckians may be due to prescription practices that lead to increased drug availability and diversion. (Source: NSDUH 2008-2009)
- Prescription rates for hydrocodone and oxycodone increased 27% and 49%, respectively, from 2003 to 2010. (Source: KASPER)
- Although prescription rates for tranquilizers have remained relatively stagnant during this time period, opioid prescription rates continue to increase from 3.4% (hydrocodone) to 6.1% (oxycodone) every year. (Source: KASPER)

As evidenced below, these alarming consumption and prescription patterns lead to significant morbidity and mortality:

- From 1999 to 2008, treatment admissions with opioids listed as the primary substance rose from 1 per 10,000 to 10 per 10,000, representing an enormous 900% increase. (Source: TEDS-A)
- From 1999 to 2008, drug overdose mortality regardless of intent increased 260%, from 5 per 100,000 to 18 per 100,000 in Kentucky. This represents a 26% annual increase compared to 10% nationally, with the 2008 rate ranking as the sixth highest in the nation behind New Mexico, West Virginia, Nevada, Utah, and Alaska. (Source: CDC WONDER)
- Compared to other forms of mortality in Kentucky, drug overdose mortality surpassed suicide mortality in 2005 and approached motor vehicle mortality in 2008. (Source: CDC WONDER)

# 3 Illicit Consumption

Figure 1. **Prevalence of Past-Year Illicit Use of Opioid Analgesics by Age, 2008-2009**

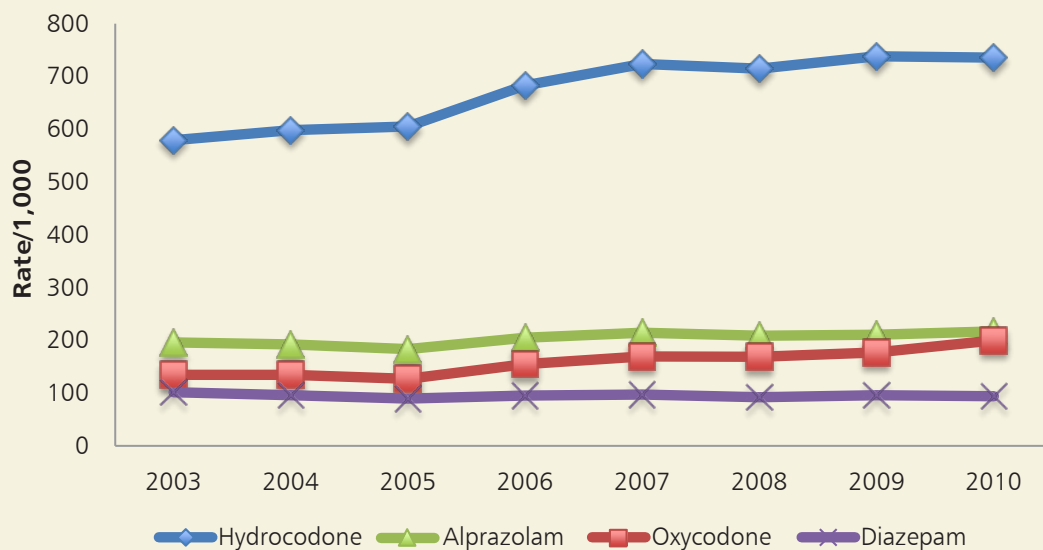


Data Source: National Survey on Drug Use and Health, <http://nsduhweb.rti.org/>

- ◆ **Kentucky has higher rates of illicit opioid use than the nation for all age groups.**
- ◆ **The highest use was among 18-25 year olds: the Kentucky rate (15.4%) was 26% higher than the national rate (11.9%).**
- ◆ **Among high school age youth (12-17), the Kentucky rate (7.7%) was 17% higher than the national rate (6.5%).**

## 4 Prescription Patterns

Figure 2. **Prescription Rates per 1,000 Population in Kentucky, 2003-2010**

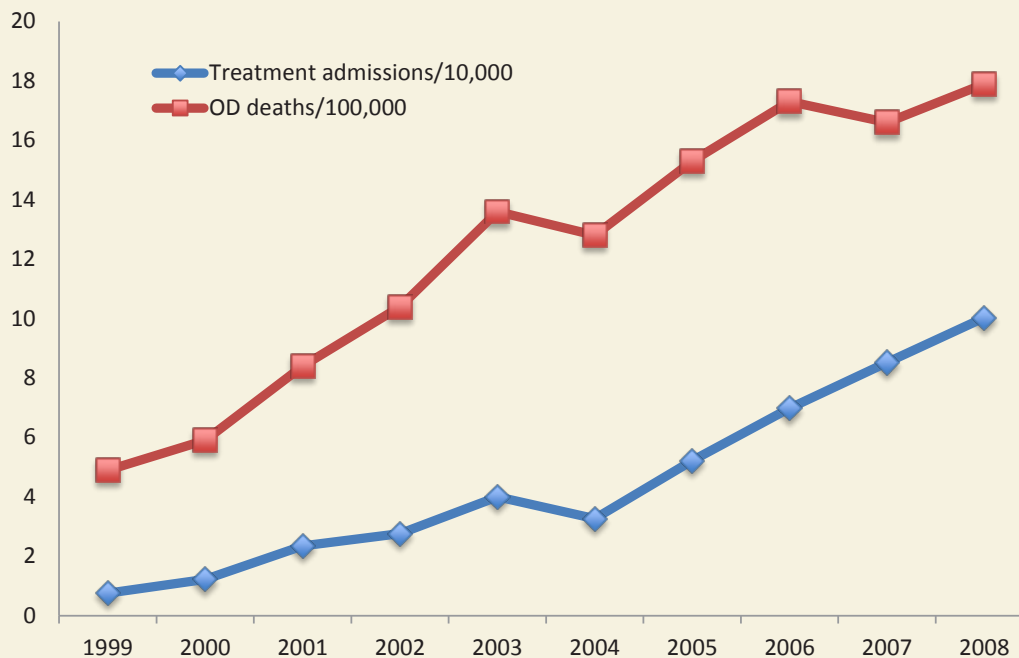


Data Source: Kentucky All Schedule Prescription Reporting System (KASPER), <http://chfs.ky.gov/os/oig/kasper.htm>

- ◆ **Between 2003 and 2010, the largest percentage increases in drug prescription rates were for Hydrocodone (27%) and Oxycodone (49%).**
- ◆ **Hydrocodone rates increased from 579 per 1,000 in 2003 to 736 per 1,000 in 2010. This is an annual percentage increase of 3.4%. Oxycodone rates increased from 135 per 1,000 to 200 per 1,000 between 2003 and 2010. This is an annual percentage increase of 6.1%.**
- ◆ **Alprazolam prescription rates increased from 196 per 1,000 in 2003 to 217 per 1,000 in 2010. This is a modest increase of 11% during the eight-year period. Diazepam prescription rates decreased from 102 per 1,000 in 2003 to 95 per 1,000 in 2010. This is a modest decrease of 7% during the eight-year period.**

# 5 Prescription Drug Use Consequences

Figure 3. **Treatment Admissions and Drug Overdose Mortality (Any Intent) Rates in Kentucky, 1999-2008**

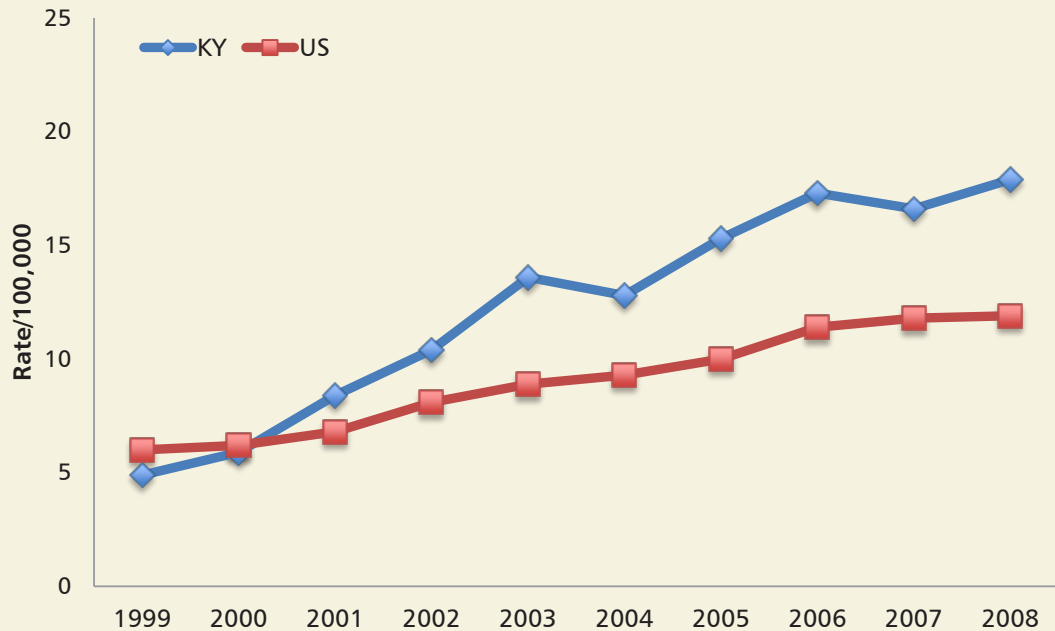


Data Source: Treatment Episode Dataset--Admissions (TEDS-A), <http://www.dasis.samhsa.gov/webt/information.htm>;  
CDC Wide-ranging Online Data for Epidemiologic Research (CDC WONDER), <http://wonder.cdc.gov/>

- ◆ From 1999 to 2008, treatment admissions with opiates as the primary substance dramatically rose from 1 per 10,000 to 10 per 10,000. This is a 900% increase during the 10-year period.
- ◆ From 1999 to 2008, the age-adjusted drug overdose mortality rate increased from 5 per 100,000 to 18 per 100,000. This is a 260% increase during the 10-year period.
- ◆ Treatment admissions and drug overdose mortality followed virtually identical patterns with steep increases from 1999 to 2003 and a slight dip in 2004 followed by continued increases from 2005 to 2008.



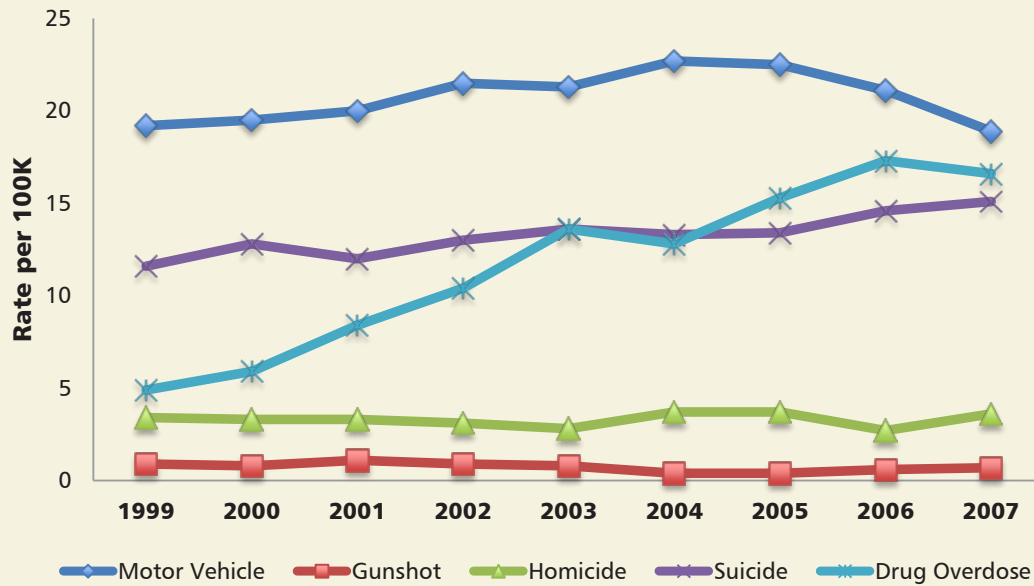
Figure 4. **Drug Overdose (Any Intent) Mortality, 1999-2008**



Data Source: CDC Wide-ranging Online Data for Epidemiologic Research (CDC WONDER), <http://wonder.cdc.gov/>

- ◆ **Drug overdose mortality rates were similar between Kentucky and the US until Kentucky diverged in 2001 with a 42% increase from 2000 to 2001 compared to a 10% increase for the US.**
- ◆ **From 1999 to 2008, the percentage increase in drug overdose mortality was 260%, with rates rising from 5 per 100,000 to 18 per 100,000 during this 10-year period**
- ◆ **From 1999 to 2008, the annual percentage increase was 26% in Kentucky compared to 10% nationally.**
- ◆ **In 2008, the percentage difference between Kentucky and the US was 40%: 18 per 100,000 in Kentucky versus 12 per 100,000 in the US.**

Figure 5. **Causes of Mortality in Kentucky, 1999-2007**



Data Source: CDC Wide-ranging Online Data for Epidemiologic Research (CDC WONDER), <http://wonder.cdc.gov/>

- ◆ **Between 1999 and 2007, the percentage change for drug overdose mortality was significantly higher (240%) when compared to other causes: Suicide (30%), Homicide (6%), Motor Vehicle (-2%), and Gunshot (-22%)**
- ◆ **In 2007, drug overdose mortality (17 per 100,000) approached motor vehicle rates (19 per 100,000).**
- ◆ **After 2005, drug overdose mortality (15 per 100,000) surpassed suicide (13 per 100,000).**

# 6 Appendix: Data Sources

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## CDC Wide-ranging Online Data for Epidemiologic Research

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**Description:** The CDC WONDER contains population, morbidity, and mortality data for all US counties from 1979 to 2007. Frequencies and rates of death may be obtained for underlying cause of death, state, county, age, race, sex, and year. The International Classification of Diseases 9th Revision (ICD 9) codes are used for underlying causes of death from 1979 to 1998. In 1999, the ICD 10 was adopted to specify cause of death.

**Sponsor(s):** Centers for Disease Control and Prevention (CDC)

**Geographic level:** National, State, County

**Frequency:** Data collected and reported annually

**Years Used:** 1999-2007

**Indicators:** Drug overdose mortality (X40-X44, X60-X64, X85, or Y10-14), suicide mortality (injury intent: suicide), motor vehicle mortality, homicide, and gunshot.

**Strengths:** Standardized and comparable across states; County-level estimates; Trends available from 1979

**Weaknesses:** Limited racial categories; Unreliable county-level estimates; Variations in ICD codes

**Link:** <http://wonder.cdc.gov/>

## Kentucky All Schedule Electronic Prescription Reporting System

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**Description:** KASPER tracks controlled substances dispensed in the Commonwealth of Kentucky. Data are primarily intended for physicians, pharmacists, and law enforcement officials.

**Sponsor(s):** Kentucky Cabinet for Health and Family Services (CHFS)

**Geographic level:** State, County

**Frequency:** Data collected and reported quarterly

**Years Used:** 2003-2010

**Indicators:** Prescription rates for oxycodone, hydrocodone, alprazolam, and diazepam

**Strengths:** Fast reporting; County-level estimates

**Weaknesses:** Limited data access; No data on diverted prescriptions; Unstandardized across states

**Link:** <http://chfs.ky.gov/os/oig/kasper.htm>

## National Survey on Drug Use and Health

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**Description:** The NSDUH is a national survey involving in-home interviews with approximately 70,000 randomly selected individuals age 12 and older.

**Sponsor(s):** Substance Abuse and Mental Health Services Administration (SAMHSA)

**Geographic level:** National, State, County

**Frequency:** Data collected annually and reported biennially

**Years Used:** 2008-2009

**Indicators:** Nonmedical use of opioid analgesics

**Strengths:** Regional estimates; Standardized and comparable across states; Clinically significant estimates

**Weaknesses:** Limited state-level indicators; Most recent years unavailable

**Link:** <https://nsduhweb.rti.org/>

## Treatment Episode Dataset – Admissions

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**Description:** The TEDS-A includes records for roughly 1.5 million substance abuse treatment admissions annually. It comprises data that are routinely collected by states in monitoring their individual substance abuse treatment systems.

**Sponsor(s):** Substance Abuse and Mental Health Services Administration (SAMHSA)

**Geographic level:** National, State

**Frequency:** Data collected and reported annually

**Years Used:** 1999-2008

**Indicators:** Opiates listed as primary substance at admission

**Strengths:** Standardized and comparable across states; Data stratified on key demographics

**Weaknesses:** Admissions do not represent individuals; State variation in identifying treatment transfers

**Link:** <http://www.dasis.samhsa.gov/webt/information.htm>

## United States Census Bureau

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**Description:** The Census Bureau develops population estimates with a component of population change using administrative records to estimate the household and group population.

**Sponsor(s):** US Census Bureau

**Geographic level:** National, State, County

**Frequency:** Data collected and reported annually

**Years Used:** 1999-2010

**Indicators:** National and state population

**Strengths:** Data include citizens, non-citizen legal residents, non-citizen long-term visitors, and illegal immigrants

**Weaknesses:** Most recent years unavailable

**Link:** <http://www.census.gov/>

