

# Child Fatality Review System 2009 Annual Report



Kentucky Department for Public Health  
Cabinet for Health and Family Services



# KENTUCKY CHILD FATALITY REVIEW SYSTEM

## 2009 ANNUAL REPORT

### Table of Contents

Message from the Commissioner.....	3
Executive Summary .....	5
Leading Causes of Child Death in Kentucky (Table) .....	8
Kentucky’s Child Fatality Review System .....	9
Kentucky’s Child Fatality Review Laws .....	10
Map of Kentucky Counties with Local CFR Teams.....	15
I.    Infant Deaths – Infant Mortality.....	16
A. Prematurity and Related Deaths.....	18
B. Congenital Anomalies.....	20
C. Sudden Unexpected Infant Deaths .....	21
1. SUDI/SIDS.....	22
2. Sudden Infant Deaths of Undetermined Cause .....	26
II.   Child Deaths—Child Fatality.....	29
A. Leading Causes of Death/Trends by Age.....	29
B. Manner and Cause of Childhood Deaths.....	33
C. Natural Cause Deaths in Children .....	34
D. Injury Deaths in Children .....	35
E. Unintentional Injury Related Deaths .....	37
1. Transportation Deaths .....	37
a. Motor Vehicle Fatalities .....	37
b. Pedestrian Fatalities.....	39
c. Bike & Motorcycle Related Fatalities .....	39
d. All Terrain Vehicle (ATV) Fatalities .....	40
2. Drowning Fatalities .....	42
3. Fire Fatalities .....	45
4. Poison Fatalities .....	48
5. Suffocation in Infants .....	50
F. Intentional Injury Related Deaths.....	51
1. Child Abuse/Neglect Fatalities.....	51
2. Homicide.....	53
3. Suicide.....	56
III.  Federal Reporting of Childhood Injury Prevention .....	61
IV.   Child Death and Injury Prevention .....	63
V.    Technical Notes and Data Sources .....	65
VI.   References .....	67
VII.  Additional Resources.....	69

# **ACKNOWLEDGEMENTS**

The Kentucky Child Fatality Review System (CFR) 2009 Annual Report is prepared by the Department for Public Health Child Fatality Review and Injury Prevention Program. The Department for Public Health would like to acknowledge the time and effort of many individuals who contributed toward the completion of this 2009 Annual Report. Data used in this report is for the year 2007, which is the latest year of completed Vital Statistics records that are available. The data is still preliminary and numbers could change.

Sanjita Thapa-Chhetri, MPH  
Epidemiologist, Child and Family Health Improvement Branch

Tracey D. Jewell, MPH  
Lead Epidemiologist, Division of Maternal and Child Health

Amy Sepulveda, BS  
Program Coordinator  
Child Fatality Review and Injury Prevention

Shelley Adams, MSN, RN  
Branch Manager, Child and Family Health Improvement Branch

Susan Pollack, MD, FAAP  
Pediatric Injury Prevention Specialist  
DPH Child Fatality and Injury Prevention Program  
University of Kentucky Injury Prevention and Research Center

Ruth Ann Shepherd, MD, FAAP  
Director, Division of Maternal and Child Health

Dee Sparks  
Administrative Specialist, Child and Family Health Improvement Branch

Thanks to all members and consultants of the State Child Fatality Review team who volunteer their time and efforts to reviewing this data and reducing child fatalities across the state. We especially thank those members and consultants who contributed and prepared information for this report: Sandy Fawbush, Dr. Susan Pollack, Mike Cavanah, Richard Peddicord, Sabrina Walsh, Rashmi Adi-Brown, Sgt. Shane Bates, Debra Israel, and Dr. Cristin Rolf.

**Questions concerning this report should be directed to:**

Amy Sepulveda, Child Fatality Review/Injury Prevention Program Coordinator  
KY Department for Public Health, Maternal & Child Health  
275 East Main Street, HS2GW-A  
Frankfort, KY 40621  
Phone: 502-564-2154

**This report may be viewed at the following web address:**

**<http://www.chfs.ky.gov/dph/mch/cfhi/childfatality.htm>**



STEVEN L. BESHEAR  
GOVERNOR

**CABINET FOR HEALTH AND FAMILY SERVICES**  
DEPARTMENT FOR PUBLIC HEALTH  
275 EAST MAIN STREET, HS2GW-A  
FRANKFORT, KENTUCKY 40621-0001

JANIE MILLER  
SECRETARY

### MESSAGE FROM THE COMMISSIONER

Death is a topic disliked by everyone. But the death of a child is especially difficult to believe or understand. It is through our struggle to understand that we ask how such a terrible event happens. Within this report is the summary of causes of death for Kentucky children under the age of 18, as well as discussions of risk factors and prevention strategies. The information included is based on Kentucky 2007 vital statistics data and other data sources such as local child fatality review teams throughout the Commonwealth. There were a total of 618 deaths of Kentucky children under the age of 18 in 2007. You will find a breakdown of these deaths in the report, as well as recommended prevention strategies.

Nationwide, the death rate of infants under the age of one year had declined over many years. These rates are on the rise again in many southern states. In 2007, Kentucky's infant mortality rate was reported to decrease from 7.6 to 6.4 infant deaths per 1000 live births, but this number is still preliminary. We continue to study these deaths and associated factors to determine the best strategies for preventing infant deaths. Many programs are at work to improve the health of pregnant women and reduce infant deaths throughout our state.

The leading causes of death for children ages 1-17 is unintentional injury, the largest number of these being from motor vehicle accidents. Many of these deaths are potentially preventable. Therefore it is imperative we continue to educate and spread awareness of child safety and injury prevention measures. The greatest number of childhood injuries occurs as a result of motor vehicle accidents. We now know that a significant number of these can be avoided by using car seats for infants and toddlers, booster seats for children ages four to eight, and seat belts for children over the age of eight. Kentucky has successfully passed the Graduated Drivers' License and the Booster Seat Bills. There should be increased education on the safe use of all-terrain vehicles (ATVs) as well.

The goal of the Kentucky Department for Public Health is to promote the safety of our children by education, awareness, and the practice of injury prevention. We must all work together to reduce Kentucky's child injury and fatality rates. In this way we can know that we are each doing our part to provide a future of safe and quality life for the children of Kentucky and their families.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Hacker".

William D. Hacker MD, FAAP, CPE  
Commissioner  
Kentucky Department for Public Health

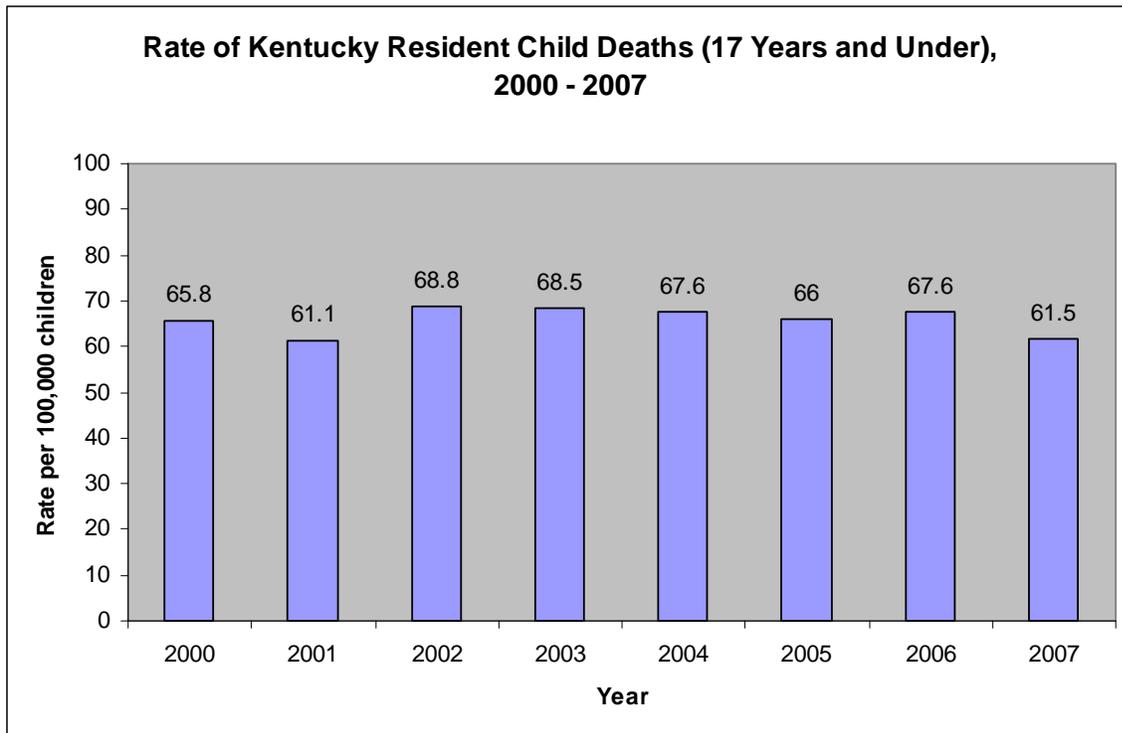


# **KENTUCKY CHILD FATALITY REVIEW SYSTEM** **2009 ANNUAL REPORT**

## **EXECUTIVE SUMMARY**

This report depicts the fatalities for Kentucky's children for the calendar year 2007, the most recent year with completed data from the Kentucky Vital Statistics records. Kentucky Vital Statistics data for the year 2007 is still preliminary and numbers could change. Findings from the year include:

- 618 children from 0-17 years died in Kentucky in 2007
- 442 died from natural causes
- 152 died from injury related causes
- 24 deaths occurred out of state and the Department for Public Health does not have complete data
- Although the rate remains comparable to the past seven years, the number of deaths to children decreased from 2006 to 2007 by 8.8%

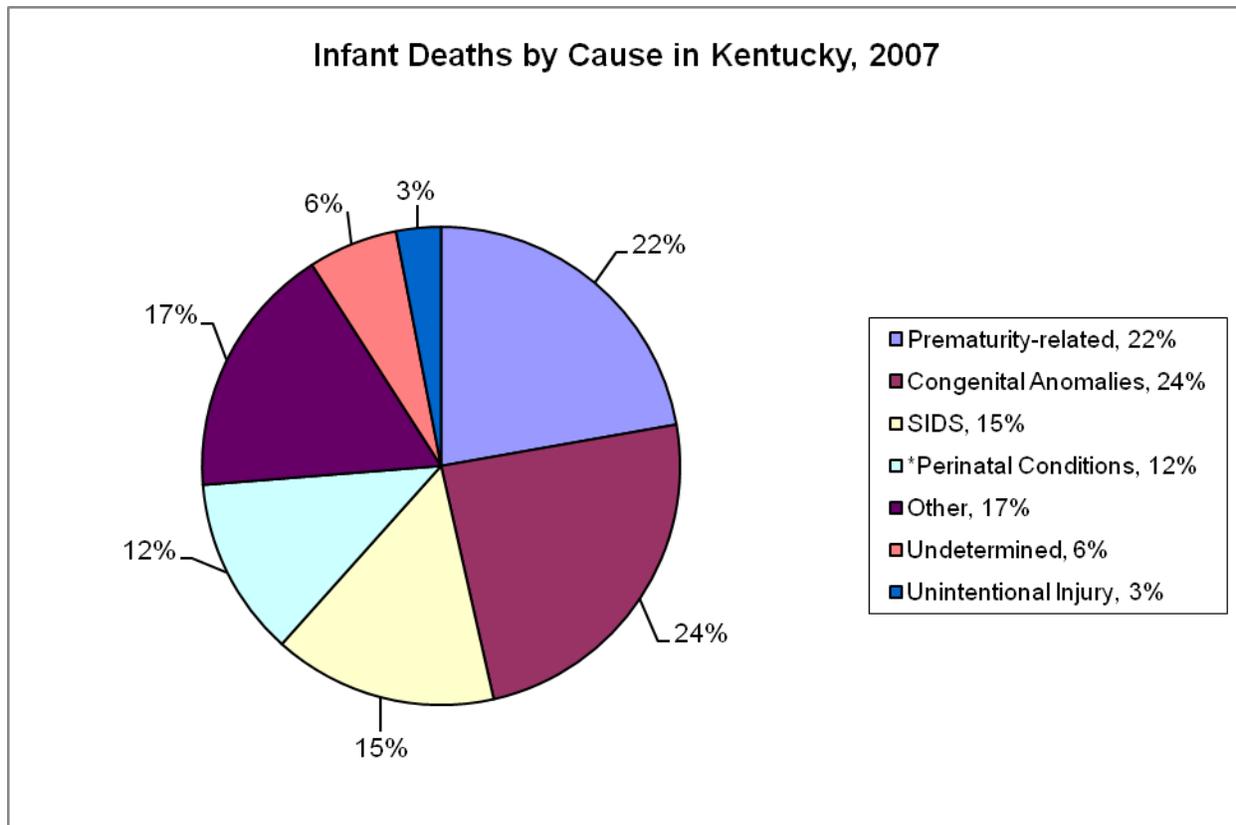


Data Source: Kentucky Vital Statistics, 2000-2007

### Infant Deaths

In 2007, 380 Kentucky resident infants died. Infant death is any baby that dies after birth and before turning one year of age. Most infant deaths are considered "natural cause" deaths because they occur due to medical conditions that share certain known risk factors; such as lack of prenatal care, poor nutrition, smoking during pregnancy, and others.

- The top three causes of infant death were congenital anomalies, prematurity, and Sudden Unexplained Death in Infancy or SUDI (formerly SIDS)
- In 2007 in Kentucky:
  - Congenital anomalies were the cause of death in 92 infants
  - 85 Kentucky infants deaths were prematurity related
  - The rate of SUDI was 1.0/1,000 live births, or 57 infants. This rate is higher than the national average of 0.5/1,000 live births, but may be due to how Kentucky defines SUDI deaths.
  - The remainder of infants below one year of age died of various other causes.



Data Source: Kentucky Vital Statistics, 2007

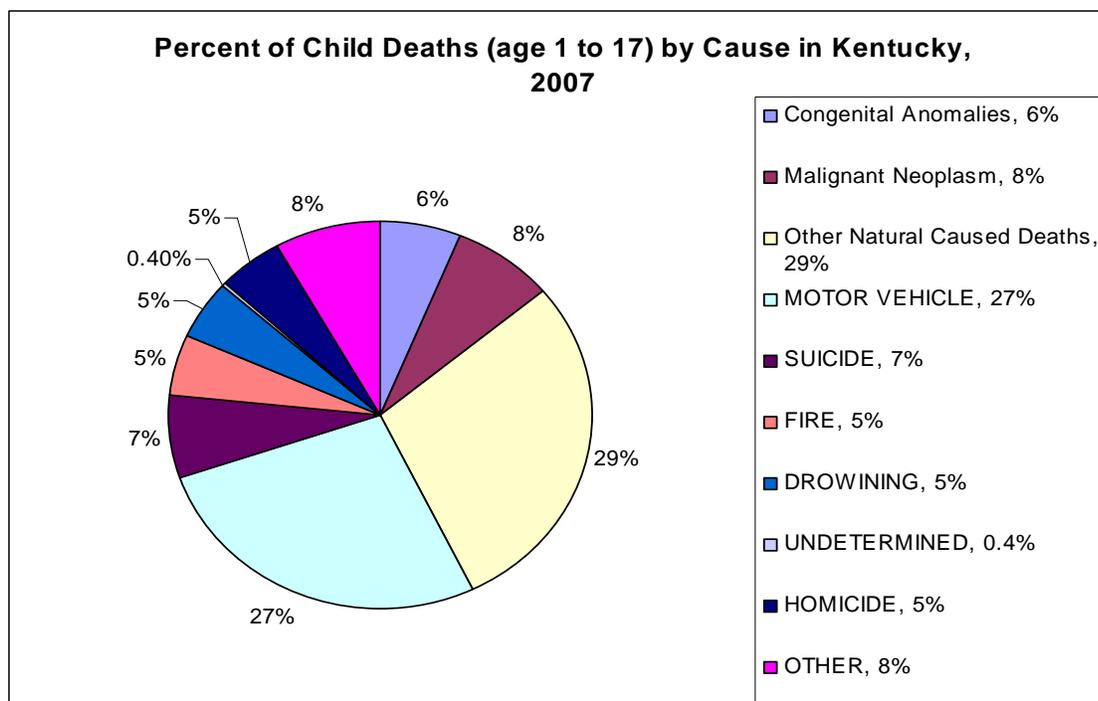
\* Perinatal conditions as defined by The Center for Disease Control are certain conditions originating in the perinatal period; perinatal meaning occurring in, concerned with, or being in the period around the time of birth. Some examples of perinatal conditions would be conditions related to, but not limited to, disorders related to length of gestation and fetal growth, birth trauma, respiratory and cardiovascular disorders specific to the perinatal period, digestive system disorders of fetus and newborn.

Perinatal conditions (P00-P96) is used as referenced in International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Volume 1 (1992); with these exclusions: congenital malformations, deformations and chromosomal abnormalities (Q00-Q99); endocrine, nutritional and metabolic diseases (E00-E90); injury, poisoning and certain other consequences of external causes (S00-T98); neoplasms (C00-D48); and tetanus neonatorum (A33).

## Childhood Deaths

In 2007, 238 Kentucky resident children ages 1 to 17 died. Most were due to injuries (56.7%); a significant percentage was due to natural causes (42.9%), of which the largest number was congenital anomalies. The remainder of deaths was due to other causes.

- The leading cause of injury death for children ages 1-17 was motor vehicle crashes:
  - More children 1 to 17 died from *motor vehicle crashes* than other types of injury. Motor vehicle crashes accounted for 47% of all injury deaths, and 26.5% of all childhood deaths
  - There were 63 deaths of children (1-17 years) from motor vehicle accidents in 2007
    - The rate of motor vehicle accidents decreased from 8.6/100,000 in 2006 to 6.7/100,000 in 2007
    - 44% were driving or riding in vehicles of which the type was not specified
    - 40% were driving or riding in a car
    - 10% were in driving or riding on an ATV
    - 6% were pedestrians or riding on a bike
- According to the Department for Community Based Services, there were 26 child deaths due to abuse or neglect that were reported in 2007. This makes child abuse the *second leading cause* of injury deaths in childhood in Kentucky. This number may not be consistent with vital statistics because of the fact that these deaths may be spread across several categories by cause of death, such as homicide, poisoning, suffocation, and others.
- Other major causes of death for Kentucky children, each comprising 4 to 7% of the childhood injury deaths, were:
  - Suicide – nearly 7% of child injury deaths were due to suicide in 2007
  - Homicide – nearly 5% of child injury deaths were due to homicide
  - Fire – 5% of child injury deaths were due to fire
  - Drowning – nearly 5% of child injury deaths were due to drowning



# LEADING CAUSES OF CHILD DEATH IN KENTUCKY

These are the top 10 leading causes of death in Kentucky by age groups from the years 2004 to 2006 combined. Data is not yet available for 2007. Unintentional injury was the leading cause of death for all age groups, after age 1. NOTE: Shaded areas denote potentially preventive deaths.

**Table 1. Top Ten Leading Causes of Death in Kentucky by Age**

<b>10 Leading Causes of Death, Kentucky</b>					
<b>Combined years 2004 - 2006</b>					
Age Groups					
Rank	<1	1 to 4	5 to 9	10 to 14	15 to 17
1	Prematurity related	Unintentional Injury	Unintentional Injury	Unintentional Injury	Unintentional Injury
2	Congenital Anomalies	Homicide	Malignant Neoplasm	Malignant Neoplasm	Suicide
3	SIDS	Malignant Neoplasm	Congenital Anomalies	Heart Disease	Homicide
4	Unintentional Injury	Congenital Anomalies	Homicide	Congenital Anomalies	Malignant Neoplasm
5	Maternal Pregnancy Comp.	Heart Disease	Heart Disease	Homicide	Heart Disease
6	Placenta Cord Membranes	Benign Neoplasm	Meningitis	Cerebro-vascular	Congenital Anomalies
7	Bacterial Sepsis	Anemias	Benign Neoplasm	Suicide	
8	Neonatal Hemorrhage	Bronchitis, Emphysema, Asthma	Bronchitis, Emphysema, Asthma	Benign Neoplasm	
9	Atelectasis	Nephritis	Perinatal Period	Diabetes Mellitus	
10	Intrauterine Hypoxia	Cerebro-vascular			

# **KENTUCKY'S CHILD FATALITY REVIEW SYSTEM**

The deaths of infants, children and teens are indicators of the overall health and safety of all children in local communities, the state, and the nation. The accurate identification of cause and manner of death provides invaluable information that is used to determine vulnerable populations and identify a response to protect and improve the lives of Kentucky's children.

KRS 211.680 was passed by the Kentucky General Assembly in 1996 to create a system for the purpose of learning from child deaths in order to reduce the number of child fatalities. The system was charged to establish priorities and develop prevention programs that require:

- Accurate determination of the cause and manner of death;
- Cooperation and communication among agencies responsible for the investigation of child fatalities; and
- Collection and analysis of data to:
  - Identify trends, patterns and risk factors; and to
  - Evaluate the effectiveness of prevention and intervention strategies.

The Kentucky Department for Public Health established a state Child Fatality Review Team. The state team is a voluntary multidisciplinary body that is charged by legislation to assume certain duties which may include:

- Facilitation of local child fatality review team development that may include training opportunities and technical assistance;
- Development and distribution of model protocols for local child fatality review teams that investigate child fatalities;
- Review and approval of locally prepared and submitted child fatality review team protocols;
- Analysis of received data regarding child fatalities to identify trends, patterns and risk factors;
- Evaluation of the effectiveness of adopted prevention and intervention strategies; and
- Making recommendations regarding state programs, legislation, administrative regulations, policies, budgets, and treatment and service standards that may facilitate development of strategies for prevention and reduction of the number of child deaths.

The Department for Public Health works through the state team to assure a strong child fatality review and injury prevention system throughout Kentucky. Local development of child fatality review teams continues to be one of the most important infrastructure-building responsibilities of the state team. Local team composition includes multidisciplinary representation from coroners, law enforcement, health departments, and the Department for Community Based Services, at a minimum. Other agencies that enhance the process include mental health professionals, emergency medical personnel, health care providers, county attorney offices, and other key community agencies and organizations that focus on child safety issues. The local team is to assist the coroner in gathering as much information as possible to determine the most accurate manner and cause of a child's death. Team members have the opportunity to share information, discuss and prioritize child health and risk factors, and promote participation in various community prevention programs. Trends and risk factors identified in the community from local teams are then reported to the state, so that the state team can identify trends across the state and develop strategies that will help save the lives of other children across the state.

Key partners in the child fatality review system include the Department for Public Health, local health departments, coroners, medical examiners, Department for Community Based Services, Kentucky Violent Death Reporting System, and the Kentucky Injury Prevention Research Center (KIPRC) at the University of

Kentucky. Numerous other state and local agencies participate, working together to find ways to reduce child deaths.

- The Department for Public Health (DPH) is responsible for the coordination of all local child fatality review teams throughout the state. DPH organizes the State Child Fatality Review Team to discuss and analyze the data from a statewide perspective. DPH also provides technical assistance to existing teams and facilitates the development of teams in counties that do not participate in the process. In addition to team coordination, DPH is responsible for producing a child fatality review annual report.
- Local Health Departments (LHD) provide vital records and epidemiological risk information for deaths in their communities. They help identify public health and safety issues in their communities. Sometimes the health department has had contact with the child or the family and can provide additional information. When the Coroner notifies the health department of a child's death, the health department can then initiate grief counseling services to families that have lost a child.
- Coroners are key partners for child fatality review. They have been given authority to obtain records from all agencies to be used to determine the cause and manner of death. Child Fatality Review teams are directed by the coroner and assist the coroner in developing a more complete picture of the cause of death.
- Medical examiners are an integral part of the child death review process. The information from the medical examiners assists the coroner in determining the manner and cause of death.
- The Department for Community Based Services (DCBS) has the legal authority and responsibility to assist in investigating child fatalities and to assess the potential risk to siblings who might remain in the home.
- Law enforcement team members are best trained in scene investigation and can provide critical information as to how a child died.

## **KENTUCKY'S CHILD FATALITY REVIEW LAWS**

### **211.680 Legislative intent and findings for KRS 211.680 to 211.686 and KRS 72.029.**

The Kentucky General Assembly declares that the purpose of KRS 211.680 to 211.686 and KRS 72.029 is to reduce the number of child fatalities. The General Assembly finds that establishing priorities and developing programs to prevent child fatalities requires the:

- (1) Accurate determination of the cause and manner of death;
- (2) Cooperation and communication among agencies responsible for the investigation of child fatalities; and
- (3) Collection and analysis of data to:
  - (a) Identify trends, patterns, and risk factors; and
  - (b) Evaluate the effectiveness of prevention and intervention strategies.

**Effective:** July 15, 1996

**History:** Created 1996 Ky. Acts ch. 347, sec. 1, effective July 15, 1996.

### **211.682 Interpretation of KRS 211.680 to 211.686 and KRS 72.029 with respect to laws relating to coroners.**

The provisions of KRS 211.680 to 211.686 and KRS 72.029 shall not be interpreted to limit, restrict, or otherwise affect any power, authority, duty, or responsibility imposed by any other provisions of law upon any coroner, but rather shall be interpreted to aid, assist, and complement the coroner in the performance of those statutory duties.

Effective: July 15, 1996

History: Created 1996 Ky. Acts ch. 347, sec. 2, effective July 15, 1996.

### **211.684 Authorization to establish state child fatality review team -- Annual report on child fatalities.**

(1) For the purposes of KRS Chapter 211:

(a) "Child fatality" means the death of a person under the age of eighteen (18) years; and

(b) "Local child fatality response team" and "local team" means a community team composed of representatives of agencies, offices, and institutions that investigate child deaths, including but not limited to, coroners, social service workers, medical professionals, law enforcement officials, and Commonwealth's and county attorneys.

(2) The Department for Public Health may establish a state child fatality review team. The state team may include representatives of public health, social services, law enforcement, prosecution, coroners, health-care providers, and other agencies or professions deemed appropriate by the commissioner of the department.

(3) If a state team is created, the duties of the state team may include the following:

(a) Develop and distribute a model protocol for local child fatality response teams for the investigation of child fatalities;

(b) Facilitate the development of local child fatality response teams which may include, but is not limited to, providing joint training opportunities and, upon request, providing technical assistance;

(c) Review and approve local protocols prepared and submitted by local teams;

(d) Receive data and information on child fatalities and analyze the information to identify trends, patterns, and risk factors;

(e) Evaluate the effectiveness of prevention and intervention strategies adopted; and

(f) Recommend changes in state programs, legislation, administrative regulations, policies, budgets, and treatment and service standards which may facilitate strategies for prevention and reduce the number of child fatalities.

(4) The department shall prepare an annual report to be submitted no later than November 1 of each year to the Governor, the Legislative Research Commission, the Chief Justice of the Kentucky Supreme Court, and to be made available to the citizens of the Commonwealth. The report shall include a statistical analysis of the incidence and causes of child fatalities in the Commonwealth during the past fiscal year and recommendations for action. The report shall not include any information which would identify specific child fatality cases.

Effective: July 14, 2000

History: Amended 2000 Ky. Acts ch. 14, sec. 61, effective July 14, 2000. -- Amended 1998 Ky. Acts ch. 426, sec. 311, effective July 15, 1998. -- Created 1996 Ky. Acts ch. 347, sec. 3, effective July 15, 1996.

### **211.686 Authorization for coroners to establish local child fatality response teams -- Confidentiality of team proceedings and records.**

(1) A local child fatality response team may be established in every county or group of contiguous counties by the coroner or coroners with jurisdiction in the county or counties. The local coroner may authorize the creation of additional local teams within the coroner's jurisdiction as needed.

(2) Membership of the local team may include representatives of the coroner, the local office of the Department for Community Based Services, law enforcement agencies with investigation responsibilities for child fatalities which occur within the jurisdiction of the local team, the Commonwealth's and county attorneys, representatives of the medical profession, and other members whose participation the local team

believes is important to carry out its purpose. Each local team member shall be appointed by the agency the member is representing and shall serve at the pleasure of the appointing authority.

(3) The purpose of the local child fatality response team shall be to:

(a) Allow each member to share specific and unique information with the local team;

(b) Generate overall investigative direction and emphasis through team coordination and sharing of specialized information;

(c) Create a body of information that will assist in the coroner's effort to accurately identify the cause and reasons for death; and

(d) Facilitate the appropriate response by each member agency to the fatality, including but not limited to, intervention on behalf of other children who may be adversely affected by the situation, implementation of health services necessary for protection of other citizens, further investigation by law enforcement, or legal action by Commonwealth's or county attorneys.

(4) The local team may:

(a) Analyze information regarding local child fatalities to identify trends, patterns, and risk factors;

(b) Recommend to the state team, and any other entities deemed appropriate, changes in state or local programs, legislation, administrative regulations, policies, budgets, and treatment and service standards which may facilitate strategies for prevention and reduce the number of child fatalities; and

(c) Evaluate the effectiveness of local prevention and intervention strategies.

(5) The local team may establish a protocol for the investigation of child fatalities and may establish operating rules and procedures as it deems necessary to carry out the purposes of this section.

(6) The review of a child fatality by a local team may include information from reports generated or received by agencies, organizations, or individuals that are responsible for investigation, prosecution, or treatment in the case.

(7) The proceedings, records, opinions, and deliberations of the local team shall be privileged and shall not be subject to discovery, subpoena, or introduction into evidence in any civil action in any manner that would directly or indirectly identify specific persons or cases reviewed by the local team. Nothing in this subsection shall be construed to restrict or limit the right to discover or use in any civil action any evidence that is discoverable independent of the proceedings of the local team.

**Effective:** July 14, 2000

**History:** Amended 2000 Ky. Acts ch. 14, sec. 43, effective July 14, 2000. -- Created 1996 Ky. Acts ch. 347, sec. 4, effective July 15, 1996.

## **72.025 Circumstances requiring post-mortem examination to be performed by coroner.**

Coroners shall require a post-mortem examination to be performed in the following circumstances:

(1) When the death of a human being appears to be caused by homicide or violence;

(2) When the death of a human being appears to be the result of suicide;

(3) When the death of a human being appears to be the result of the presence of drugs or poisons in the body;

(4) When the death of a human being appears to be the result of a motor vehicle accident and the operator of the motor vehicle left the scene of the accident or the body was found in or near a roadway or railroad;

(5) When the death of a human being occurs while the person is in a state mental institution or mental hospital when there is no previous medical history to explain the death, or while the person is in police custody, a jail or penal institution;

(6) When the death of a human being occurs in a motor vehicle accident and when an external examination of the body does not reveal a lethal traumatic injury;

(7) When the death of a human being appears to be the result of a fire or explosion;

(8) When the death of a child appears to indicate child abuse prior to the death;

(9) When the manner of death appears to be other than natural;

- (10) When human skeletonized remains are found;
- (11) When post-mortem decomposition of a human corpse exists to the extent that external examination of the corpse cannot rule out injury or where the circumstances of death cannot rule out the commission of a crime;
- (12) When the death of a human being appears to be the result of drowning;
- (13) When the death of an infant appears to be caused by sudden infant death syndrome in that the infant has no previous medical history to explain the death;
- (14) When the death of a human being occurs as a result of an accident;
- (15) When the death of a human being occurs under the age of forty (40) and there is no past medical history to explain the death;
- (16) When the death of a human being occurs at the work site and there is no apparent cause of death such as an injury or when industrial toxics may have contributed to the cause of death;
- (17) When the body is to be cremated and there is no past medical history to explain the death;
- (18) When the death of a human being is sudden and unexplained; and
- (19) When the death of a human being occurs and the decedent is not receiving treatment by a licensed physician and there is no ascertainable medical history to indicate the cause of death.

**Effective:** July 15, 1998

**History:** Amended 1998 Ky. Acts ch. 406, sec. 1, effective July 15, 1998. -- Amended 1986 Ky. Acts ch. 316, sec. 1, effective July 15, 1986. -- Created 1982 Ky. Acts ch. 195, sec. 1, effective July 15, 1982.

### **72.029 Monthly report by coroner on child fatalities.**

Every coroner or other official performing a coroner's functions shall, on or before the tenth day of each month, report to the Department for Public Health the death of any child under the age of eighteen (18) years occurring within the county during the preceding month, and the circumstances of the death. The report shall be made on the form required pursuant to administrative regulations promulgated pursuant to KRS Chapter 13A by the department. The form shall be developed in consultation with the Kentucky Coroners' Association.

**Effective:** July 15, 1998

**History:** Amended 1998 Ky. Acts ch. 426, sec. 93, effective July 15, 1998. -- Created 1996 Ky. Acts ch. 347, sec. 5, effective July 15, 1996.

### **72.410 Investigation of deaths defined as a coroner's case.**

(1) The coroner of each county shall investigate the cause and manner of all deaths that are defined by KRS 72.405 as a coroner's case.

(2) The coroner may, in his sound discretion, when investigating a coroner's case, request the assistance of the district medical examiner and the Office of the Kentucky State Medical Examiner, order an autopsy, and hold an inquest.

(3) (a) Upon notification of the death of a child under the age of eighteen (18) years which meets the criteria for a coroner's case as defined in KRS 72.405 and 72.025, the coroner shall as soon as practicable contact the local office of the Department for Community Based Services, law enforcement agencies with local jurisdiction, and the local health department to determine the existence of relevant information concerning the case.

(b) Any agency of the state or any other agency, institution, or facility providing services to the child or the child's family, shall provide to the coroner upon his or her request the cooperation, assistance, and information to enable the coroner to comply with the provisions of this chapter. This section shall not be deemed to abrogate the attorney-client nor the clergy-penitent privilege or the confidentiality of records provided by KRS 311.377(2). If other privileged or confidential records are disclosed to the coroner pursuant to this section, the records shall remain confidential or privileged and shall not be disclosed

except as authorized by this section, to the state or local child fatality response team, or as otherwise required by law.

**Effective:** June 26, 2007

**History:** Amended 2007 Ky. Acts ch. 85, sec. 152, effective June 26, 2007. -- Amended 2000 Ky. Acts ch. 14, sec. 8, effective July 14, 2000. -- Amended 1998 Ky. Acts ch. 65, sec. 7, effective July 15, 1998. -- Amended 1996 Ky. Acts ch. 347, sec. 6, effective July 15, 1996. -- Created 1978 Ky. Acts ch. 93, sec. 4, effective June 17, 1978.

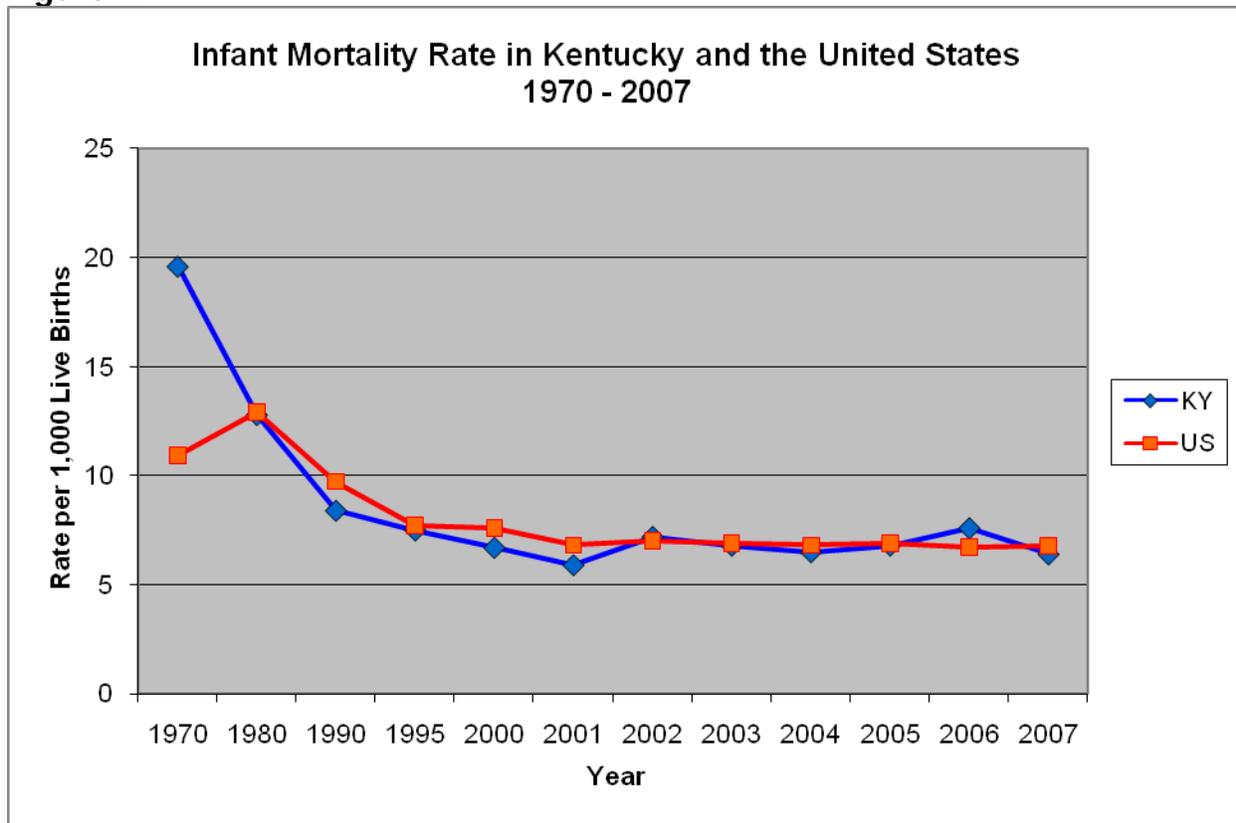


# I. INFANT DEATHS- INFANT MORTALITY

Infant mortality is the death of a child any time after birth and before reaching their first birthday. Infant mortality of a state or nation is often considered a reflection of the social, political, and health care delivery systems of that state or nation.

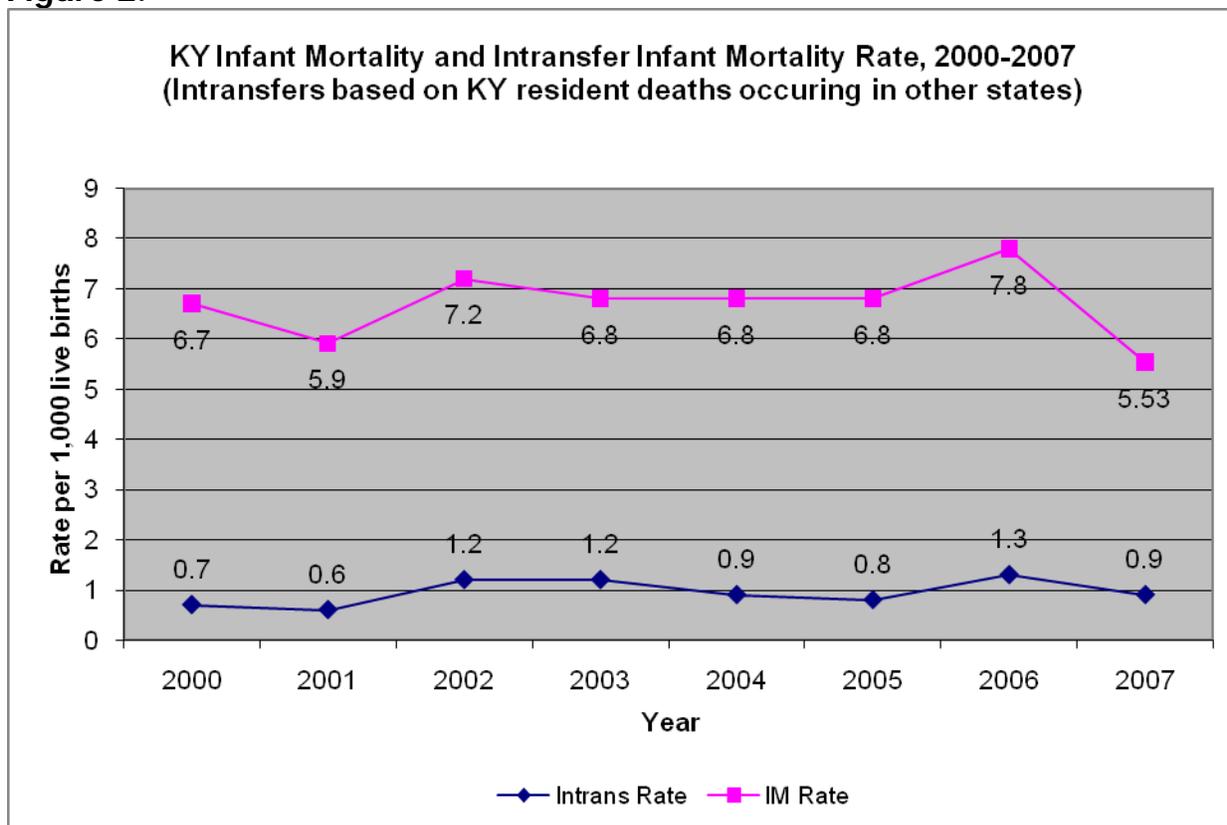
In the last 30 years, Kentucky's infant mortality rate has fallen dramatically and has run very close to the national average for infant mortality (Figure 1). However, all across the country, infant mortality rates have leveled off and in many southern states, infant mortality is now beginning to increase again. In Kentucky's preliminary 2007 data, 380 infants died, compared to 427 in 2006; however, the 2007 data may change because the data file for that year is not yet finalized. Emphasis has been given to these deaths and to the study of their prevention. In analyzing the data, it is apparent that deaths of Kentucky infants that occurred while the infant was out of state has consistently influenced Kentucky's infant mortality rate (Figure 2). However, this does not lessen the need to investigate ways Kentucky can address infant deaths. The Kentucky Department for Public Health has established a fetal and infant death subcommittee of the Child Fatality Review System to look more closely at those deaths and determine what can be done to prevent them. This information will be given to local child fatality review teams so that local strategies can be implemented.

**Figure 1.**



Data Source: National Vital Statistics System; Deaths, Preliminary Data for 2007; & Kentucky Vital Statistics Files, Death Certificate Files, 1970-2007

**Figure 2.**



Data Source Kentucky Vitals Statistics, 2000-2007

The three leading causes of infant mortality are congenital anomalies, prematurity-related, and sudden unexplained death in infancy (SUDI, formerly SIDS). Of these three leading causes, congenital anomalies are a major concern in Kentucky, as more than one in five of our Kentucky infants die from this cause. Kentucky saw a 15% increase in the number of deaths due to congenital anomalies from 2006 to 2007.

**Table 2. The Three Leading Causes of Infant Deaths in Kentucky, 2007.**

Cause	Total # of Deaths
Congenital Anomalies	92
Preterm-Related Causes of Death	85
SUDI	57

For 2007, there were a total of 92 congenital anomaly infant deaths in Kentucky moving this category to the number one cause of infant deaths in the state. Preterm-related causes

of death and SUDI were the next highest causes of death (Table 2). This data indicates that infants in Kentucky were more likely to die from congenital anomalies than any other single condition.

## A. PREMATURETY-RELATED DEATHS

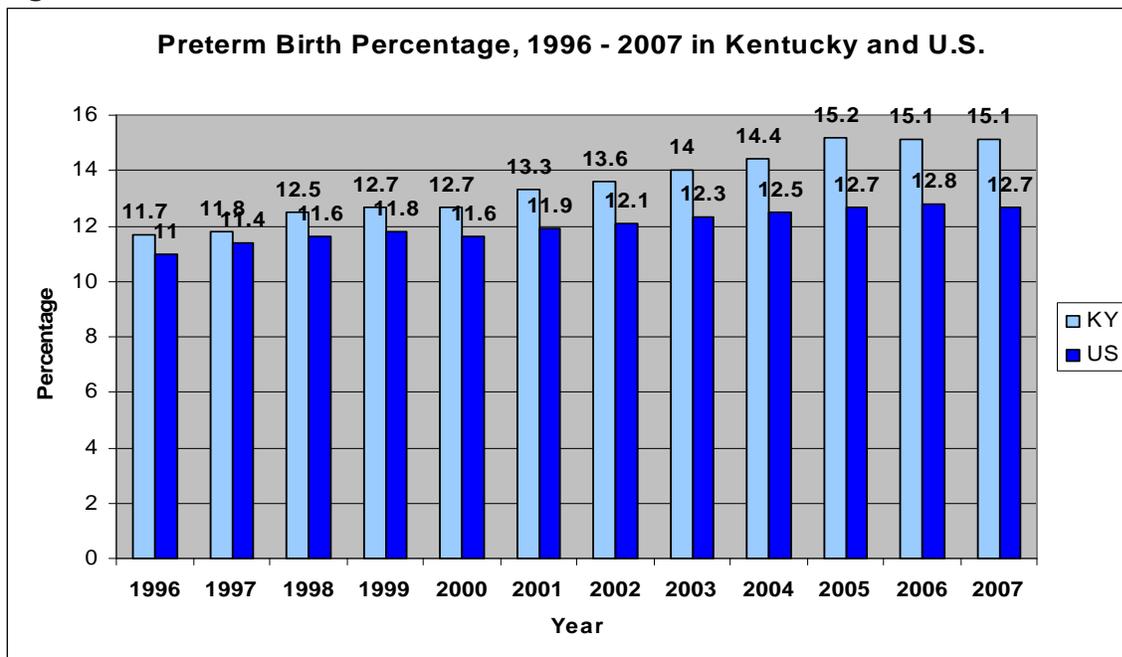
Prematurity/low birth weight is a leading cause of neonatal death in Kentucky and the United States. Preterm birth is defined as any birth occurring prior to 37 weeks of completed gestation, and low birth weight is defined as any infant weighing less than 2,500 grams (5lb. 8oz.) at birth. These two conditions often overlap and share similar risk factors. These factors include:

- Previous preterm or low birth weight birth
- Multiple births
- Short inter-pregnancy interval (Less than 18-24 months between babies)
- Maternal smoking during pregnancy
- Second-hand smoke exposure of the pregnant mother (even if she is not a smoker herself)
- Maternal drug use during pregnancy
- Certain infections during pregnancy including sexually transmitted diseases
- Little or no prenatal care
- Certain birth defects

Of all perinatal condition deaths, infants were more likely to die from prematurity (short gestation) and low birth weight than other conditions. Most of the infants who die of respiratory conditions in the perinatal period are also premature, thus the importance of preventing prematurity is even more apparent.

A major concern for Kentucky has been that prematurity-related birth rates are rapidly rising in the Commonwealth, at rates twice as fast as the rising rate nationally (Figure 3).

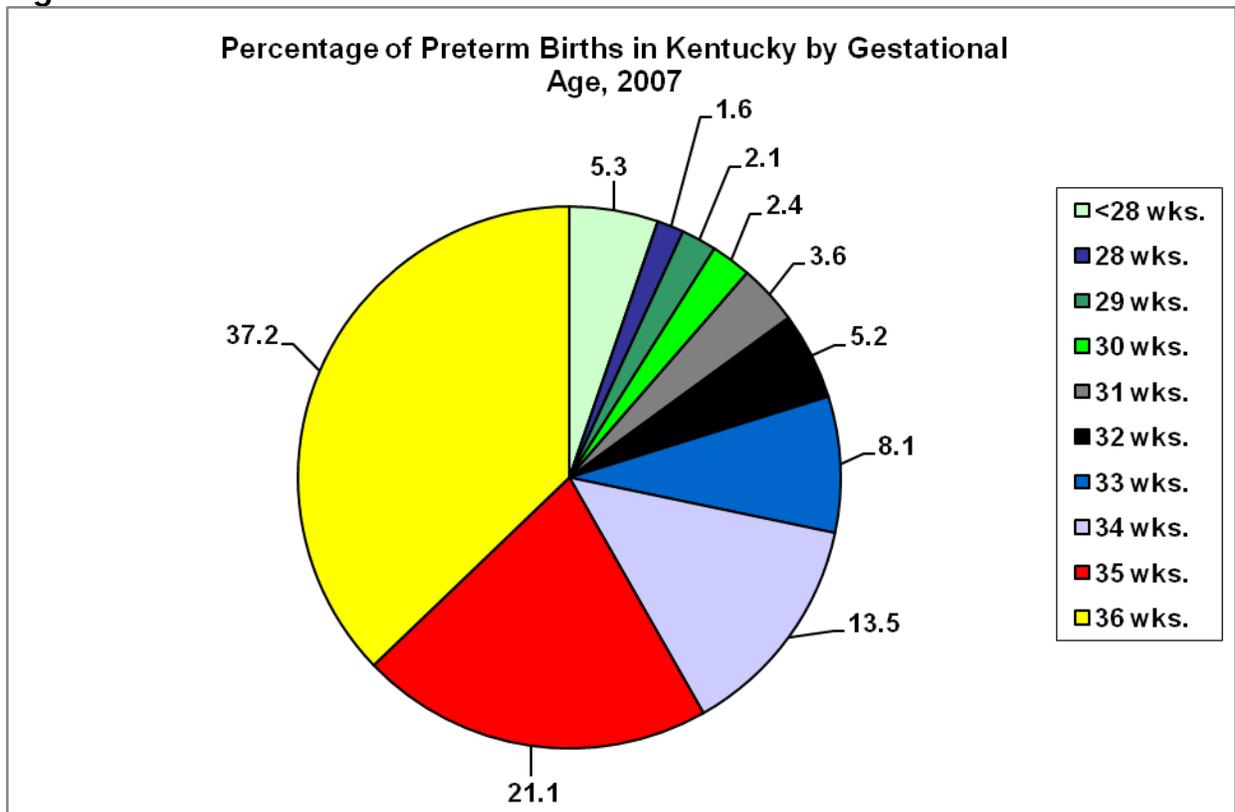
**Figure 3.**



Data Source: National Vital Statistics System; Deaths, Preliminary Data for 2007; & Kentucky Vital Statistics Files; Death Certificate Files, 1996-2007

Of all the premature births in Kentucky and nationally, nearly 72% are babies born between 34 weeks and 36 weeks gestation, or 4-6 weeks before their due date (Figure 4). Although these babies may be “big preemies” and have a high chance of survival, when compared to full term infants they are six times more likely to die in the first week of life, three times more likely to die in the first year of life, and seven times more likely to have complications at delivery. Long term studies on these infants suggest that they are also at higher risk for behavior and learning problems, ADHD, and long term disabilities. Parents and families need to understand that these infants remain at higher risk, and these babies should only be delivered for medical reasons.

**Figure 4.**



Data Source: Kentucky Vital Statistics Files, 2007

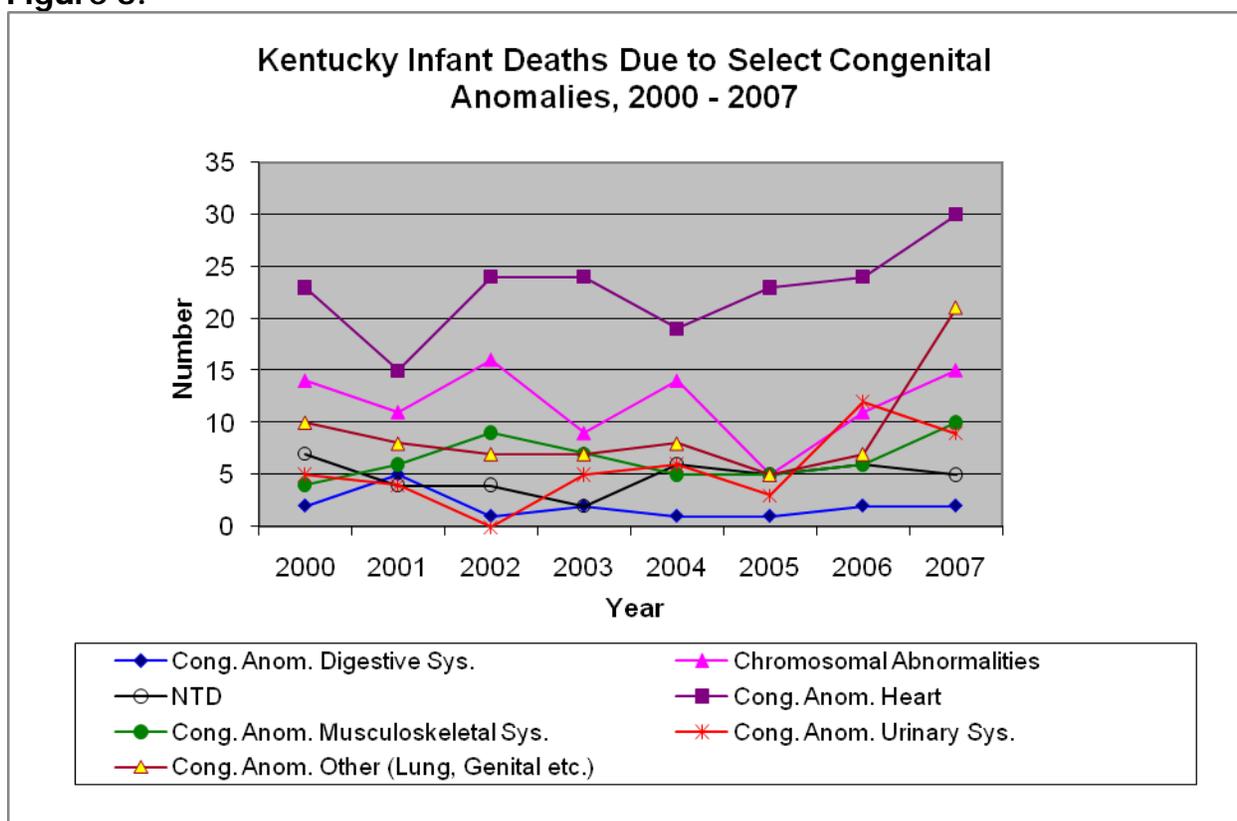
Preconception health care promotes the health of the woman prior to pregnancy for optimal birth outcomes, which would decrease preterm births. Continued research into the causes and risk factors associated with prematurity and low birth weight is critical in order to develop effective prevention of preterm and low birth weight deliveries. Strategies include assuring access to early prenatal care, educating all women to receive prenatal care as early as possible in the pregnancy, and informing all women of the signs of preterm labor and the appropriate steps to follow. Kentucky DPH has a number of programs aimed at reducing premature births. However, it will take the efforts of local communities to reverse the trend of increasing deliveries of premature infants, especially those in the last 4-6 weeks of the pregnancy. The entire community should be aware of the seriousness of preterm birth and the costs associated with prematurity, not only to the families of premature babies, but to the health care, educational, and other systems in the community. Preventing prematurity is possible in some cases, but must be addressed in the entire community, not just with providers and pregnant women. Preventing preterm birth not only saves babies lives, but improves the future of all communities.

## **B. CONGENITAL ANOMALIES**

Congenital anomalies, also known as birth defects, accounted for 24% of the deaths among infants in Kentucky in 2007. Birth defects continue to remain the leading cause of infant morbidity and mortality in the U.S., and accounts for more than one in five infant deaths (Figure 5).

Among birth defects in Kentucky, congenital heart defects are the leading cause of deaths among infants with congenital anomalies. Total deaths due to congenital heart defects have fluctuated over time, but these deaths have not decreased, despite improved diagnostic technology and improved treatment methods. Deaths due to chromosome abnormalities are the second leading cause of congenital anomalies among infants in Kentucky. Deaths from chromosomal abnormalities have increased from 2000 to 2007. This increase could be due to advanced technology identifying these abnormalities prior to delivery.

**Figure 5.**



Data Source: Kentucky Vital Statistics Files, 2007

Some birth defects may be preventable. One such type of congenital anomaly, neural tube defects (NTDs), occurs in approximately 4,000 infants each year in the U.S. NTDs are a group of congenital malformations involving defects in the skull and spinal column that are caused primarily by the failure of the neural tube to close during embryonic development. This group of defects consists of anencephaly, spina bifida and encephalocele. Total infant deaths due to neural tube defects have decreased slightly in Kentucky since 2000 (See Figure 5). As many as 70% of neural tube defects can be prevented by women taking 400mcg of folic acid daily through their childbearing years. However, the US Public Health Service now recommends prescribing folic acid supplementation of 400 to 800 mcg per day, since folate levels in women studied are still low. Because this type of defect develops between 6-8 weeks gestation, often

before the woman even knows she is pregnant, it is essential that folic acid be taken in the months prior to pregnancy. The Department for Public Health's Folic Acid Program is part of the KIDS NOW program. Folic acid funds are allocated to all local health departments (LHD). At the LHD, folic acid counseling and supplementation for woman of child bearing age is provided through the family planning and adult preventive programs. Approximately 75,000 women of childbearing age each year receive folic acid counseling and supplementation through the efforts of the health departments and six contract agencies, including three state universities. From 1996-2007, there has been a 43% reduction in the rate of neural tube defects in Kentucky. According to the 2006 Kentucky Behavior Risk Factor Surveillance System, 44% of women 18-44 years of age report taking folic acid daily.

Multiple causes exist for birth defects. Proper risk education and preconception health promotion are critical elements of targeted prevention in helping to reduce birth defects. All birth defects are not preventable, but there are things that women can do to increase their chance of having a healthy baby. Since 50% of pregnancies are unintended, healthcare providers need to promote healthy practices for all women of childbearing age.

Every woman of child bearing age should:

- Take a daily multivitamin that has at least 400 mcg of folic acid in it
- Have regular medical check-ups
- Have regular dental check-ups
- Talk to her health care provider about any medical problems such as diabetes, phenylketonuria, hypothyroidism, hypertension, seizure disorder, and obesity
- Eat healthy food, maintain a healthy weight, and get fit
- Stop smoking and avoid secondhand smoke
- Stop drinking alcohol
- Not use illegal drugs
- Avoid infections because some can harm a fetus
- Avoid hazardous substances and chemicals
- Talk to her health care provider about any family history of birth defects or genetic conditions
- Avoid stress

## **C. SUDDEN UNEXPECTED INFANT DEATH (SUID)**

The sudden and unexpected death of an infant is tragic for families. These deaths require detailed investigations to determine the manner and cause of death, and many times the investigation reveals no specific answers for what caused the death. This is frustrating for both families and the professionals involved. In the past, many of these deaths were called Sudden Infant Death Syndrome (SIDS) deaths. But SIDS was to be used as a diagnosis of exclusion, when the cause of death was unknown. Therefore the Kentucky State Medical Examiners Office has created a statewide uniform policy to follow when approaching these cases. These deaths are now referred to as Sudden Unexplained Death in Infancy (SUDI) deaths. It is often difficult to distinguish SUDI deaths from other causes such as overlaying, accidental asphyxia, or deaths that do not fit the typical picture of SUDI. In 2007, Kentucky statistics show 80 infants died suddenly and unexpectedly. This number includes all categories now referred to as Sudden Unexplained Death in Infancy: typical SIDS, atypical SIDS, and Sudden Infant Death of Undetermined Cause.

## **1. SUDDEN UNEXPLAINED DEATH IN INFANCY (SUDI)**

SUDI (Sudden Unexplained Death in Infancy) is defined as “the sudden death of an infant under one-year of age, which remains unexplained after a thorough case investigation, including the performance of a complete autopsy, examination of the death scene and a review of the medical history.” All cases of SUDI, and all cases of Undetermined Cause are classified as “undetermined” in manner of death. It is not caused by spitting up, choking, or minor illnesses, such as a cold. It is not caused by immunizations, it is not contagious and it is not child abuse. SUDI is also not the cause of every sudden or unexpected infant death (see paragraph above). Although the exact cause of death is unknown, there are several factors that have been identified that increase an infant’s risk for SUDI. They include:

- Prone (tummy) or side sleeping
- Bed sharing
- Soft sleep surfaces
- Loose bedding
- Smoking by mother and caregivers
- Preterm and low birth weight infants

SUDI is a diagnosis of exclusion. There are no pathological markers that distinguish SUDI from other causes of sudden infant death. There are no known warning signs or symptoms. 90% of SUDI deaths occur in the first six months of life, with a peak at one to four months. While there are several known risk factors, the cause or causes of SUDI are unknown at this time. Nationally, as well as in Kentucky, African-American babies are twice as likely to die of SUDI as their white counterparts.

As a result of the multiple and on-going meetings of the State Medical Examiners Office, the following policy has been implemented for purposes of uniformity and standardization. All sudden, unexplained deaths in infancy with no anatomic, toxicologic, or metabolic causes will be categorized into one of three broad groups, depending on specific findings, information, or criteria as listed below. All unexpected infant death cases investigated by the Kentucky Medical Examiner Program undergo complete autopsy examination.

### **ATTRIBUTED TO SUDI**

- Age 3 weeks to 6 months
- Complete autopsy, scene investigation, and case history review conducted
- Sleeping alone
- Standard crib, bassinet, or commercial co-sleeping bed attachment
- No previous sudden unexplained infant deaths in family
- The final opinion shall state: “No anatomic, metabolic, or toxicologic cause of death is determined in this case. Death in this \_\_ month old baby is *attributed to* Sudden Unexplained Death in Infancy (SUDI). This constellation of findings is often referred to as Sudden Infant Death Syndrome (SIDS).”

### **CONSISTENT WITH SUDI**

- Unusual age (<3 weeks, or 6 to 12 months)
- Complete autopsy, scene investigation, and case history review conducted
- Co-sleeping with one or more non-infant individuals
- Questionable bedding surface that may have resulted in rebreathing or entrapment

- Minor anatomic findings (gross or microscopic) that have questionable relevance (e.g., an isolated focus of bronchiolitis or superficial intraoral trauma of undetermined origin and significant in baby who underwent attempted resuscitation)
- The factors of concern that excluded a categorization of "attributed to" shall be listed in the final diagnoses
- The final opinion shall state: "No anatomic, metabolic, or toxicologic cause of death is determined in this case. Death in this \_\_\_ month old baby is *consistent with* Sudden Unexplained Death in Infancy (SUDI)."

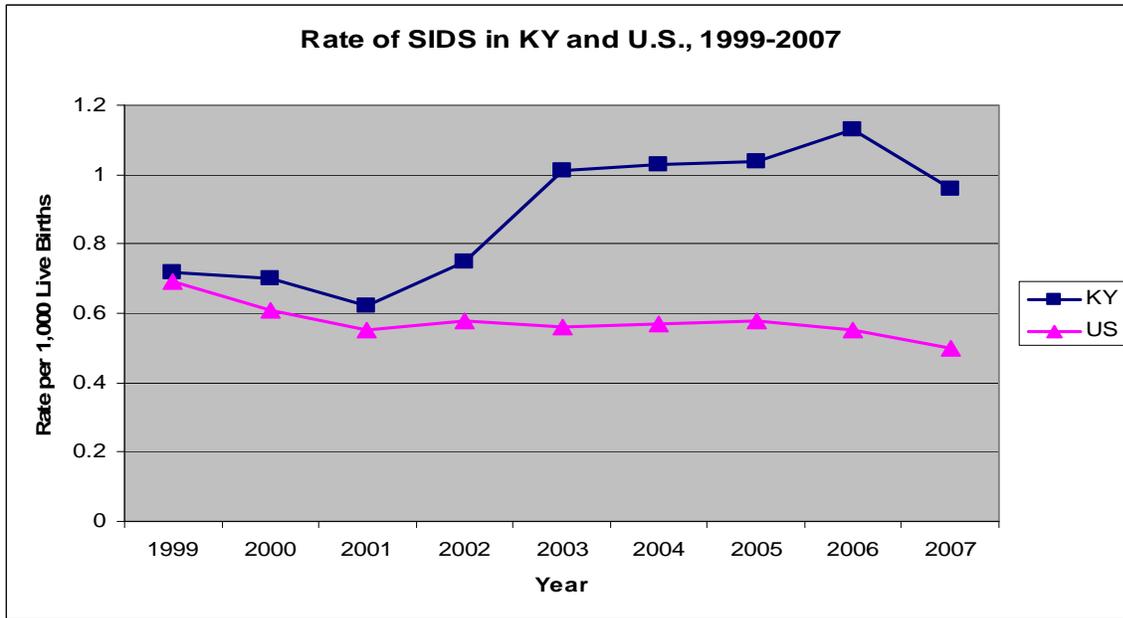
#### UNDETERMINED INFANT DEATH

- Evidence or documented history of previous abuse (same caregiver)
- Unexplained remote fractures or other similar injury not related to birth trauma or other well-defined incident (e.g. known motor vehicle crash)
- Previous SUDI in family
- Other simultaneous death (e.g. twins)
- A history of a previous apparent life threatening event (ALTE)
- No scene investigation
- Intraoral trauma that cannot be accounted for by resuscitative efforts
- Other suspicious circumstances to be specified by the pathologist
- The final opinion in these cases shall state: "No anatomic, toxicologic, or metabolic cause of death is determined in this \_\_\_ month old baby. Due to \_\_\_\_\_ [list confounding factor such as lack of scene investigation or previous abuse], the cause and manner of death in this case remain undetermined."

It should be noted that when the death certificate information is entered into the vital statistics electronic file, all three of the above mentioned SUDI groups are coded into the same diagnostic category. This inflates the deaths counted as "SIDS" when compared to other states that only count "classic" SIDS/SUDI cases. This may partly explain the recent increase in Kentucky's reported SUDI deaths.

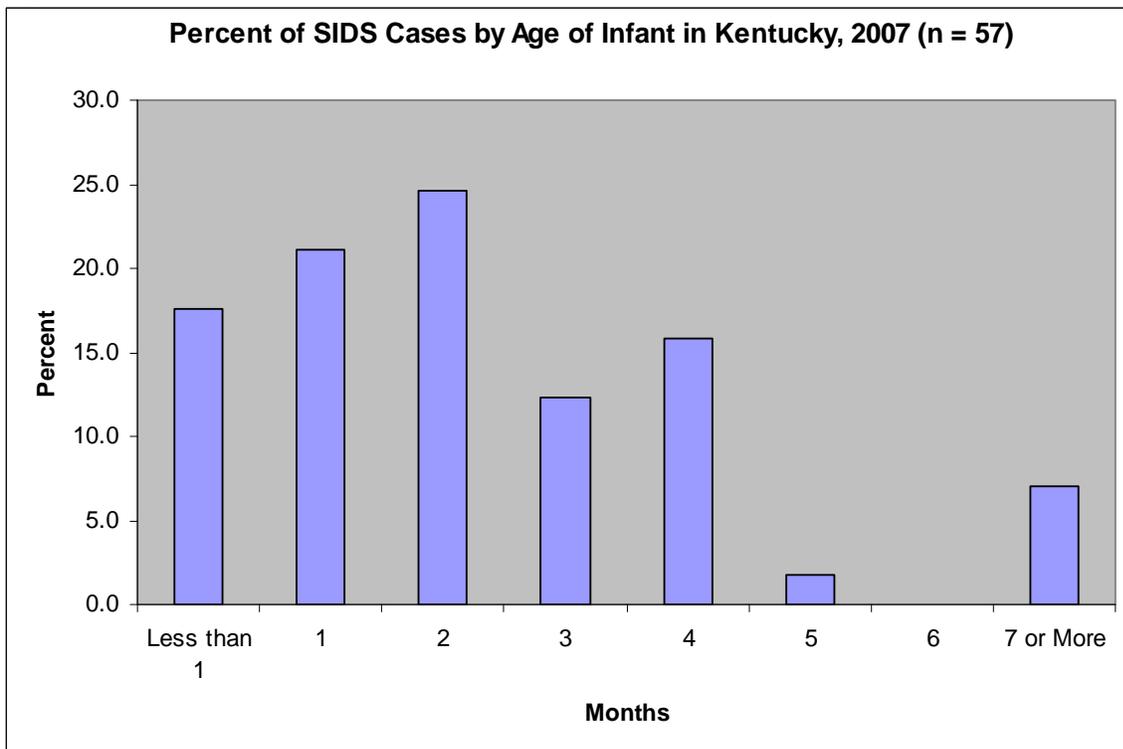
Kentucky's SUDI rate has decreased but still remains well above the rate for the nation (Figure 6). However, at least part of this rise may be due to the generalized coding used for death certificates. During the same time period that SUDI deaths increased, deaths in the "unexplained" category decreased, and the overall infant deaths showed little change. Deaths may not have increased, but instead a shift in the cause of death may have occurred. This is also seen in a published retrospective review of infant deaths from 2000 to 2004 done by Shields, et. al., in the August, 2007 *Kentucky Medical Association* article, "Is SIDS on the Rise?". The conclusions of this study are that the increase in the number of deaths consistent with SUDI and the decrease in cases reported as unexplained over the same time period are due to the standardization of terminology, rather than an actual increase in the number of infant deaths.

**Figure 6.**



Data Source: National Vital Statistics System; Deaths, Preliminary Data for 2007; & Kentucky Vital Statistics Files; Death Certificate Files, 1999-2007. Note that in 2007, SUDI deaths were referred to as SIDS and the graphs contain that language in their titles.

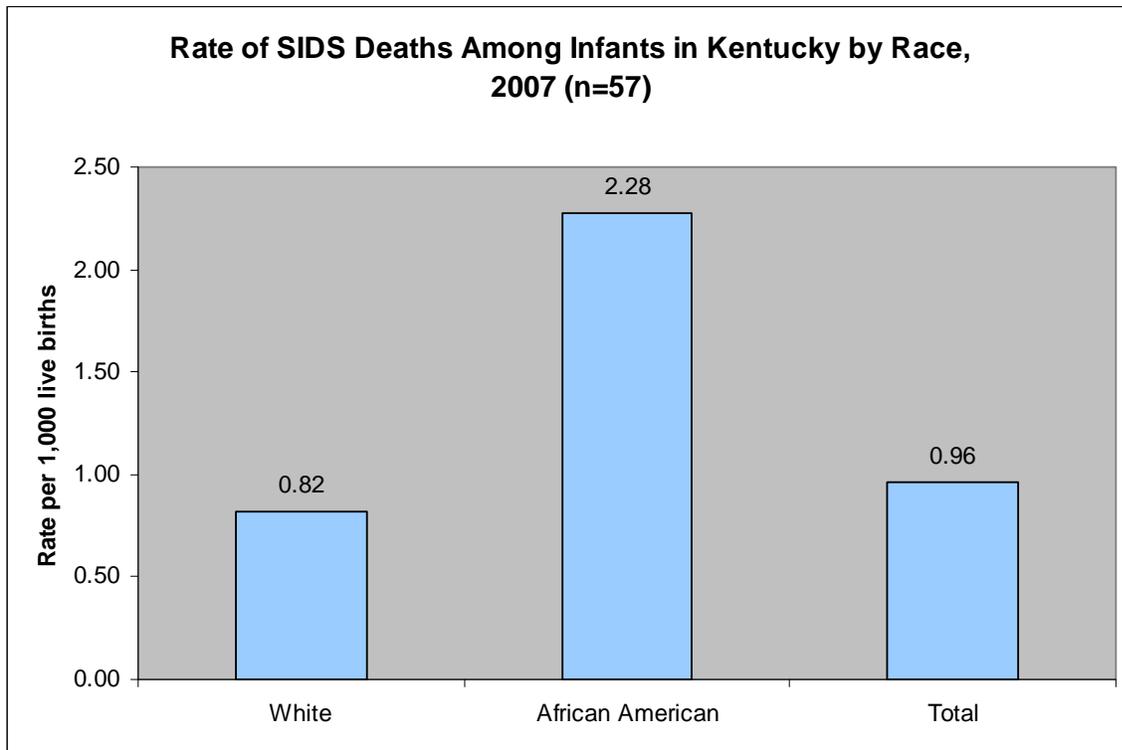
**Figure 7.**



Data Source: Kentucky Vital Statistics Files, 2007

The rate of SUDI in Kentucky in 2007 is 1.0/1,000 live births (Figure 6). SUDI was the assigned cause of death for 57 of the sudden unexplained Kentucky resident infant deaths in 2007. The deaths occurred between the ages of 0 to 11 months (Figure 7). Of these 57 deaths, 27 (47%) were male and 30 (53%) were female, 40 (70%) of these infants were white, 13 (23%) were African American, and four (7%) were classified as other race. Among white infants, nearly one infant died due to SUDI for every 1,000 live births. However, the rate among African American infants is higher, with more than two SUDI deaths for every 1,000 live births (Figure 8).

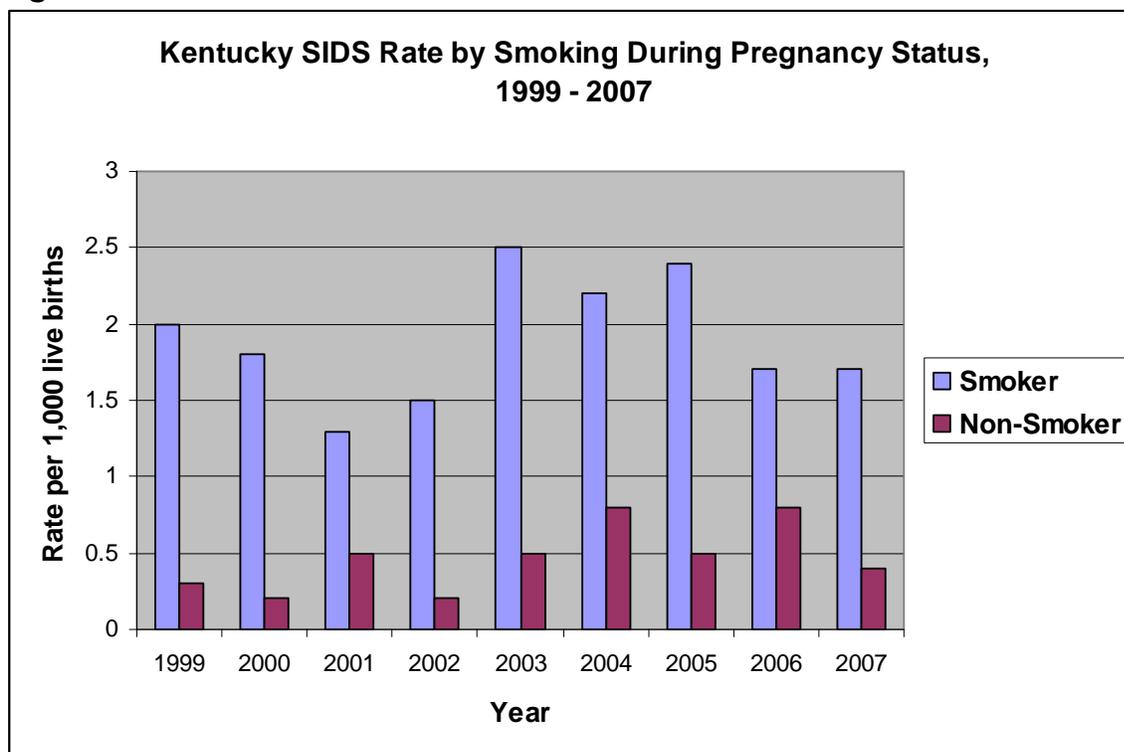
**Figure 8.**



Data Source: Kentucky Vital Statistics Files, 2007

Another risk factor for SUDI is the association of smoking and SUDI. In general, infants of mothers who smoke during pregnancy are twice as likely to die of SUDI as infants of non-smoking mothers. Smoking in the home after the baby is born (second-hand smoke) also increases the risk of SUDI and is additive to the prenatal exposure. Smoking during pregnancy is much higher in Kentucky compared to the nation. Women in Kentucky are more than twice as likely to smoke during pregnancy as other women in the United States. The increased risk of SUDI for those who smoke during pregnancy is clearly demonstrated in (Figure 9). In 2007, Kentucky babies born to women who smoked during pregnancy were 4 times more likely to die from SUDI than those born to women who did not smoke. Although the rate of death by SUDI for infants of smoking mothers has fluctuated over the last nine years, it has consistently remained at least three times higher than that of infants with non-smoking mothers. The rate of SUDI in non-smoking mothers in Kentucky is very low.

Figure 9.



Note: Deaths that could not be linked to birth certificates were excluded.

Data Source: Kentucky Vital Statistics Files; Linked Live Birth and Death Certificate Files, 1999-2007

## **2. SUDDEN INFANT DEATHS OF UNDETERMINED CAUSE**

In 2007, the cause of death of 23 Kentucky infants could not be determined, which can be very frustrating as people look for reasons/causes of death. In some cases, even the most thorough and careful scene investigation and autopsy do not produce a definite cause of death because several risk factors are present that are significant enough to have possibly contributed to the death. Sudden unexpected infant deaths involving an unsafe sleep environment may be classified as undetermined, for example, when accidental suffocation is suspected but not conclusively demonstrated by the scene investigation.

The Centers for Disease Control and Prevention has designed the Sudden Unexplained Infant Death Investigation (SUIDI) reporting form, which is now being used by coroners to collect data and assist medical examiners in Kentucky. Thanks to the help of the coroners, Kentucky has an extremely high rate of autopsies as required by the CDC to gather information on these deaths. Kentucky is very fortunate to have autopsies performed by forensic pathologists who have special training in studying the causes of human death. This will hopefully provide more answers for families and aid communities in their efforts to prevent future infant deaths.

## RISK FACTORS AND RECOMMENDATIONS FOR SUDDEN UNEXPLAINED DEATH IN INFANCY (SUDI)

The most recent recommendations from The American Academy of Pediatrics (AAP) are as follows:

- The American Academy of Pediatrics no longer recognizes side sleeping as a reasonable alternative to fully supine (lying on back). Studies found that the side sleep position is unstable and increases the chances of the infant rolling onto his or her stomach. The caregiver should use the back sleep position during every sleep period. The AAP and partners launched the Back to Sleep Campaign approximately 10 years ago. For more information you may visit [www.nichd.nih.gov/sids](http://www.nichd.nih.gov/sids).
- Bed sharing is not recommended during sleep. Infants may be brought into bed for nursing or comforting, but should be returned to their own crib or bassinet when the parent is ready to return to sleep. However, there is growing evidence that room sharing (infant sleeping in a crib in parent's bedroom) is associated with a reduced risk of SUDI. The AAP recommends that a baby sleep in the room with parents but not share a bed with other children or adults. Bed sharing also increases the risk of an overlay which occurs when a parent or other person sleeping with the infant unintentionally rolls over or lays upon the infant; therein blocking the infant's airway. The risk of overlays seems to be particularly high when there are multiple bed sharers and also may be increased when the bed sharer has consumed alcohol or is over-tired.
- Avoid soft bedding. Soft bedding may be pillows, quilts, comforters, sheepskins, waterbeds, couch cushions, stuffed toys.
- Avoid any extra objects in the crib with the baby. No pillows, stuffed animals, bumper pads, extra blankets, or sheets should be in the crib. The AAP recommends using sleep clothing with no other covering over the infant: for example, infant sleep sacks that are designed to keep the infant warm without the possible hazard of head covering.
- Avoid overheating. The infant should be lightly clothed for sleep, and the bedroom temperature should be kept comfortable for a lightly clothed adult. Over-bundling should be avoided, and the infant should not feel hot to the touch.
- Research published by the AAP now indicates an association between pacifier use and a reduced risk of SUDI, which is why the revised policy recommends the use of pacifiers at nap time and bedtime, throughout the first year of life. However, the procedures in place by the AAP state that the pacifier should be used when placing the infant down for sleep and not be reinserted once the infant falls asleep. If the infant refuses the pacifier, he or she should not be forced to take it. Additionally, pacifiers should be cleaned often and replaced regularly.
- Maternal smoking and second-hand smoke in the home are potent risk factors for Sudden Unexplained Death in Infancy. Babies whose mothers smoked when pregnant are twice as likely to die of SUDI, and the risk increases further if there is smoking in the home after they are born. In Kentucky, SUDI occurred three to five times more frequently over the last nine years in mothers who smoked during pregnancy than in non-smoking mothers. Any home with a young baby should make every effort to keep the home smoke-free.

## PREVENTION STRATEGIES

### Parents:

1. *Sleep position:* Infants should be placed on their backs to sleep throughout the first year of life.
2. *Sleep environment:* Do not place infants on adult beds or sofas to sleep; babies should sleep in their own bed, not with adults or other children.

3. *Bedding:* Place baby on a firm, tight-fitting mattress in a crib that meets current safety standards. Avoid placing the baby on soft quilts or comforters, sofas, pillows, waterbeds, or sheepskins. Stuffed animals and pillows should not be placed in the crib with the baby. Avoid using bumper pads. Additionally loose bedding such as blankets and sheets may be hazardous. If a blanket is used it should be tucked in around the crib mattress and only as high as the infant's waist, so that the infant's face is less likely to become covered.
4. *Breastfeeding:* Mothers are encouraged to breastfeed. Even if breastfeeding, infants should not sleep in the beds with their mothers as this puts the baby at increased risk of suffocation and overlay.
5. *Pacifier use:* Research now indicates an association between pacifier use and a reduced risk of SUDI, which is why the AAP recommends the use of pacifiers at nap time and bedtime throughout the first year of life.
6. *Temperature:* To avoid overheating, do not overdress the baby or over-bundle the baby. If a light blanket is needed, make sure you tuck it in on all sides and that it doesn't come above the baby's waist. Never cover the baby's head and face.
7. *Smoking:* Avoid smoking during and after pregnancy. Create a smoke-free environment in the home during pregnancy and after the baby comes home from the hospital.
8. *Prenatal Care and well-baby care:* Mothers should receive prenatal care as early as possible in the pregnancy. They should also make sure to keep their baby on the schedule given by the pediatrician.

#### Professionals:

1. Newborn nursery personnel, physicians, nurses, and public health officials should instruct all new parents and potential caregivers in safe sleeping practices and other strategies to reduce the risk of SUDI.
2. Potential care givers should all receive training on SUDI prevention and follow AAP guidelines on safe sleep practices.
3. Promote Safe Sleep education and campaigns.

#### CFR Teams:

1. All sudden, unexplained deaths of infants <1 year of age require an autopsy and should be reviewed by a county child fatality review team. The data pertaining to infant deaths is critical in identifying risk factors for SUDI and providing targeted prevention messages for communities.
2. Encourage a multidisciplinary approach that includes thorough completion of death scene reports by coroners in all counties, include metabolic screening reports with other case documents to more accurately define the cause of deaths, and classify the death correctly as SUDI, co-sleeping, suffocation, overlay, positional asphyxia, or an inborn metabolic disease.

## **RESOURCES**

American Academy of Pediatrics .....	<a href="http://www.aap.org">www.aap.org</a>
National SIDS/Infant Death Resource Center.....	<a href="http://www.sidscenter.org">www.sidscenter.org</a>
National Institutes of Health.....	<a href="http://www.NICHD.NIH.gov/SIDS">www.NICHD.NIH.gov/SIDS</a>
SIDS Kentucky Network .....	<a href="http://www.SIDSKY.org">www.SIDSKY.org</a>
First Candle .....	<a href="http://www.FirstCandle.org">www.FirstCandle.org</a>
American SIDS Institute.....	<a href="http://www.sids.org">www.sids.org</a>

## II. CHILD DEATHS- CHILD FATALITY

More children in Kentucky die of injury related causes than natural cause deaths. Injury related deaths are more likely to be preventable than natural cause deaths. Many factors have been associated with increased risk of injury or death in children including socioeconomic factors, cultural factors, geographical location, education level, and health and safety issues in the community. Understanding these factors is critical to addressing preventable injury related child death through state and community-based interventions.

### A. LEADING CAUSES OF DEATH/TRENDS BY AGE

#### Children 1 to 4:

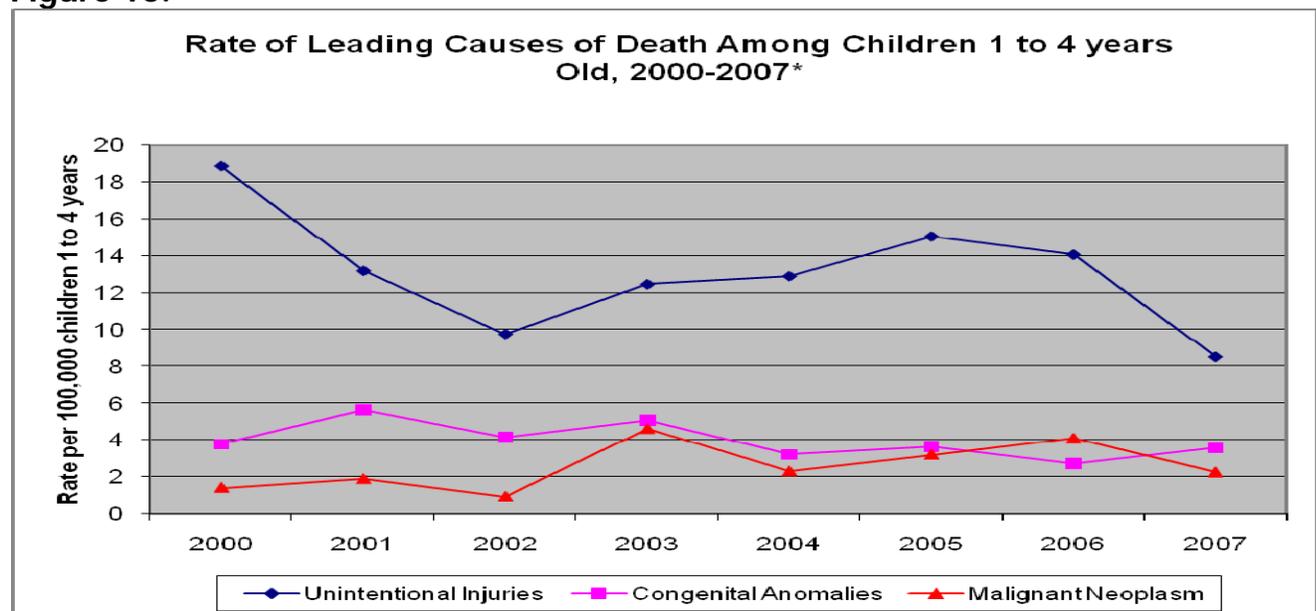
Unintentional injuries were the leading causes of death for children aged one to four during 2007 (Table 3). This particular age group can be especially vulnerable to injuries due to incomplete cognitive and physical development, a curious nature, and lack of adult supervision.

**Table 3. Top Three Leading Causes of Death among Children Aged 1 to 4 in Kentucky, 2007**

Cause	Total # of Deaths
Unintentional Injuries	19
Congenital Anomalies	8
Malignant Neoplasm	5

Unintentional injury was the leading cause of death among children one to four years old from 2000 to 2007 (Figure 10). The rate of death from unintentional injury has decreased to 9.0/100,000 children in 2007. Congenital anomalies is the second leading cause of death for this age group, at 4.0/100,000 children. The death rate from malignant neoplasm has decreased and is now the third leading cause of death for one to four year olds in Kentucky. In 2007, the rate of death from malignant neoplasm was 2.0/100,000 children.

**Figure 10.**



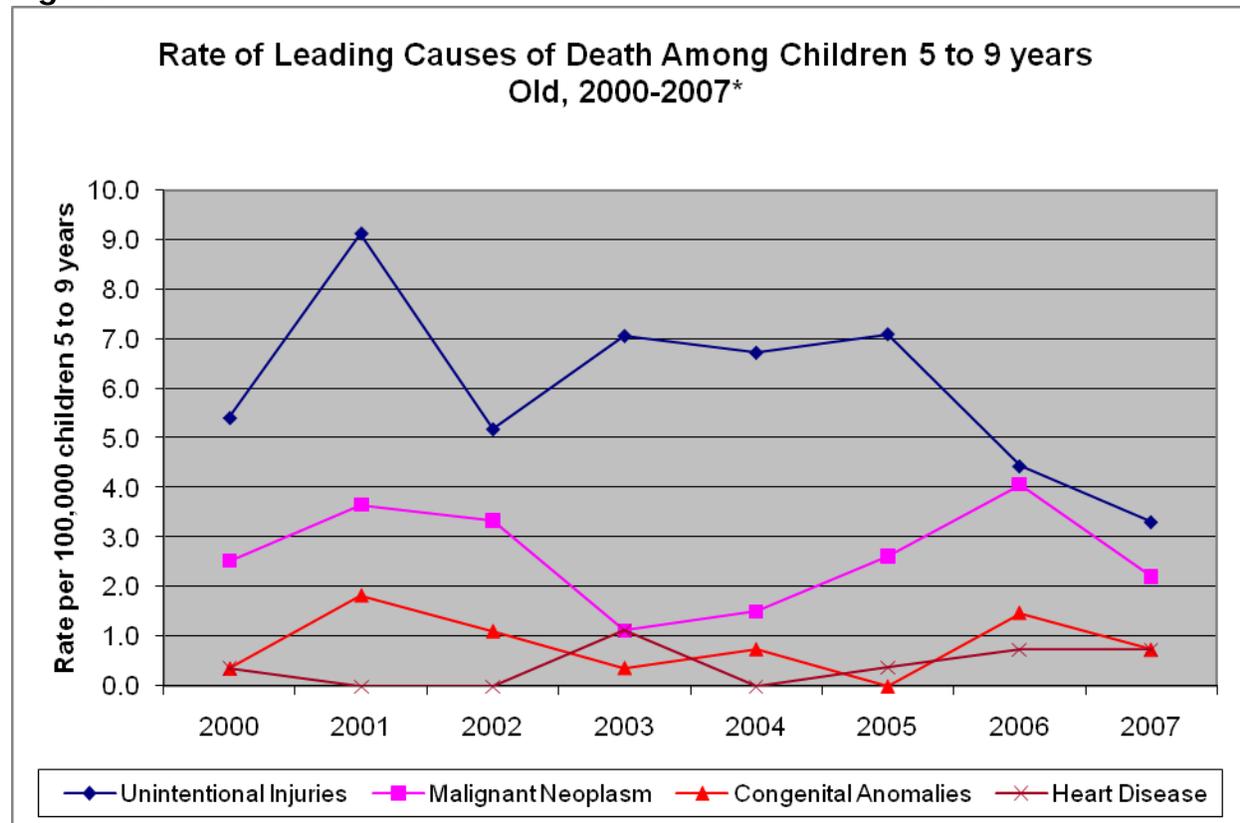
**Children 5 to 9:**

During 2007, the leading cause of death among children aged five to nine was also unintentional injuries, which is shown in Table 4. Unintentional injuries are followed by malignant neoplasm, congenital anomalies, and heart disease as the next leading causes of death for this age group.

**Table 4. Top Three Leading Causes of Death among Children Aged 5 to 9 in Kentucky, 2007**

Cause	Total No. of Deaths
Unintentional Injuries	9
Malignant Neoplasm	6
Congenital Anomalies	4

**Figure 11.**



Data Source: Kentucky Vitals Statistics, 2000-2007

\*Rates based on 20 or fewer deaths and may be unstable. Use with caution.

From 2000 to 2007, the leading cause of death among children five to nine years old was unintentional injury (Figure 11). The next leading cause of death among five to nine year old children in Kentucky was malignant neoplasm followed by congenital anomalies including heart disease. The death rate of malignant neoplasm per 100,000 children was higher than that of congenital anomalies in all years except 2003. Congenital anomalies are the third leading cause of death with nearly 1.0/100,000 children.

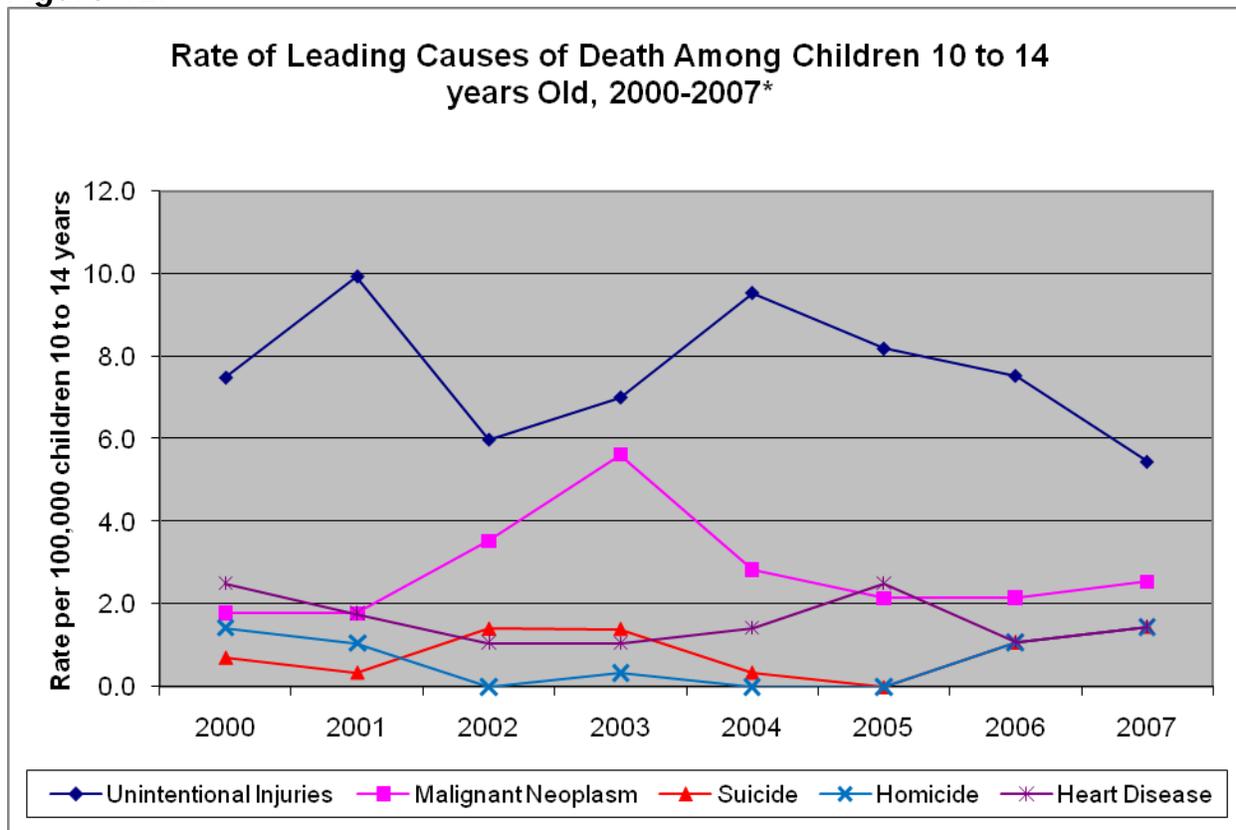
**Children 10 to 14:**

Unintentional Injuries were again the leading cause of death among children aged 10 to 14 in 2007 (Table 5). As children age, injuries continue to remain the leading cause of death followed by violent deaths, including homicide and suicide. In 2007, natural cause related illnesses were the third leading cause of death in this age group.

**Table 5. Top Three Leading Causes of Death among Children Aged 10 to 14 in Kentucky, 2007**

Cause	Total No. of Deaths
Unintentional Injuries	15
Violent death (Homicide, Suicide)	8
Malignant Neoplasm	7

**Figure 12.**



Data Source: Kentucky Vitals Statistics, 2000-2007

\*Rates based on 20 or fewer deaths and may be unstable. Use with caution.

Among children 10 to 14 years old, from 2000 to 2007, the leading cause of death was unintentional injury (Figure 12). The next leading causes of death for 10 to 14 year olds were malignant neoplasm, heart disease, homicide and suicide. The rate of death from malignant neoplasm, heart disease, and suicide all increased slightly from 2006. The rate of death due to homicide increased as well, bringing it to tie with heart disease and suicide as the third leading cause of death of 10 to 14 year olds in Kentucky in 2007.

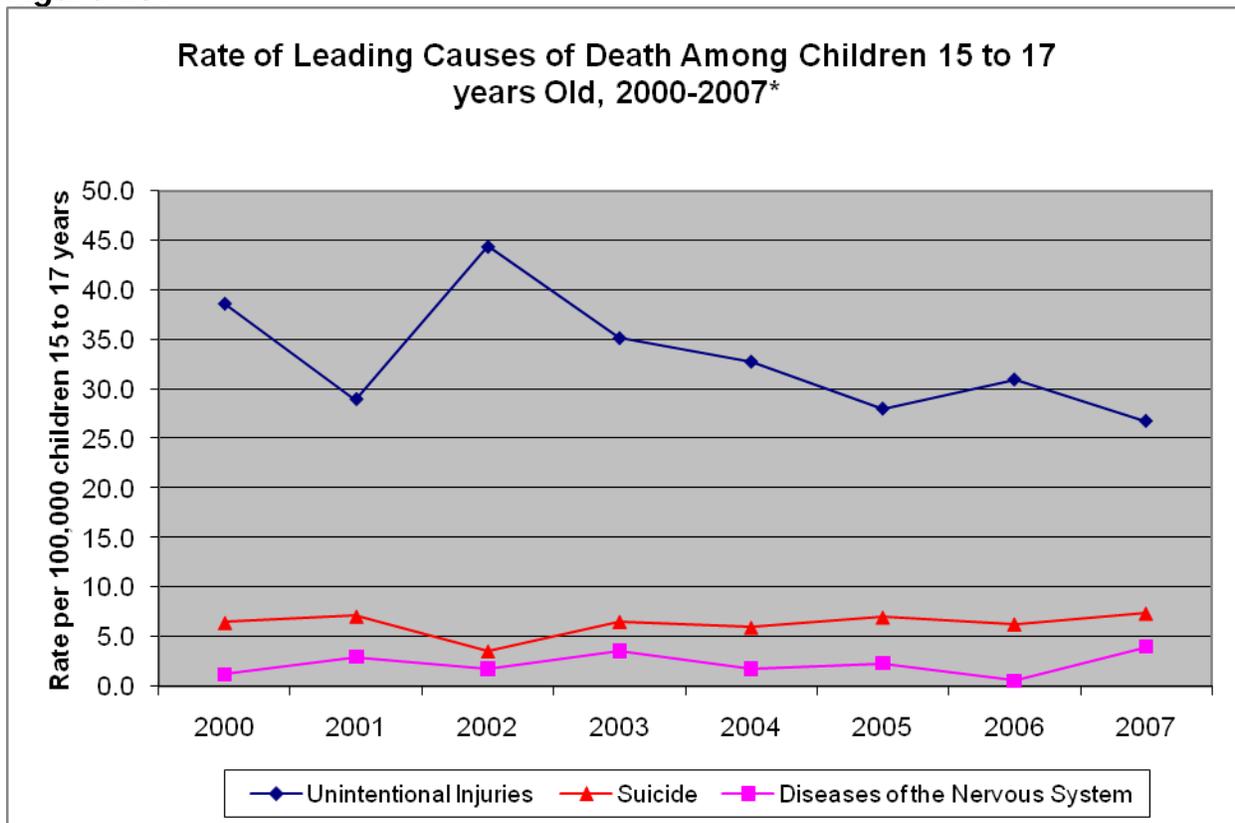
### **Children 15 to 17:**

The leading cause of death among Kentucky teens aged 15 to 17 in 2007 was unintentional injuries. These deaths are mostly from motor vehicle accidents involving young drivers and their passengers. The second leading cause of death in this age group is suicide; followed by diseases of the nervous system (Table 6). As teens become older they may engage in more risk taking behavior, and they may be more easily influenced by their peers.

**Table 6. Top Three Leading Causes of Death among Children Aged 15-17 in Kentucky, 2007**

<b>Cause</b>	<b>Total No. of Deaths</b>
Unintentional Injuries	47
Suicide	13
Diseases of the nervous system	7

**Figure 13.**



Data Source: Kentucky Vitals Statistics, 2000-2007

\*Rates based on 20 or fewer deaths and may be unstable. Use with caution.

From 2000 to 2007 the leading cause of death among Kentucky teens 15 to 17 years old was unintentional injury (Figure 13). Teens 15 to 17 years old have the highest rate of death from unintentional injury for all years shown, compared to other age groups. The next leading causes of death for 15 to 17 year old teens are suicide and diseases of the nervous system.

## **B. MANNER AND CAUSE OF CHILDHOOD DEATHS**

Childhood deaths are generally grouped into deaths from natural causes or deaths from injuries. "Natural cause" deaths include any fatality occurring due to innate, existing conditions. Natural causes include congenital anomalies, disease, and other medical causes. "Injury cause" deaths include fatalities resulting from physical, chemical, thermal, or electrical forces. Injury-related deaths result from accidents, homicides, suicides or other violent deaths. Table 7 shows the total number of deaths for "natural cause" and "injury cause" fatalities in 2007 by gender and age.

**Table 7. Comparison of "Natural Cause" and "Injury Cause" Child Fatalities**

<b>Causes of Child Death 2007</b>	<b>Natural Cause</b>		<b>Injury Cause</b>		<b>Grand Total</b>	
	<b>#</b>	<b>Rate*</b>	<b>#</b>	<b>Rate*</b>	<b>#</b>	<b>Rate*</b>
<b>Total</b>	441	44.3	152	15.3	618** ~	62.1
<b>Male</b>	242	24.3	90	9.0	345	34.7
<b>Female</b>	199	20.0	62	6.2	272	27.3
<b>Age Groups:</b>						
<b>&lt;1</b>	339	34.1	17	1.7	380~	38.2
<b>1-4</b>	32	3.2	21	2.1	54	5.4
<b>5-9</b>	25	2.5	12	1.2	37	3.7
<b>10-14</b>	27	2.7	27	2.7	54	5.4
<b>15-17</b>	18	1.8	75	7.5	93	9.3

~ 1 – SEX is missing

\*Rates are per 100,000 specified population; Denominator data are based on the 2007 population estimates for Kentucky from US Census. (994,818)

\*\*24 records in the Preliminary Vital Statistics Death Certificate file did not have cause of death coded.

The breakdown of natural and injury deaths by age is shown in Table 8. For children 1 to 17 years old, 42.9% of all deaths were due to natural causes, while 56.7% were due to injuries. The remaining 0.4% did not have a cause of death listed on the death certificate. Injury deaths have the most potential for prevention. Injury deaths can be either from unintentional injury, like motor vehicle deaths, or from intentional injury/violent deaths. The majority of injury deaths are accidental, but the numbers of homicides and suicides in children are significant.

**Table 8. Child Deaths by Manner of Death and Age in Kentucky 2007**

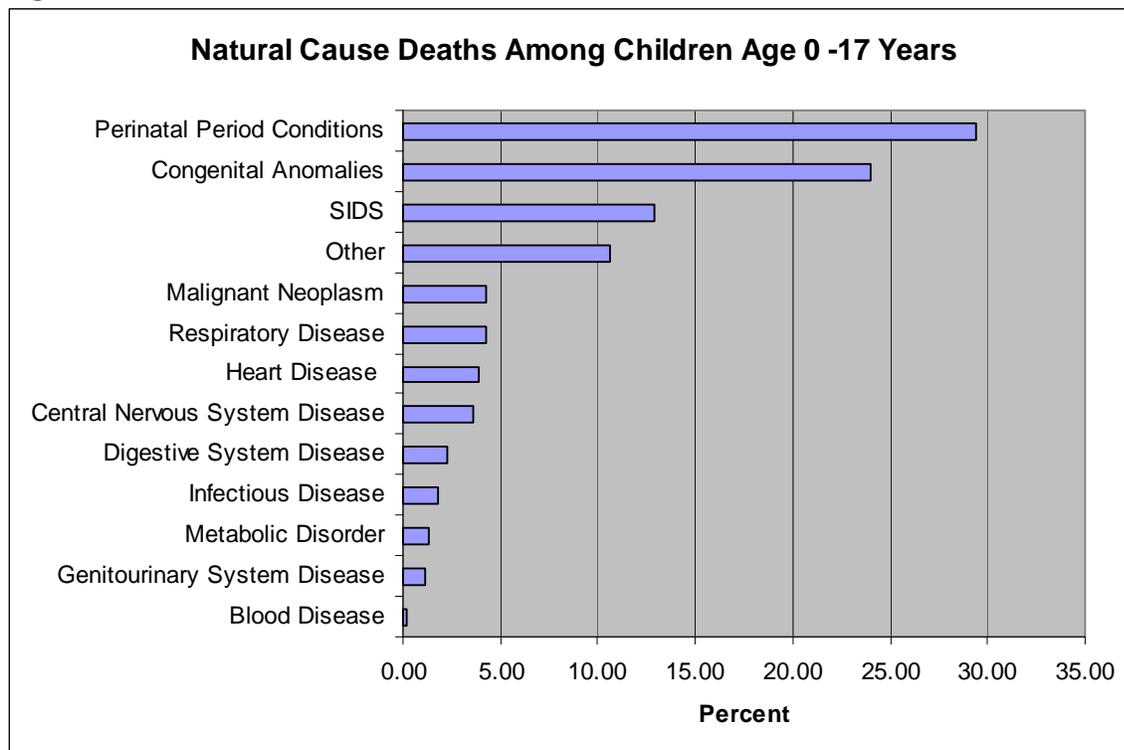
Age	Natural	Accident	Homicide	Suicide	Total	
	#	#	#	#	#	%
1-4 Years	32	19	2	0	54	23
5-9 Years	25	9	0	0	37	15
10-14 Years	27	19	4	4	54	23
15-17 Years	18	47	5	13	93	39
Total	102	94	11	17	238	100

Note: 14 children in 2007 did not have a cause of death listed or intent was not determined, but they are included in the total.

### **C. NATURAL CAUSE DEATHS IN CHILDREN**

Deaths classified under the category of “natural cause” are generally linked to a specific disease or condition. Figure 14 shows natural cause deaths among children birth to 17 years old for 2007 by cause of death groupings. Deaths due to perinatal conditions account for 29% of all natural deaths among children in 2007. SUDI alone make up 13% of natural deaths (see discussion of SUDI in part C of section I.); 24% of natural deaths among children were due to congenital anomalies.

**Figure 14.**



Data Source: Kentucky Vital Statistics Files, 2007

Note: This is 2007 data and the SUDI deaths may also be referred to as SIDS; in 2007 these deaths were classified as natural deaths.

**Figure 15. Leading Natural Causes of Death Among Kentucky Children 14 and under, 2007**

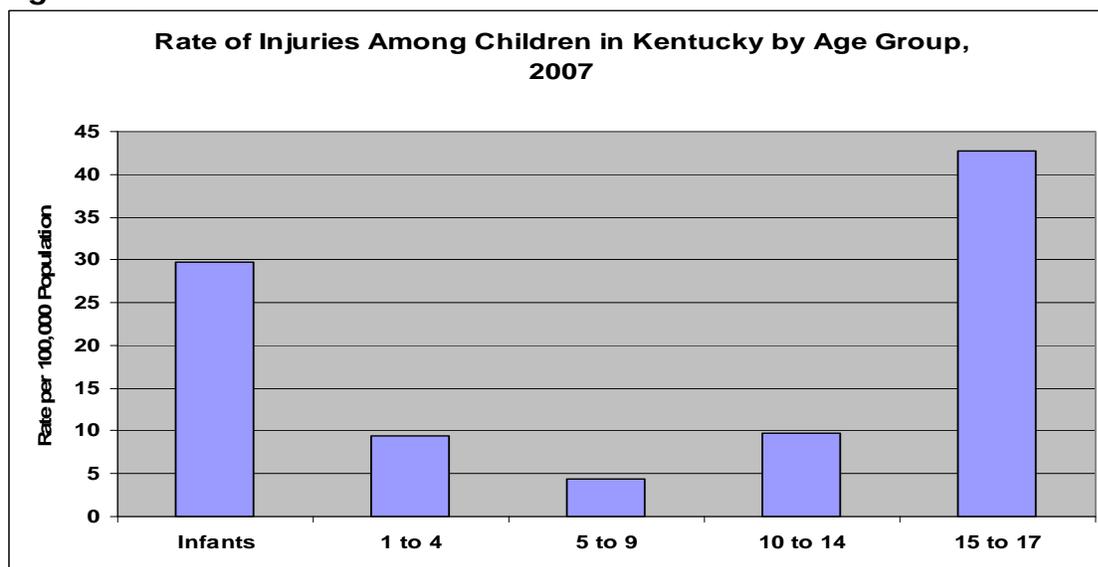
<b>NATURAL CAUSES*</b>	<b>Number of Deaths</b>
Perinatal Period Conditions (conditions related to, but not limited to, disorders related to length of gestation and fetal growth, birth trauma, respiratory and cardiovascular disorders specific to the perinatal period, digestive system disorders of fetus and newborn.)	130
Congenital Anomalies	106
SUDI	57
Malignant Neoplasm	18
Respiratory Disease	16
Heart Disease	14
Other (digestive system, CNS, mental disorder, infectious disease, other ill-defined conditions etc.)	83

\*Causes are based on ICD code groupings, not on individual ICD codes. Perinatal conditions as defined by The Center for Disease Control are certain conditions originating in the perinatal period; perinatal meaning occurring in, concerned with, or being in the period around the time of birth. Perinatal conditions (P00-P96) is used as referenced in International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Volume 1 (1992); with these exclusions: congenital malformations, deformations and chromosomal abnormalities (Q00-Q99); endocrine, nutritional and metabolic diseases (E00-E90); injury, poisoning and certain other consequences of external causes (S00-T98); neoplasms (C00-D48); and tetanus neonatorum (A33).

## **D. INJURY DEATHS IN CHILDREN**

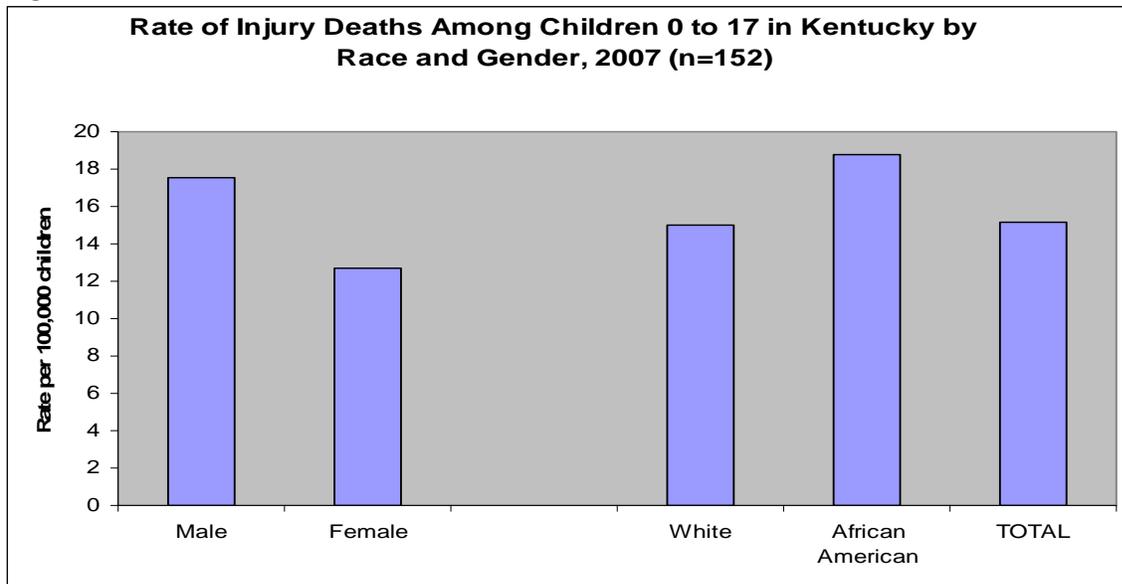
Kentucky's children continue to experience many deaths from injury (Figure 16). Injuries remain a major cause of morbidity and mortality for children, not just in Kentucky, but in the nation. The majority of childhood injuries are potentially preventable, yet they continue to increase and remain the leading cause of death to children over one year of age. The National Center for Injury Prevention and Control says the cost of injuries to our nation is estimated at more than \$400 billion each year. These costs include direct medical care, rehabilitation, lost wages and lost productivity. The federal government pays approximately \$80 billion each year in injury related medical costs and about \$18.4 billion in death and disability benefits. It is estimated that insurance companies and other private sources pay approximately \$161 billion annually.

**Figure 16.**



Data Source: Kentucky Vital Statistics Files, 2007

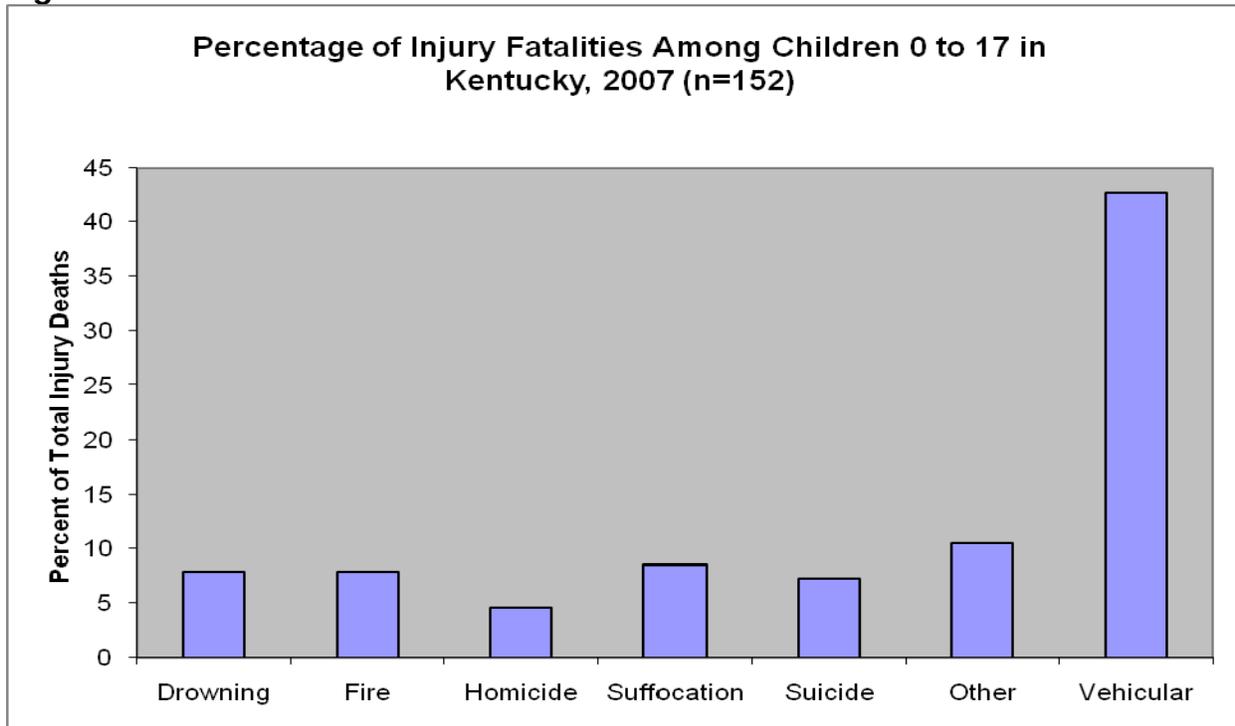
**Figure 17.**



Data Source: Kentucky Vital Statistics Files, 2007

In Kentucky, African American children died at a higher rate (19.0/100,000) than white children in 2007 (15.0/100,000). Kentucky's injury death rate for African American children is lower than the national average of 22.0/100,000, and the injury death rate for white children is slightly higher than the national average which is 14.0/100,000. In 2007, male children under 17 years old were 1.4 times more likely to die from injuries than females. In Kentucky, 17.6/100,000 male children under 17 years old died from injuries in 2007, compared to 12.6/100,000 female children (Figure 17). The national injury death rate for males is higher than ours at 19.0/100,000, but is lower for females with a rate of 11.0/100,000.

**Figure 18.**



Data Source: Kentucky Vital Statistics Files, 2007

Injury deaths were responsible for 152 Kentucky children dying in 2007. When looking at injury deaths by type, more children died from motor vehicle crashes than any other injury (Figure 18). The category for "Other" includes deaths due to circumstances involving falls, rifles or larger firearms discharge, accidental poisoning by drug or alcohol exposure, and other unspecified events.

## **E. UNINTENTIONAL INJURY RELATED DEATHS**

Unintentional injuries, more commonly known as accidents, are the number one cause of all deaths for Kentucky's children aged 1-17. Perhaps the most unsettling part of these deaths is that they are potentially preventable. Unintentional injuries include transportation deaths, drowning fatalities, fire fatalities, poison fatalities, suffocation in infants and even the unintentional act of leaving a child in a car alone. The following section will look at the specifics of accidental deaths and give risk factors and recommendations for prevention.

### **1. TRANSPORTATION DEATHS**

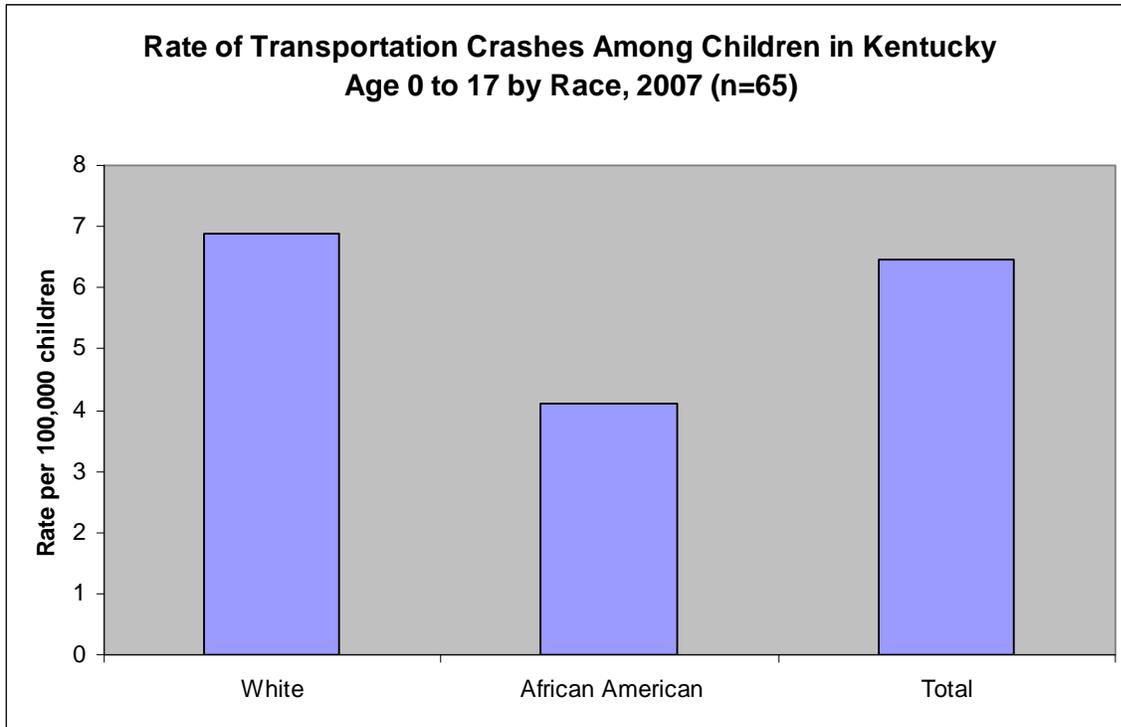
#### **a. MOTOR VEHICLE FATALITIES**

In the United States, as well as in Kentucky, motor vehicle crashes are the leading cause of injury death for people ages 1–44 years; the leading cause of death for children from 1-14 years; and, the second leading cause of injury death for children less than one year. Kentucky Vital Statistics data shows that in 2007, for children 17 and under, motor vehicle crashes accounted for 47%, or almost half, of all injury related deaths.

In 2007, there were a total of 865 Kentuckians (including adults) killed in motor vehicle crashes and 65 (8%) of those motor vehicle fatalities occurred with Kentucky's children less than 18 years of age. There were 28,889 motor vehicle crashes involving children, and in those crashes, 1,726 (67%) of the children were not restrained. However, of the 65 child fatalities from motor vehicle accidents, 44 (68%) were unrestrained. This is consistent with past years and makes motor vehicle fatalities the leading cause of injury deaths for Kentucky's children 17 years and under, according to Kentucky State Police Statistics.

Motor vehicle fatalities include drivers, passengers, and pedestrians who are struck by motor vehicles, bicyclists, and occupants in any other form of transportation, including all-terrain vehicles. In 2007, Kentucky's children were killed as car drivers or passengers (40%), vehicle in which the type was not specified (44%), pedestrians or riding a bicycle (6%), and ATV drivers or passengers (10%). The rate of death for children under 18 from transportation crashes is 6.5/100,000 children. Among white children, nearly 7.0/100,000 died in transportation crashes in 2007. Four per 100,000 African American children died in transportation crashes (Figure 19).

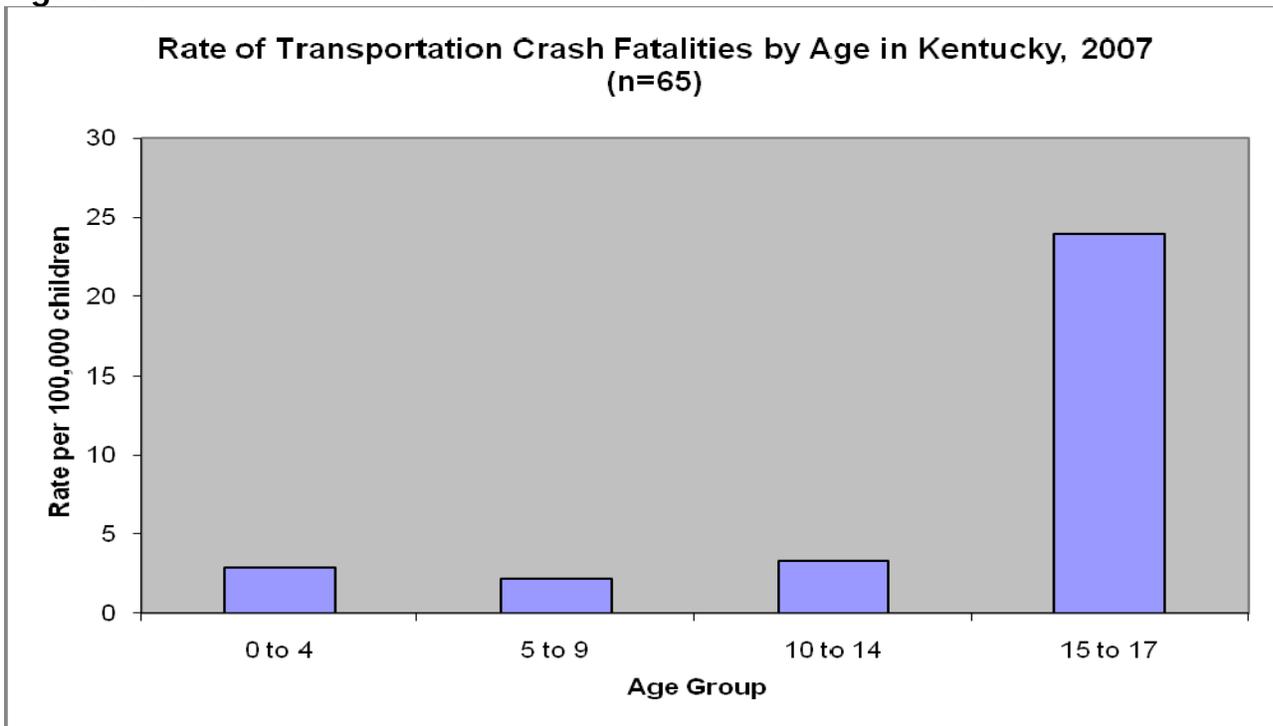
**Figure 19.**



Data Source: Kentucky Vital Statistics Files, 2007

In 2007, nearly 24 youth (age 15 to 17 years) per 100,000 died in crashes in Kentucky. Kentucky teens, aged 15 to 17 years were seven times as likely to die in transportation crashes, compared to the rate of all other age groups.

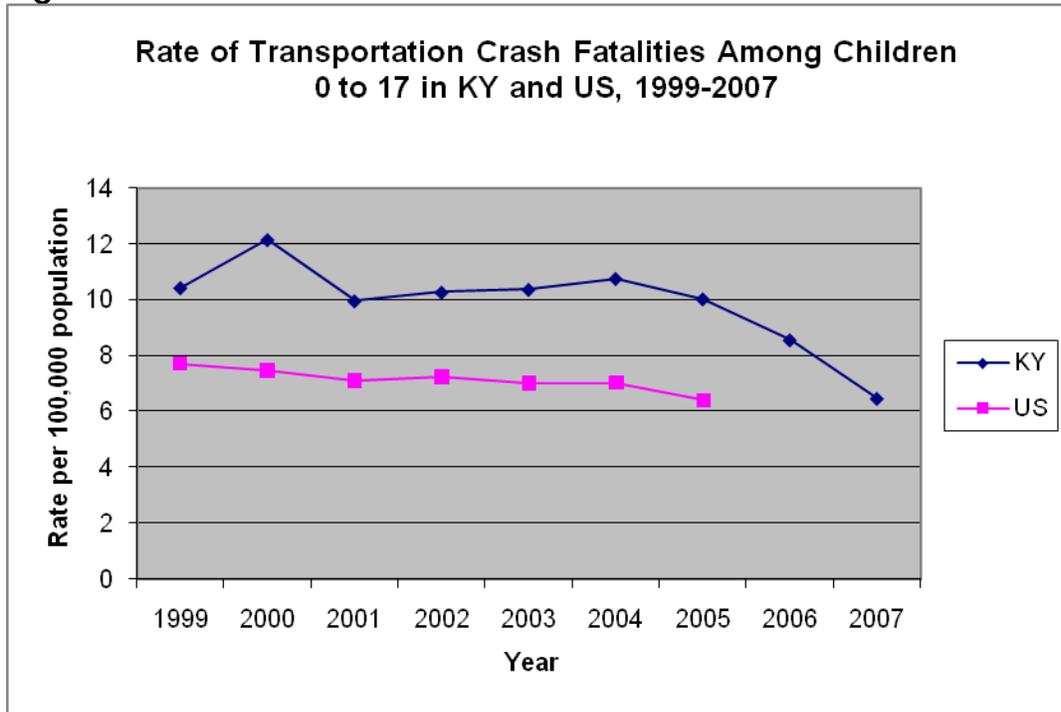
**Figure 20.**



Data Source: Kentucky Vital Statistics Files, 2007

From 1999 to 2007, the rate of transportation crash fatalities in Kentucky has been higher than the United States rate. However, the rate decreased in Kentucky from over 12.0/100,000 in 2000 to 6.5/100,000 in 2007 (Figure 21). The recent decrease comes after the implementation of the Graduated Driver Licensing Program in 2006. The program became law from strong legislative leadership, and was supported by the recommendations and efforts of the state CFR team. The “2008 Booster Bill” law may have a similar impact in decreasing child deaths.

**Figure 21.**



Data Source: National Vital Statistics System; Deaths, Data not available for 2006 and 2007; & Kentucky Vital Statistics Files; Death Certificate Files, 1999-2007

**b. PEDESTRIAN FATALITIES**

In 2007, a few deaths occurred to children as pedestrians on public roadways. Young children are impulsive and have difficulty judging speed and distance. They are more likely to suffer injuries on residential streets with high traffic volume and large numbers of parked cars on the street.

Toddlers are at risk primarily due to their small stature and limited interactions with traffic. The majority of pedestrian injuries involving toddlers occur when a vehicle is backing up. Young children are at increased risk of death in driveways and other relatively protected areas. Parents, grandparents and caregivers must remember to never leave an infant/toddler unattended around a parked vehicle.

**c. BIKE & MOTORCYCLE RELATED FATALITIES**

Motor vehicle fatalities also included bicycling. In addition to bicycles, children died as a result of injuries sustained in motorcycle accidents as either passengers or drivers.

The single most effective safety device available to reduce brain injury from any type of bike crash is a helmet. In the event of a crash a bike helmet can reduce serious brain injury by 85%. Unfortunately, national estimates on helmet usage suggest that only 15-25% of children under 14 years of age wear a

helmet according to SAFE KIDS. According to the National Center for Injury Prevention and Control primary strategies to increase helmet use include: 1) education, 2) legislation and 3) helmet distribution programs.

#### **d. ALL-TERRAIN VEHICLE (ATV) FATALITIES**

In 2007, 10% of Kentucky's transportation crash fatalities among children under 18 were due to ATV injuries. Of these, most involved riding on roads. An ATV that turns over can lead to serious injury or death, such as blunt trauma to the chest, a combination of chest and head injuries, or positional asphyxia. Overturns typically occur when riding on a steep hillside or when the ATV runs off the road, but can even occur in an open yard. Helmets help protect the head from serious injury while riding an ATV and should always be worn regardless of age, experience, or length of travel time on the ATV. However, in the child ATV deaths that occurred in Kentucky in 2007, most were not wearing helmets. Helmets do not protect against chest injuries that may occur and chest injuries were involved in at least half of the cases. These ATV fatalities all occurred in different counties, scattered across the state. While summer is generally considered the time when trauma occurs, ATV deaths occurred throughout the year, beginning as early as February and as late as November. The age range of those killed due to ATV accidents is 6 to 17 years.

In addition to the ATV deaths, dirt bikes also pose a threat of serious injury or death. Just as with ATV overturns and riding on roads, dirt bikes can be dangerous, especially when the child is not wearing a helmet. Unfortunately, neither ATVs nor dirt bikes are typically thought of as motor vehicles and children are often allowed to drive these vehicles with no driving education. Sixty six percent of all the off-road vehicle deaths in 2007 involved roads and children with no driving experience.

### **RISK FACTORS FOR TRANSPORTATION FATALITIES**

The National Center for Injury Prevention and Control lists two factors as most significant in contributing to motor vehicle-related fatalities among children: 1) unrestrained children and 2) drunk drivers. The National Safe Kids Campaign reports that 45% of children age four years and under ride unrestrained. This places them at twice the risk of death and injury as those riding restrained. Child restraint use directly correlates to the restraint use of the caregiver. As with all the other states, Kentucky has primary enforcement of child restraints, meaning a police officer can stop and cite a driver for not having a child 50 inches and under properly restrained. The most common reason restrained children are killed is misuse of child car seats and premature graduation to seat belts. Through voluntary car seat checks, done by certified child passenger safety technicians across Kentucky, nearly 73% of the seats checked are used incorrectly. To find a certified child passenger safety technician near you, please visit <http://www.safekidsweb.org/events/events.asp> and click on your state. You may also visit [www.highwaysafety.ky.gov](http://www.highwaysafety.ky.gov) for more information about child seats and other safety issues.

Teenagers are three to four times more likely to be involved in a crash than the older driving population. According to the National Center of Injury Prevention and Control, risk factors faced by teens include inexperience, low rates of seatbelt use, and high rates of alcohol use. Inexperienced drivers lack perception, judgment, and decision-making skills that are required to drive safely. Kentucky's graduated licensing system (KRS 186.450) was passed by the General Assembly in 2006 and already deaths appear to be decreasing, (as the rate of transportation crash fatalities among children 0 to 17 decreased in 2007 to 6.5 per 100,000 from 8.6 per 100,000 in 2006.)

Although pedestrian injuries are not as common as motor vehicle occupant injuries, a disproportionate number of the injuries sustained by child pedestrians are severe. Often parents overestimate their

children's pedestrian skills. Children are impulsive and have difficulty judging speed, spatial relations, and distance. Safe Kids U.S.A. reports that auditory and visual acuity, depth perception and proper scanning ability develop gradually and do not fully mature until at least age 10. Toddlers are especially vulnerable, but unlike their older counterparts, toddlers are most likely to be struck in driveways, in parking lots or on sidewalks.

According to Safe Kids U.S.A., each year more than 130 children die from bicycle-related injuries, and more than 280,000 are treated in emergency rooms. Of these, nearly half (47%) have traumatic brain injuries. Proper use and proper fit of a helmet is important to reduce injuries. In a crash, the risk of head injury is doubled if the helmet is worn incorrectly.

ATVs are not "one-size-fits-all". According to the ATV Safety Institute, approximately 90% of youth ATV-related injuries occur when a child under the age of 16 is operating an adult-sized ATV. The U.S. Consumer Product Safety Commission data show that 92% of all ATV-related fatalities are the result of warned-against behaviors. These behaviors include: not wearing a helmet, riding on public roads, carrying a passenger on a single-rider ATV, riding the wrong size ATV, youth riding unsupervised, and riding with no formal ATV training.

## **PREVENTION STRATEGIES**

### **Parents:**

1. All children less than 13 years should ride properly restrained in the back seat.
2. Unless using a higher weighted harness car seat, children between 40-100 pounds should ride properly positioned with a lap/shoulder belt in a booster seat.
3. Always model and teach proper pedestrian behaviors.
4. Children should walk with an adult until they are at least 10 years of age.
5. Teach children to look left, right and left again before they cross the street and keep looking both ways until they reach the other side.
6. Educate children that if they must walk when it is dark, to wear light-colored clothing or clothing with reflective material so drivers can see them. A flashlight is also a good idea.
7. "Spot the Tot" is an initiative through Safe Kids U.S.A. encouraging drivers to take a five-second walk around the car before they get in to leave.
8. Teach kids to obey traffic signs and the rules of the road when riding a bicycle. Kids should not ride without supervision until they have demonstrated that they always follow the rules.
9. As long as it's certified and brand new, let kids pick out their own helmets. If they think a helmet looks cool, they'll be more likely to wear it when you're not around.
10. A helmet should sit on top of the head in a level position, and should not rock forward and backward or side to side. The helmet straps must always be buckled but not too tightly. Safe Kids recommends the "Eyes, Ears and Mouth" test: The rim of the helmet should be one to two finger-widths above the eyebrows, the straps should form a "V" just below the ear lobe, the buckle should be flat against the skin and the strap should feel snug when the rider's mouth is open.
11. Always wear protective gear when riding ATVs, motorcycles, bicycles, etc., especially a helmet.
12. Helmets should be worn at all times when riding a bicycle, scooter, skate board, motorcycle, moped, or ATV.
13. Children under the age of 16 years should not ride or operate ATVs of any size.
14. ATVs should never be ridden after dark.
15. ATVs should not be ridden by two people, unless the machine was manufactured to carry two riders.
16. Ask about ATV safety training courses in your community; you may visit [www.atvsafety.org](http://www.atvsafety.org) to find out about training in your area

17. Education about ATV safety must include leaving it parked without keys in the ignition and with the emergency brake on. Children should be instructed not to play around a parked ATV, just as they should not play around a car.
18. Children should not ride as a passenger on off-road utility vehicles until they have graduated from booster seats in an automobile at age 8 or 4'9" in height, and they must use a seat belt when available.
19. Never leave children alone in the car, not even for a minute.

**Professionals:**

1. Educate parents on strategies to reduce injury and death at car seat check-up events.
2. Educate parents on bike safety through bike rodeo programs.
3. Helmet distribution and education.
4. Institute the "Not Even For a Minute" Campaign. This campaign, sponsored by the Children's Trust Fund, urges parents and care givers to never leave a child alone in a vehicle, not even for a minute. More information please visit:  
[http://ctf.typepad.com/missouri\\_childrens\\_trust\\_/files/NEFAM\\_WebBroch.pdf](http://ctf.typepad.com/missouri_childrens_trust_/files/NEFAM_WebBroch.pdf).

**CFR Teams:**

1. Local CFR teams continue to work in their communities to avert transportation deaths. A number of community initiatives are targeted at teen driver safety, as well as promoting child safety seats for younger children.
2. The state child fatality review team will continue to improve data collection and analysis and work collaboratively with the Kentucky State Police, the Kentucky Injury Prevention Center at UK, and other groups with the common goal of reducing child deaths from motor vehicle accidents.

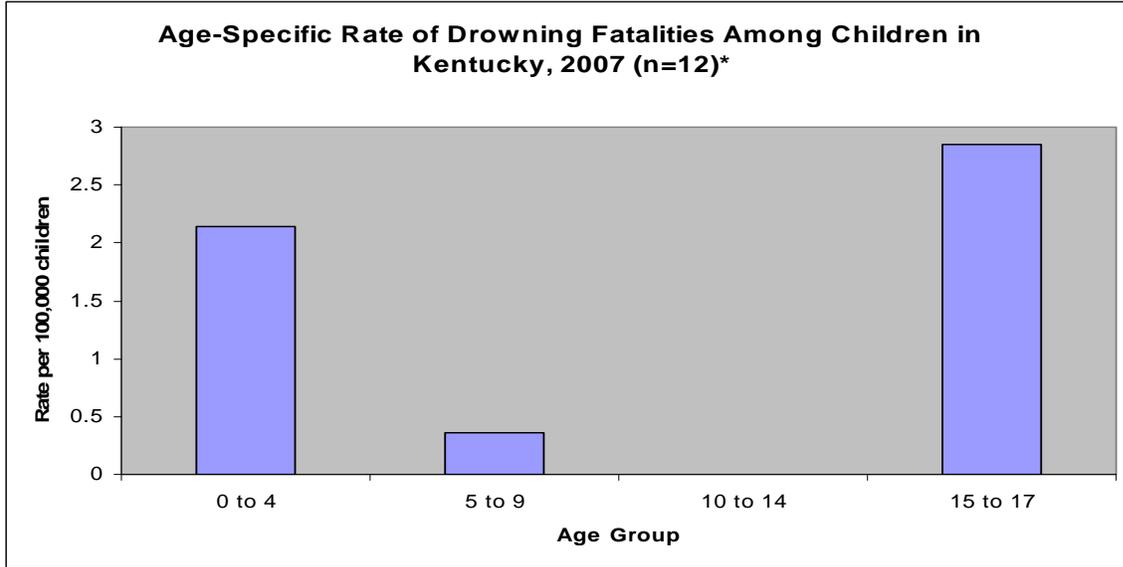
**RESOURCES**

American Academy of Pediatrics .....	www.aap.org
Children's Safety Network .....	http://research.marshfieldclinic.org
National SAFE KIDS Campaign .....	www.safekids.org
Center for Injury Prevention and Control .....	www.cdc.gov/ncipc
National Highway Transportation Safety Admin.....	www.nhtsa.dot.gov
ATV Safety Institute.....	www.atvsafety.org

**2. DROWNING FATALITIES**

In 2007, 12 Kentucky children died due to drowning. The place of drowning for these children included natural water, swimming pools, and unspecified places. Drowning in infants under age one typically occurs in bathtubs. Most drowning in children ages one to four happen in swimming pools. Children can drown in as little as an inch of water which makes wading pools, buckets, toilets, hot tubs, gold fish ponds, and other water sources dangerous as well. A child can drown in a matter of seconds and they usually drown when they are left unattended. Drowning occurs quickly and quietly. In 2007, Kentucky trends were consistent with the national trend as there were a number of children under four years of age that died due to drowning. (Figure 22) Children under four are at high risk and always need adult supervision. Older children are more likely to drown in creeks, lakes and rivers. In Kentucky, teenagers ages 15-17 had the highest rate of drowning deaths in 2007.

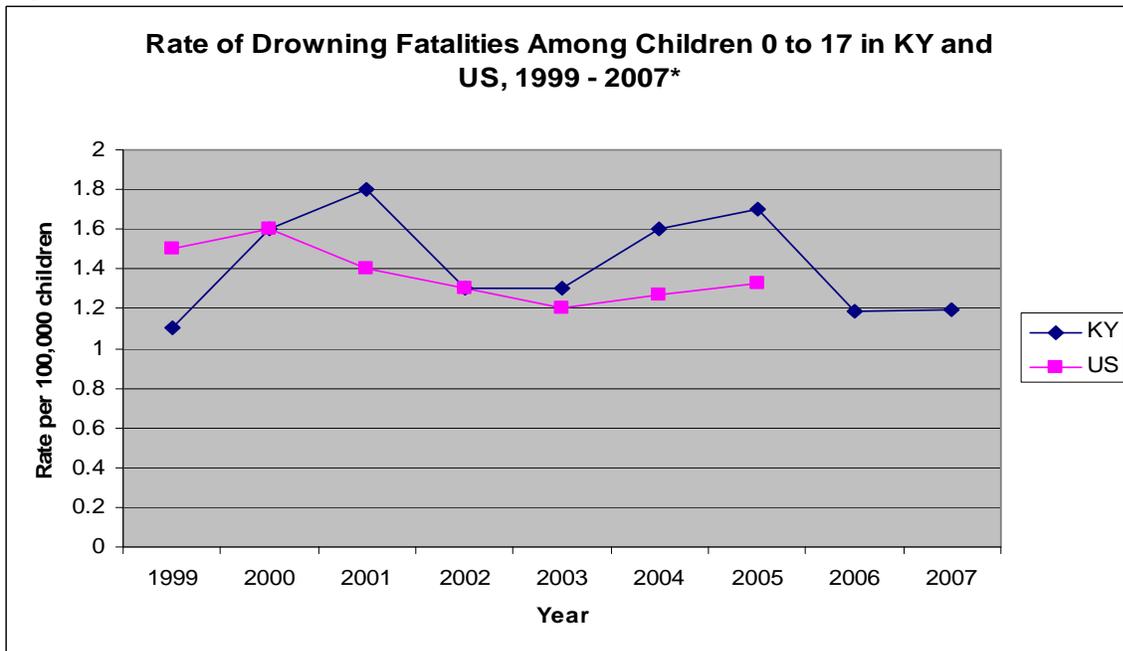
**Figure 22.**



Data Source: KY Vital Statistics Files, 2007

\*Rates based on 20 or fewer deaths and may be unstable. Use with caution.

**Figure 23.**



Data Source: National Vital Statistics System; Deaths, Data not available for 2006 and 2007; & Kentucky Vital Statistics Files, Death Certificate Files, 1999-2007

\*Note: Rates are based on 20 or fewer deaths and may be unstable. Use with caution.

## **RISK FACTORS FOR DROWNING**

Children are at risk of drowning when they are unsupervised around any water source. All children, regardless of age, are at risk. Pools without fences and steps that aren't properly secured increase the risk of a small child gaining access to the pool. Older children are at more risk due to swimming in lakes or streams.

## **PREVENTION STRATEGIES**

Local teams reviewed drowning deaths and produced preventive recommendations: closer supervision of children around water sources, making sure pools are enclosed with fences, removing steps to above-ground pools when the pool is not in use, having lifeguards at rivers or post no swimming signs, and limiting access to pools when adult supervision is unavailable. Kentucky has implemented The Virginia Graeme Baker (VGB) Pool and Spa Safety Act which requires public pools to comply with additional safety measures that minimize suction and entrapment hazards. For more information on this important law, go to <http://www.poolsafety.gov/index.html>. For additional information on swimming pools and bathing facilities regulations, please visit <http://chfs.ky.gov/dph/poolsafety.htm>. Public pools in Kentucky are required to have fences and a locked gate mechanism. Some city ordinances require for private pools to be fenced as well. Please check with local governmental offices to learn about local community ordinances and requirements.

### **Parents:**

1. Parents and caregivers need to be advised that they should never—even for a moment—leave children alone or in the care of another young child while in bathtubs, pools, spas, or wading pools or near irrigation ditches or other open standing water.
2. Residential pools should have a four-sided pool fence with a self-closing, self-latching gate. The fence should be at least four feet tall and should completely separate the pool from the house and the yard.
3. The AAP points out that rigid, motorized pool covers, pool alarms, and other protective devices, which may offer some protection if used appropriately and consistently, are not a substitute for 4-sided fencing.
4. Remove all water from containers, such as pails and 5-gallon buckets, immediately after use.
5. Make sure children always wear U.S. Coast Guard-approved personal flotation devices near open water or when participating in water sports.
6. Parents, caregivers, and pool owners should learn CPR and keep a telephone and equipment approved by the US Coast Guard (eg, life preservers, life jackets, shepherd's crook) at poolside.
7. Children need to be taught never to swim alone and never to swim without adult supervision.
8. Tell children to stay away from pool and hot tub drains.
9. Safe Kids U.S.A. reminds parents to educate children that if they find a drain cover that is loose, broken or missing, notify the owner or operator and do not enter the pool or hot tub.

### **Community Leaders:**

1. Enact or enforce pool fencing ordinances.
2. Enforce the use of personal flotation devices when boating.

**Professionals:**

1. The American Academy of Pediatrics encourages pediatricians to identify families who have residential swimming pools and then schedule periodic counseling beginning in the perinatal period to ensure that parents remain aware of the risk of drowning and near-drowning.
2. Adults and children should receive water safety education. This should include watercraft safety (wave-runners, boats, skis, etc) as well as the dangers of open water and other water hazards to small children.
3. Facilitate CPR trainings.

**CFR Teams:**

1. Promote public education.
2. Implement prevention strategies at the local level.

**RESOURCES**

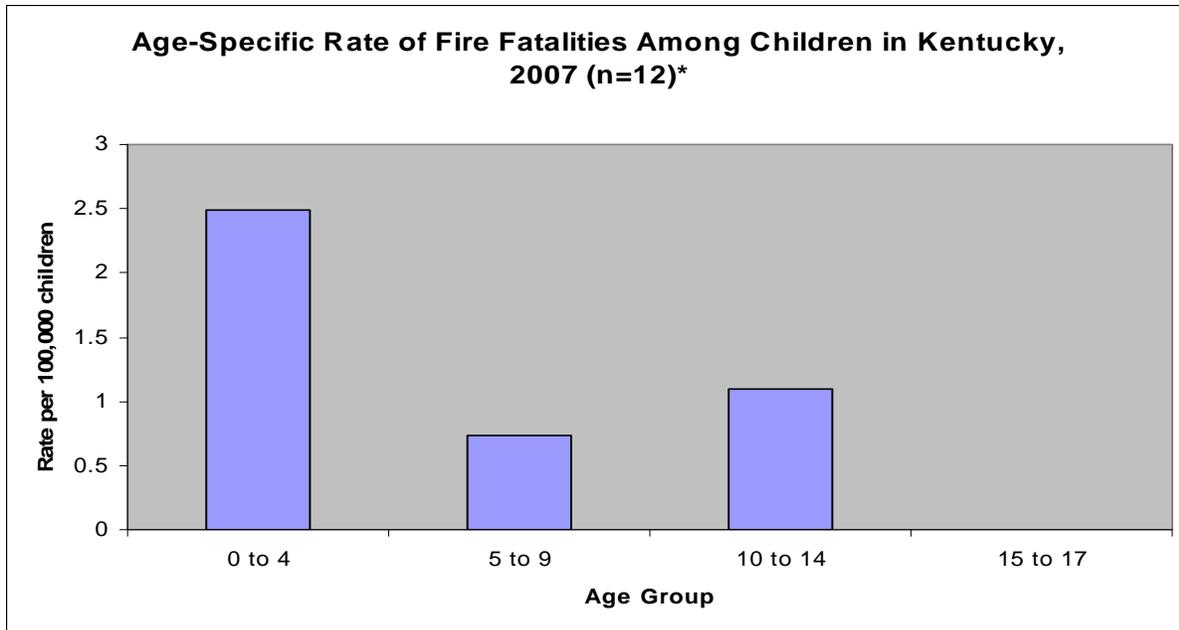
American Academy of Pediatrics.....	<a href="http://www.aap.org">www.aap.org</a>
National SAFE KIDS.....	<a href="http://www.safekids.org">www.safekids.org</a>
National Center for Injury Prevention.....	<a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a>
Consumer Product Safety Commission.....	<a href="http://www.cpsc.org">www.cpsc.org</a>
American Red Cross.....	<a href="http://www.redcross.org">www.redcross.org</a>
United States Lifesaving Association.....	<a href="http://www.usla.org">www.usla.org</a>

**3. FIRE FATALITIES**

Each year in the United States, at least 850 children under age 14 die and 2,800 are injured in residential fires. According to the National Fire Protection Association, Kentucky is ranked 8<sup>th</sup> in the United States for fire deaths. Children under age five are particularly vulnerable to fire related injury and death. They are twice as likely as the rest of the population to die in a fire. Safe Kids reports that more than half of the children under age five who die in house fires are asleep at the time of the fire, and recent studies have demonstrated that young children will sleep through sounding smoke detector alarms. Young children must often depend upon adults to help them get out, and when in a fire, young children may seek adults rather than exits, or they may run and hide in a closet. The United States Fire Administration also reports that children living in rural areas have a dramatically higher risk of dying in a residential fire than do children living in more urban areas, and this is probably related in part to the time it takes fire responders to reach rural fires.

In 2007, 12 Kentucky children died according to Kentucky Vital Statistics records. The rate of fire deaths among children in Kentucky is 1.2 per 100,000 children. Four African American children and eight white children died of fire in Kentucky in 2007. No Hispanic children died of fire in Kentucky in 2007. Among those that died, five were males and seven were females.

**Figure 24.**

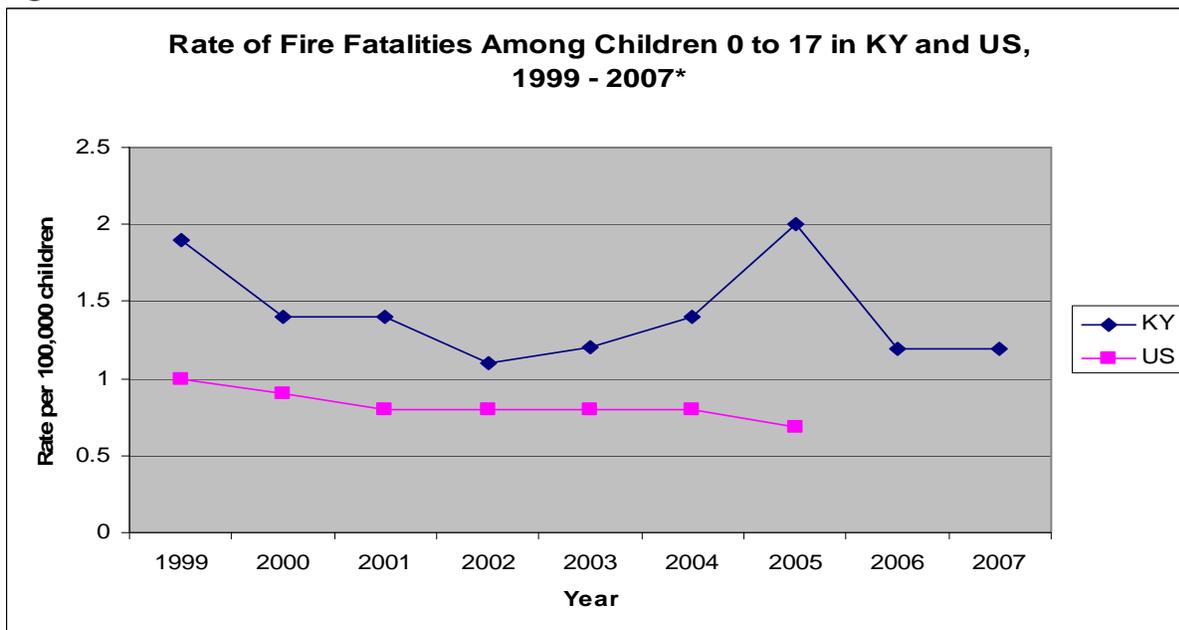


Data Source: KY Vital Statistics Files, 2007

\*Rates based on 20 or fewer deaths and may be unstable. Use with caution.

In Kentucky, almost half of all fires resulting in the death of a child in 2007 killed multiple children. Children who died ranged in age from 1-12 years (Figure 24). In 2007 the trend in Kentucky among children 17 and under who died due to fire was consistent with the trend across the nation, and children less than five are the most vulnerable.

**Figure 25.**



Data Source: National Vital Statistics System; Deaths, Data not available for 2006 and 2007; & Kentucky Vital Statistics Files, Death Certificate Files, 1999-2007

\*Note: Rates are based on 20 or fewer deaths and may be unstable. Use with caution.

From 1999 to 2007, the rate of death among children from fires was higher in Kentucky than the United States. The spike in the Kentucky deaths in 2005 was from a fire with multiple deaths. Overall, there has been a decrease in the rate of fire deaths in Kentucky from the baseline in 1999.

## **RISK FACTORS FOR FIRE FATALITIES**

There are many issues around fire injury and death to children. Prevention can be divided into primary prevention of fire, detection of a fire that does occur, and escape from a fire. According to the National Center for Injury Prevention and Control, children from low-income families are at greater risk due to factors such as a lack of working smoke alarms, substandard housing, use of alternative heating sources, and having to leave children unattended to work due to not being able to afford or access child care.

Prevention of residential fires in Kentucky involves safe storage of matches and lighters, fully extinguishing cigarettes, fire standards for mobile homes and manufactured housing, rental home/apartment standards, code compliance by builders and families doing home maintenance/adaptation, code enforcement, adequate space around alternate heating sources, not overloading extension cords, eradication of methamphetamine home manufacturing labs, safe kitchen cooking, and safe use of candles. Data on specific fire causes can help direct more specific and efficient community prevention efforts.

In Kentucky in 2007, most of the fires occurred in residences without smoke detectors. When a fire does occur, smoke detectors save lives because they give people the precious minutes of warning that permit them to get out. Smoke detectors with standard batteries should have the batteries replaced whenever the clocks change, so that there is never an opportunity for a battery to be dead and dysfunctional. Ten-year batteries provide more lasting protection.

Escape is enhanced by families having made an escape plan in advance and having practiced it. It is important to be sure in advance that windows actually do open and that people can fit to get out of them. Special planning needs to be done for fire evacuation of families with small children, as the children may know a plan but be unable to physically implement it. They may not be able to reach a window or have the strength to open it alone. Advance planning should include which adult will evacuate which child.

Lack of access to fire departments within a time frame that permits possible fire suppression is part of what confers excess mortality risk on rural children.

## **PREVENTION STRATEGIES FOR FIRE PREVENTION**

### **Parents:**

1. Children should always be supervised.
2. Keep matches, lighters, gas, etc. locked up and out of reach of children.
3. Install smoke alarms on every level and in every sleeping area of your home.
4. Test smoke detectors/alarms at least one time per month.
5. Replace batteries when you change your clocks in the spring and fall.  
And replace the entire unit after ten years of service, or as the manufacturer recommends.
6. Have a fire drill plan in place and practice with your family. Practicing may help children stay calm in an actual emergency. Safe Kids U.S.A. helps making your fire escape plan easy. Please visit their website at <http://www.usa.safekids.org/fire/> for tools to ensure your families safety.
7. Assign which adult is responsible for which child in case of an emergency.
8. Children should stay away from radiators and heaters, and they should be taught that these are not

toys. Young children in particular must be taught not to play with or drop anything into space heaters. Nothing should be placed or stored on top of a heater.

**Community Leaders:**

1. Work with local builders and inspectors to require smoke detectors in new and existing housing.
2. Work to make landlords responsible for ensuring that their properties have working smoke detectors.
3. Enforce building codes and inspections.

**Professionals:**

1. Partner with local agencies to go door-to-door to install smoke detectors in high risk communities, as distribution alone without installation has been proven to be an ineffective strategy.
2. Work with the fire department to help them disperse their fire safety messages.

**CFR Teams:**

1. When reviewing a fire death, explore code requirements in the community and determine the presence of a smoke detector at the home.
2. CFR teams should assure the following questions are covered: Were children being supervised, were there working smoke detectors in the house, was there drug or alcohol use by supervising adults, did the child have access to lighters, matches or other incendiary devices, etc.

**RESOURCES**

American Academy of Pediatrics .....	<a href="http://www.aap.org">www.aap.org</a>
United States Fire Administration .....	<a href="http://www.usfa.fema.gov">www.usfa.fema.gov</a>
National SAFE KIDS Campaign .....	<a href="http://www.safekids.org">www.safekids.org</a>
Kentucky Injury Prevention/Research Center .....	<a href="http://www.kiprc.uky.edu">www.kiprc.uky.edu</a>
State Fire Marshall's Office.....	<a href="http://www.dhbc.ky.gov">www.dhbc.ky.gov</a>
National Fire Protection Association .....	<a href="http://www.nfpa.org">www.nfpa.org</a>

**4. POISON FATALITIES**

The traditional picture of poisoning deaths is unintentional among young children with inadvertent ingestions and intentional ingestions among older, suicidal teens. The highest risk of poisoning is generally for young children, specifically those ages one to three. Young children will put anything in their mouth. But many household products are poisonous if swallowed, if in contact with the skin or eyes, or if inhaled. This includes medicine. Medicines we commonly keep around the house, such as vitamins, cold medicines, ibuprofen and others can be fatal if taken incorrectly. The Kentucky Department for Public Health partners with the Norton Poison Center to provide education about and prevention for poisonings. In Kentucky in 2007, the only confirmed deaths were in the 15 to 17 age group and all of these deaths were recorded as suicides. Additionally there were three deaths from poisoning among 16 and 17 year olds that were classified in the 'Other' category of injury death that includes accidental poisonings and overdoses.

## **PREVENTION STRATEGIES FOR POISONINGS**

### **For parents, caregivers, and community leaders such as teachers, neighbors, police, etc:**

1. Flush all unfinished medication after 6 months, thus reducing the amount of medication available to children.
2. Be especially careful when staying somewhere other than home, that may not be child-proofed.
3. The American Academy of Pediatrics recommends not to use over the counter cold medications in children younger than six months.
4. Store medications and cleaning solutions in original bottles. Lock up all potentially lethal substances including drain cleaner, dishwasher soap, kerosene and other volatile fluids.
5. Avoid use of over the counter cold and cough medications in children under age 2, and carefully review with doctor or other primary care provider and with pharmacist any medication ordered to be sure of correct strength and dose.
6. Be aware that giving cough and cold medication to children to make them stop crying, be quiet or go to sleep is a dangerous choice that can result in their death.
7. If nursing an infant, mothers should be careful about their own pain medication and other substance use and avoid anything that can affect their baby.
8. Pain medication in a household is a potential risk for a child; this is especially true of long-acting forms.
9. Methamphetamines in a household are a serious potential risk for children. Research has shown the harmful affects of the manufacture and production of this drug. Children should never be exposed to the process or the drug itself.
10. Everyone in a community must be vigilant about child abuse and about parental drug abuse, and must make it their responsibility to report potential child endangerment so that families can receive treatment and children can be protected. Ideally in the long term, drug abuse prevention is the goal.
11. The AAP recommends that you call medicine by its correct name. You do not want to confuse a child by calling medicine "candy".
12. Use safety latches or locks on drawers and cabinets where you keep dangerous items.
13. Seek help if your child swallows a substance that is not food. Call the Poison Help Line at 800-222-1222 or your doctor. Don't make a child vomit.

### **For community leaders and policy makers and professionals:**

1. Create a sense of community where the well-being of the children is important and people look out for one another.
2. Be aware of the potential lethality of familial drug abuse on any related children, including teenagers. Educate all in the child protection field about this, including the judicial system.
3. Ensure that adequate drug treatment and mental health care exist for all community members, including women and teenagers.
4. Educate the public, clients and patients about the items listed above.
5. Ensure adequate access to childcare.
6. Ensure that children of military personnel and military contractors have adequate access to safe care during the time their caregiver is deployed.

### **For child fatality review teams:**

1. Ensure that toxicology is obtained on all suspicious deaths, particularly young children and teens.
2. Ensure that all child deaths receive full review by a multidisciplinary, multi-agency team and that all medical records are carefully reviewed.

## RESOURCES

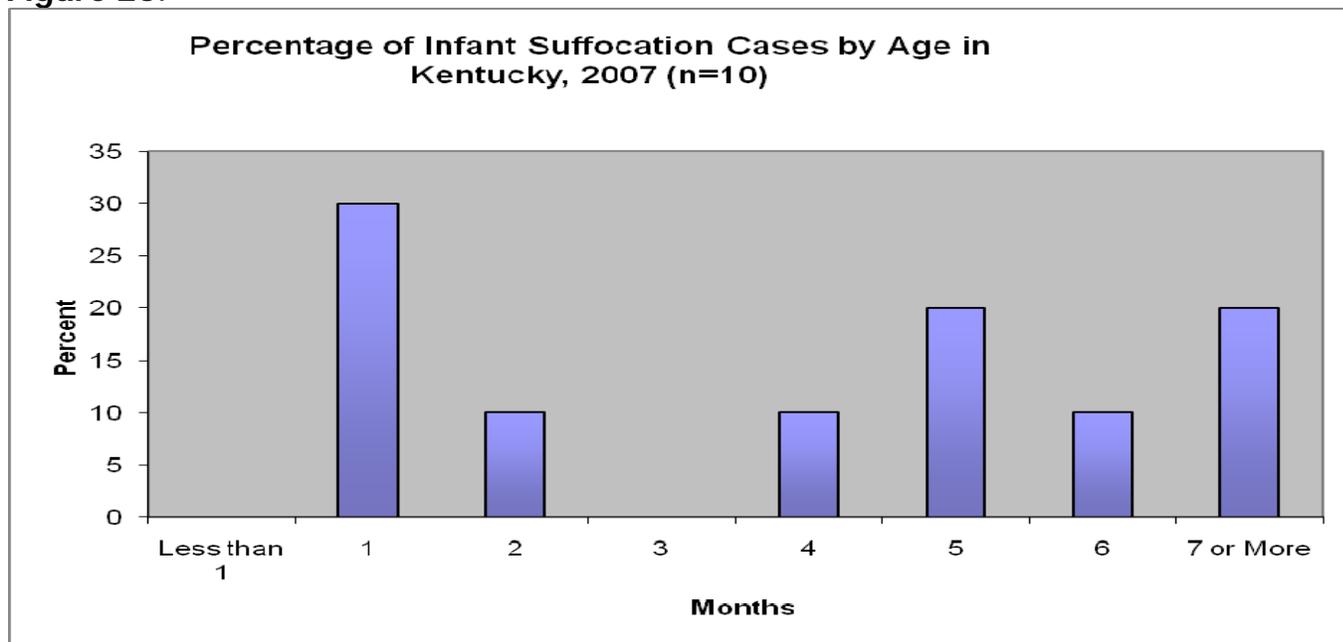
Poison Control Center ..... 1-800-222-1222  
MMWR (article on deaths from cough and cold medications)..... www.cdc.gov  
American Academy of Pediatrics ..... www.aap.org  
Substance Abuse/Mental Health Administration ..... www.samhsa.gov  
SAFE KIDS ..... www.safekids.org

### **5. SUFFOCATION IN INFANTS**

Infant deaths due to suffocation are almost always related to an unsafe sleep environment. Parents and caregivers may not know the risks associated with unsafe sleeping arrangements. Infants can suffocate when their faces become positioned against or buried in a mattress, cushion, pillow, comforter or bumper pad, or when their faces, noses and mouths are covered by soft bedding, such as pillows, quilts and comforters or stuffed animals. Most cases of unintentional suffocation happen in environments where normal infants could not move themselves out of the unsafe circumstance (scooting between the back and bottom of sofa cushions). In addition to positioning, overlaying is a type of unintentional suffocation. This occurs when an infant is sleeping with one or more persons (bed sharing with adults or children, sharing sofas or armchairs) and someone rolls over on the infant or the baby wedges between the wall, pillow, cushion, or blanket and the person. Most of these types of cases are classified as undetermined because the actual position of the infant and other person at the time of death was not witnessed.

Unintentional suffocation and unspecified threat to breathing were the cause of death of 10 Kentucky infants in 2007 (Figure 26). Nationally the rate of death from suffocation is 0.2 infants/1,000 live births or 2 infants in every 10,000 births. The rate of infant suffocation in Kentucky is comparable at 0.17/1,000 live births. In Kentucky in 2007, the rate among African American infants and white infants is very close; 0.18/1,000 live births and 0.16/1,000 live births respectively. However, valid comparisons cannot be made from year to year due to numbers being too small.

**Figure 26.**



Data Source: Kentucky Vital Statistics Files, Death Certificate Files, 2007

Prevention Strategies and Safe sleeping practices for infants are described under section I, part C: Sudden Unexpected Infant Deaths.

## **RISK FACTORS AND RECOMMENDATIONS**

The most recent recommendations from the American Academy of Pediatrics (AAP) are as follows:

- Bed sharing is not recommended during sleep. Infants may be brought into bed for nursing or comforting, but should be returned to their own crib or bassinet when the parent is ready to return to sleep. However, there is growing evidence that room sharing (infant sleeping in a crib in parent's bedroom) is associated with a reduced risk of SUDI. The AAP recommends that a baby sleep in the room with parents, but not share a bed with other children or adults. Bed sharing also increases the risk of an overlay. (An overlay is when a parent or other person sleeping with the infant unintentionally rolls over or lays upon the infant; and therein blocking the infant's airway.) The risk of overlays seems to be particularly high when there are multiple bed sharers and also may be increased when the bed sharer has consumed alcohol or is over-tired.
- Avoid soft bedding. Soft bedding may be pillows, quilts, comforters, sheepskins, waterbeds, couch cushions, stuffed toys.
- Avoid any extra objects in the crib with the baby. No pillows, stuffed animals, bumper pads, extra blankets or sheets should be in the crib. The AAP recommends using sleep clothing with no other covering over the infant. For example infant sleep sacks that are designed to keep the infant warm without the possible hazard of head covering.
- For more prevention strategies and safe sleeping practices for infants please see section I, part C: Sudden Unexpected Infant Death.

## **F. INTENTIONAL INJURY RELATED DEATHS**

### **1. CHILD ABUSE/NEGLECT FATALITIES**

Child fatalities are the most tragic consequence of child abuse and neglect. The Cabinet for Health and Family Services, Department for Community Based Services, Division of Protection and Permanency (DPP) is the agency in Kentucky responsible for receiving and investigating cases where child abuse or neglect is alleged to have resulted in a child fatality or near fatality.

The Division of Protection and Permanency investigates potential abuse/neglect related child fatalities and near fatalities and substantiates abuse or neglect when it is warranted. Each investigation is reviewed by a policy analyst in Central Office. The following data were collected from the child abuse or neglect child fatalities reported during the 2007 fiscal year.

During the 2007 state fiscal year in Kentucky, 26 children died from child abuse or neglect. However, this may be an underestimation because child abuse and neglect fatalities often mimic illness and accidents, and are particularly difficult to diagnose for the treating physician or the investigating coroner. The Division of Protection and Permanency (DPP) works with local child fatality review teams to help improve the accuracy of child death reporting.

#### **Age of Child Victims**

As in previous reporting periods, there continues to be a strong correspondence between the age of the child victim and the risk for serious or fatal injury. For the 13 child fatalities occurring in the 2007 fiscal year

whose families had prior involvement with DPP, 38.5% of the victims were age three or younger and 30.8% were one year of age or younger. These data are consistent with trends seen previously in Kentucky as well as nationally.

### **Gender of Child Victims**

The distribution of the victim gender during this state fiscal year varied from statewide historical averages with 17 of the fatality and near fatality victims being male (52%) and 16 female (48%).

### **Type of Maltreatment**

The cause of the majority of child deaths associated with families that had prior involvement with DPP was from caretaker neglect (85%). Another 15% of the deaths were the result of caretaker physical abuse. Expectedly, physical abuse and neglect, being very different types of maltreatment, present quite differently as well. House fire, inflicted head injury, motor vehicle accidents where other circumstances contributed to the accident; like the driver being impaired or the presence of domestic violence, and child drug overdose were the most common causes of death in physical abuse and neglect fatalities with prior DPP involvement; others included drowning and gun shot wounds.

## **RISK FACTORS FOR CHILD ABUSE/NEGLECT**

An overwhelming predominant risk factor among caregivers was substance abuse which was indicated in more than 80% of the cases. In addition, almost 75% of caregivers had a criminal history and domestic violence history that was clearly significant in almost 50% of the cases. The caregiver having a mental illness was indicated in 42% of the child fatality and near fatality cases; an increase of 12% from SFY 2006.

## **PREVENTION STRATEGIES**

Kentucky Revised Statute 620.030 mandates that anyone who has reasonable cause to believe that a child is abused or neglected shall immediately make a report to proper authorities including local law enforcement, the cabinet or the commonwealth or county attorney. The 24-hour abuse or neglect hotline number to call to make a report of abuse or neglect is 1-800-752-6200.

### **Parents:**

1. Recognize that being a parent is a difficult job at times and accept that you may at times get frustrated and/or angry; but you are being a better parent for walking away rather than reacting in a negative manner.
2. Seek help if your family is in crisis. 1-800-CHILDREN is a statewide helpline that offers a lifeline of support, encouragement and information regarding resources in local communities. Parents and caregivers can call 1-800-CHILDREN 24 hours per day, 7 days per week and talk with a trained volunteer who can provide them with information, support and/ or referrals in their local communities. Other resources can be found at <http://www.pcaky.org/>.

### **Community Leaders:**

1. Support and fund home-visitation programs that assist parents.
2. Work with agencies such as Prevent Child Abuse Kentucky and Community Partners Protecting Children to further their missions of protecting Kentucky's children.

**Professionals:**

1. Support and facilitate public education programs that target caretakers, especially male caretakers, and child care providers.
2. Expand training on recognition of child abuse and neglect.
3. Educate the public on reporting procedures and laws.
4. Develop consistent policies among agencies so children will not go undetected.
5. Improve collaboration and utilization of collateral resources during an investigation.
6. Recognize families that are at risk and identify potential services that may protect the children.
7. Use data to determine consistent risk factors.
8. Improve recognizing, reporting and documenting the child deaths.
9. Assist parents to recognize that anger and frustration are a part of being a parent. Moreover, it is a tough job but understanding, empathy, and permission for these emotions along with tools to deal with those feelings can very often prevent a negative incident from occurring.
10. Participate in the C.A.R.E. program through Prevent Child Abuse Kentucky. The C.A.R.E. program partners with medical professionals who have indicated their support of and commitment to the well being of Kentucky's children. These professionals have identified (and continue to do so) colleagues throughout the Commonwealth, each who have responsibilities encompassing one or more areas where a child victim of child abuse or neglect may be seen.

**CFR Teams:**

1. Community-based teams are critical in identifying which child deaths have abuse and neglect as risk factors and explore integrative ways to address these risk factors so that no children go undetected or unprotected.

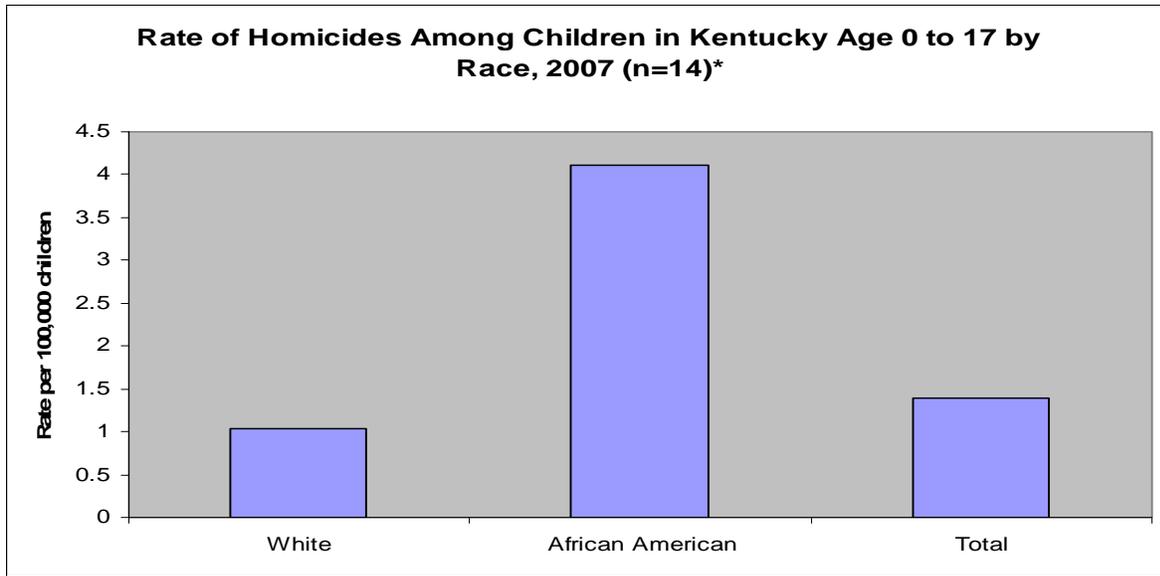
**RESOURCES**

National Center on Shaken Baby Syndrome .....	<a href="http://www.dontshake.org">www.dontshake.org</a>
U.S. Department for Justice.....	<a href="http://www.ojjdp.ncjrs.org">www.ojjdp.ncjrs.org</a>
Child Abuse .....	<a href="http://www.childabuse.com">www.childabuse.com</a>
National Center for Missing/Exploited Children .....	<a href="http://www.missingkids.com">www.missingkids.com</a>
Prevent Child Abuse Kentucky .....	<a href="http://www.pcaky.org">www.pcaky.org</a>
Community Partners Protecting Children.....	<a href="http://www.uky.edu/socialwork/trc">www.uky.edu/socialwork/trc</a>
Department for Community Based Services.....	<a href="http://www.chfs.ky.gov/dcbs">www.chfs.ky.gov/dcbs</a>
Kentucky Domestic Violence Association .....	<a href="http://www.kdva.org">www.kdva.org</a>

**2. HOMICIDE**

In 2007 the methods of child homicide in Kentucky included gunshot, fire, maltreatment, hanging, strangulation, suffocation, drowning, and unspecified or other. Child abuse can be manifested as homicide. Therefore some cases from the previous section may be captured here as well. Of the 14 homicides to children under the age of 17 in the 2007 Kentucky death certificate file, the majority occurred among children 15-17 years old (2.8 per 100,000). Since 1999 Kentucky has ranked consistently lower than the United States with our rate of homicides in children 17and under, but this is likely due to underreporting.

**Figure 27.**



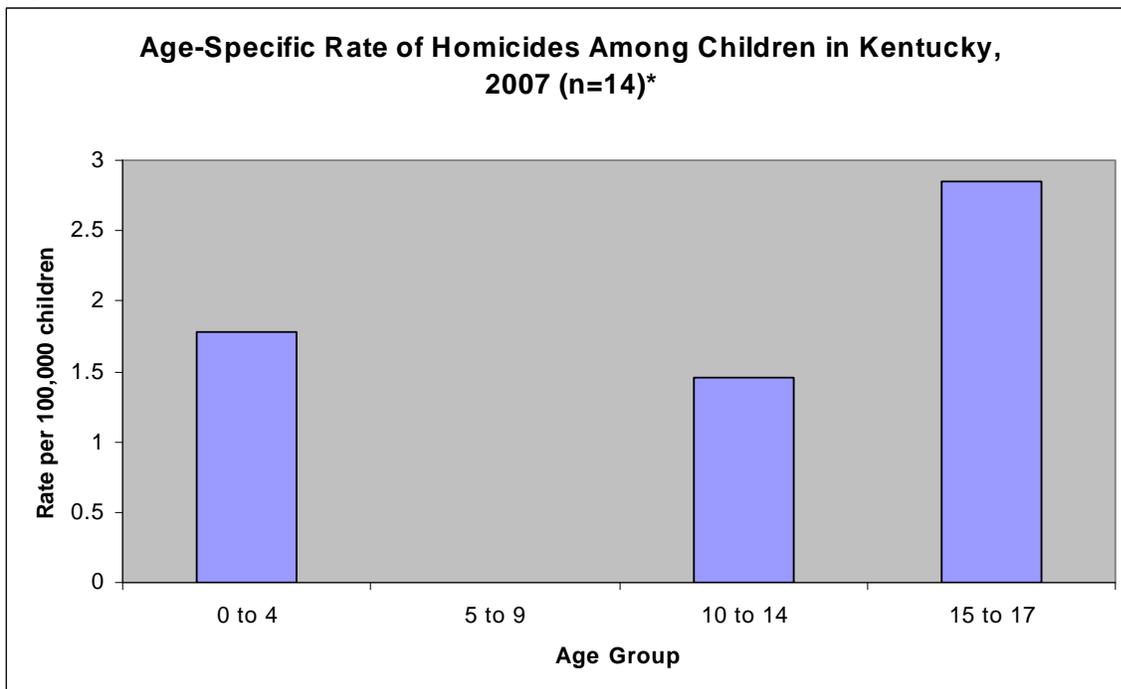
Data Source: Kentucky Vital Statistics Files, Death Certificate Files, 2007

\*Note: Rates are based on 20 or fewer deaths and may be unstable. Use with caution.

In 2007 in Kentucky, the rate of homicide deaths among children 17 and under was 1.4/100,000 children (Figure 27). The rate of white children who died by homicide was lower than that of black children (1.0/100,000 compared to 4.1/100,000 respectively).

For 2007 the rate of death by homicide of Kentucky children age 15-17 was highest compared to other age groups (2.8/100,000). The next highest age group was children under age four (1.8/100,000).

**Figure 28.**

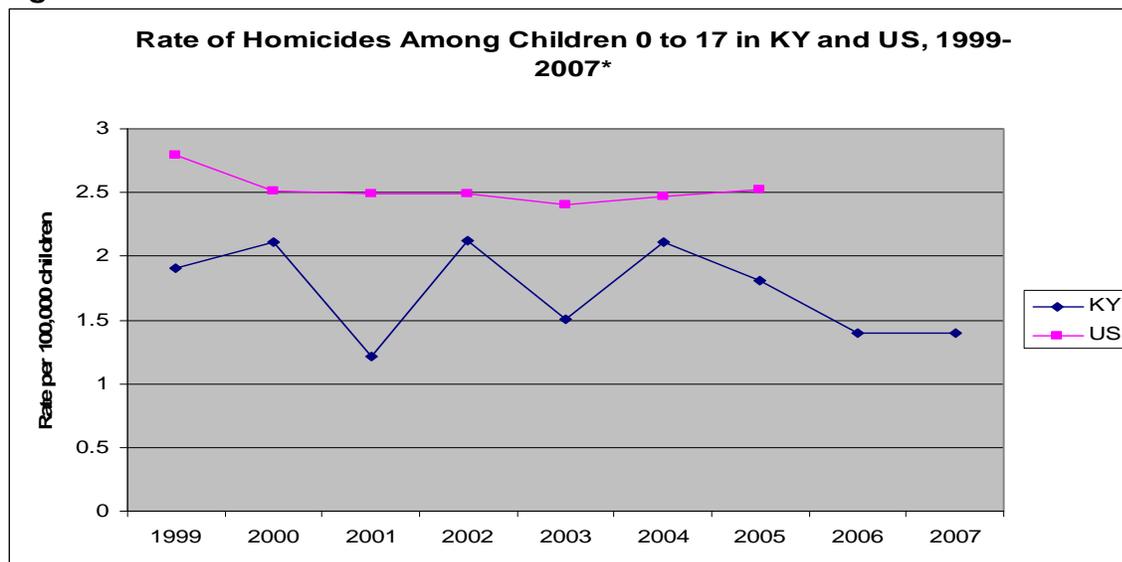


Data Source: Kentucky Vital Statistics Files, Death Certificate Files, 2007

\*Rates based on 20 or fewer deaths and may be unstable. Use with caution.

The rate of homicide deaths has decreased since 1999 for the U.S. Between 1999 and 2007, the rate of homicide deaths among children 17 and under in Kentucky has been lower than that of the US. Kentucky's overall trend appears to be decreasing, but low numbers make it difficult to determine if this decrease is significant.

**Figure 29.**



\*Note: Rates are based on 20 or fewer deaths and may be unstable. Use with caution.

## RISK FACTORS FOR HOMICIDE

The Kentucky Violent Death Reporting System (KVDRS), with funding from the Centers for Disease Control and Prevention, began collecting statewide violent death information in 2005. The KVDRS integrates investigative information from the Kentucky State Police, coroners, medical examiners, forensic crime laboratories and toxicology laboratories from deaths that occur within Kentucky (numbers will vary from Vital Statistics due to KVDRS reporting all deaths occurring in Kentucky, while the remaining data in this report is all Kentucky resident deaths for children less than 17 years old).

The National Youth Violence Prevention Resource Center states that a young person's exposure to childhood victimization such as child abuse and neglect places them at increased risk for delinquency, adult criminality, and violent criminal behavior. Intimate partner violence is often a risk factor.

## PREVENTION STRATEGIES FOR HOMICIDE

### Parents:

1. Seek early treatment for children with emotional problems, possible mental disorders, particularly depression and impulse control disorder, and substance abuse problems. Find help if your child appears angry, sad, lonely, is being bullied at school, has other school problems, or is withdrawn. Please visit [http://mentalhealth.samhsa.gov/publications/Publications\\_browse.asp?ID=50&Topic=Youth+Violence+Prevention](http://mentalhealth.samhsa.gov/publications/Publications_browse.asp?ID=50&Topic=Youth+Violence+Prevention) or <http://www.safeyouth.org/scripts/topics/hotlines.asp>

for youth violence prevention information and crisis hotlines that may be useful to you and your family.

2. Talk to your pediatrician or primary care provider.
3. Make sure your child has appropriate adult supervision, especially in the hours after school and on weekends.
4. Help your child make good choices about personal safety, staying out of gang activity, substance use, and limiting access to firearms

#### **Community Leaders:**

1. Work to make firearms inaccessible to young people.
2. Support violence prevention programs in your community.
3. Create positive activities for youth, such as after-school programs.
4. Educate families about violence prevention.

#### **Professionals:**

1. Provide appropriate treatment to children who exhibit violent behaviors.
2. Work with families to recognize signs of depression, anger, or loneliness that could lead to violence.
3. Partner with schools to help kids understand the issues of violence.

#### **CFR Teams:**

1. Promote education/awareness about firearm safety and programs that keep guns out of the hands of children.
2. When reviewing homicide deaths, be mindful of prevention activities for the community.

## **RESOURCES**

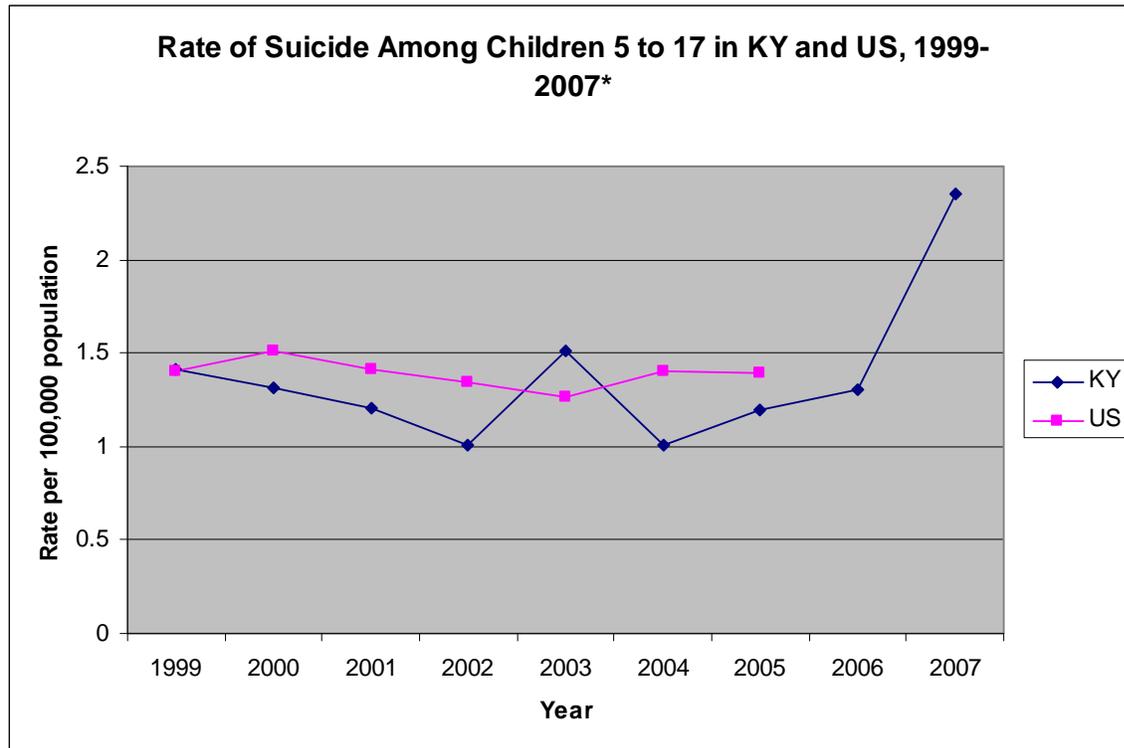
KUTO (Kids Under Twenty-One) ..... [www.kuto.org](http://www.kuto.org)  
National Youth Violence Prevention Resource Center ..... [www.safeyouth.org](http://www.safeyouth.org)  
National Center for Injury Prevention and Control ..... [www.cdc.gov/ncipc](http://www.cdc.gov/ncipc)  
Best Practices of Youth Violence Prevention:  
A Sourcebook for Community Action ..... [www.cdc.gov/ncipc/dvp/bestpractices.htm](http://www.cdc.gov/ncipc/dvp/bestpractices.htm)

## **3. SUICIDE**

Approximately 33,300 people in the United States die by suicide every year. In the United States someone dies as the result of suicide every 15.8 minutes, and a young person dies by suicide every 2 hours according to [www.suicidology.org](http://www.suicidology.org). Suicide is the second leading cause of death for Kentuckians ages 15-34. The rate of suicide deaths among Kentucky children ages 5 to 17 was 2.3 per 100,000 children in 2007.

Of the suicides in 2007, there were no documented suicides in children under age 11 in Kentucky. The rate of suicide was highest among children 15 years old (7.4 per 100,000). From 1999 to 2007, the rate of death among children from suicide was lower in Kentucky than the United States for most years (Figure 30). However, the rate has increased from 1.3 in 2006 to 2.3 in 2007. Suicide is the second leading cause of death for teens 15-17 years old in Kentucky.

**Figure 30.**



Data Source: National Vital Statistics System; Deaths, Data not available for 2006 & 2007; & Kentucky Vital Statistics Files, Death Certificate Files, 1999-2007

\*Note: Rates are based on 20 or fewer deaths and may be unstable. Use with caution.

Firearms are the most common method of suicide among all groups (male, female, elderly, young, black, white, etc). Suicide crosses all ethnic, economic, social, and age boundaries. In youth who died by suicide in 2007, all but one were white, and the most commonly used mechanism was a firearm. The second most common mechanisms were hanging and poisoning. Surprisingly, just as many females used firearms as did males in 2007 but more males died from intentional poisoning.

## **RISK FACTORS FOR SUICIDE**

In 2007, there were 17 KVDRS suicide cases and precipitating circumstances known in 13 (76%) of those cases. Of the male suicides, 55% occurred at age 16. (Table 9) is a list of precipitating suicide circumstances and frequency distribution. The most common reasons for youth to die by suicide in 2007 were other relationship problem (not intimate partner), current depressed mood, and school problems. Males were more apt to disclose their intent to commit suicide.

**Table 9. Suicide Precipitating Circumstances (9-17 years old)**

	All
Current depressed mood	(46%)
Other relationship problem	(46%)
School problem	(46%)
Ever treated for mental illness	(31%)
Current mental health problem	(31%)
Current treatment for mental health problem	(31%)
Suicide of family or friend in past 5 years	(23%)
Crisis in the past two weeks	(15%)
Disclosed intent to commit suicide	(23%)
Left suicide note	(31%)

\*More than one circumstance can apply

Research shows that most suicidal people desperately want to live. They are just unable to see alternatives to their problems. They want to 'stop the pain' and think suicide is the only answer. Most suicidal people give definite warning signals of their suicidal intentions, but others are often unaware of the significance of these warnings or unsure what to do about them. Suicide has ramifications for the loved ones left behind, often referred to as "survivors." Survivors have lost a loved one, but they also have many questions and may experience emotional problems and become suicidal themselves. Survivors include not just family members but classmates, neighbors, and entire schools.

To help identify youth at risk for suicide, the most important warning signs are:

- Any suicide threats
- Statements revealing a desire to die
- Sudden changes in behavior
- Prolonged depression
- Previous suicide attempt
- Alcohol and drug abuse
- Making final arrangements
- Giving away prized possessions
- Purchasing a gun or stockpiling pills

There is ample evidence that talking about suicide does not cause someone to become suicidal. Talking may be the one thing that saves someone.

The Kentucky Suicide Prevention Group has three key messages 1) A life is too much to lose, 2) Suicide is a preventable public health problem and 3) Suicide Prevention: It's Everybody's Business. The group's mission is to decrease suicide deaths and attempts in the Commonwealth through advocacy and awareness, intervention, survivor support, and evaluation. The Kentucky Department of Mental Health and Mental Retardation Services (KDMHMRS) has an ongoing grant funded by SAMHSA. This grant, Kentucky Suicide Prevention in Youth - a Collaborative Effort (SPYCE) project, includes both public and professional education on suicide risk factors and protective factors for suicide prevention, as well as training in prevention, early intervention and post-intervention methods.

## **PREVENTION STRATEGIES FOR SUICIDE**

### **Parents:**

1. Seek early treatment for children with emotional problems, possible mental disorders (particularly depression and impulse control disorder) and substance abuse problems.
2. Learn how to recognize the signs of suicide and ask your children if they are thinking about suicide. Gatekeeper training is used to learn these signs and is widely available throughout the state and can be scheduled for any community group through the Kentucky Suicide Prevention Group (502-564-4456).
3. Limit access to lethal means of suicide, particularly firearms.
4. Provide supervision, support and constructive activities for children and adolescents.
5. Find professional help if your child appears angry, sad, lonely, is being bullied at school, has other school problems, or is withdrawn.
6. Get trained in Q.P.R. (Question, Persuade, and Refer). Q.P.R. is an educational program that teaches ordinary citizens how to recognize a mental health emergency and how to get a person at risk the help they need. For more information please visit <http://www.kentuckysuicideprevention.org/Resources.html#4>.

### **Community Leaders:**

1. Support local efforts to address suicide and the range of associated stressors, e.g. untreated mental illness, abuse, lack of access to care, bullying.
2. Work to make firearms inaccessible to young people.
3. Support suicide prevention programs in your community.
4. Create positive activities for youth such as after-school programs.
5. Educate professionals in the community who deal with children and families about suicide and warning signs.
6. Become gatekeepers to ask youth about suicide and refer them to appropriate professional resources.

### **Professionals:**

1. Provide appropriate treatment to kids who exhibit suicidal behaviors.
2. Work with families to recognize signs of depression, anger, or loneliness that could lead to suicide.
3. Partner with schools to help kids understand the issues of suicide.
4. Become involved in state or local suicide prevention/postvention activities.
5. Encourage trainings in Q.P.R. (Question, Persuade, and Refer). Q.P.R. is an educational program that teaches ordinary citizens how to recognize a mental health emergency and how to get a person at risk the help they need. For more information please visit <http://www.kentuckysuicideprevention.org/Resources.html#4>.

### **CFR Teams:**

1. Support the Kentucky Suicide Prevention Group's efforts both locally and statewide.
2. Promote education/awareness about firearm safety and programs that keep guns out of the hands of children.
3. Promote other suicide prevention programs both locally and statewide.

4. When reviewing suicide deaths, be mindful of prevention/postvention activities for the community.

## RESOURCES

Kentucky Suicide Prevention Group.....	www.kentuckysuicideprevention.org
Kentucky Department for Mental Health.....	www.mhmr.ky.gov
National Youth Violence Prevention Resource Center .....	www.safeyouth.org
Yellow Ribbon Suicide Prevention Program .....	www.yellowribbon.org
Youth Suicide Prevention Programs: A Resource Guide .....	www.cdc.gov
Suicide Prevention Resource Center .....	www.sprc.org
American Association of Suicidology .....	www.suicidology.org
National Suicide Prevention Lifeline .....	1-800-Suicide (784-2433)
Suicide Hopeline Hotline.....	1-800-273-TALK (8255)

# III. FEDERAL REPORTING OF CHILDHOOD INJURY PREVENTION INDICATORS

To receive funding for the Title V block grant from the Health Resources and Services Administration, Maternal and Child Health Bureau, Kentucky reports annually on a core set of measures. A section of these are performance measures, on which all states are required to report. Performance measures help to assess how maternal and child health needs are being met in each state. Table 10 highlights 2007 Kentucky and U.S. data for selected national and state performance measures that relate to child fatality. In spite of some of the progress noted earlier in this report, Kentucky is worse than the nation on almost all of these indicators.

**Table 10. Selected Performance Measures from Title V<sup>a</sup>**

<b>Performance Measures Relating to Child Fatality Review</b>	<b>KY</b>	<b>US</b>
<b>Health Status Indicator 03C:</b> The death rate per 100,000 from unintentional injuries due to motor vehicle crashes among youth aged 15 through 24 years.	26.7	23.6
<b>Health Status Indicator 03B:</b> The death rate per 100,000 for unintentional injuries among children aged 14 years and younger due to motor vehicle crashes.	2.5	2.3
<b>National Performance Measure 10:</b> The rate of deaths to children aged 14 and younger caused by motor vehicle crashes per 100,000 children.	2.5	2.3
<b>Health Status Indicator 03A:</b> The death rate per 100,000 due to unintentional injuries among children aged 14 years and younger.	6.9	5.9
<b>Health Status Indicator 04C:</b> The rate per 100,000 of nonfatal injuries due to motor vehicle crashes among youth aged 15 through 24 years.	125.2 <sup>b</sup>	69
<b>Health Status Indicator 04B:</b> The rate per 100,000 of nonfatal injuries due to motor vehicle crashes among children aged 14 years and younger.	15.7 <sup>b</sup>	15.8
<b>National Performance Measure 16:</b> The rate (per 100,000) of suicide deaths among youths 15-19.	10.6	8.5
<b>Health Status Indicator 04A:</b> The rate per 100,000 of all nonfatal injuries among children aged 14 years and younger.	136 <sup>b</sup>	136.6
<b>State Performance Measure 1:</b> Decrease the death rate for children age 0-18 due to unintentional injury and/or violence.	17.4	17.8 <sup>c</sup>

<sup>a</sup> Data for Kentucky is 2007 from Title V; US data is calculated from state data in the Title V Information System. The data for the US is preliminary, from 2005, 2006 and 2007 (depending on what is available for each state), and may not include all 50 states. .

<sup>b</sup> Non-injury data for Kentucky is from Kentucky Injury Prevention Research Center and is based on in-patients hospitalizations, which excludes emergency room data.

<sup>c</sup> State performance measure data for US is from the Web-based Injury Statistics Query and Reporting System (WISQARS) from which 2007 data is not yet available. The data shown is from 2006.



# **IV. CHILD DEATHS AND INJURY PREVENTION**

Many federal and state dollars are spent on important child health services including immunizations and well-child exams as a part of Kentucky's efforts of preventing illness, injury and deaths in children. However, the reality remains that unintentional injury continues to be the leading cause of death for children ages 1-17 in Kentucky. According to Kentucky Vital Statistics records, in 2007, Kentucky lost approximately 102 children (43% of all childhood deaths) to unintentional injuries. This number is alarming when you consider the years of potential life lost to injury surpasses years of potential life lost for cancer and cardiovascular disease combined. The primary causes of unintentional injury deaths include motor vehicle crashes (ATV, bicycles and pedestrian), fire, drowning, and poisoning. This is certainly not new information. Children and adolescents have consistently been at risk of injury or death due to physical harm from these and other sources of trauma.

The Department for Public Health continues to support injury prevention activities by encouraging the development of local injury prevention coalitions and assisting communities in developing local child fatality review or community action teams. The Department also partners with the Pediatric and Adolescent Injury Prevention Program at the University of Kentucky to support statewide injury prevention efforts. The Child Fatality Review and Injury Prevention Program exists to address injuries that are both predictable and preventable. The cost of prevention is minimal when compared to the cost of caring for children and families after they have been affected. The emotional cost of child injury and death cannot be measured, but the financial cost of unintentional injuries to society is staggering. Costs that have been cited for effectiveness of injury prevention include:

- Every child safety seat saves this country \$85 in direct medical costs and an additional \$1,275 in other costs to society.
- Every bicycle helmet saves this country \$395 in direct medical costs and other costs to society.
- Every working and properly maintained smoke detector saves this country \$35 in direct medical costs and an additional \$865 in other costs to society.
- Every dollar spent on poison control centers saves this country \$6.50 in medical costs.
- Every dollar spent on smoking cessation for mothers saves \$3 in initial hospital costs for the newborn.

Most health departments participate in some type of injury/death prevention education. 70 Kentucky counties have active local child fatality review teams; another 19 counties have local CFR teams but they are not meeting regularly at this time. Our goal is to have Child Fatality Review teams in all 120 Kentucky Counties, because local reviews provide much better information and more opportunities for prevention in the local communities. Child Fatality Review is critical to preventing injury and death to children in Kentucky. By working as a team, agencies gather information that may have otherwise been missed had the death not been reviewed. This process combines the expertise of the local coroner, the local health department, the local Department for Community Based Services, and local law enforcement, at a minimum. Other agencies that are useful in the process include county attorneys, commonwealth attorneys, physicians, emergency medical personnel, fire personnel, school personnel, and local mental health. The team is critical in helping the coroner determine the exact cause of death, insuring that other children in the home are safe, and that grief counseling is offered to the family, identifying genetic factors that may affect other children, ruling out accidental vs. intentional injury, etc. The information, along with vital statistics data, fuel state and local efforts that focus on preventable conditions and injuries that may

result in life-long disabilities or death (i.e. methamphetamine use, transportation safety, Sudden Unexplained Death in Infancy, suicide, fire, drowning, and others.) Child fatality review leads to prevention efforts at the state and local level. We continue to work to increase the number of counties that have child fatality review teams by providing technical assistance and training to encourage this vital collaboration among agencies.

**For more information, please contact:**

Amy Sepulveda, Child Fatality Review/Injury Prevention Program Coordinator  
Kentucky Department for Public Health, Division of Maternal & Child Health  
275 East Main Street, HS2GW-A  
Frankfort, KY 40621  
Phone: 502-564-2154 x3857

# V. Technical Notes and Data Sources

Data contained within this report are from:

- Kentucky Vital Statistics Death Certificate Files
- March of Dimes Peristats Data Center
- Child Fatality Coroner Report Form Database
- Kentucky State Police Statistics
- Kentucky Injury and Prevention Research Center (KIPRC)
- Kentucky Child Abuse and Neglect Annual Report
- Kentucky Violent Death Reporting System
- Centers for Disease Control and Prevention
- US Census Bureau

The data reflects only those deaths occurring to children age 17 and under. Data from the 2007 Vital Statistics Live Birth Certificate files were utilized for denominator data in calculating infant mortality rates. Causes of death are classified based on the International Classification of Diseases 10th revision (ICD-10). Whenever available, rates for the Nation were compared to rates for Kentucky. National rates were obtained from the Centers for Disease Control and Prevention WISQARS Fatal Injury Reports and WONDER Mortality Reports.

Certain limitations exist with death certificate data and should be acknowledged when interpreting results. First, problems exist in the completion of death certificates as well as the accuracy of completed information on the certificate. Physician interpretation of mortality causal events may differ which could lead to variation in coding the primary cause of death. Also, determining one specific underlying cause of death among decedents with multiple chronic diseases can become problematic since the etiologic sequence of diseases may be unclear, and one single disease may not adequately describe the cause of death. Second, data reported in this publication are from the primary cause of death field only and do not include supplemental causes of death. This could lead to under-reporting of certain causes of death. For example, an infant with a congenital heart defect that is born pre-term may have listed prematurity as the primary cause of death on the certificate with congenital anomalies listed as a contributing cause of death; since this report is based only on the primary cause of death, this infant would be counted in the prematurity deaths but not in the congenital anomalies deaths. Therefore, reporting based solely on the primary cause of death can lead to under-reporting of certain causes.

## **Calculation of Rates:**

Often time's rates are used to relate the number of cases of a disease or outcome to the size of the source population in which they occurred. A rate is defined as a ratio in which there is a distinct relationship between the numerator and denominator, and some measure of time is included as part of the denominator. One example of a rate would be the number of newly diagnosed cases of breast cancer per 100,000 women during a given year.

Infant mortality rates are commonly used to measure the risk of dying during the first year of life. These rates are calculated by dividing the number of infant deaths in a calendar year for a given area by the number of live births registered for the same period and area and are presented as rates per 1,000 live births.

With the exception of infant mortality rates, rates presented within this report are on an annual basis per 100,000 estimated populations residing in Kentucky. The 2007 Population Estimates for Kentucky from the

US Census Bureau were utilized for denominator data in calculating death rates. Age specific death rates are calculated by dividing the total number of deaths for a specified age group for a given area and time frame by the total estimated persons within that same age group for the same area and time frame and expressed as a rate per 100,000 specified population.

### **Calculation of Preterm Related Causes of Death:**

Preterm birth has been steadily increasing in Kentucky over the last decade and has risen at a rate faster than that of the nation with a total of 8,961 babies born preterm in Kentucky during 2007. Despite this fact, in 2007, only 52 infant deaths were classified as being attributable to preterm birth with the standard classification of leading causes of death. In order to address this discrepancy, we utilized a newer method that estimates more accurately the contribution of preterm birth to infant mortality rates in Kentucky. One study published in the *Journal Pediatrics* ("The Contribution of Preterm Birth to Infant Mortality Rates in the United States") classified preterm related causes of death for the nation based off linked birth and death files and in so doing were able to classify 34.3% of all infant deaths as attributable to preterm birth compared to only 17% using the standard classification of leading causes of death. The National Center for Health Statistics has also published this new method of classifying preterm related causes of death in their publication "Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set." After reviewing these two publications along with the new method, Kentucky applied this method to its 2007 data.

In order to ascertain the gestational age of an infant who has died, death certificate files had to be linked to the birth certificate files so the infant could be classified as preterm or not at birth. Kentucky infant death certificates from 2007 were linked to birth certificates from 2006 and 2007 and this was the data set from which preterm related causes of death were determined. Following the criteria from Callaghan et. al. a specific list of ICD10 codes for the underlying cause of death was utilized to classify a death as either preterm related or not. This list was determined in their study by taking the top 20 leading causes of infant death in the linked file using the criteria outlined for cause of death rankings by NCHS and determined if  $\geq 75\%$  of infants whose deaths were attributed to that cause had been born at  $< 37$  weeks gestation. Based on this method, the following causes of death were determined to be attributable to preterm birth: short gestation/low birth weight, respiratory distress of newborn, bacterial sepsis of newborn, atelectasis, chronic respiratory disease originating in the perinatal period, necrotizing enterocolitis of newborn, maternal complications, cord and placental complications, neonatal hemorrhage, birth trauma, and vascular disorder of intestines. These corresponding ICD10 codes were then pulled from the linked infant death/birth file for Kentucky and these were the deaths that were classified as preterm related cause of death.

## VI. References

1. National Center for Injury Prevention and Control. Injury Fact Book 2001-2002. Atlanta, Georgia: Centers for Disease Control and Prevention; 2001.
2. Behrman, R. "Unintentional Injuries in Childhood." *The Future of Children*; Vol. 10, No. 1. Spring/Summer, 2000.
3. United States Fire Administration; [www.usfa.dhs.gov](http://www.usfa.dhs.gov). Last accessed 9-2-2009.
4. National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org). Last accessed 9-2-2009.
5. National Institute of Mental Health – Suicide Facts Brochure. (2009)
6. Mental Health Assistance; [www.suicidology.org](http://www.suicidology.org). Last accessed 9-2-2009.
7. Centers for Disease Control and Prevention. "National Poison Prevention Week." *MMWR* 2004; 53: 233.
8. Kentucky Revised Statutes; [www.lrc.state.ky.us](http://www.lrc.state.ky.us). Last accessed 9-2-2009.
9. National SAFEKIDS Campaign – Injury Fact Sheets; [www.usa.safekids.org](http://www.usa.safekids.org). Last accessed 9-2-2009.
10. Preventing Child Deaths in Missouri; The Missouri Child Fatality Review Program Annual Report, 2005.
11. "Risk Factors Associated With Sudden Unexplained Infant Death: A Prospective Study of Infant Care Practices in Kentucky." *American Academy of Pediatrics: Pediatrics Journal*, July 7, 2005.
12. Callaghan W, MacDorman M, Rasmussen S, et al. "The contribution of preterm birth to infant mortality rates in the United States." *Pediatrics*. 2006; 118; 1566-1573.
13. Maternity Care Coalition – Cribs Brochure; [www.momobile.org/pdf/cribs\\_brochure.pdf](http://www.momobile.org/pdf/cribs_brochure.pdf). Last accessed 9-2-2009.
14. "Infant Mortality Statistics from the 2004 period linked birth-infant death data set." National Center for Health Statistics National Vital Statistics Reports, Volume 55, Number 14.
15. Shields LB, Hunsaker JC 3rd, Corey TS, Stewart D. "Is SIDS on the rise?" *Kentucky Medical Association*. 2007 105:8; 343–353.



# VII. Additional Resources

## SAFE KIDS Kentucky- Local Coalitions

- Safe Kids Barren River
  - Coalition Coordinator: Vickie Poore
    - [vickieLpoore@ky.gov](mailto:vickieLpoore@ky.gov) (270) 651-8321 x136
- Safe Kids Fayette County
  - Coalition Coordinator: Sherri Hannan
    - [srhann2@uky.edu](mailto:srhann2@uky.edu) (859) 323-1153
- Safe Kids Louisville and Jefferson County
  - Coalition Coordinator: Erika Kravic
    - [Erika.kravic@nortonhealthcare.org](mailto:Erika.kravic@nortonhealthcare.org) (502) 629-7335
- Safe Kids River Cities
  - Coalition Coordinator: Rene Clay
    - [Rene.clay@kdmc.net](mailto:Rene.clay@kdmc.net) (606) 408-4151

## SAFE KIDS Kentucky- Local Chapters

- Safe Kids Christian County
  - Chapter Coordinator: Deborah Lambert
    - [Deborah.Lambert@ky.gov](mailto:Deborah.Lambert@ky.gov) (270) 887-4160
- Safe Kids Estill County
  - Chapter Coordinator: Suzi Freeman
    - [Suzi.Freeman@ky.gov](mailto:Suzi.Freeman@ky.gov) (606) 723-5873
- Safe Kids Madison County
  - Chapter Coordinator: Joan Welch
    - [JoanF.Welch@ky.gov](mailto:JoanF.Welch@ky.gov) (859) 576-4447 (cell)
- Safe Kids Metcalfe County
  - Chapter Coordinator: Stephanie Elmore
    - [Stephanie.Elmore@ky.gov](mailto:Stephanie.Elmore@ky.gov) (270) 651-8321 x130
- Safe Kids Pulaski County
  - Chapter Coordinator: Judy Price
    - [judy.price@somersetpd.com](mailto:judy.price@somersetpd.com) (606) 678-6670

Kentucky Injury Prevention and Research Center – [www.kiprc.uky.edu](http://www.kiprc.uky.edu)

333 Waller Avenue, Suite 206

Lexington, KY 40504

Contact : Susan Pollack, MD

859-257-4954 or [shpoll@uky.edu](mailto:shpoll@uky.edu)

Healthy Start in Childcare Program

Department for Public Health

Contact: Sandy Fawbush

502-564-3757 or [sandy.fawbush@ky.gov](mailto:sandy.fawbush@ky.gov)

HANDS Program

Department for Public Health

Contact: Brenda English

502-564-3757 or [brenda.english@ky.gov](mailto:brenda.english@ky.gov)

## **Resources for Educational Programs and Law Enforcement Activities**

Kentucky Crime Prevention Coalition  
859-727-2678  
www.kycrimeprevention.com

Prevent Child Abuse Kentucky  
300 East Main St, Suite 110  
Lexington, KY 40507  
1-800-CHILDREN  
www.pcaky.org

Kentucky Department of Community Based Services  
Division of Protection and Permanency  
1-800-752-6200

Kentucky Child Now!  
1491 Twilight Trail  
Frankfort, KY 40601-1700  
502-227-7722  
www.kychildnow.org

Kentucky Regional Poison Center  
PO BOX 35070  
Louisville, KY 40232-5070  
1-800-222-1222

Kentucky Coroners Association  
Dept of Criminal Justice  
www.coroners.ky.gov  
Brian Ritchie, Executive Secretary  
(502) 839-5151  
blritchie66@yahoo.com

Division of Fire Prevention  
101 Sea Hero Road, Suite 100  
Frankfort, KY 40601  
502-573-0365  
www.ohbc.ky.gov

Kentucky Suicide Prevention Group  
1-800-SUICIDE or 1-800-273-TALK (8255)  
www.kentuckysuicideprevention.com

Kentucky Department for Mental Health  
100 Fair Oaks Lane, 4E-D  
Frankfort, KY 40621  
502-564-4527

Hunter Education (Firearm Safety)  
KY Dept of Fish and Wildlife Resources  
#1 Sportsman's Lane  
Frankfort, KY 40601  
1-800-858-1549  
www.fw.ky.gov

Cabinet for Health and Family Services  
Department for Public Health  
Division of Maternal and Child Health  
275 E. Main St. HS2GW-A  
Frankfort, KY 40621  
Telephone: (502) 564-2154  
Web: <http://chfs.ky.gov/dph/mch/cfhi/childfatality.htm>

