Kentucky Department for Public Health
Division of Maternal & Child Health

Data Brief

January 2015

Early Elective Deliveries

Early elective deliveries (EED) occur when labor is induced or cesarean sections are performed without a medical reason between 37 and 39 weeks of gestation. While the American Congress of Obstetricians and Gynecologists (ACOG) has advised against elective delivery prior to 39 weeks for decades, early elective deliveries doubled between 1990 and 2006 in the United States to greater than 15% of all deliveries.[1] While a planned delivery may be convenient for mothers and hospitals, it is associated with significant risks to both mother and baby compared to deliveries after 39 weeks gestation. In addition, the brain is the last major organ to develop, and the last 4-6 weeks of pregnancy are a critical time for brain growth that should not be cut short. Babies at 37 or 38 weeks have more complications, more NICU admissions, and longer average length of stays than full term infants.

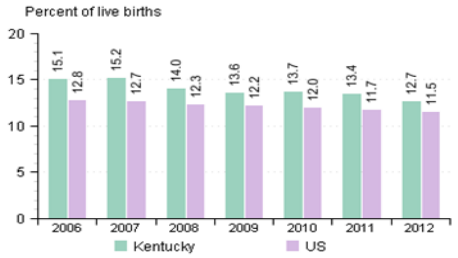
Risks with EED:[1,2]

- Neonatal Intensive Care Unit Admission
- Respiratory Distress Syndrome
- Other breathing problems
- Low Apgar scores
- Feeding problems

Kentucky Data on Early Elective Deliveries

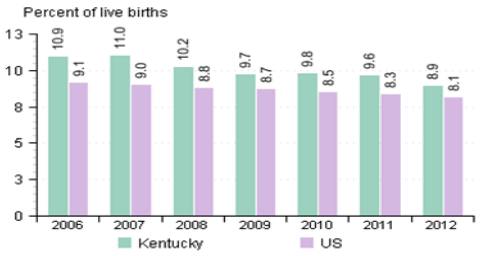
In 2006, Kentucky was one of the first states to determine that the rising rates of preterm birth were being driven by the bigger preemies, now called LATE PRETERM. Because they were bigger babies they were thought not to be at high risk, and were often delivered without medical indications, i.e., at the convenience of the mother or the provider. Reducing these early elective deliveries became an emphasis in the Healthy Babies are Worth the Wait project, done in collaboration with Johnson & Johnson and the March of Dimes. More and more literature came out citing short and long-term adverse outcomes in these late preterm babies that made the case for change.

PRETERM BIRTHS

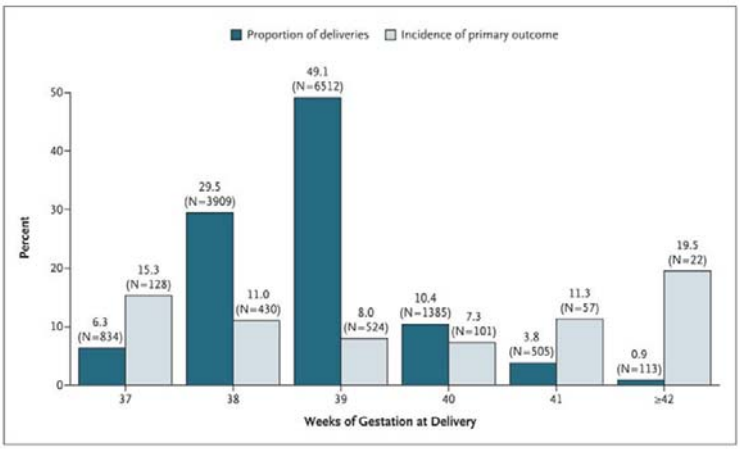


Preterm births (left) have declined from 15.1% of Kentucky births in 2006 to 12.7% of births in 2012. Late preterm births (right) have declined from 10.9% in 2006 to 8.9% in 2012. Data from March of Dimes Peristats

LATE PRETERM BIRTHS



Timing of Elective Repeat Cesarean Delivery and Incidence of the Primary Outcome According to the Number of Completed Weeks of Gestation



Source: Tita et. al. NEJM, 2009.

In 2009, in an article in the New England Journal of Medicine, researchers from the NIH Maternal Fetal Medicine Network studied elective repeat cesarean deliveries in their institutions, many of which were occurring before 39 weeks (contrary to the ACOG guideline).[3] Even those babies who were born electively at 37 and 38 weeks, technically in the range of "term", had increased morbidities. These babies are now referred to as EARLY TERM infants. Since 2009 ACOG, the Joint Commission on Accreditation of Healthcare Organizations, Center for Medicaid Services, and others have worked collaboratively to promote implementation of policies to eliminate non-medically indicated deliveries prior to 39 weeks. Eliminating all elective deliveries before 39 weeks, as recommended by ACOG guidelines, will address non-medically indicated deliveries for both late preterm and early term infants.

Collaborative Improvement and Innovation Network (CoIIN)[4]:Early Elective Delivery Team

The EED CoIIN team has team members from all 13 southern states. The first task was to develop a common measurement tool that was easily obtainable for all states (see below). While states are taking a number of approaches, three main strategies are being developed in states:

(1) Perinatal Quality Collaboratives. There are about a dozen perinatal quality collaboratives around the country, with voluntary participation of hospitals in the state. Clinical leaders develop packages of evidence-based practices around a specific topic, and then all participating hospitals work to implement the evidence-based strategies and report and share data to measure improvements in quality. For EED, hospitals implement a policy to stop the scheduling of early elective deliveries that have no medical indication.

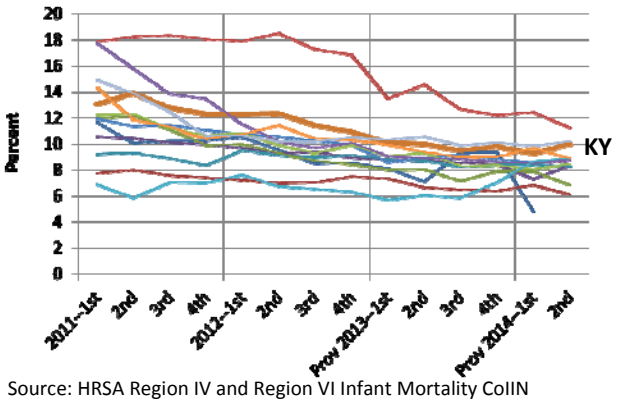
(2) Hospital Engagement Networks. This approach is being promoted nationally through the Strong Start initiative. Led by the state hospital association, hospitals voluntarily work on a specific topic, in this case reducing early elective delivery, and also learn from each other about challenges and successes. The Kentucky Hospital Association is leading this effort in Kentucky.

(3) Medicaid payor strategies. Several of the CoIIN states have passed legislation directing their state Medicaid department to not pay for early deliveries with no medical indication.

Estimation of Early Elective Deliveries with Birth Certificate Data

The HRSA Regions IV and VI Collaborative Improvement and Innovation Network developed a tool for assessing early elective deliveries using vital statistics data. While it is not an exact match to the JCAHO indicator, it correlates well, and allows states to compare their trends with the trends of other states. Kentucky's data (right), demonstrates that the percentage of non-medically indicated early term deliveries among singleton term deliveries has declined from 13% in the first quarter of 2011 to 10% in the second quarter of 2014. Kentucky's decline is slightly below the average for all states in regions IV and VI. Nationally, less than 3% is achievable.

Percent of Non-Medically Indicated Early Term Deliveries Among Singleton Term Deliveries, Reg. IV/VI (Provisional)



Source: HRSA Region IV and Region VI Infant Mortality CoIIN
Chart provided by Ashley Hirai, PhD

Regional Activities

South Carolina Birth Outcomes Initiative[5]**—**South Carolina used a policy of non-payment for early elective deliveries and was the first state in the nation to have its Medicaid program partner with the largest local commercial insurer to adopt such a non-payment policy.

Arkansas[6]**—**Medicaid Inpatient Quality Incentive Program – incentive for meeting threshold levels on elective delivery measure.

Oklahoma[7]—Three pronged approach including 1) Every Week Counts Collaborative among birthing hospitals (data collection, scheduling process change, "hard stop" policies); 2) Patient Education; and 3) Public Awareness.

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1 Wilmink FA, Hukkelhoven CWPM, Lunshof S, et al. (2010). Neonatal outcome following elective cesarean section beyond 37 weeks of gestations: a 7-year retrospective analysis of a national registry. *Am J Obstet Gynecol* 202(3):250-252.

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3 Tita, AT, Landon, MB, Spong, CY, et al. (2009). Timing of elective repeat cesarean delivery at term and neonatal outcomes. *New England Journal of Medicine* 2009; 360(2):111-120.

4 Ghandour R., Presentation: *Collaborative Improvement & Innovation Network (CoIIN) 101*. Presented February 10,2013.

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7 Association of State and Territorial Health Officials. (2013). Oklahoma Every Week Counts Collaborative. Retrieved December 1, 2014 from http://www.astho.org/Access/Maternal-and-Child-Health/Oklahoma-Every-Week-Counts-Collaborative/.

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Smoking during pregnancy harms babies

Smoking during pregnancy is associated with numerous adverse reproductive outcomes (infertility and delayed pregnancies), pregnancy complications (premature rupture of membranes and placental anomalies), and long-term consequences for children (sudden infant death syndrome and respiratory problems).[2,3] Prenatal smoking is associated with 30% of small for gestational age infants and 10% of preterm infants.[4]

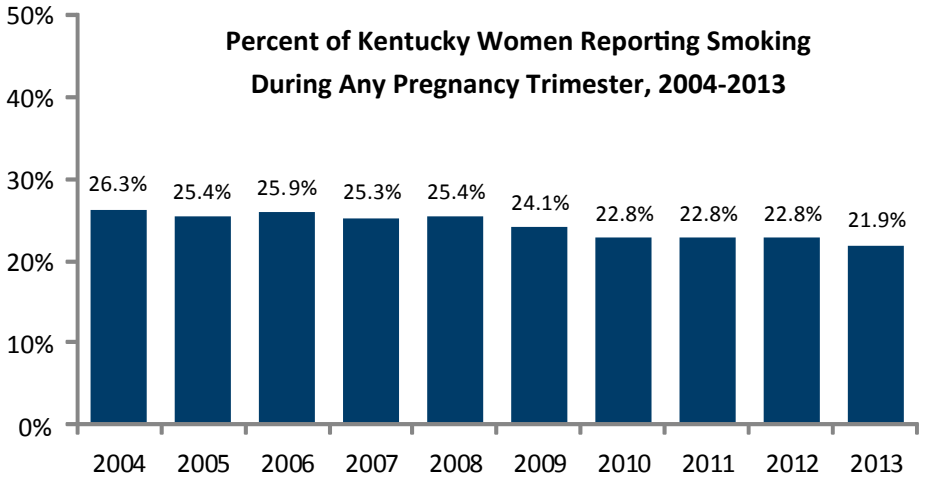
There are great costs associated with smoking in pregnancy. The direct medical costs of a complicated birth are 66% higher for smokers than for nonsmokers, reflecting the greater severity of complications and the more intensive care that is required.[5] Smoking attributable neonatal expenditures in Kentucky were more than $4.5 million based on 2003 smoking prevalence rates.[6]

Smoking **before** *and* **during** pregnancy is the single most preventable cause of illness and death among mothers and infants.[1]

More than 20% of Kentucky mothers smoke during pregnancy but less are smoking every year

Kentucky continues to have one of the worst rates of smoking during pregnancy in the US with more than 20% of women smoking during their pregnancy.[7]

Kentucky's rate is more than twice the national rate of 10.4%, and significantly above the Healthy People 2020 goal of 1.4%.[8] Still, **Kentucky is beginning to show progress with a 9% decrease in the past 5 years** (2009-2013).

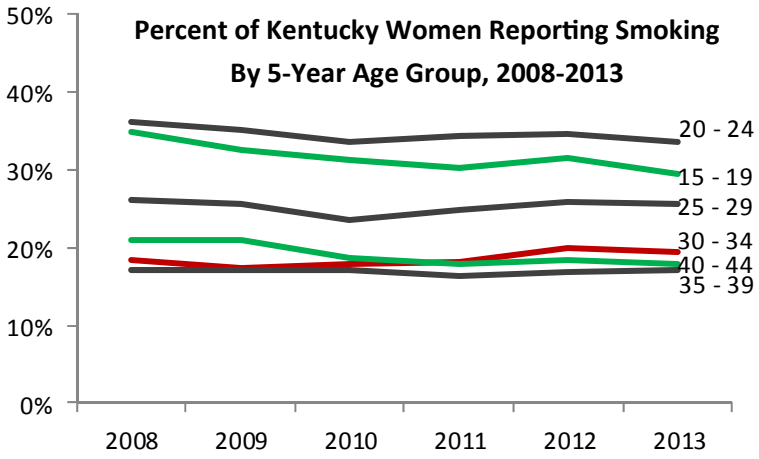


Source: Kentucky Live Birth Certificate Files, 2004-2013. Data from 2008 to 2013 is preliminary and subject to change. Rates are percent of behavior among live births.

Important age groups show decline in pregnancy smoking rates

Kentucky's smoking rate among pregnant women continues to be high but there are declines among important age groups.

Smoking among pregnant youth (aged 15-19 years) has declined 15.4% since 2008 and smoking among women aged 40-44 years has declined 15.3%. Unfortunately, smoking in the 30-34 age group has increased 5.4%, and five-year age groups between 15 and 29 continue to have smoking rates higher than the overall state rate.

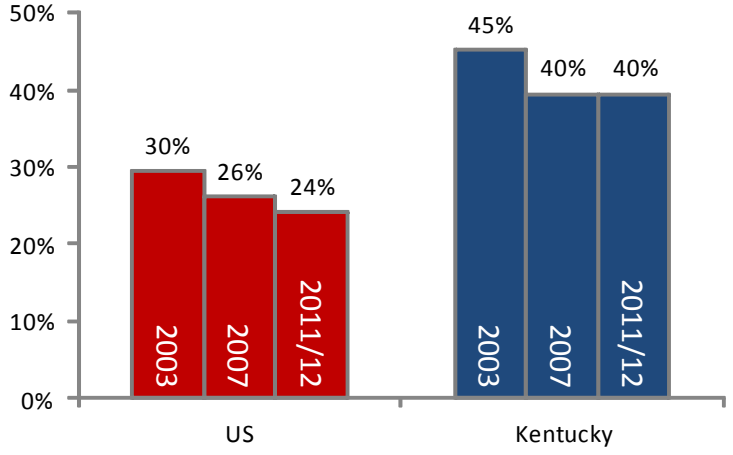


Source: Kentucky Live Birth Certificate Files, 2008-2013. Data from 2008 to 2013 is preliminary and subject to change. Rates are percent of behavior among live births.

Secondhand smoke exposure among children declines but remains higher than US

According to the National Survey of Children's Health, **40% of Kentucky's children were exposed to secondhand smoke (SHS) in 2011/12, a decrease of 11% from 2003.** SHS increases the risk of children developing asthma and other respiratory diseases. Over the same time frame, the US rate has declined nearly twice as much (20%). Kentucky's rate is two-thirds higher than the US rate of 24% in 2011/12. Local and statewide smoke-free ordinances protect our children from SHS.

Percent of Kentucky Children Exposed to Secondhand Smoke in their Home, 2003-2011/12

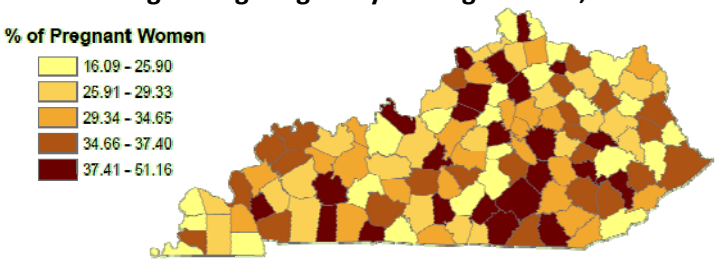


Source: National Survey of Children's Health, 2003-2011/12. Rates are percent of children living in a household where someone smokes.

Smoking during pregnancy is highest in southeast Kentucky

Smoking during pregnancy occurs in as few as 16% of pregnancies (Allen County) and as many as 50% (Pulaski), depending on the county where the mother lives. Southeastern Kentucky is associated with higher rates of smoking during pregnancy.

Smoking During Pregnancy Among Women, 2012



Source: Kentucky Live Birth Certificate Files, 2004-2013. Data from 2008 to 2013 is preliminary and subject to change. Rates are percent of behavior among live births.

The United States Preventive Services Task Force recommends that all pregnant women of any age be asked about their tobacco use and that smokers be provided augmented pregnancy-tailored counseling.[9] A **5-A** framework is recommended as a useful counseling strategy including: **ASK** about tobacco use, **ADVISE** to quit through clear personalized messages, **ASSESS** willingness to quit, **ASSIST** to quit, and **ARRANGE** follow-up and support.

Specific Activities to Promote Smoking Cessation During Pregnancy:

- Promote the use of Quitlines: Quit Now Kentucky has a specific telephonic counseling program tailored to pregnancy and post-partum. Women can enroll at 1-800-QuitNow or at www.QuitNowKentucky.org.
- Encourage participation in self-guided, group, or individual education programs such as:
  - Freedom from Smoking: group counseling program developed by American Lung Association.
  - Pregnancy & Motherhood: educational resources from the National Cancer Institute and NIH
  - You Can Quit Smoking: educational materials to support cessation from the Agency for Health Care Research and Quality
  - Need Help Putting Out That Cigarette?: a pregnancy self-help guide developed in partnership with the American Congress of Obstetricians and Gynecologists (ACOG)

References:

1 Centers for Disease Control and Prevention. (2007). Preventing Smoking and Exposure to Secondhand Smoke Before, During, and After Pregnancy. Retrieved May 14, 2014 from http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/pdf/Smoking.pdf.

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7 Centers for Disease Control and Prevention. (2004). Smoking during pregnancy—United States, 1990-2002. *MMWR Morb Mortal Wkly Rep*, 53(39), 911-915.

8 Healthy People 2020. Retrieved December 22, 2014 from http://www.healthypeople.gov/2020/data-search/Search-the-Data?nid=4838.

9 Fiore MC, J. C., Baker TB, et al. (2008). *Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline*. Rockville, MD.

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Early Childhood Home Visitation

Early childhood home visiting programs provide voluntary, in-home services to expectant mothers and families with infants and young children. Trained home visitors, who may be nurses, social workers, early childhood education specialists, or other trained paraprofessionals, meet with families in their homes to advise them on their children's health and development.

Home visiting programs are beneficial to both children and parents. In addition to providing information on childhood health and development, these programs connect families to a broader range of community services and supports. Many studies have found that quality, evidence-based home visitation services produce measurable outcomes for children and families such as better health, greater school readiness, academic achievement, parental involvement and economic self-sufficiency, and reduced child maltreatment, injuries, and juvenile delinquency. Overall, home visiting programs provide preventative services that help to enhance the quality of life for children and families. – from *The Children's Defense Fund*

KY HANDS

HANDS (Health Access Nurturing Development Services) began as Kentucky's voluntary home visitation program designed to assist overburdened expectant and first-time parents, at critical development points, prenatally through age two. It was developed as a core component of KIDS Now, Kentucky's early childhood initiative that is funded from the Master Tobacco Settlement. HANDS focuses on fostering early childhood development and learning and serves more than 10,000 families annually in all 120 counties across Kentucky. It has become one of the largest early childhood home visitation programs in the nation.

HANDS Program Goals:

- Positive pregnancy outcomes
- Optimal child growth and development
- Children live in healthy and safe homes
- Family self-sufficiency

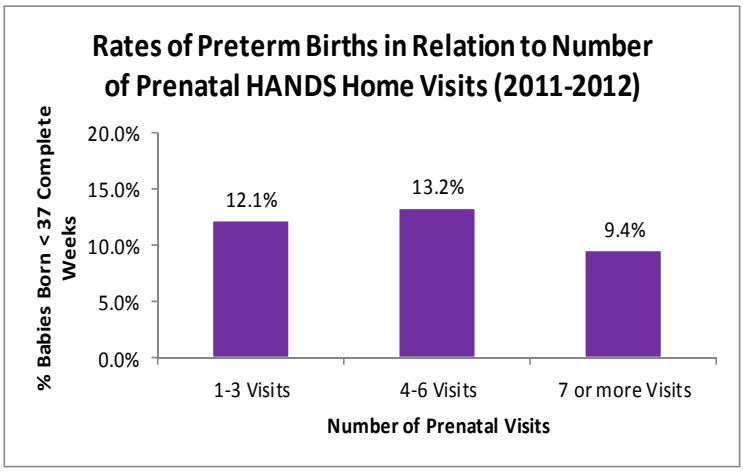
The HANDS program paraprofessional and professional visitors build relationships with the parents of these young children, and work on strengths-based skills for both the child and parent. These protective factors build resilience and positive outcomes.

Program Outcomes

- **Prematurity- 26% Less Than Similar High Risk Families That Did Not Participate**
  - Compared to mothers receiving no HANDS services, those receiving at least one prenatal home visit had lower rates of preterm delivery (HANDS participants included first-time mothers referred to the HANDS program during 2011-2012).

All studies are based on 1+ prenatal HANDS visits versus families that did not enter HANDS.
Evaluators - UNIVERSITY OF KENTUCKY RESEARCH FOUNDATION; data from July 1, 2011-June 30, 2012; n=4,506.

- When stratified by the number of home visits, the rate of preterm delivery decreased as the number of prenatal home visits increased: among women receiving 1-3 prenatal home visits the rate of preterm delivery was 12.1% compared to 13.2% among women receiving 4-6 prenatal home visits, and 9.4% among those receiving 7 or more prenatal home visits (HANDS participants included first-time mothers referred to the HANDS program during 2011-2012).



- **Child Maltreatment- 47% Less Likely than Comparable Families At-Risk**
  - Based on DCBS reports, HANDS participants were much less likely to have a substantiated report of child maltreatment compared to comparison families (HANDS participants included first-time mothers referred to the HANDS program during 2011-2012).

Affordable Care Act: HANDS Expansion

In 2010, the Kentucky Department for Public Health was designated by Governor Steve Beshear to be the state agency to apply for funding through the Affordable Care Act, which amended Title V of the Social Security Act to create the Maternal, Infant, and Early Childhood Home Visiting Program (MIECHV). The grant required a statewide needs assessment ranking of all 120 Kentucky counties according to a set of specified indicators, to identify "high risk" communities. In those communities, the state proposed a plan to enhance the existing home visitation services using one of the designated evidence-based home visiting models (Healthy Families America, which HANDS is based on).

Kentucky's MIECHV program goals include:

1. Expand HANDS to all at-risk families, not just first time parents;
2. Build Systems of Care for home visiting in communities to promote health and well-being for all pregnant women, children and their families; and
3. Provide in-home perinatal depression treatment through local mental health agencies.

At full implementation, 78 counties are covered with the grant expanded services (in addition to the core HANDS program, which is in every county). Funding for the MIECHV grant is scheduled to end in 2016.

All studies are based on 1+ prenatal HANDS visits versus families that did not enter HANDS.
Evaluators - UNIVERSITY OF KENTUCKY RESEARCH FOUNDATION; data from July 1, 2011-June 30, 2012; n=4,506.

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Neonatal Abstinence Syndrome

When pregnant women take addictive drugs during pregnancy, the baby also typically becomes addicted. After birth, the baby goes through withdrawal. Symptoms of withdrawal in the infants can include extreme irritability, tremors, seizures, vomiting, diarrhea, poor feeding, and inconsolability. This is called Neonatal Abstinence Syndrome, or NAS.

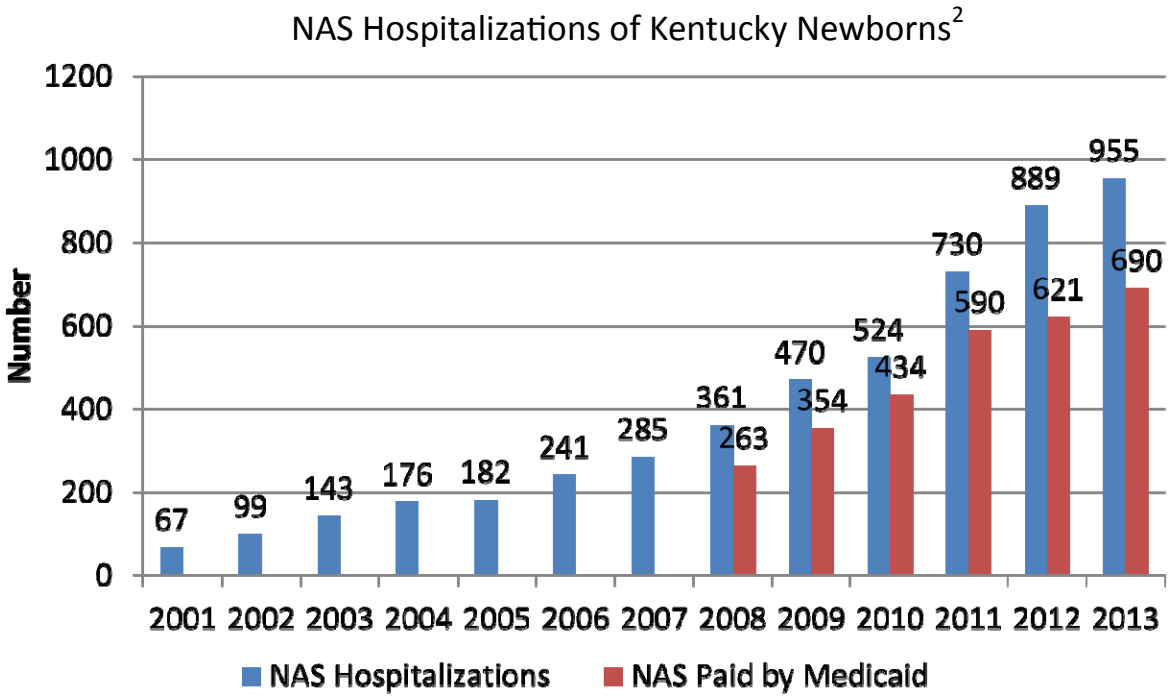
Symptoms of infant withdrawal due to drugs taken by the mother and passed to the baby often do not start until 48 hours after delivery, as the levels of the drug in the baby wear off. This is frequently after discharge from the hospital setting so the babies may not be identified as having NAS. Because the effects of NAS can linger for months, even after treatment and discharge, these infants are at high risk for ongoing feeding problems with failure to thrive, and for child abuse due to their ongoing irritability and crying. Supports must be put into place to assure the safety of these infants.

Problems of NAS babies:

- Excessive crying
- Neurologic issues
- Feeding issues
- Increased risk for child abuse

NAS Among Infants in Kentucky

Nationally, rates of NAS have tripled since 2000 with approximately one infant born per hour in the U.S. with signs of drug withdrawal [1]. In Kentucky, data from hospital discharge records indicate the number of cases of NAS has increased 14-fold in the last decade (67 in 2001 vs. 955 in 2013). While NAS has been increasing both in the nation and in Kentucky, Medicaid has seen the largest increase in NAS over the last several years. Patrick et al [1] discovered that state Medicaid programs were the main source of payment for babies with NAS (78.1%) compared to other forms of payment. In Kentucky, the rate of NAS among infants covered by Medicaid has more than doubled in just the last three years from 263 cases in 2008 to 690 in 2013. In addition, the average length of stay Nationally for NAS babies covered by Medicaid is 8 times longer than for healthy newborns (16.6 days vs. 2 days) [1] resulting in higher costs per hospital stay. In Kentucky, the average length of stay for NAS babies covered by Medicaid increased from 12.9 days to 21.8 days in a six year period.



Data Source: Kentucky Injury Prevention and Research Center, University of Kentucky
Hospitalization data may contain duplicates since some infants may be transferred to another hospital for treatment

Substance Abuse during Pregnancy

Substance abuse during pregnancy poses several risks not only to the mother but to the baby as well. Pregnant women who abuse illegal drugs or prescription medications place their baby at risk for getting addicted to a drug before birth and then going through withdrawal after birth.[3] Substance use by pregnant women is a leading preventable cause of mental, physical, and psychological problems in infants and children.[4] Nearly four percent of pregnant women in the United States use illicit drugs such as marijuana, cocaine, Ecstasy and other amphetamines, and heroin.[4] A study conducted by Havens et.al. (2009) using a national sample found an overall prevalence of any past month substance use during pregnancy to be 25.8%; the prevalence rates of past month illicit drug, cigarette and alcohol use were 4.7%, 18.9% and 10%, respectively. Compared to the prevalence of substance use among women in their first trimester, use was significantly lower among women in their second or third trimesters.[5] Illicit drugs pose various risks for pregnant women and their babies. Some of these drugs can cause a baby to be born too small or too soon, or to have withdrawal symptoms, birth defects or learning and behavioral problems.[3]

Initiatives to address NAS and Substance Abuse in Kentucky

The Kentucky Perinatal Quality Collaborative has introduced an NAS quality improvement project with the goal of collecting information from partnering hospitals in Kentucky. From there, information on best practices for treating infants with NAS will be disseminated to hospitals and maternal-infant health care providers. The results of data collected will provide information toward standardized treatments to improve the outcomes of both the mothers and children affected by NAS. Initially, the focus will be on interventions for hospitalized newborns with NAS, including both medication and non-medical treatments.

Prevention Efforts

- **Screen pregnant women for substance use and refer to appropriate treatment**
- **Treat women who have substance use disorder**
- **Increase awareness of NAS among neonatal providers**

NAS has become an epidemic both nationally and in the state of Kentucky. Prevention efforts as well as interventions need to be established in order to reduce the negative impact NAS has on individuals and society.

References:

1 Patrick, SW et al. (2012) Neonatal Abstinence Syndrome and Associated Health Care Expenditures; United States, 2000-2009. *JAMA* 307(18):1934-1940.

2 Data Source: Kentucky Department for Medicaid Services, Medicaid Management Information System, Medicaid Claims Database, Calendar years 2008-2013; NAS was based on the ICD9CM code 779.5-any claim with this diagnosis code as either the primary, secondary, tertiary, or fourth diagnosis code was included for children born in the specified year. Kentucky Injury Prevention and Research Center; KY Inpatient Hospitalization claims database years 2001-2013.

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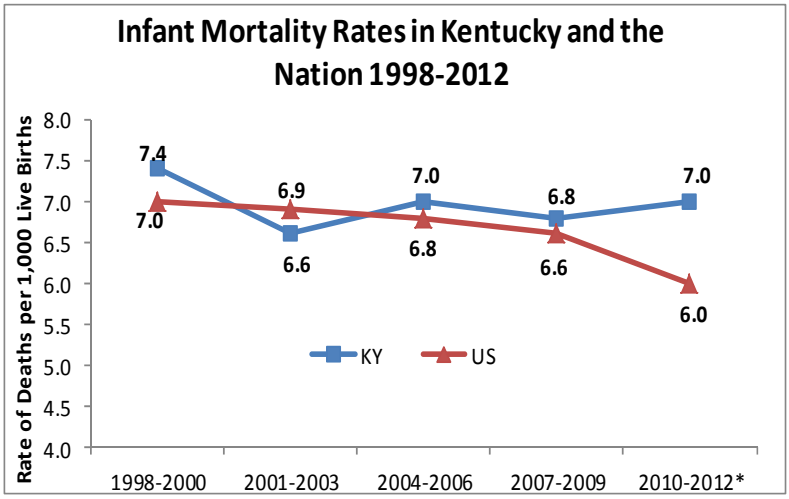
Infant Mortality

Infant mortality is the death of a child any time after birth and before reaching his or her first birthday. Nearly all of these deaths are non-injury deaths related to medical conditions. The infant mortality rate (an estimate of the number of infant deaths for every 1,000 live births) is often used as an indicator to measure the health status of a nation as it is associated with a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices.[1] The three leading causes of infant mortality both nationally and in Kentucky are congenital anomalies (birth defects), prematurity and low birth weight, and Sudden Infant Death Syndrome (SIDS). Other causes of infant mortality include maternal complications during pregnancy and victims of injuries.[2]

Leading Causes of Infant Mortality:

- Congenital Anomalies (Birth Defects)
- Prematurity and Low Birth Weight
- Sudden Infant Death Syndrome (SIDS)
- Maternal Complications during Pregnancy
- Injuries

Kentucky Compared to the Nation



***Note: Data from 2010-2012 are preliminary and numbers may change**
Data Sources: National Center for Health Statistics, National Vital Statistics Reports, Infant Mortality Statistics from the 2000, 2003, 2006, 2009, and 2010 Period Linked Birth/Infant Death Data Sets and Deaths: Final Data for 2011 and 2012.[3-8] Kentucky Vital Statistics, Death Certificate Files 2005-2012; Additional deaths identified through KY Medicaid Claims Data Warehouse for Years 2010-2012.

Kentucky's infant mortality rate has historically run close to the national average. The National Center for Health Statistics uses three year linked files to assess infant mortality rates in the Nation and for each state. The figure to the left shows how close Kentucky's rate is to the Nation.

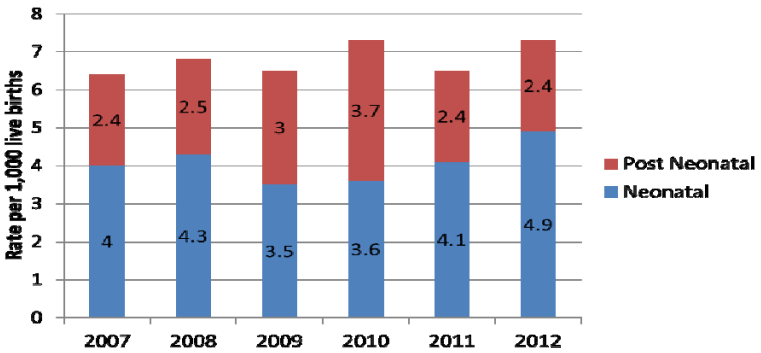
Kentucky's rate exceeds the Nation in all time periods except for 2001-2003. Over the twelve years depicted, there has been very little improvement in infant mortality rates despite advances in knowledge and technology. Improvements must be made to achieve the Healthy People 2020 goal of 6.0 infant deaths per 1,000 live births.[9]

Characteristics of Kentucky's Infant Mortality

The Neonatal Infant Mortality Rate is on the rise in Kentucky, with 2012 having the highest neonatal infant mortality rate (4.9 per 1,000 live births) Kentucky has seen in 6 years.

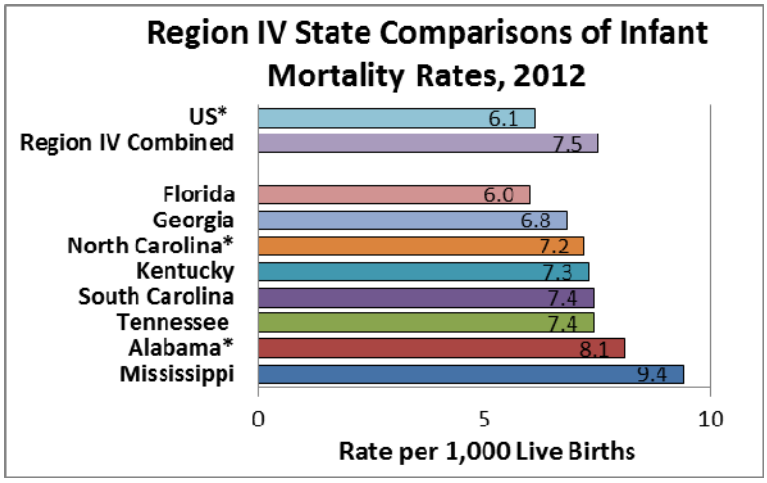
Further investigation reveals that this increase in neonatal infant mortality is due to deaths among infants born at 23 weeks or less gestation. Early preterm births (<26 weeks gestation) poses a variety of complex medical considerations.[10] In the US, 80% of those infants born between 20-23 weeks gestation do not live.[11]

Neonatal and Post Neonatal Infant Mortality Rate among Kentucky Residents; Years 2007-2012*



*2009-2012 data are preliminary and numbers could change;
Data Source: KY Vital Statistics Files, Death Certificate files, years 2007-2012; Medicaid Claims Data Warehouse, Years 2010-2012

Region IV Infant Mortality Rates Remain Above the National Average



Data Source: US Department of Health and Human Services, Health Resources and Services Administration, Title V Information System, National Performance and Outcome Measures., Most recent year available

***Note**: Alabama, North Carolina, and the US rates are based on 2011 data, the most recent year available

Kentucky has joined other southern states in the U.S. Department of Health and Human Services, Health Resources Service Administration (HRSA) Regions IV and VI Collaborative Improvement and Innovation Network (CoIIN) with its efforts to reduce infant mortality. The five common strategies of the CoIIN include: Reducing Early Elective Delivery, Reducing Smoking in Pregnancy, Interconception Care Models, Regionalized Perinatal Care, and Safe Sleep Strategies.

Out of the eight southern states in Region IV, Kentucky ranks 5th worst in infant mortality rates. Kentucky's infant mortality rate is 7.3 per 1,000 live births and is consistent with the combined rate of Region IV at 7.5 per 1,000 live births. Region IV remains higher than the total U.S. infant mortality rate, which was 6.1 per 1,000 live births as of 2011.

Strategies to Prevent Infant Mortality

- **Participation in the Infant Mortality Collaborative Improvement and Innovation Network (CoIIN)**
  - **◊ Increase Safe Sleep Practices**
  - **◊ Preconception/ Interconception Care through Medicaid**
  - **◊ Enhance Perinatal Regionalization**
  - **◊ Increase Smoking Cessation in Pregnant Women**
  - **◊ Reduce Elective Deliveries Prior to 39 Weeks**
- **Child Fatality Review Program**
  - **◊ Period of Purple Crying Materials**
  - **◊ Cribs for Kids and Safe Sleep Materials**
- **Other Prevention Projects**
  - **◊ Healthy Babies are Worth the Wait**
  - **◊ Giving Infants and Families Tobacco Free Starts (GIFTS)**
  - **◊ Safe to Sleep for Child Care Providers**
  - **◊ TEN-4 Bruising Training**
  - **◊Abusive Head Trauma Prevention**
- **Health Access Nurturing Development Services (HANDS)**
- **Perinatal Advisory Committee**
- **Neonatal Abstinence Syndrome Workgroup**

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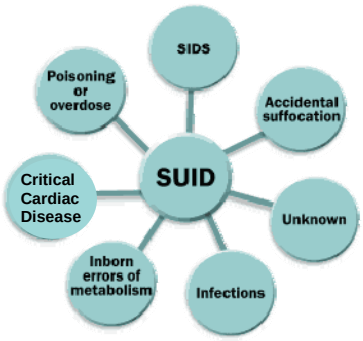
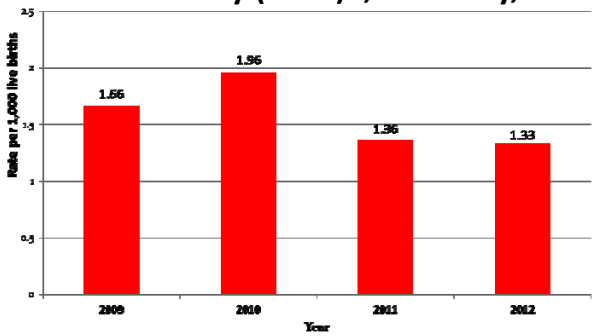
Sudden Unexpected Infant Deaths



Historically, Sudden Infant Death Syndrome (SIDS) had been the third leading cause of infant mortality in Kentucky and the Nation. Even after a thorough investigation, it may be difficult to separate SIDS from other similar causes of death. The CDC is now recommending a new broader category of Sudden Unexpected Infant Death (SUID), which is helpful in determining potential prevention efforts. SUID is defined as deaths that occur suddenly and unexpectedly, during the first year of life in which the cause of death is not immediately obvious prior to investigation.[1] After investigations, some of the causes of SUID turn out to be suffocation, homicide, neglect, poisoning, and metabolic disorders. About half of the infant deaths in the SUID category are attributed to classic SIDS, where the sudden death of an infant cannot be explained after a thorough investigation (including a complete autopsy, death scene investigation, and review of the clinical history).[1] However, many of these infants deaths, including SIDS, have common opportunities for prevention, so studying this broader group helps improve prevention efforts. In Kentucky, these deaths are reported as Sudden Unexpected Death in Infancy (SUDI) by the state medical examiner's office.

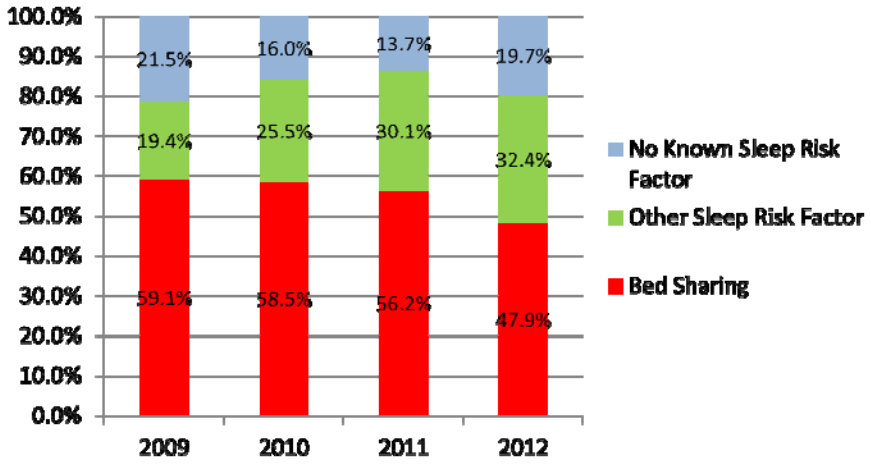
Rate* of Infant Deaths Due to Sudden Unexpected Death in Infancy (SUDI)^; Kentucky, 2009-2012**



*Rates are reported per 1,000 live births
**Data for 2009-2012 are preliminary and numbers may change.
^SUID includes Asphyxia (ICD10 codes W75, W83, W84), SIDS (ICD10 code R95),and Undetermined (ICD10 code R99)
Data Source: Kentucky Vital Statistics Files, Years 2009-2012; Medicaid Claims Data Warehouse, Years 2010-2012

- The rate of infant deaths due to SUDI increased from 1.66 per 1,000 live births in 2009 to 1.96 per 1,000 live births in 2010. Since then, infant deaths due to SUDI have declined to 1.36 and 1.33 per 1,000 live births respectively in 2011 and 2012.
- In 2012, approximately one in five infant deaths in Kentucky were SUDI (data not shown).

Sleep Risk Factors Among Sudden Unexpected Death in Infancy (SUDI) , Kentucky Residents, 2009-2012*



*Data for 2009-2012 are preliminary and numbers may change.
SUID cases are those with the primary cause of death listed as ICD-9 Codes R95 (SIDS), R99 (Undetermined), W75 (Accidental Suffocation and Strangulation in Bed), W83 (Other Specified Threats to Breathing) and W84 (Unspecified Threat to Breathing).
Source: Kentucky Death Certificate Files, 2009-2012, Office of Vital Statistics, and Kentucky Medical Examiner's Reports, 2009-2012

Sleep-Related Risk Factors:

- Bed sharing or co-sleeping
- Sofa/couch sleeping
- Soft/loose bedding
- Soft Objects
- Use of an adult bed
- Placed prone or side position

Prevention Efforts

Multiple sleep-related risk factors can be present simultaneously, so the prevention approach is to teach families to always place an infant in a safe sleep environment. The National Institute of Child Health and Development has new materials, based on the AAP recommendations (right), which are recommended for use nationwide.

Local health departments in Kentucky are participating in safe sleep activities by purchasing crib survival kits and providing them to families in need. In calendar year 2013, 31 local health departments participated in this initiative in partnership with Cribs for Kids®. Kentucky has also been participating on the Region IV and IV Collaborative Improvement and Innovation Network (CoIIN) workgroup related to safe sleep. The aim of this workgroup is to increase safe sleep practices by 5% and reduce disparities in sleep-related infant deaths.

http://www.nichd.nih.gov/sids/Pages/sids.aspx

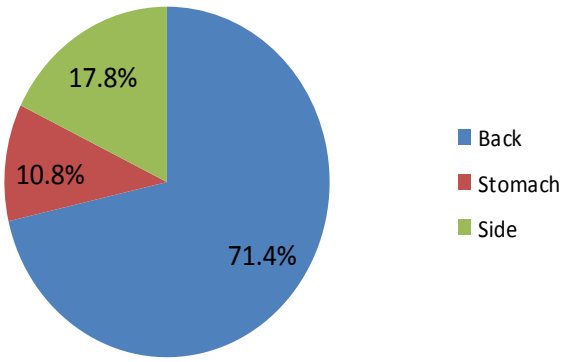
AAP Safe-Sleep Recommendations:[2]

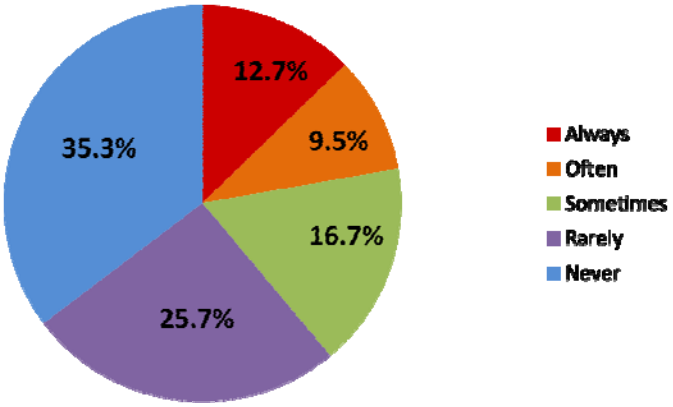
- Place baby on their back for every sleep
- Place baby on firm sleep surface
- Keep soft objects, loose bedding, or any objects that could increase the risk of entrapment, suffocation, or strangulation out of the crib
- Place baby in the same room where you sleep but not the same bed
- Breastfeed as much and for as long as you can
- Schedule and go to all well-child visits
- Keep baby away from smokers and places where people smoke
- Do not let your baby get too hot
- Offer a pacifier at nap time and bedtime
- Do not use home cardiorespiratory monitors to help reduce the risk of SIDS
- Do not use products that claim to reduce the risk of SIDS

The sleep environment is a modifiable risk factor and one that can be the target for prevention and health promotion activities in Kentucky in order to reduce infant deaths.

Sleep-Related Risk Factors in Kentucky

A 2009/2010 survey of recent new mothers in Kentucky found that 71.4% report laying their baby down most often on their back to sleep while 17.8% report laying their baby down on their side, and 10.8% on their stomach . When these new mothers were asked about how often their baby sleeps in the same bed with them or someone else, only 35.3% of respondents reported that their baby never sleeps in the same bed with them or anyone else. Among respondents, 12.7% reported always having their baby sleeping in a bed with someone.





Data Source: Pilot Kentucky Pregnancy Risk Assessment Monitoring System, 2009/2010
Percentages represent weighted percentages that are representative of the state birth population.

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Preterm Birth

Preterm birth (a live birth occurring prior to 37 completed weeks gestation) has been an increasing problem both in the Nation and in Kentucky.

The two most important predictors of an infant's subsequent health and survival are birthweight and period of gestation.[1] Infants born too small or too soon are at a greater risk of death and disability. Because of the increased risk of death, these infants have a large impact on infant mortality.[1] Preterm-related causes of death are the leading cause of infant mortality in Kentucky and the Nation accounting for 35.4% of total infant deaths.[2] Even babies born just a few weeks early, called late preterm infants (34 0/7-36 6/7weeks gestation) are three times more likely to die in the first year of life compared to term infants, and are also twice as likely to die of SIDS than term infants.[3]

Risks for Preterm Babies:

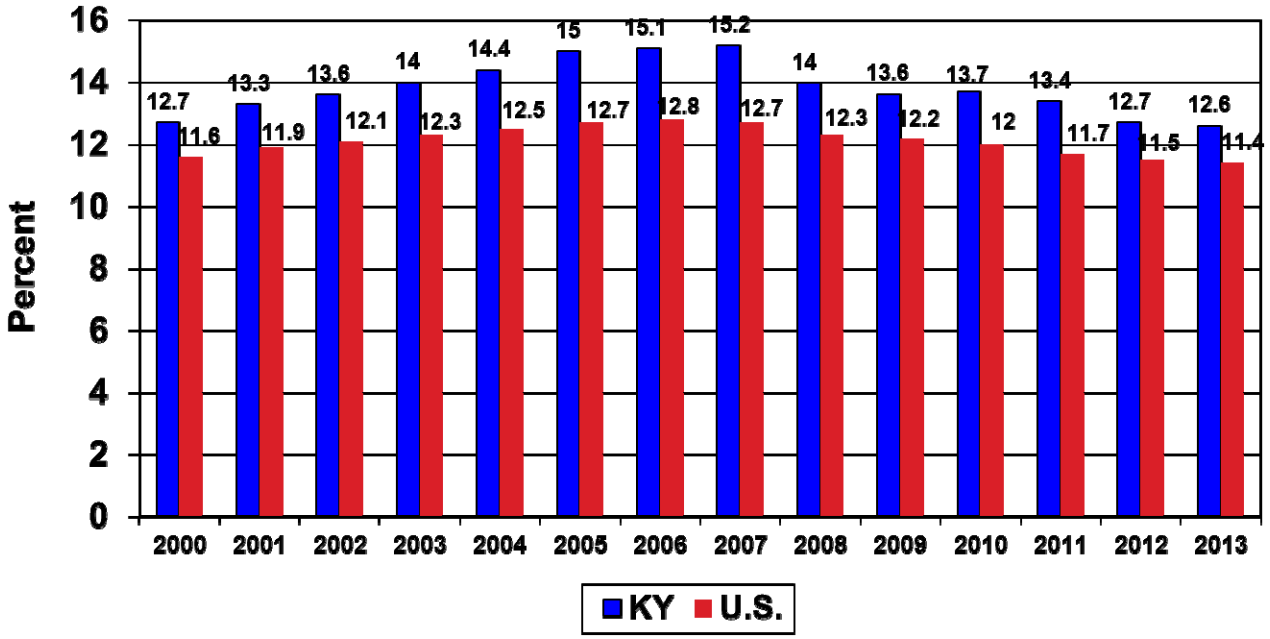
- Chronic Lung Disease
- Blindness/Hearing Impairment
- Cerebral Palsy
- Developmental Delay
- Behavior and Learning Problems
- Long-term Disability

Preterm Birth Among Infants in Kentucky

Preterm birth in Kentucky increased from 12.7% in 2000 to a high of 15.2% in 2007. Since then, the percent of preterm births has declined to 12.6% in 2013 preliminary data. In the first half of the decade, rates of preterm birth increased nearly 20% in Kentucky compared to only an 8% increase in the U.S. Nationally, rates of preterm birth have increased over the same time period as well, but not as high or as fast as the Kentucky rate. The preterm birth rate for the U.S. has also been declining over the last three years after reaching a high of 12.8% in 2006 and is currently at 11.4% in 2013.[4]

- Babies born preterm are at an increased risk for life-long complications such as visual and hearing impairments, developmental delays, and behavior/emotional problems which can range from mild to severe. Preterm birth not only poses several risks to the infant but is also a huge cost to society in terms of direct and indirect medical costs. Prematurity may result in long-term physical and mental disabilities, which generate additional costs compared to children born full term.[5] On average, first year medical costs including both inpatient and outpatient care were 10 times greater for preterm ($32,325) than for term infants ($3,325).[5]

Percent of Live Births that were Preterm; Kentucky and U.S.



Data Sources: National Center for Health Statistics, National Vital Statistics Reports, Births: Preliminary data for 2013[4], National Center for Health Statistics, National Vital Statistics Reports. Births: Final data for 2011, 2009, 2007, 2005, 2003, 2001.[6-11]

Can Preterm Birth Be Prevented?

Yes, it can. What we have learned in recent years, is that preterm birth should be treated like a public health problem with interventions at all levels in a community, not just approached as a medical care issue. Providing comprehensive services that integrate evidence-based and best practices in clinical care with a system of social and environmental supports have shown great promise in reducing rates of preterm birth. The Kentucky Healthy Babies are Worth the Wait project worked from this ecological model and reduced rates of preterm birth in the intervention communities by 15%. We do not have all the information we need to prevent preterm birth, but we know enough now to do better. We have to take a broader approach and improve our systems of care and support for pregnant women and their infants.

PREMATURITY PREVENTION

National Examples

- Strong Start New Models of Care
- Pregnancy Medical Homes
- Perinatal Quality Collaboratives
- Federal Healthy Start
- Smoking Cessation
- ASTHO President's Challenge

Kentucky Examples

- HANDS Home Visiting
- Healthy Babies are Worth the Wait
- Centering Pregnancy Projects
- Kentucky Healthy Start Sites
- Smoke Free Ordinances

National Collaborative Improvement and Innovation Network

The Collaborative Improvement & Innovation Network (CoIIN) to Reduce Infant Mortality is a public-private partnership to reduce infant mortality and improve birth outcomes. Participants learn from one another and national experts, share best practices and lessons learned, and track progress toward shared benchmarks. Kentucky participates in the CoIIN as part of Region IV and has representatives on each of the five strategy teams. One strategy team, early elective deliveries, seeks to reduce elective deliveries prior to 39 weeks through policy and environmental change, provider engagement, and implementation of evidence-based practices and guidelines. By implementing the strategies put forth from the CoIIN along with other prevention initiatives, it is hopeful that Kentucky's preterm birth rate will continue to decline.

PREMATURITY PREVENTION

- **Encourage a preconception health visit prior to pregnancy**
- **Early and regular prenatal care visits**
- **Provide comprehensive, evidence based care that includes psychosocial screening and supports for pregnant women**
  Reduce early elective deliveries
- **Educate pregnant women on the importance of carrying their baby to full term**

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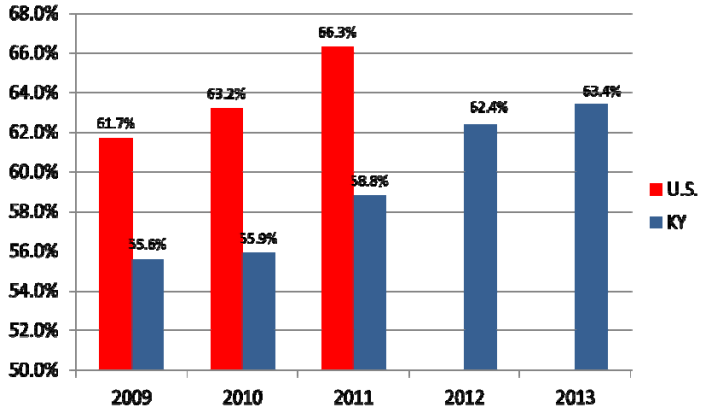
Breastfeeding

Breastfeeding is one of the most beneficial health interventions for any child. Compared to formula-fed infants, breastfed babies have fewer problems with illnesses such as ear infections, vomiting, and diarrhea and may also be at reduced risk for the development of allergies.[1] Breastfeeding also improves brain development in children, which may lead to a higher IQ.[2] Mothers benefit from breastfeeding as well, improving a mother's bond with her baby, helping her to feel relaxed and safe, burning calories to promote post-pregnancy weight loss and it may even provide protection against breast and ovarian cancers.[2] The national Healthy People 2020 goal is to increase the initiation of breastfeeding in the early postpartum period to 81.9% of newborns and to improve breastfeeding rates to 60.6% of infants at age 6 months and 34.1% at 1 year.[3] In 2011, 58.8% of Kentucky women initiated breastfeeding compared to 66.3% of women in the US (Figure 1). At six and twelve months of age, 15.5% and 7.2% of Kentucky infants were breastfed compared to 26% and 17.9% in the US.[4] While initiation of breastfeeding in Kentucky is lower than the national average, it has increased steadily from 55.6% in 2009 to 63.4% in 2013.

Figure 1: Percent of Women Initiating Breastfeeding; Kentucky and US, 2009-2013*



Source: Kentucky Live Birth Certificate Files, 2009-2013; *Kentucky data from 2009-2013 are preliminary and numbers may change; US Data from Pediatric Nutrition Surveillance System[4]

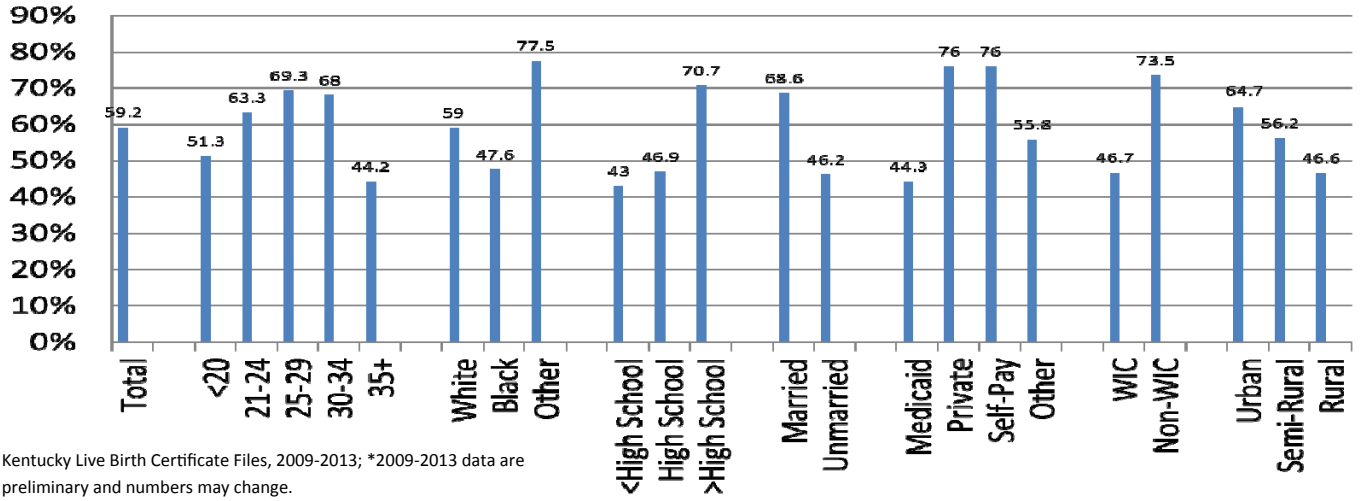
Benefits of Breastfeeding[1,2]

- Reduction of infant illness
- Reduction of childhood obesity
- Increased workplace productivity for mothers
- Increased attachment between mother and child
- Decreased breast and ovarian cancer rates for mothers

Breastfeeding in Kentucky

Disparities exist among various maternal characteristics for women initiating breastfeeding (Figure 2). In Kentucky, White women are more likely to initiate breastfeeding compared to Black women (58.9% vs. 47.6%) and women of older maternal age (20-35) are more likely to breastfeed than women of younger maternal age. Other characteristics associated with being more likely to breastfeed in Kentucky include being married, having greater than a high school education, having private insurance, not being enrolled in WIC, and living in an urban environment.

Figure 2: Breastfeeding Initiation by Select Maternal Characteristics; KY 2009-2013* Combined



Kentucky Live Birth Certificate Files, 2009-2013; *2009-2013 data are preliminary and numbers may change.

Capacity/Resources:

The Kentucky WIC program within the Department for Public Health partners with many agencies, groups, providers and professionals throughout the Commonwealth to promote and improve breastfeeding rates. There are breastfeeding coalitions across the state as well as private providers and universities that work with pregnant women to encourage both initiation and duration of breastfeeding. In addition, each local health department has a Breastfeeding/WIC coordinator who provides education, support, classes, hospital grade breast pumps, and numerous other resources to encourage breastfeeding and support lactating women. In several communities, the WIC program also has breastfeeding peer counselors.

Breastfeeding is promoted by Breastfeeding Coalitions in several regions of the state for the purpose of providing information and resources to pregnant women and mothers. These coalitions are a source of education and support for women and their families to encourage breastfeeding and to educate about the benefits of breastfeeding to mother and baby. Breastfeeding has also been supported by the passage of state laws which mandate that a mother may breastfeed her baby or express breast milk in any location, public or private, where the mother is otherwise authorized to be, and which excuse a breastfeeding mother from jury duty. Federal law requires the workplace to provide a breastfeeding mother with adequate time to feed her baby or express breast milk as frequently as needed.

Improvements in Kentucky's breastfeeding rates will be further assisted by the creation of a stars rating system for Baby Friendly hospitals and statewide adoption of the Kangaroo Care program which provides in-hospital skin-to-skin breastfeeding assistance to mothers.

Recommendations to Increase Breastfeeding in Kentucky:[5,6,7,8]

- Increase the number of hospitals that implement skin-to-skin policies from nineteen percent (19%) to twenty-five percent (25%).
- Increase follow-up breastfeeding visits by pediatric care providers.
- Increase the number of hospitals that achieve baby friendly status or implement the Ten (10) Steps to Successful Breastfeeding.
- Increase the number of health professionals that become International Board Certified Lactation Consultants.
- Establish the WIC Breastfeeding Peer Counselor Program statewide and increase referrals to this and other breastfeeding support services by healthcare professionals.
- Improve the promotion of worksite breastfeeding including flexible schedules, regular breaks to facilitate breast pump use and feeding, and designated lactation rooms.
- Use Lactation Improvement Network of Kentucky (LINK) to develop an integrated network of online media for the dissemination of breastfeeding information.

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Child Maltreatment

Child maltreatment is the abuse and/or neglect of a child under the age of 18. The most common types of abuse include physical abuse, sexual abuse, emotional abuse, and neglect.[1] Perpetrators of abuse can include a parent, caregiver, or another person in a custodial role (i.e. clergy, coach, teacher). Children under the age of 4 years are at the greatest risk for severe injury and death from abuse.[1] Other risk factors for child maltreatment include a family history of violence, drug or alcohol abuse, poverty, and chronic health problems, all of which can put a great deal of stress on families. In addition, families that do not have a strong family or social support system are also at risk.[1]

Four Common Types of Child Maltreatment:

Physical Abuse—the use of intentional physical force such as hitting, kicking, shaking, burning, or other show of force against a child

Sexual Abuse— engaging a child in sexual acts (i.e. fondling, rape, and exposing a child to other sexual activities)

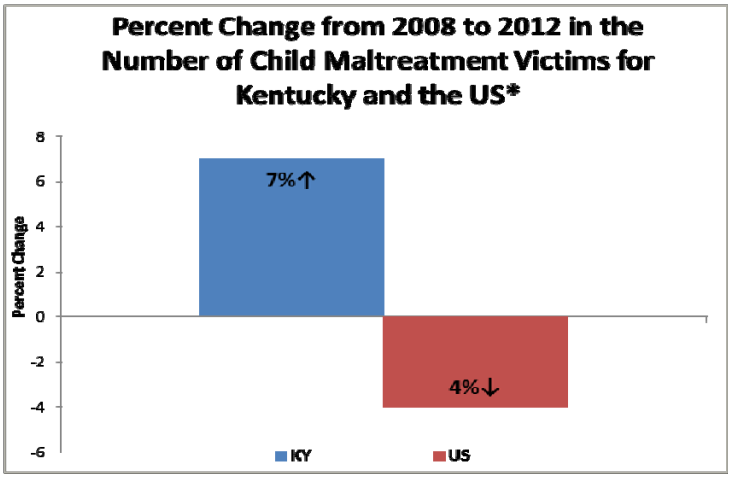
Emotional Abuse—behaviors that harm a child's self-worth or emotional well-being (i.e. name calling, shaming, rejection, with-holding love, and threatening)

Neglect—failure to meet a child's basic needs (i.e. housing, food, clothing, education, and access to medical care)

Maltreatment among Kentucky's Children

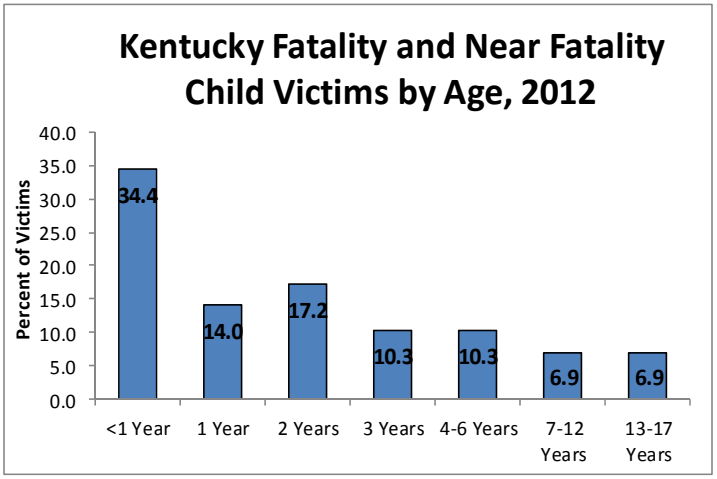
The number of child maltreatment victims in Kentucky is increasing[2], while the number of child maltreatment victims in the US is decreasing.[3] From 2008 to 2012, the number of Kentucky child maltreatment victims increased by 7%; during this same time period in the US, child maltreatment victims decreased by 4%.

In looking at Kentucky child maltreatment victims who experience a fatality or near fatality as a result of the abuse by age, one-third occur in infants. This indicates a specific population for Kentucky to target prevention efforts. Those children of potty training age (2 year olds) account for the second largest group in Kentucky for fatalities or near fatalities as a result of child mal-treatment. This suggests that children under the age of two are at the greatest risk for the most violent and life threatening forms of child maltreatment.



***Note: Kentucky data is based on State Fiscal Year (July 1st – June 30th) and US data is based on Federal Fiscal Year (October 1st - September 30th).**

Data Sources: Kentucky Cabinet for Health and Family Services, Department for Community Based Services, Division of Protection and Permanency. (2012). *2012 Child Fatality and Near Fatality Annual Report* available from http://chfs.ky.gov/dcbs/dpp/childsafety.htm [2]; US Department of Health and Human Services, Administration for Children and Families, Admin-istration on Children, Youth, and Families, Children's Bureau. (2013). *Child Maltreatment 2012*. Available from http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment[3]



Data Sources: Kentucky Cabinet for Health and Family Services, Department for Community Based Services, Division of Protection and Permanency. (2012). *2012 Child Fatality and Near Fatality Annual Report* available from http://chfs.ky.gov/dcbs/dpp/childsafety.htm [2]

Child Maltreatment Prevention

The CDC has developed an "*Essentials for Childhood Framework*," which proposes evidence-based strategies communities can consider to promote safe, stable, and nurturing relationships and environments that help children grow up to be healthy and productive citizens[4]. Safe, stable, and nurturing relationships and environments are essential to prevent child maltreatment and to assure children reach their full potential. *Essentials for Childhood* is for anyone dedicated to the healthy development of children and families and to the prevention of **ALL** forms of child abuse and neglect. To implement this framework, state health departments will:

- **manage existing and new partnerships with other child maltreatment prevention organizations and non-traditional partners**
- **work with partners to identify strategies across sectors**
- **identify, coordinate, monitor and report on the strategies implemented by multi-sector partners**
- **coordinate improvement processes (e.g., continuous quality improvement) for multi-sector partners to refine strategies**

Pediatric Abusive Head Trauma (PAHT) Prevention

Pediatric abusive head trauma (PAHT) is a severe form of child abuse that often occurs among infants after being shook vigorously. Shaking a baby, as well as blunt impact of the head, can cause neurological injury, which may result in permanent brain damage or death[5]. Kentucky House Bill 285 requires training and education for child care professionals and others who have contact with infants and toddlers to recognize and prevent traumatic head injuries due to shaken baby syndrome[5]. This legislation has resulted in a profession-specific training module on PAHT, as well as a pilot program aimed at teaching all new parents and caregivers the importance of never shaking a baby.

Strategies to Prevent Child Maltreatment

- **Health Access Nurturing Development Services (HANDS) (http://chfs.ky.gov/dph/mch/ecd/hands.htm)**
  - **◊Statewide home visitation program for at-risk parents**
- **Kentucky Strengthening Families Initiative (http://chfs.ky.gov/dph/mch/ecd/Kentucky+Strengthening+Families.htm)**
  - **◊ Promoting strong families and healthy development for families**
  - **◊ Partnering with all families and celebrating differences**
  - **◊Using protective factors as a strengths-based philosophy to buffer for toxic stress**
  - **◊Building knowledge and skills for individual and system change**
- **Kentucky Safety and Prevention Alignment Network (KSPAN) (http://www.kspan.uky.edu/home/Welcome.html)**
  - **◊ Child Abuse subcommittee is working to increase utilization of a standardized Pediatric Abusive Head Trauma curriculum for birthing hospitals to provide to parents of newborns**
- **Additional Partners**
  - **◊ Child Fatality and Near Fatality External Review Panel**
  - **◊Prevent Child Abuse Kentucky (http://www.pcaky.org/index.php)**
  - **◊University of Louisville Division of Forensic Medicine (http://louisville.edu/medicine/departments/pediatrics/divisions/forensic-medicine)**
  - **◊Kosair Children's Hospital Partnership to Eliminate Child Abuse (http://www.kosairchildrenshospital.com/eliminatechildabuse)**
    - **∗ "Hope for Tomorrow" a Kentucky based PAHT prevention video**
    - **∗ Required profession-specific training on PAHT for those who have direct contact with infants and toddlers**
    - **∗TEN-4 Bruising Rule training and education**

References:

1 CDC, National Center for Injury Prevention and Control, Division of Violence Prevention. *Understanding Child Maltreatment Fact Sheet* 2014. Retrieved October 9,2014 from http://www.cdc.gov/violenceprevention/pdf/understanding-cm-factsheet.pdf.

2 Kentucky Cabinet for Health and Family Services, Department for Community Based Services, Division of Protection and Permanency. (2012). *2012 Child Fatality and Near Fatality Annual Report.* Available from http://chfs.ky.gov/dcbs/dpp/childsafety.htm.

3 US Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth, and Families, Children's Bureau. (2013). *Child Maltreatment 2012*. Available from http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment.

4 Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention (2014). *Essentials for Childhood: Steps to Create Safe, Stable, Nurturing Relationships and Environments Factsheet.* Retrieved December 1, 2014 from http://www.cdc.gov/violenceprevention/pdf/efc_onepager-a.pdf.

5 Governor Steve Beshear's Communications Office. (2010). *News Release: Gov. Beshear Signs Bill Aimed at Reducing Rate of Injuries to Infants.* Retrieved December 1, 2014 from http://migration.kentucky.gov/newsroom/governor/20100527infants.htm.

Kentucky Department for Public Health
Division of Maternal & Child Health

Data Brief

January 2015

Kentucky Strengthening Families

Kentucky Strengthening Families (KYSF) represents a multi-disciplinary partnership of over 20 national, state and local, and public and private organizations **dedicated to embedding six research-based Protective Factors into services and supports for children and their families**. Supporting families is a key strategy for promoting school readiness and preventing child abuse and neglect. All families experience times of stress, and research demonstrates that children grow and learn best in families who have the supports and skills to deal with those times. By supporting families and building their skills to cope with stressors, we can increase school readiness and reduce the likelihood abuse will occur in families. Kentucky Strengthening Families is using a nationally recognized strategy—Strengthening Families: A Protective Factors Framework – which is coordinated nationally by the Center for the Study of Social Policy. In 2013, the Governor's Office of Early Childhood and the Kentucky Department for Public Health convened a group inclusive of many organizations that touch families to explore the implementation of the Strengthening Families framework. In January 2014, the Leadership Team developed a strategic plan to move the Kentucky Strengthening Families initiative forward in the Commonwealth. KYSF is funded by the Governor's Office for Early Childhood (GOEC) through the Race to the Top/Early Learning Challenge Grant Program and the Kentucky Department for Public Health through the Early Childhood Comprehensive Systems Grant Program.

Mission Statement

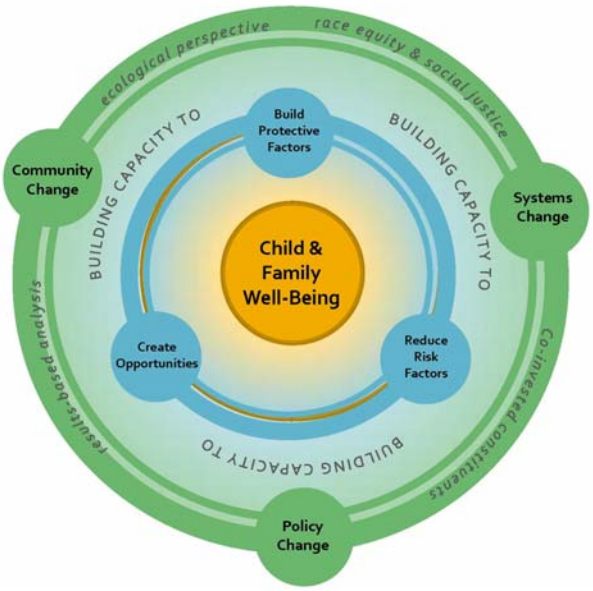
All Kentucky children are healthy, safe and prepared to succeed in school and in life through families that are supported and strengthened within their communities.

Vision Statement

Kentucky is strengthening families, promoting knowledge and skills, and providing access to resources and support by enhancing protective factors through family, community, and state partnerships.

The Six Protective Factors

The Protective Factors lay the foundation for the Strengthening Families Framework. Protective factors are conditions in families and communities, which when present, help increase the health and well-being of families and children and reduce the risk of child abuse and neglect. All Kentucky families can benefit from comprehensive efforts to build protective factors. The protective factors identified for Kentucky are:



1. Parental Resilience—*Families bounce back*

2. Social Connections—*Families have friends they can count on*

3. Knowledge of Child Development—*Families know how children grow and develop*

4. Concrete Support in Times of Need—*Families get assistance to meet basic needs*

5. Social and Emotional Competence of Children—*Families teach children how to have healthy relationships*

6. Nurturing and Attachment—*Families ensure children feel loved and safe*

What Strengthening Families Does

- ◊ **Benefits ALL Families**
- ◊ **Builds on family strengths, buffers risk, and promotes better outcomes**
- ◊ **Builds on and can be integrated into existing programs, strategies, systems. and community opportunities**
- ◊ **Can be implemented through small but significant changes in everyday actions**
- ◊ **Is grounded in research, practice and implementation knowledge**

Background for Strengthening Families and Protective Factors

In 2001, with funding from the Doris Duke Charitable Foundation, the Center for the Study of Social Policy (CSSP) began studying the role that early child care and education programs nationwide can play in strengthening families and preventing abuse and neglect. The Strengthening Families conceptual framework involves building research-based Protective Factors around young children by working differently with their families across all child- and family-serving organizations and systems. This approach includes aligning systems with protective factors, using data driven decision-making, marshaling leadership, and making policy and systems changes on multiple levels.

Adverse Childhood Experiences (ACE) Study

The Adverse Childhood Experiences (ACE) Study was led by Kaiser Permanente (KP) co-principal investigators Dr. Vincent J. Felitti and Dr. Robert Anda. From 1995–1997, medical history and retrospective childhood experiences data was gathered from over 17,000 middle-income adults (average age = 57) with KP health insurance to assess the relationship between multiple forms of childhood trauma, later adolescent or adult risky behaviors, and current health status.

Ten categories of adverse childhood experiences (ACEs) were examined that included 5 categories of child maltreatment and 5 categories of family dysfunction: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, household substance abuse, household mental illness, incarcerated household member, mother treated violently, and parental separation or divorce.

The ACE study reveals that a little more than half of the study participants reported one or more ACEs and ACEs have a strong, positive correlation to adult health status a half-century later. As the number of ACEs increase, the risk for health problems (e.g., alcoholism/alcohol abuse, smoking, depression, liver disease, pulmonary disease, risk for intimate family violence, suicide attempts) increases in a graded fashion.

ACE Study Findings

- ◊ **ACEs are much more common than previously recognized**
- ◊ **A little more than half of the study participants reported one or more ACEs**
- ◊ **One in 4 participants was exposed to ACEs**
- ◊ **One in 16 was exposed to 4 ACEs**
- ◊ **Given exposure to one ACE, there is an 80% chance of exposure to another**
- ◊ **ACEs had a strong, positive correlation to adult health status a half-century later**
- ◊ **As the number of ACEs increase, the risk for health problems (e.g., alcoholism/alcohol abuse, smoking, depression, liver disease, pulmonary disease, risk for intimate family violence, suicide attempts) increases in a graded fashion**

Implication for Strengthening Families

Reducing the likelihood of child maltreatment by Strengthening Families, an evidence informed approach, contributes to improved adult health outcomes.

References:

1 Anda, R.F., Felitti, V.J., Brenner, J.D., Walker, J.D., Whitfield, C., Perry, B.D., Dube, S.R., & Giles, W.H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. European Archives of Psychiatry and Neurological Sciences, 256:174-186.

2 Felitti, V.J. (Winter, 2002). The relation between adverse childhood experiences and adult health: Turning gold into lead. The Permanente Journal, 6(1):44-47.

3 Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., Koss, M.P., & Marks, J.S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. American Journal of Preventive Medicine, 14(4):245-258.

4 The Center for the Study of Social Policy. Research in brief: The Adverse Childhood Experiences Study. Retrieved December 18, 2014 from http://www.cssp.org/reform/strengthening-families/resources/body/1.3_.1_RB_-_ACE_Study_.pdf.

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January 2015

Pediatric Obesity

The growing rates of obesity across the nation begin at early ages. Overweight is defined as a weight status that is at or above the 85th percentile for Body Mass Index (BMI). Obesity is a BMI of greater than the 95th percentile for age. Kentucky has one of the highest prevalence for pediatric overweight and obesity in the nation, ranking 2nd highest among all states, for children 10-17 years old, in 2011.[1] Data from the 2008 Pediatric Nutrition Surveillance survey indicates that 32.3% of low income Kentucky children aged 2-5 are obese. The Healthy People 2020 objective (19-3) regarding childhood obesity is to reduce the proportion of children and adolescents aged 2-17 who are obese, nationwide, to 14.1%.[2] According to YRBS data, Kentucky is not on target to meet these objectives, with the rates of obesity in high school adolescents increasing from 14.5 percent in 2003 to 18 percent in 2013 (Figure 1).[3] Children in Kentucky are less likely than their counterparts, nationwide, to be physically active at least 4 days per week (35.9% vs. 37.8%), and are likely to spend 3 hours or more, per day, in front of a television or computer screen (63.2%)[3].

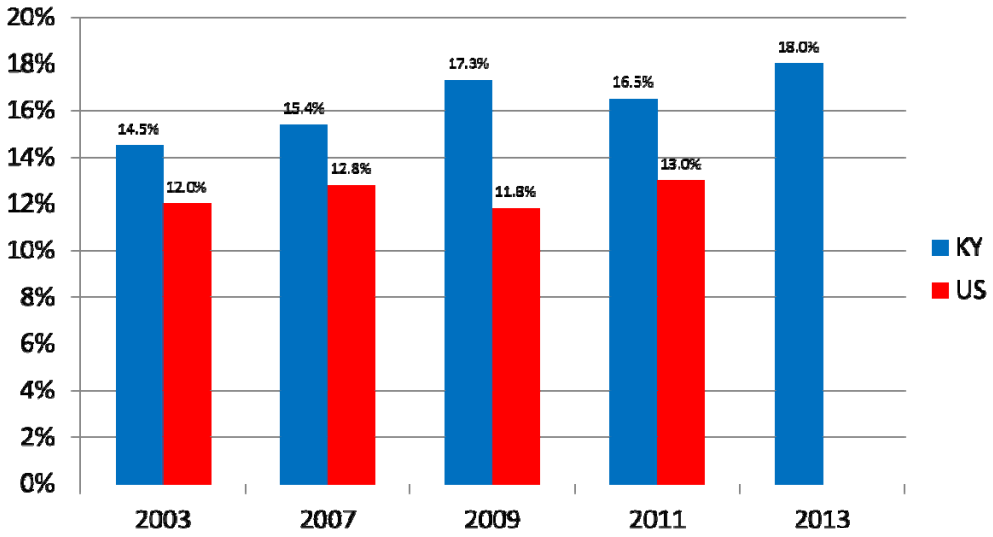
Risks of Obesity[4-6]

Increased risk of cardiovascular disease, high cholesterol and high blood pressure

Increased risk of bone and join problems, sleep apnea, and social/ psychological problems

Obese children are more likely to become obese adults

Figure 1: Percentage of Adolescents Aged 10-17 With Obese Weight Status; KY and US 2003-2013*



Source: US and KY YRBS data 2003-2011 taken from http://www.cdc.gov/healthyyouth/yrbs/index.htm; *KY 2013 data preliminary and may change.

Obesity in Kentucky

Overweight, obesity and their associated health problems have a significant economic impact on the health care system. In 2008, direct and indirect health costs associated with obesity were $147 billion.[7] Obesity related health care cost Kentucky $2.3 billion in 2013.[8]

Childhood obesity is a leading public health concern that disproportionately affects low-income and minority children.[9] According to the 2010 Pediatric Nutrition Surveillance Survey, obesity rates differ for children of different ethnicities with Hispanic children in Kentucky having the highest rates of overweight and obesity, followed by White children and Black children.

Capacity/Resources

Kentucky has several programs and partnerships that address obesity in children and adolescents such as the Partnership for a Fit Kentucky and Action for Healthy Kids (AFHK). The Partnership for a Fit Kentucky is a pubic/private partnership with a wide range of partners, whose mission is to support policy and environmental changes that promote healthy eating and active lifestyles. Action for Healthy Kids focuses on changes in the school environment. The Department for Public Health recently hosted a Summit on Pediatric Obesity, which included a policy brief "Shaping Kentucky's Future" which includes eight policies to reduce obesity levels in the state.[10]

"Shaping Kentucky's Future" Policies to Reduce Obesity:

- Increase physical activity and physical education in schools
- Establish a BMI surveillance system for youth
- Support Breastfeeding in the Workplace
- Require standards for nutrition and physical activity in licensed child care centers
- Establish Complete Streets policies
- Require menu labeling at fast food and chain restaurants
- Require healthy food in state agencies
- Provide worksite wellness tax credits to businesses

Interventions

The Centers for Disease Control and Prevention have funded 23 states through the Nutrition and Physical Activity and Obesity (NPAO) Cooperative Agreement Program to coordinate statewide efforts with multiple partners to address obesity. Early signs of success in the prevention and control of obesity—at both state and national levels—are now emerging. Major CDC surveys have found a slow and steady increase in obesity prevalence among children, adolescents and adults between 2010 and 2014. The CDC is making progress in diminishing the obesity epidemic through innovative partnerships. The Task Force on Community Preventive Services reviewed several studies among children and one among adolescents to determine the effectiveness of school-based programs to prevent or reduce overweight and obesity among children and adolescents but found insufficient evidence of their effectiveness.[11] The studies showed some small positive effects on weight status.

In Kentucky, pediatric obesity rates are being targeted by the Farm to School program, the Tweens Nutrition and Fitness Coalition and the Better Bites Program, all of which aim to improve children's access to healthy and nutritious food choices in their every day lives. The SHAPE network and Kentucky Coordinated School Health programs seek to increase physical activity in schools and to make them generally healthier places to encourage healthy lifestyle choices in children and their families. Increased physical activity and nutritional eating for all Kentuckians are being promoted through a variety of programs with goals of changing the food and physical environments of the state to improve the health of its citizens.

Recommendations to Reduce Pediatric Obesity in Kentucky[12]

- Promote SHAPE network to address improving physical activity and nutrition in schools through a Coordinated School Health Program (CSHP).
- Improve awareness of nutritional eating for families through the 5-2-1-0 Healthy Numbers for Kentucky Families program.
- Establish a Body Mass Index (BMI) surveillance system for youth.
- Require standards for nutrition and physical activity in licensed day care centers.
- Develop policies that support breastfeeding in the workplace.
- Establish Complete Streets policies to encourage physical activity in Kentucky children and families.
- Encourage physical activity statewide through the development of Trail Towns which provide both health and economic benefits to communities along long-distance trails.
- Continue to expand availability of rail trails and greenways for recreation through the Rails to Trails program.

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1 Trust for America's Health. (2011). The State of Obesity: Kentucky.

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3 Centers for Disease Control and Prevention. (2012). Youth Risk Behavior Survey. The Obesity Epidemic and Kentucky Students. Retrieved May 26, 2014 from http://nccd.cdc.gov/youthonline/.

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6 Swartz MB and Puhl R. (2003) Childhood Obesity: a societal problem to solve. *Obesity Reviews* 4(1): 57-71.

7 Centers for Disease Control and Prevention. (2012) Overweight and Obesity. Causes and Consequences.

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Kentucky Department for Public Health
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Education and awareness lead to more positive outcomes for teen mothers and babies

Teen mothers are at a higher risk of dropping out of school and are more likely to remain unmarried than their peers who delay childbearing. They are more likely to live in poverty and their babies are more likely to grow up poor, live in single-parent homes, experience abuse and neglect and enter the child welfare system.

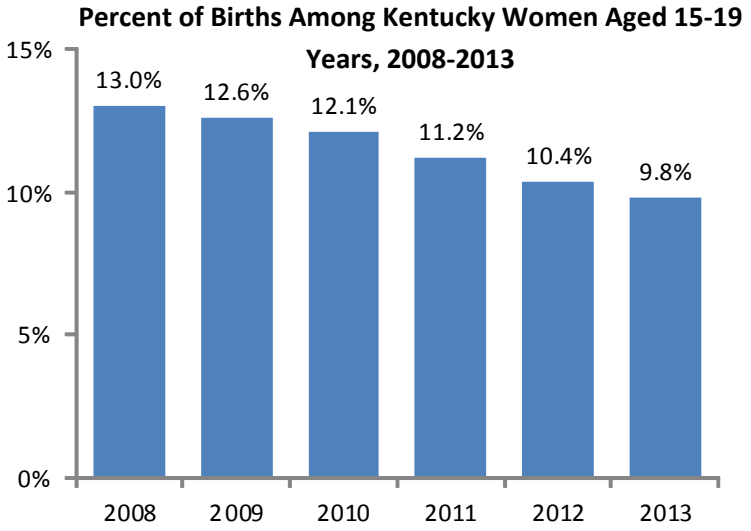
The National Campaign to Prevent Teen Pregnancy estimates national teen childbearing costs taxpayers at least $9.4 billion annually.[1] Teen childbearing in Kentucky cost taxpayers (federal, state and local) at least $158 million in 2010.[1] Of these costs, 41% were federal and 59% were state and local. **The majority of the costs associated with teen childbearing are associated with negative consequences for the children of teen mothers.**[1]

Research has linked teen parenthood to a variety of negative consequences not only to babies, but to mothers and fathers as well.[1]

Teen pregnancies have decreased nearly 25% since 2008

Kentucky's proportion of teen births has declined to less than 10% in 2013. This rate is only slightly higher than the rate among pregnant women aged 35-39 years of age.

Over the same time frame the US teen birth rate has declined nearly 30%. **Kentucky's rate remains one of the highest in the US, ranking 5th among all states and DC.** Kentucky's rate in 2012 was one-third higher than the US rate.

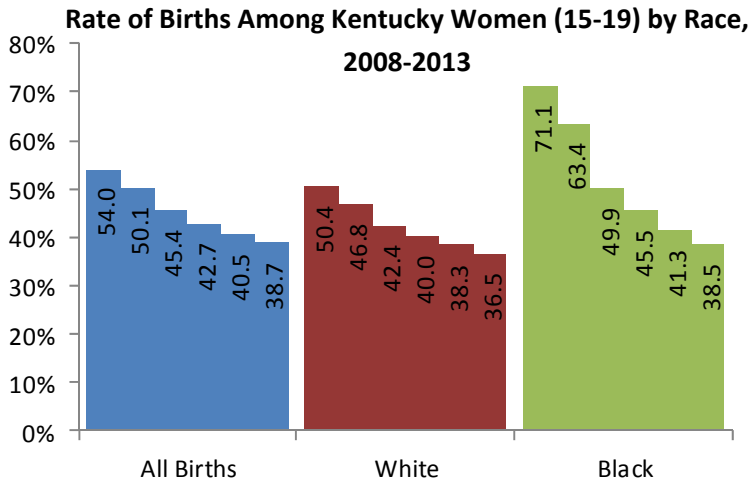


Source: Kentucky Live Birth Certificate Files, 2008-2013. Data from 2008 to 2013 is preliminary and subject to change. Rates are percent of births among age group.

Rate of teen birth has decreased the greatest among black youth

Overall, Kentucky's rate of teen births per 1,000 population has seen a similar decline as noted earlier in the proportion of teen births. Kentucky's rate per 1,000 population has declined 28% since 2008.

While Kentucky has seen a favorable decline in the rate of teen pregnancy across all racial groups, **the greatest impact has been reported among Black women with a 46% decrease in teen births.** This decline is greater than that observed in the US, which declined 30% over the same time frame.[2]



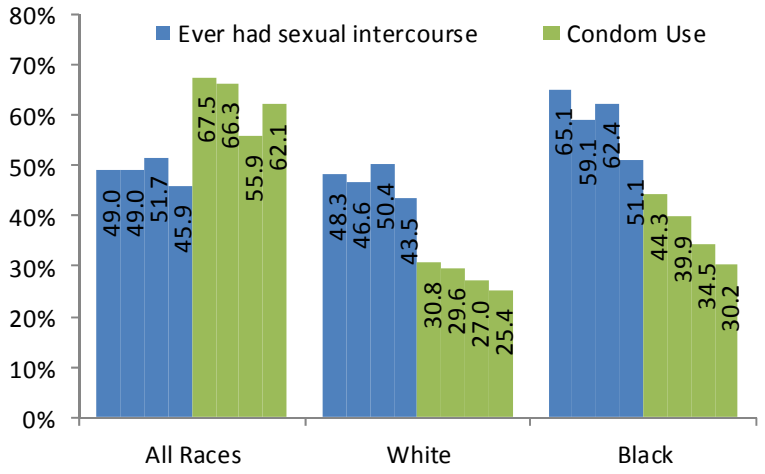
Source: Kentucky Live Birth Certificate Files, 2008-2013. Data from 2008 to 2013 is preliminary and subject to change. Rates are live births per 1,000 population.

Kentucky high school youth report less risky behaviors

According to the latest data from the CDC Youth Risk Behavior Survey (YRBS), **Kentucky high school youth report they are less likely to have ever had sexual intercourse, a decrease of 6.3% since 2007.** A greater decrease has been reported among Black youth (21.5%).

Despite the decreases achieved, **Kentucky high school youth report being less likely to have used condoms in their last sexual encounter with a decrease of 8.0% since 2007.** A greater decrease has been reported among Black youth (31.8%)

Percent of Kentucky High School Children Reporting Behavior Increasing Risk of Teen Pregnancy, 2007-2013



Source: Youth Risk Behavior Survey, 2007-2013 (CDC). Rates are percent of high school children reporting applicable behavior.

The Community Preventive Services Task Force recommends group-based comprehensive risk reduction (CRR) interventions delivered to adolescents to promote behaviors that prevent or reduce the risk of pregnancy, HIV, and other sexually transmitted infections (STIs)[3]. The recommendation is based on sufficient evidence of effectiveness in:

- Reducing a number of self-reported risk behavior, including:
  - Engagement in any sexual activity
  - Frequency of sexual activity
  - Number of partners
  - Frequency of unprotected sexual activity
- Increasing the self-reported use of protection against pregnancy
- Interventions may be:
  - Targeted to adolescents (girl, boy, or co-ed)
  - Delivered in group settings in school or communities
  - Led by adult or peer educators
  - Implemented as single or multicomponent programs
  - Tailored to groups or individuals

Kentucky offers resources directly related to reducing childhood pregnancy through local health department initiatives that include:

- Family Planning: pre-pregnancy health and consultation including confidential help with abstinence
- Teen Pregnancy Prevention Initiatives: reductions in teen pregnancies through comprehensive community activities in 80 Kentucky counties

References:

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MCH Data Brief

Kentucky Commission for Children with Special Health Care Needs

Special Children... Special Needs... Special Care

Commission for Children with Special Health Care Needs

Children and Youth with Special Health Care Needs

In Kentucky, almost 200,000 children and youth, or 19.5 percent (compared to 15.1 percent nationwide), have special health care needs. These children have or are at increased risk for chronic physical, developmental, behavioral or emotional conditions and require extensive health services. Since 2001, when the Kentucky percentage was 15.7 percent, the rates have steadily increased. Kentucky currently has the second-highest rate of any state in the nation.[4]

Common conditions include Asthma, Cerebral Palsy, Cleft Lip & Palate, Craniofacial anomalies, Cystic Fibrosis, eye conditions, heart conditions, Hemophilia and other bleeding disorders, Epilepsy and neurological conditions, Spina Bifida, orthopedic conditions, otology or ear/hearing conditions, Autism Spectrum Disorders, and a variety of other health problems, including ADD/ADHD, learning disabilities and mental health issues.

Key Numbers

97,473: number of Kentucky schoolchildren with disabilities[1]

197,916: number of estimated Kentucky children with special health care needs[2]

299,025: number of estimated Kentucky children reported to have one or more chronic conditions[3]

Commission for Children with Special Health Care Needs (CCSHCN)

CCSHCN is the state agency responsible for administering federal Title V funds for ensuring the health of children with special health care needs in Kentucky. CCSHCN has been in existence since 1924. The mission of CCSHCN is to enhance the quality of life for Kentucky's children with special health care needs through quality service, leadership, advocacy, education and collaboration. CCSHCN is a department within the Kentucky Cabinet for Health and Family Services.

- ◊ Direct services include ensuring specialty health services (for qualifying conditions) in clinics statewide where care is unavailable or inaccessible
- ◊ Enabling services include arranging transportation, interpreters, care coordination, social work, therapies, and family support programs
- ◊ Population-based services include newborn hearing screening as well as nursing consultation to the foster care system
- ◊ Infrastructure-building services include needs assessment, evaluation, policy development, systems integration, etc.

The chart to the right shows CCSHCN trend data toward Maternal and Child Health Block Grant National and State Performance Measures (NPMs & SPMs) relevant to children and youth with special health care needs (CHSCN), which are as follows:

NPM 2:The % of CSHCN age 0-18 years whose families partner in decision making at all levels and are satisfied with the services they receive

NPM 3:The % of CSHCN age 0-18 years who receive coordinated, ongoing, comprehensive care within a medical home

NPM 4: The % of CSHCN age 0-18 years whose families have adequate private and/or public insurance to pay for the services they need

NPM 5: The % of CSHCN age 0-18 years whose families report that community-based service systems are organized so they can use them easily

NPM 6: The % of youth with special health care needs who received the services necessary to make transitions to all aspects of adult life, including health care, work, and independence

NPM 12: The % of newborns who have been screened for hearing before hospital discharge

SPM 7: The % of children, ages 0-18, receiving CCSHCN services, with a Body Mass Index (BMI) at or above the 85th percentile

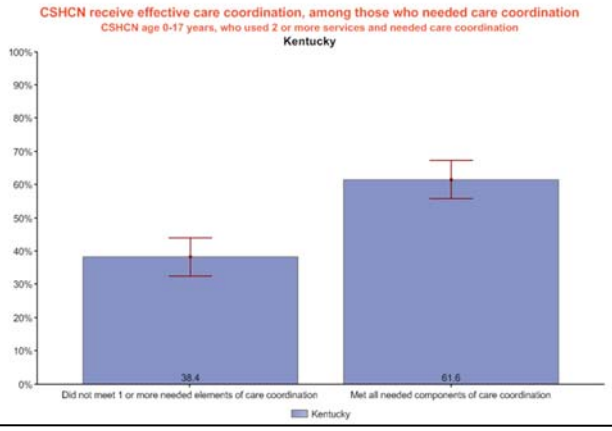
SPM 8: The % to which CCSHCN transition action plan is successfully completed and implemented

Indicator	2009	2010	2011	2012	2013	5 Yr. Trend
NPM 2	87.8	96.8	97	96.9	96.8	9.0
NPM 3	91.9	93.6	94.5	93.9	94.6	2.7
NPM 4	93.1	96.1	96	96.4	96.8	3.7
NPM 5	95.9	97.1	97.4	96.4	96.3	0.4
NPM 6	61	66.9	61.7	55.2	54.9	-6.1
NPM 12	99.9	96.6	98.1	98.5	96.7	-3.2
SPM 7	NA	33.1	36.7	34.8	35.8	-2.7
SPM 8	NA	46.2	63.5	75	86.5	40.3

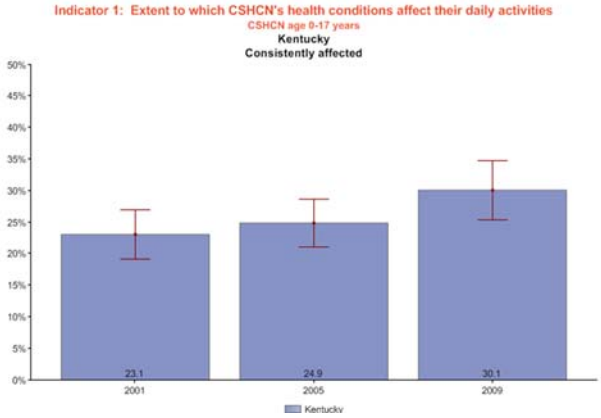
	Improvement in indicator
	No definite trend in indicator/unable to denote trend
	Worsening in indicator

Measuring System Performance

Children with special health care needs are a diverse group with differing needs, and performance can be difficult to measure. To help evaluate the system, CCSHCN relies on data on services provided to CCSHCN enrollees, comment cards filled out by families in clinics, and the CHSCN Screener, a five-item, parent-reported tool used in two national child health surveys. The chart to the right shows just one metric from a national survey[5], showing how many Kentucky children who needed care coordination received it.



Impact of Health Conditions on Children



In addition to the financial impact on families (20.9% of Kentucky families of CSHCN have experienced financial problems due to child's health conditions[6] and 16.8% paid $1000 or more out-of-pocket in medical expenses for child in past 12 months[7]) special health care needs take a toll on children's functioning in day-to-day life, including (for example) breathing problems, swallowing, circulation, pain, seeing, hearing, taking care of self, coordination, using hands, learning or paying attention, speaking or communicating, feeling anxious or depressed, behavior problems, or making and keeping friends. The chart to the left shows, over three survey periods, that the number who are consistently affected have grown to 30.1% of CHSCN.[8]

Community Based System of Supports

CCSHCN's goals include collaboration and outreach. By forming initiatives and partnerships with providers, hospitals, state universities, schools, and other agencies, councils, and organizations, CCSHCN is ensuring that more children may be reached and cared for.

Learn more about CCSHCN programs and services by calling (800) 232-1160, or visiting the website: http://www.chfs.ky.gov/ccshcn

CCSHCN Regional offices are located in: Ashland, Barbourville, Bowling Green, Elizabethtown, Hazard, Lexington, Louisville, Morehead, Owensboro, Paducah, Prestonsburg, and Somerset.

Numbers Served by CCSHCN[9]

- ◊ **9220 Clinic visits, including 293 visits via Telemedicine**
- ◊ **7541 Audiology visits, including 860 Early Hearing Detection & Intervention ("EHDI") program**
- ◊ **2947 Occupational/Physical/Speech Therapy services provided**
- ◊ **1463 Home visits to children in foster care placements**
- ◊ **2759 Services to families provided by Family to Family Health Information Centers ("F2F")**

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Medical Home Health Care

The medical home model of health care is centered around meeting all patient needs through the coordinated effort of a team of medical professionals, including nurses, pharmacists, nutritionists and social workers, who are led by a physician.[1] Medical home care is a family/patient centered concept first introduced by the American Academy of Pediatrics in 1967, making teams responsible for being a centralized source of comprehensive care and information for individuals who receive their services.[2] For children, the medical home must provide a personal doctor or nurse and a usual source for care. In addition, health care must be family centered, those children needing referrals must be able to get them and those children who need it must receive effective Care Coordination under the medical home model.[3] This centralized, team-focused method of health care delivery aims to increase the efficiency of receiving needed treatment, and reduce the costs associated with care for chronic diseases. In 2012, only 54.4% of parents in the U.S. felt that their children were receiving health care that met the criteria of a medical home.[3] Children in Kentucky fared slightly better, with 56.4% of parents indicating that their chil-

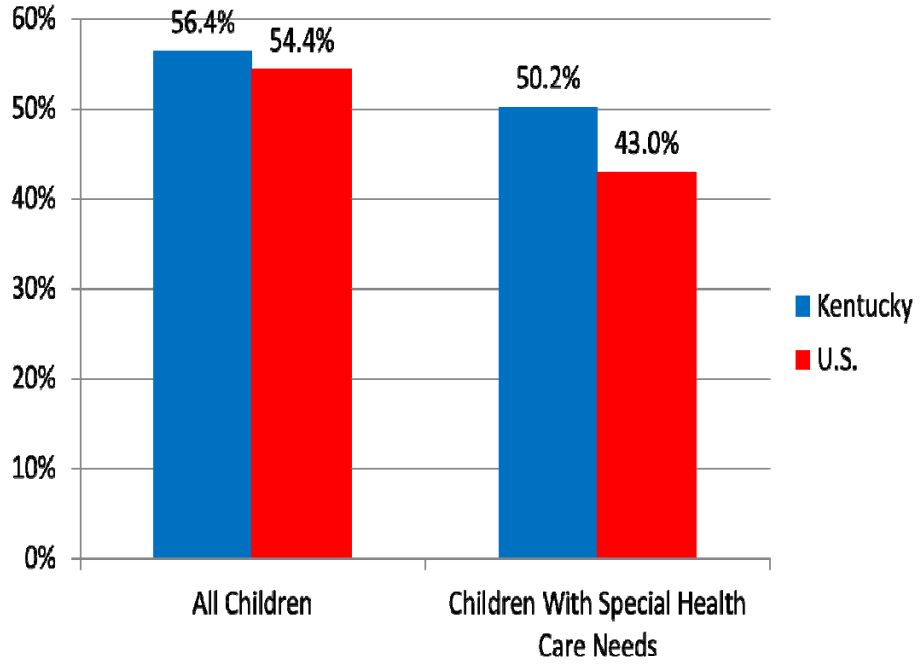
Benefits of the Medical Home[4]

- Increased rates of vaccination among children
- Increased access to after-hours health care
- Increased patient satisfaction with medical team
- Reduced provider errors due to increased team communication

Medical Home Health Care in Kentucky

Kentucky is taking steps toward increasing the availability of medical home health care. In 2011, state legislation required all Medicaid beneficiaries to be enrolled in a Managed Care Program, with the goal of making health care more cooperative and patient-centered, and recent funding from the Centers for Medicare and Medicaid Services, under section 2307 of the Affordable Care Act, should provide money toward establishing medical homes for Kentuckians enrolled in Medicaid, who have chronic medical conditions.[7]

Figure 1. Percentage of Children Receiving Ongoing Comprehensive Care in a Medical Home: KY and US 2011/2012



Source: National Survey of Children's Health. 2012. http://www.childhealthdata.org/learn/NSCH

Children with special health care needs comprise the majority of children for whom medical home health care is essential. However, a smaller proportion of those children with special health care needs have received medical home care. In Kentucky, 56.4% of all children receive medical home model health care, compared to the national average of 54.4%. (Figure 1) According to the National Survey of Children with Special Health Care Needs, however, in 2012 only 50.2% of Kentucky special needs children aged 0-17 were receiving consistent, adequate care in a medical home, though this number is well above the national average of 43%.[8] Even fewer of these children receive care in a certified, patient centered medical home, as there are very few practices in Kentucky which have been formally accredited by the National Committee for Quality Assurance, The Joint Commission or the Accreditation Association for Ambulatory Health Care.

A Comparison of Access to Adequate Health Care for Children with Special Health Care Needs; KY and US 2009/2010

	KY	US
Receives Family-Centered Care In a Medical Home	67.5%	64.6%
Has Usual Source of Sick and Well Care	92.6%	89.3%
Has One or More Personal Doctor or Nurse	94.4%	93.1%

Source: National Survey of Children with Special Health Care Needs; 2009/2010. http://www.childhealthdata.org/browse/survey/results?q=1620&r=1&r2=19

Benefits of Certified Medical Home Health Care

One of the primary goals of the medical home model of health care is to reduce the costs associated with treatment for chronic diseases, over the course of a patient's lifetime. This is accomplished through a payment reform which, unlike the fee-for-service model, seeks to align providers compensation with the health outcomes of the patient being treated. This team model of health care has been shown to reduce the number of emergency visits and hospitalizations required for patients receiving care from certified patient centered medical homes, resulting in an economic savings of $10.30 per patient, per month over the course of two years.[5] The implementation of a patient-centered medical home has also been shown to reduce Medicaid spending. In 2012, 26 states had incorporated the medical home model into their Medicaid programs after results from early implementations indicated a reduction in health care costs for those patients who received care for a chronic illness from a medical home team when compared to patients who received care from a standard provider.[6]

Recommendations

Follow the National Academy for State Health Policy guidelines for implementing medical homes.

1) Strategically engage partners
2) Set performance expectations and implement a process to identify practices that meet expectations.
3) Compensate and motivate practices through enhanced payment.
4) Help practices meet expectations and improve performance
5) Evaluate program performance.

Interventions that Work

The National Academy for State Health Policy, with support from the Commonwealth fund has fostered the adoption of a Medicaid sponsored medical home health care program in several states, with measureable success.[11] Beginning in 2007 with eight states, assistance was provided to establish a concrete framework for the construction and evaluation of medical homes in states who were seeking to incorporate them as the standard model of Medicaid based health care for chronic illnesses. This support was provided in the form of a kick-off meeting with a member of an accreditation team, regular technical assistance webinars with groups of individuals who were responsible for overseeing the medical home program in each state, and consultation with experts who would help guide the program through the beginning stages, into stability. These states now have established medical homes with reported success in terms of improved access to care, patient and provider satisfaction, and money saved by the Medicaid Program.

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Health Insurance Coverage

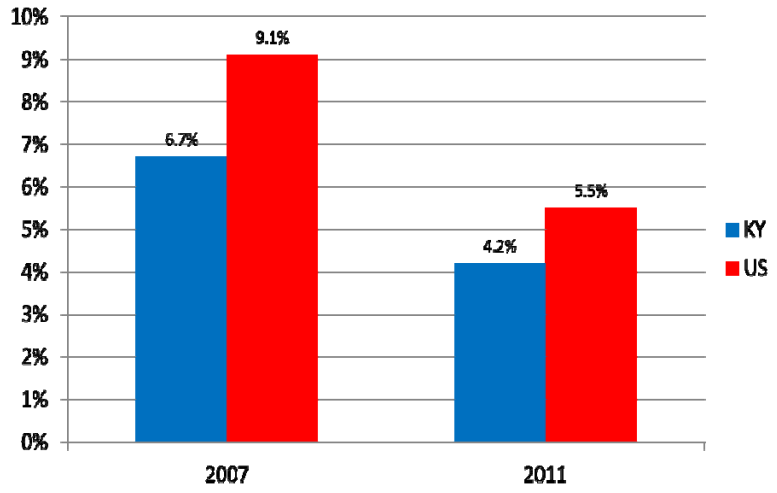
Health insurance coverage is a necessity for all—children, adults, the elderly and the disabled. As health care costs and insurance premiums rise, more Kentuckians may have to choose between health insurance and life's basic necessities. There have been some national improvements with the passage of the Affordable Care Act (ACA). States moving forward with the Medicaid expansion under the ACA, as Kentucky did, had lower numbers of uninsured citizens in 2013 than states not moving forward with the Medicaid expansion.[1] An estimated 3,101,000 young adults, aged 19-25, gained health insurance coverage through the ACA by December 2011 (48,000 of these were Kentuckians).[2] Approximately 3 million more people were enrolled in Medicaid and CHIP as of February 2014.[3] Up to 17 million children with pre-existing conditions were prevented from being denied health insurance coverage.[3] Preventive services such as mammograms, immunizations and birth control began to be covered by private insurance plans in 2011 and 2012.[3] Since the passage of the ACA, health care costs in the United States have grown at the slowest three year average rate of any period since 1960.[3]

Improvement in Kentucky Health Insurance Coverage through the Affordable Care Act and the KYNECT Marketplace[4, 5]

- During the first enrollment period for marketplace coverage, 413,410 Kentuckians registered for health insurance coverage, with 75% of those enrollees indicating that they were uninsured before signing up through KYNECT.
- 330,615 enrollees qualified for Medicaid coverage under the Medicaid expansion, which extended eligibility to adults living at 133% of the Federal Poverty Level and children 1-18 living at 159% of the Federal Poverty Level, as well as extending CHIP coverage to parents and children living at 233% of the Federal Poverty Level.
- A family of four making less than $32,499 will now be eligible for Medicaid.
- As of April 2014, 1,605 Kentucky small businesses have started applications for employee health insurance coverage, with 628 of these applications already completed and the companies eligible to offer insurance coverage to employees.
- The implementation of the Affordable Care Act will save Kentucky an estimated $15.6 billion between 2014 and 2021.

Coverage Among Kentucky Children

Percentage of Children with No Health Insurance Coverage; KY and US 2007-2011



Source: National Survey of Children's Health; http://www.childhealthdata.org/learn/

Approximately 6.5% of uninsured Kentuckians are children under the age of 19.[6] According to the National Survey of Children's Health, Kentucky children actually fare better than the nation in terms of health insurance coverage. The number of children with no health insurance coverage has decreased in Kentucky from 6.7% in 2007 to 4.2% in 2011. Nationally, the percent of uninsured children has declined from 9.1% in 2007 to 5.5% in 2011. There has also been a steady increase in the number of children with special health care needs who are insured, with 96.8% of these children having some public or private health coverage in 2013, a 3.7% increase since 2009.[7]

Insurance Coverage in Kentucky

Many factors are driving up health care expenditures, including, of course, the health status of people.[9] Kentuckians with incomes under 200 percent of the federal poverty level ($23,340 for a single adult and $47,700 for a family of four in 2014[10]) are much more likely to be uninsured than those at or above 200 percent of poverty.[11]

In 2012, the Kaiser Family foundation reported that 85% of Kentuckians have health insurance whether employee-sponsored coverage, individual coverage, Medicaid or Medicare coverage, or some other type of public coverage.[11] However, it is estimated that 651,000 Kentuckians are without health insurance.[11] According to the National Women's Health Law Center, 20.5% of White women in Kentucky do not have health coverage, along with 19.8% of Black women and 69.3% of Hispanic women.[12] Pregnant women who are not insured are less likely to have routine prenatal care which can lead to adverse birth outcomes such as low birth weight.[13] It has been estimated that for every $1 spent on prenatal care approximately $3 is saved.[14]

Kentucky's Health Status[8]

- **Highest adult smoking rate in the nation at 28.3%**
- **Adult obesity rate of 31.3%, higher than U.S. average of 27.6%**
- **More than 1 in 4 children under 19 live in poverty**
- **High rates of chronic illness and cancer deaths**

Recommendations:

- Fulfill the Healthy People 2020 and Healthy Kentuckians 2020 goals to reduce the proportion of children and adults without health care coverage to 0% by providing outreach and enrollment assistance to those eligible for Medicaid or KCHIP programs.
- Continue to toward ensuring that all eligible children are enrolled in KCHIP through awareness, ease of application and consistency of coverage through adulthood.
- Continue to work toward securing lasting funding for the Medicaid expansion when federal funding is reduced in three years.
- Prevent the recurrence of a coverage gap for Kentucky citizens by maintaining Medicaid expansion which provides coverage to those with income too high to qualify for subsidized coverage under through the Health Benefit Exchange.

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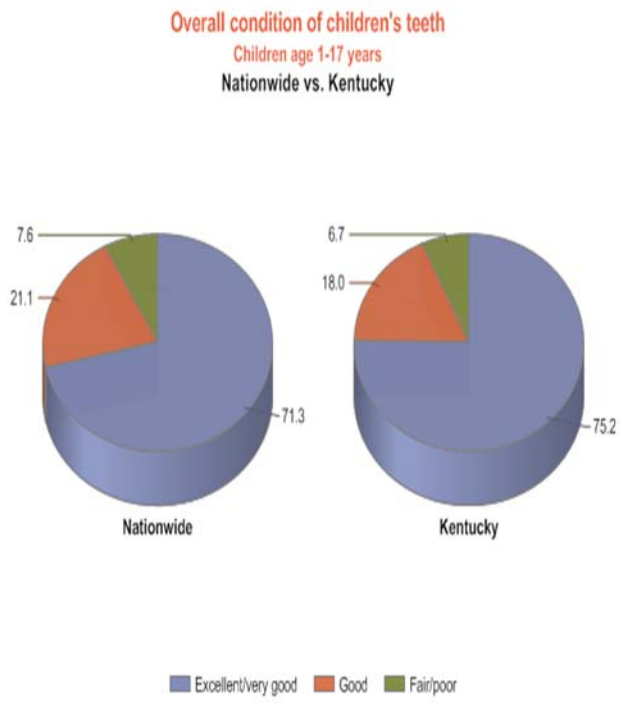
The Status of Oral Health in Kentucky

The most recent Center for Medicare and Medicaid Services reporting indicates, "… only 46% of Medicaid eligible children under 19 years [had] received any preventive care in fiscal year 2013"[1, 2]. Nationally, there was substantial progress made in number of children receiving preventive dental visits (at least one in the fiscal year prior to the research).

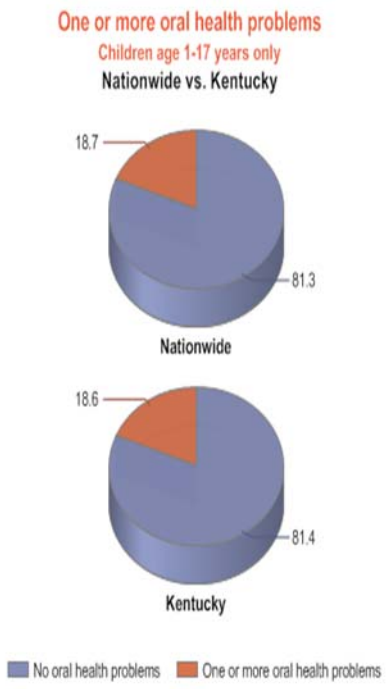
According to the Centers for Disease Control and Prevention (CDC):

Oral health is critically important to overall health … and ***is the largest unmet health care need for children*** … ***Dental caries***, a primary indicator of oral health, ***remains the most common chronic childhood disease*** … ***Forty percent of children aged 2 to 11 years, experience dental caries*** … (*Preventing Chronic Disease: Public Health Research, Practice, and Policy; Vol.10 – Dec.5, 2013).*[3]



Based upon parent survey data research found at the website http://childhealthdata.org[4], some parents indicated that there was a lack of oral health care and/or they did not access preventive dental services for their children. Oral health problems were shown to be prevalent in almost 19% of children and yet parents tended to view the condition of their children's teeth as very good to excellent.

Good oral health begins with good oral hygiene habits which should be initiated during the perinatal period. The development of healthy oral hygiene habits, starting with the expectant mother, tremendously improves the health outcomes of the individual as they grow through all the stages of life. For example, it has been proven that the pain caused by untreated dental caries can create learning delays due to an inability to eat and sleep properly.[3]



As these children age and come of employable age, their childhood oral health experiences have a major economic impact—not only on them personally, but on their employers and the state. According to the CDC's Division of Oral Health, "Employed adults lose more than 164 million hours of work each year due to oral health problems or dental visits."[4] With healthier outcomes from good and early oral hygiene habits, there is less stress on Kentucky's infrastructure to cover the expenses for this type of lost productivity and the higher health care costs associated with it.[5] Therefore, Kentucky has chosen to address the problem of childhood oral health with an evidence based, best practice approach to program development in the provision of dental services throughout the Commonwealth. Using research from collaboration between the American Association of People with Disabilities, the American Dental Association, and others, the US Preventive Services Task Force has recommended the following to address childhood caries[6]:

PREVENTION OF DENTAL CARIES IN CHILDREN FROM BIRTH THROUGH AGE 5 YEARS CLINICAL SUMMARY OF U.S. PREVENTIVE SERVICES TASK FORCE RECOMMENDATION			
Population	**Children age 5 & younger**		
Recommendation	**Prescribe oral fluoride supplementation starting at age 6 months for children whose water supply is deficient in fluoride.**	**Apply fluoride varnish to the primary teeth of all infants and children starting at age of primary tooth eruption.**	**Routine oral screening examinations: No recommendation.**
Risk Assessment	All children are at potential risk for caries; those whose primary water supply is deficient in fluoride (defined as <0.6 ppm F) are at particular risk. While there are no validated multivariate screening tools to determine which children are at higher risk for dental caries, there are a number of factors that elevate risk, such as low socioeconomic status, being an ethnic minority, frequent sugar exposure or snacking, inappropriate bottle feeding, developmental defects of the tooth enamel, dry mouth, history of previous caries (in the child, a sibling, or mother), lack of access to dental care, and inadequate preventive measures (such as failure to use fluoride toothpaste).		
Preventive Medications	Oral fluoride supplementation prevents dental caries in children with inadequate water fluoridation. All children with erupted primary teeth can benefit from the periodic application of fluoride varnish, regardless of the levels of fluoride in their water.		
Balance of Benefits and Harms	There is a moderate net benefit of providing oral fluoride supplementation at recommended doses in children older than 6 months who reside in communities with inadequate water fluoride.	There is a moderate net benefit of providing fluoride varnish application to all children starting at the age of eruption of primary teeth to age 5 years.	The evidence on performing routine oral screening examinations for dental caries in children from birth to 5 years is insufficient, and the balance of benefits and harms cannot be determined.

For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statements, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/.[6]

What is Kentucky Doing for Oral Health in the Commonwealth[7]?

- Has provided community fluoridation for the last 63 years (Maysville, 1951 was the first).
- Provides a Rural School Fluoridation Program (began in 1975—almost 40 years).
- Has offered families a Fluoride Supplement Program through local health departments since 1978.
- Provides a Dental Sealant Program through local health departments over the past 12 years.
- Has developed a Public Health Preventive Dental Hygiene Program that provides primary preventive dental services (e.g. fluoride varnishes, cleanings, sealants, oral hygiene education, etc.) to underserved populations (mostly children) through the use of mobile dental units. These units and clinics are staffed by certified public health dental hygienists hired through the local health departments. The program is part of the Governor's Initiative for a Healthy Kentucky and his priority of improving the oral health of Kentuckians.

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