

Kansas Maternal and Child Health

**2010
Biennial Summary**



**Kansas Department of Health and Environment
Bureau of Family Health**



Mark Parkinson, Governor
John W. Mitchell, Acting Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Health

November, 2010

Dear Fellow Kansans:

It is my pleasure to present to you the 2010 Maternal and Child Health Biennial Summary for the State of Kansas. This is our department's third such report; the first was issued in 2006. Feedback from previous documents has been resoundingly positive.

We heard from policy-makers, program managers, other decision-makers and advocates alike that the report was useful in getting an overall picture of the health of Kansas mothers and children. In particular, the document helped them understand the important role this information plays in assessing key indicators of population health. The analyses of disparities served to underscore the need for targeting services and resources to certain populations and areas of the state with greatest need.

To let us know what you think about this Summary, and what it says about the health status of Kansas mothers and children, please send an email to Jamie Kim at jkim@kdheks.gov or to Garry Kelley at gkelley@kdheks.gov.

Sincerely,

Jason Eberhart-Phillips, MD, MPH
State Health Officer and
Director, Division of Health

DIRECTOR OF HEALTH'S OFFICE
CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 300, TOPEKA, KS 66612-1368

Voice 785-296-1086 Fax 785-296-1562

KANSAS MATERNAL AND CHILD HEALTH

2010 BIENNIAL SUMMARY



November 2010

Kansas Department of Health and Environment
Division of Health
Bureau of Family Health
1000 SW Jackson, Suite 220
Topeka, Kansas 66612-1274
Telephone (785) 291-3368
Fax (785) 296-6553
Website: <http://www.kdheks.gov/bfh/>

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	3
SECTION I. Women of Reproductive Age and Infants	
Demographics	7
Women’s Health Insurance Coverage	8
Prenatal Care.....	10
Breastfeeding	12
Low Birth Weight	14
Preterm Births	16
Cesarean Delivery.....	18
Tobacco Use During Pregnancy	20
Infant Mortality.....	22
Congenital Anomalies (Birth Defects).....	24
Newborn Metabolic Screening	26
Newborn Hearing Screening.....	28
SECTION II. Children and Adolescents	
Demographics	33
Children’s Health Insurance Coverage	34
Immunization	36
Lead Poisoning in Children	38
Oral Health.....	40
Injury.....	42
Missed School Days.....	44
Overweight.....	46
Diabetes in Children and Adolescents	48
Behavioral/Mental Health.....	50
Teen Pregnancy.....	52
SECTION III. Children and Youth with Special Health Care Needs (CYSHCN)	
Demographics	56
CYSHCN Insurance Coverage	58
Medical Home.....	60
Youth Transition	62
Special Health Care Needs Screening.....	64
Satisfaction with Services	66
Community-Based Service Systems.....	68
Financial Impact on Families.....	70

SECTION IV. Health Systems Indicators

Poverty Status	74
Linguistic Isolation	76
Utilization of Health Care	78

SECTION V. Special Projects

MCH2015 Updates	
Pregnant Women and Infants Update	83
Pregnant Women and Infants: Breastfeeding Update	84
Children and Adolescents: Reducing Risk Behaviors Update.....	85
Children and Adolescents: Overweight and Obese Children Update.....	86
Children and Adolescents: Medical Home Update.....	87
Children and Youth with Special Health Care Needs: Medical Home Update	89
Children and Youth with Special Health Care Needs: Youth Transitioning into Adult Services Update	90
Children and Youth with Special Health Care Needs: Financial Impact on the Family Update	91
State of Kansas Genetics Plan, 2010.....	92
Children and Youth with Special Health Care Needs: Family Survey.....	93
Children and Youth with Special Health Care Needs: Physician Survey.....	94
Infant and Parental Characteristics at Birth Associated with Lost to Follow-up and Lost to Document in Kansas Newborn Hearing Screening	96
Breastfeeding Initiation-National Immunization Survey (NIS) Results.....	97
Stillbirths and Infant Deaths, Kansas, 2008.....	98
Adequacy of Prenatal Care Utilization Index, Kansas, 2008	99
Adolescent and Teenage Pregnancy Report, Kansas, 2008	101
Assessing Household Food Security in Kansas Using the Kansas Behavioral Risk Factor Surveillance System (BRFSS) Survey Data, 2008	103

SECTION VI. Appendices

Map of Kansas	108
County Abbreviations	109
Technical Notes	110
Glossary	113

EXECUTIVE SUMMARY

- ❑ In Kansas, 1999-2008, there was an increasing trend in the percent of women 18-44 who lack health insurance with about 18.0% of women lacking health insurance in 2008. In 2008, women at greatest risk of being uninsured were Hispanic, had less than a high school education, earned less than \$25,000 and resided in a densely-settled rural county, and were widowed, divorced or separated. The percent of Hispanic women ages 18-44 with no health insurance was increasing and was about 43.5% in 2008.
- ❑ In 2008, the percent of pregnant women reporting smoking during pregnancy was 16.6%. The rates of smoking during pregnancy among non-Hispanic white and non-Hispanic black mothers were highest at 23.7% and 23.0%, respectively. Hispanic mothers had the lowest rate (5.9%). Teenagers 18-19 years and women in their early twenties had the highest smoking rates (24.7% and 23.5%, respectively). Smoking rates for women in their thirties and older were sharply lower, around 9%.
- ❑ In 2008, the rate for preterm births, those occurring before 37 weeks gestational age was 9.3%. The non-Hispanic black prematurity rate was 40.2% higher than the non-Hispanic white rate (12.9% and 9.2%, respectively). The Hispanic prematurity rate met the Healthy People 2010 goal at 7.6%.
- ❑ About one-third (30.1%) of Kansas births were delivered by cesarean, a 52.8% increase from 19.7% in 1999. There was an increase in cesareans among all gestational age groups. The induction rate increased 67.1% from 17.0% in 1999 to 28.4% in 2008. An increasing trend was observed in inductions among all gestational age groups.
- ❑ In 2008, low birth weight (LBW) and very low birth weight (VLBW) infants contributed heavily to the total infant mortality rate. Almost two thirds (61.4%) of infant deaths occurred among the 7.2% of infants who were born at LBW. Similarly, 44.4% of infant deaths occurred among the 1.4% of infants born at VLBW. The risk of delivering a LBW infant is greater among non-Hispanic black mothers and differs by maternal age, with the highest risk for the youngest and oldest mothers regardless of race.
- ❑ The percent of Kansas WIC infants (Special Supplemental Nutrition Program for Women, Infants, and Children) ever breastfed has increased by 12.0% in the last 10 years from 60.7% in 1999 to 68.0% in 2008. However, the percent breastfed at least 6 months and 12 months have decreased.
- ❑ The percent of Kansas WIC children (ages 24-59 months) who are overweight or obese has increased by 25.5% from 23.9% in 1999 to 30.0% in 2008. In 2008, 33.5% of Hispanic children and 40.3% of American Indian/Alaskan Native children participating in WIC were overweight or obese.
- ❑ In Kansas, for adolescents and young adults ages 15-24 (2007-2008), 73.4% of unintentional injury deaths were caused by motor vehicle crashes, 12.1% were caused by poisonings, and 3.2% were caused by drowning. In non-Hispanic white and Hispanic adolescents and young adults unintentional injury caused the highest percent of injury deaths. However, in non-Hispanic black adolescents and young adults, homicides caused more deaths than unintentional injuries.

- ❑ Overall, Kansas children and youth with special health care needs (CYSHCN) did better than U.S. CYSHCN. The 2005-2006 National CSHCN Survey estimates that 28.6% of Kansas CYSHCN ages 0-11 served by care systems met all five core outcomes compared to 20.4% of the U.S. and Kansas ranked first in the nation. For CYSHCN ages 12-17, 20.2% met all six* core outcomes compared to 13.7% of the U.S. and Kansas ranked second in the nation. (*The sixth, transition to adulthood, was asked only for CYSHCN ages 12-17.)
- ❑ In Kansas, 50.3% of youth with special health care needs receive services necessary to transition to all aspects of adult life compared to the national average of 41.2%. Generally, the vocational/education transition is more comprehensive than transition to adult medical services.
- ❑ In Kansas, an estimated 62.9% of CYSHCN have adequate health insurance coverage compared to the national average of 62.0%. “Adequate” private and/or public insurance is defined as access to health services including preventive care, primary care and tertiary care. Many Kansas families have policies that cover only well visits or catastrophic care.
- ❑ In Kansas, eight out of ten Kansas parents who have CYSHCN reported that their child’s condition did not cause financial strain for their families. The percent of families reporting no financial strain in Kansas is similar to that reported nationally.

INTRODUCTION

This third edition of the Kansas Biennial Summary of Maternal and Child Health (MCH) was prepared in the context of many changes in federal and state health policy relating to mothers and children. In the past decade, new policies have emerged relating to health insurance, welfare reform, federal and state funding reductions, provider workforce shortages, and rapid advances in technology, among others. All of these impact the health status of our mothers and children. In turn, changes in the health status of the MCH population reflect changes in the health status of the general population.

Kansas has made steady progress in developing program capacity to collect and analyze MCH data, and to monitor trends in child health that will guide program and policy decision-making. Each year for several years, as part of the federal application for MCH Services Block Grant funding, a vast amount of information and data have been collected. In addition to dramatic improvements in data quality, Kansas is now able to see trends in performance on national and state priority measures, health status and outcomes, and the capacity of our health system to meet the needs of mothers and children, including children with special health care needs.

In addition to federal reporting, an important use of the MCH Services Block Grant data is to prioritize MCH needs for the State. A five-year MCH State needs assessment is conducted as part of the federal requirements for this grant. Kansas' most recent assessment called MCH 2015 can be viewed at the website: http://www.datacounts.net/mch2015/documents/MCH2015_Report.pdf. The assessments are major undertakings involving diverse groups of stakeholders. The purpose of the assessments is to focus on priority work.

For the period 2011-2015, the MCH priorities for Kansas are as follows:

Pregnant Women and Infants

Goal: Enhance the health of Kansas women and infants across the lifespan.

- All women receive early and comprehensive care before, during, and after pregnancy.
- Improve mental health and behavioral health of pregnant women and new mothers.
- Reduce preterm births (including low birth weight and infant mortality).
- Increase initiation, duration and exclusivity of breastfeeding.

Children and Adolescents

Goal: Enhance the health of Kansas children and adolescents across the lifespan.

- All children and youth receive health care through medical homes.
- Reduce child and adolescent risk behaviors relating to alcohol, tobacco and other drugs.
- All children and youth achieve and maintain healthy weight.

Children and Youth with Special Health Care Needs (CYSHCN)

Goal: Enhance the health of all Kansas children and youth with special health care needs across the lifespan.

- All CYSHCN receive coordinated, comprehensive care within a medical home.
- Improve the capacity of YSHCN to achieve maximum potential in all aspects of adult life, including appropriate health care, meaningful work, and self-determined independence.
- Financing for CYSHCN services minimizes financial hardship for their families.

The 2010 Biennial Summary of MCH is the third summary providing an overview of MCH in Kansas. We hope readers will continue to look forward to this biennial publication and analyses.

Purpose and format of the report

The purpose of the report is to provide useful information on MCH in Kansas for health care providers, public health workers and policy makers. The report presents summaries of three population groups: Women of Reproductive Age and Infants, Children and Adolescents, and Children and Youth with Special Health Care Needs (CYSHCN).

The report is divided into six sections. Sections I - IV present summaries of 31 important health issues for women of reproductive age and infants (Section I), children and adolescents (Section II), children and youth with special health care needs (Section III), and MCH health systems indicators (Section IV) in Kansas. Each of the health issues is presented with a brief overview of the Kansas goal, definition, significance of the health issue, and Healthy People 2010 Objectives when available.

The race and ethnicity categories presented are consistent with Office of Management and Budget's (OMB) 15 categories whenever possible. For this report, race and Hispanic origin categories are combined. Self-reported single race data are utilized for non-Hispanic white, non-Hispanic black, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian and Pacific Islander and non-Hispanic other. If more than one racial category is checked, the person's race is classified as non-Hispanic multiple category. Data shown for Hispanic persons included all persons of Hispanic origin of any race.

A summary of the health issue in Kansas including key statistics and trends is supplemented by tables and graphs with the latest data available. Rates have been calculated from the appropriate most recent available census estimates to adjust for population size and allow for more meaningful interpretation of the data. In this report, data analysis and display were based on suggestions of the Maternal and Child Health Bureau, Health Resources and Services Administration. (Refer to the Technical Notes on page 110 - Table 1 includes the guidelines for measures with small sample sizes used in this document.)

Section V includes special studies and reports. Section VI includes a map of Kansas with county names, a list of county abbreviations, technical notes, and glossary.

Please note that in October 2010, a new bureau was created in the Division of Health - the Bureau of Epidemiology and Public Health Informatics. This bureau merged the existing Bureau of Surveillance and Epidemiology with the Bureau of Public Health Informatics. Throughout the report, we referenced data published by the former Bureau of Public Health Informatics.

Acknowledgments

We would like to thank all the physicians, nurses, hospitals, laboratorians, county health department staff, and others who participated in providing data. We would also like to acknowledge the Bureau of Family Health staff for their support and assistance.

Linda Kenney, MPH
Director
Bureau of Family Health

SECTION I

WOMEN OF REPRODUCTIVE AGE

AND

INFANTS

Demographics

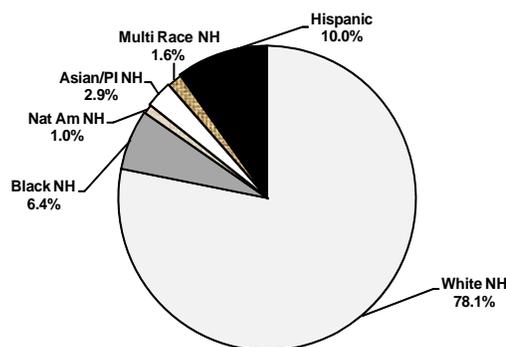
In 2008, there were an estimated 42,425 infants living in Kansas, or about 1.5% of the total Kansas population (2,802,134). Women of reproductive age 15-44 accounted for 19.8% (553,481) of the Kansas population. The race and ethnicity composition for this group was estimated at 78.1% non-Hispanic white, 6.4% non-Hispanic black, 2.9% non-Hispanic Asian and Pacific Islander, 1.0% non-Hispanic Native American or Alaska Native and 10.0% Hispanic.

**Population Composition by MCH groupings
Kansas, 2008**

Population Group	Age in Years	KS Population Estimate	KS %
Infants	<1	42,425	1.5%
Children	1-4	160,104	5.7%
Children	5-9	192,365	6.9%
Adolescents	10-14	187,678	6.7%
Women of Childbearing Age	15-44	553,481	19.8%
Teen Women	15-19	96,531	3.4%
Adult Women	20-44	456,950	16.3%
Total MCH Population		1,136,053	40.5%
Others		1,666,081	59.5%
Total Population		2,802,134	100.0%

Source: U.S. Census Bureau

**Women (ages 15-44) by Race and Ethnicity
Kansas, 2008**



NH: non-Hispanic

Source: U.S. Census Bureau

In 2008, a total of 41,815 births occurred to Kansas residents, representing a birth rate of 14.9 per 1,000 population. This rate was 1.3% lower than the rate in 2007 of 15.1. Geary (25.8), Seward (24.4) and Ford (21.7) counties had the highest county birth rates per 1,000 population.

In 2008, 38.2% of all Kansas live births occurred to women in the 15-24 age-group, 51.3% of live births occurred to women in the 25-34 age-group and 10.3% occurred to women in the 35-44 age-group. In 2008, 71.5% of Kansas live births were to non-Hispanic white mothers, 7.0% were to non-Hispanic black mothers, 5.3% were to mothers of non-Hispanic other/multiple races, and 16.2% were to Hispanic mothers. Even though Hispanic women comprise only 10.0% of women of reproductive ages, they had 16.2% of all live births.

During the period 2004 through 2008, 54.9% of births occurred in 5 urban counties (Douglas, Johnson, Sedgwick, Shawnee and Wyandotte) with 66.7% (154) of Kansas obstetricians practicing in the same. The remaining 100 Kansas counties account for 45.1% of all births where 33.3% (77) of the state's 231 obstetricians practice. Twenty-five rural and frontier counties average fewer than 40 births per year.

Data Sources and References:

1. Bureau of Family Health, Kansas Department of Health and Environment. *Kansas Maternal and Child Health 2010 Needs Assessment*. www.datacounts.net/mch2015/documents/MCH2015_Report.pdf
2. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html

Women's Health Care Coverage

KANSAS GOAL: Increase health care coverage for women of reproductive age.

Indicator: Percent of women in their reproductive years (18-44) without public or private health insurance coverage.

Definition: Women ages 18-44 sampled by the Behavioral Risk Factor Surveillance System (BRFSS) who reported that they have no health care coverage, including health insurance, prepaid plans such as Health Maintenance Organizations (HMO), or government plans such as Medicaid.

Significance: Access to health care is a leading Healthy People 2010 indicator. Strong predictors of access to quality health care include having health insurance, a higher income level, and a regular primary care provider or other source of ongoing health care.¹ Use of clinical preventive services, such as early prenatal care, can serve as indicators of access to quality health care services.¹ According to the BRFSS, nationally in 2008, women (18-44) at highest risk of being uninsured had less than a high school education (43.9%), income less than \$15,000 (37.4%), of Hispanic ethnicity (38.5%), widowed (31.5%) or out of work (38.2%).² The specific age group with the greatest risk of women being without health care coverage was 18-24 (25.4%).² Additionally, women who have a usual source of care (a personal doctor or health care provider) are more likely to receive preventive care. This is particularly important for women before, during and after pregnancy. In 2008 nationally, approximately 11.0% of women reported that they did not have a usual source of care.² Hispanic women were most likely to report not having a usual source of care (40.9%) followed by non-Hispanic black women (19.1%) and non-Hispanic white women (16.8%).² Research has shown that having health insurance increases timely initiation of prenatal care, promotes access to C-section deliveries for high risk births and increases access to neonatal intensive care for high risk babies.³ Limitations in access to care to extend beyond basic causes, such as a shortage of health care providers or a lack of facilities. Individuals also may lack a usual source of care or may face other barriers to receiving services, such as financial barriers (having no health insurance or being underinsured), structural barriers (no facilities or health care professionals nearby), and personal barriers (sexual orientation, cultural differences, language differences, not knowing what to do, or environmental challenges for people with disabilities). Patients with disabilities may face additional barriers arising from facilities that are not physically accessible or from the attitudes of clinicians. Hispanics, young adults, and uninsured persons are least likely to have a usual source of care.

Healthy People 2010 Objective: 1.1. Increase the proportion of persons with health insurance to 100%.

Data Sources and References:

1. U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. *With Understanding and Improving Health and Objectives for Improving Health*. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. www.healthypeople.gov/document/html/uih/uih_bw/uih_4.htm
2. Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention, U.S. Department of Health & Human Services.
3. Hadley, J. *Sicker and Poorer: The consequences of being uninsured. The Kaiser Commission on Medicaid and the Uninsured* (May, 2002). www.kff.org/uninsured/20020510-index.cfm
4. U.S. Department of Health and Human Services, Health Resources and Services Administration. *Women's Health USA 2007*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Note: Percentages reported here are weighted percentages. See technical notes for explanation of weighting procedure.

Epidemiology and Trends

Elimination of health risks and comprehensive management of disease prior to pregnancy increases the likelihood of a pregnant woman delivering a healthy infant. Use of clinical preventive services, for women of reproductive age before, during and after pregnancy serves as an indicator of access to health care services. Access to health services including preventive, primary care and tertiary care often depends on whether a person has health insurance. According to the BRFSS, approximately 18.0% of Kansas women ages 18 to 44 years lacked health care coverage in 2008, which is slightly below the national average of 19.3%. Non-Hispanic black women were more than twice as likely as non-Hispanic white women to be uninsured, and Hispanic women were more than three times as likely. From 2000 to 2008, the percentage of Hispanic women without health care coverage increased from 21.1% to 43.5%, an increase of 106.2%.

In 2008, 83.6% of women in Kansas reported having a usual source of care (a personal doctor or health care provider). Among women, non-Hispanic whites were most likely to report a usual source of care (86.8%), followed by non-Hispanic blacks (81.6%); Hispanic women were least likely to report a usual source of care (66.6%). Having a usual source of care varied by family income level.⁴ Women with family incomes under 100% of the federal poverty level (FPL) were more likely to report that hospital outpatient departments and emergency departments were the places they usually go when sick, and were more likely to have no usual source of care than those with higher incomes.⁴

Women 18- 44 <u>Without</u> Health Care Coverage Kansas, 2008	
Kansas	18.0%
U.S.	19.3%

Race/Ethnicity	
White, non-Hispanic	12.9%
Black, non-Hispanic	30.1%
Other race, non-Hispanic	35.4%
Multi race, non-Hispanic	17.4%
Hispanic	43.5%

Education	
Less than high school	44.0%
High school or GED	36.2%
Some college	15.7%
College	5.5%

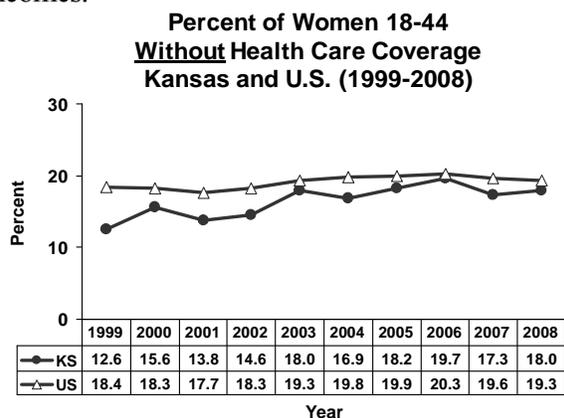
Annual Household Income	
Less than \$15,000	50.4%
\$15,000 - \$24,999	47.4%
\$25,000 - \$34,999	25.4%
\$35,000 - \$49,999	17.4%
\$50,000+	2.5%

Marital Status	
Married/Unmarried couple	12.9%
Divorced/Separated	39.3%
Widowed	40.5%
Never married	24.8%

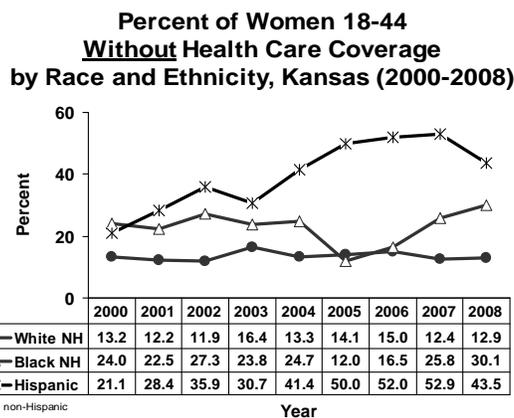
Population Density	
Frontier	*
Rural	*
Densely-settled rural	21.9%
Semi-urban	18.9%
Urban	16.3%

*Number of respondents is too small to allow for the calculation of population density level estimates.

Source: Behavioral Risk Factor Surveillance System Survey



Source: Behavioral Risk Factor Surveillance System Survey



NH: non-Hispanic

Source: Behavioral Risk Factor Surveillance System Survey

Prenatal Care

KANSAS GOAL: Ensure early entry into prenatal care to enhance pregnancy outcomes.

Indicator: Percent of infants born to pregnant women receiving prenatal care beginning in the first trimester.

Definition: Comprehensive medical care provided during pregnancy, labor and delivery, and postpartum. Services include screening for medical and behavioral risk factors known to cause poor outcomes and treatment for those conditions. First trimester is the first three months of pregnancy.¹

Numerator: Number of live resident births with reported first prenatal visit during the first trimester (before 13 weeks gestation) in the calendar year reported on the birth certificate.

Denominator: Number of resident live births in Kansas in the calendar year where month prenatal care began was reported on the birth certificate.

Significance: Prenatal care is an important factor in achieving a healthy pregnancy outcome. Receiving early prenatal care can help to reduce the incidence of perinatal illness, disability, and death by providing health care advice to mothers and identifying and managing any chronic or pregnancy-related risks.²

Healthy People 2010 Objective: 16-6a. Increase prenatal care beginning in the first trimester of pregnancy to 90% of all live births.

Data Sources and References:

1. Washington State Department of Health. *The Health of Washington State*. Maternal and Child Health: Prenatal Care, p.249.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration. *Women's Health USA 2005*. Rockville, Maryland: U.S. Department of Health and Human Services, 2005.
3. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html
4. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Mathews TJ, Kirmeyer S, Osterman MJK. *Births: Final data for 2007*. National vital statistics reports; vol 58 no 24. Hyattsville, MD: National Center for Health Statistics. 2010.

Note:

1. Percentages were calculated only in counties with ≥ 20 live births. Percentages were not calculated in counties with a smaller number of live births as the percentages are not useful or meaningful.
2. The collection process for prenatal care (PNC) data has changed. Beginning with the reporting of 2005 data, Kansas implemented the 2003 revision of the U.S. standard birth certificate. While most data items on the certificates are comparable with past years, certain items such as prenatal care are not. For PNC, in previous years, the mother or prenatal care provider reported the month of pregnancy in which the mother began PNC. In 2005, this item was replaced by exact dates of first and last prenatal visit. States that have implemented the new standard birth certificate typically see a drop in percentage of women beginning care in the first trimester. For more information, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf.

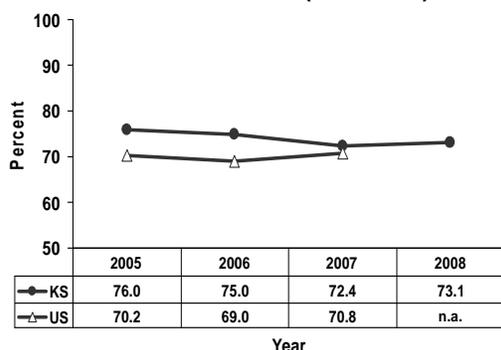
Epidemiology and Trends

In 2008, 73.1% of infants were born to pregnant women receiving prenatal care in the first trimester, a slight increase from 2007 (72.4%).³ The U.S. data for 2007 (the latest data available) on this measure was 70.8%.⁴ Kansas exceeded the U.S. on this measure by 2.3% in 2007. Over the four year period (2005-2008), there was a decreasing trend detected. The annual percent change was not significant (-1.51).

In 2008, a total of 41,815 live births occurred to Kansas residents. Of these live births, 39,776 had “month care began” indicated on the birth certificate. Among live births where start date for prenatal care is known, the proportion of births to mothers beginning in the first trimester was 73.1%. Kansas 2008 data shows that Hispanic and non-Hispanic black mothers are most likely to enter prenatal care late. Older mothers are most likely to begin prenatal care early regardless of race or ethnicity.

Women in Gove, Sheridan, Norton, and Johnson counties were more likely to obtain early prenatal care; in Gove county, shaded dark gray on the map below, 90% or more of the mothers meet or exceed the Healthy People 2010 target for beginning prenatal care in the first trimester of pregnancy. Women in Doniphan, Wichita, Harper, Haskell, Morton, Cherokee, Meade, Lyon, Finney, Ford, Seward, and Scott were least likely to obtain prenatal care. In general, women in rural areas are less likely to get prenatal care.

Percent of Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester Kansas and U.S. (2005-2008)



Source: Bureau of Public Health Informatics; National Vital Statistics Reports.

Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester		
	Number	Percent**
Kansas (2008)	29,089	73.1%
Kansas (2007)	28,677	72.4%
U.S. (2007)*	n.a.	70.8%

*The most recent year with finalized birth data.

**Unknown/not stated were excluded from the denominator.

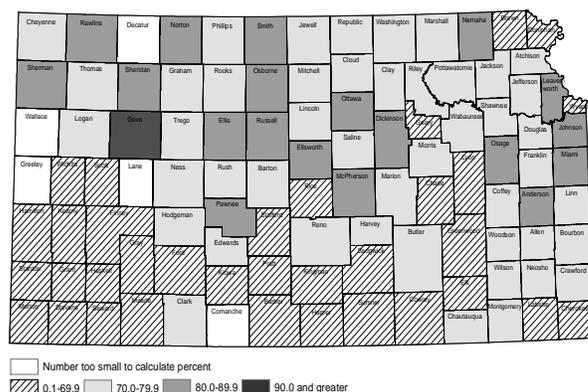
Source: Bureau of Public Health Informatics, National Vital Statistics Reports

Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester Kansas, 2008		
Race/Ethnicity	Number	Percent
White, non-Hisp	22,242	78.4%
Black, non-Hisp	1,702	61.1%
Other, non-Hisp	1,504	71.7%
Hispanic	3,629	55.9%

Age groups	Number	Percent
10-14	14	40.0%
15-17	650	53.7%
18-19	1,739	58.0%
20-24	7,360	66.4%
25-29	9,379	77.1%
30-34	6,701	81.6%
35 plus	3,246	79.8%

Source: Bureau of Public Health Informatics.

Percent of Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester by County Kansas, 2008



Source: Bureau of Public Health Informatics

Breastfeeding

KANSAS GOAL: Increase the incidence and duration of breastfeeding.

Indicators:

1. Percent of Kansas infants in which breastfeeding was initiated.
2. Percent of Kansas infants breastfed at least 6 months.
3. Percent of Kansas infants breastfed at least 12 months.
4. Percent of Kansas infants exclusively breastfed at 6 months.

Significance: Human milk is the preferred feeding for all infants, including premature and sick newborns. Exclusive breastfeeding is ideal nutrition and sufficient to support optimal growth and development for approximately the first 6 months after birth.¹ The advantages of breastfeeding are indisputable and include nutritional, immunological and psychological benefits to both mother and infant, as well as economic benefits.¹ Observational studies have found that breast-fed infants have less earaches, respiratory infection, gastroenteritis, eczema² and a decreased risk of being overweight as a child.³ The American Academy of Pediatrics (AAP) recommends that an infant be breastfed without supplemental foods and liquids for the first 6 months after birth (known as exclusive breastfeeding).

Healthy People 2010 Objective:

- 16-19. Increase the proportion of mothers who breastfeed their babies.
- 16-19a. In the early postpartum period to 75%
- 16-19b. At 6 months to 50%
- 16-19c. At 1 year to 25%.

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Maternal and Child Health Services Title V Block Grant to States Program Guidance and Forms for the Title V Application and Annual Report Guidance*. Fifth Edition. P112.
2. U.S. Preventive Services Task Force. *Behavioral Interventions To Promote Breastfeeding: Recommendations and Rationale*. July 2003. Agency for Healthcare Research and Quality, Rockville, MD. www.ahrq.gov/clinic/3rduspstf/brstfeed/brfeedrr.htm
3. Harder, T., Bergmann, R., Kallischnigg, G., Plagemann, A. *Duration of breastfeeding and risk of overweight*. *Am J Epidemiol*. 2005;162:5, 397-403.
4. National Immunization Survey. www.cdc.gov/breastfeeding/data/NIS_data/
5. Kansas Pediatric Nutrition Surveillance System - Supplemental Nutrition Program for Women, Infants, and Children (WIC) program data. This data represents Kansas families with incomes below 185% of the poverty level. www.kdheks.gov/nws-wic/download/2008_PedNSS_Tables_Kansas.pdf
6. Pediatric Nutrition Surveillance System, U. S. Department of Health & Human Services, Centers for Disease Control and Prevention. www.cdc.gov/pednss/pednss_tables/pdf/national_table19.pdf

Epidemiology and Trends

Overall, trends from the most recent data show small changes, but the direction is encouraging. In 2008, Kansas birth certificate data showed that in 77.5% of resident live births, the mothers initiated breastfeeding. This is a 2.6% increase from 2005 (75.5%). According to the National Immunization Survey (NIS), among Kansas children born in 2007 (provisional), 79.6% of Kansas mothers initiated breastfeeding. This was higher than the national estimates (75.0%) and exceeded the Healthy People 2010 goal of 75%. The survey also shows that low income mothers are less likely to breastfeed than their higher income counterparts.⁴

Over half of all women who have live births in Kansas participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program. The percent of Kansas WIC infants ever breastfed has increased by 12.0% in the last 10 years from 60.7% in 1999 to 68.0% in 2008. However, the percent breastfed at least 6 months and 12 months have decreased.⁵ All are below the HP2010 objectives. Although among Kansas WIC participants Hispanic mothers met the HP2010 target for initiating breastfeeding (75.3%), more work is needed in protecting, promoting, and supporting breastfeeding at 6 months and 12 months.^{5,6} The percent of Kansas WIC infants who initiated breastfeeding (68.0%) was higher than WIC infants nationally (62.0%).^{5,6}

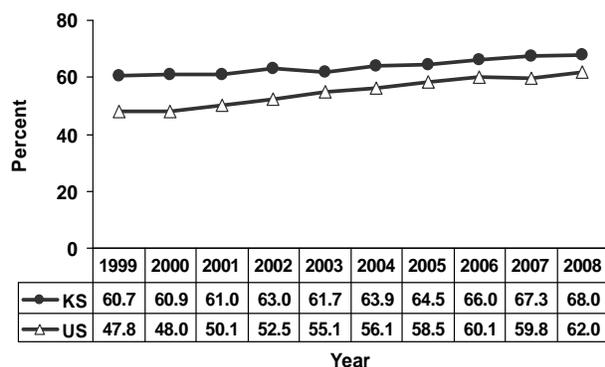
Incidence and Duration of Breastfeeding Children Born in 2007	
Ever breastfed	
Kansas	79.6%
U.S.	75.0%
Breastfed at least 6 months	
Kansas	47.4%
U.S.	43.0%
Breastfed at least 12 months	
Kansas	20.2%
U.S.	22.4%
Exclusively breastfed at least 6 months	
Kansas	18.5%
U.S.	13.3%

Maternal factors for initiating breastfeeding Children Born in 2007, U.S.	
College graduate	88.3%
Asian	86.4%
WIC ineligible	84.6%
Poverty level \geq 350%	84.4%
Married	81.7%
Hispanic or Latino	80.6%
Maternal age \geq 30	79.3%
MSA*, non-central city	77.9%
Birth order - not first born	75.6%

*MSA=Metropolitan Statistical Area defined by the Census Bureau

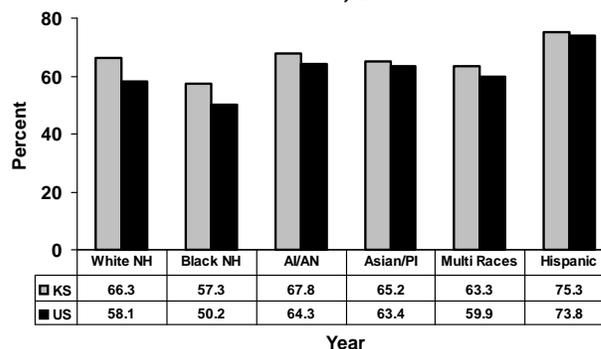
Source: National Immunization Survey, 2007 Births (provisional)

Percent of WIC infants Ever Breastfed Kansas and U.S. (1999-2008)



Source: Pediatric Nutrition Surveillance System (PedNSS)

Infants Ever Breastfed WIC Participants by Race/Ethnicity Kansas, 2008



NH: non-Hispanic; AI/AN: American Indian/Alaskan Native; PI: Pacific Islander
Source: Pediatric Nutrition Surveillance System (PedNSS)

Low Birth Weight

KANSAS GOAL: Reduce the percent of births with low birth weight.

Indicators:

1. Percent of live birth infants weighing less than 2,500 grams.
2. Percent of live birth infants weighing less than 1,500 grams.

Definition: Low birth weight (LBW) infants are live born infants weighing less than 2,500g (5.5lb) at birth. They fall into two categories: those who are small because they are born prematurely (fewer than 37 weeks of gestation completed) and those who are small for their gestational age (intrauterine growth retardation). Very low birth weight infants (VLBW) are live born infants weighing less than 1,500g (3.3lb).

Significance: Birth weight is one of the most important factors in an infant's chance of survival. Infant mortality rates are much higher for infants born at low birth weight or very low birth weight than for heavier babies. Low birth weight babies may face serious health problems as newborns, and are at an increased risk of long-term disabilities. Only some of the reasons babies are born too small, too soon, or both are known. Fetal defects that result from genetic conditions or environmental factors may limit normal development. Multiples (twins, triplets, or higher) often are low birth weight, even at term. If the placenta is not functioning properly, a fetus may not grow as well as it should. A mother's medical problems influence birth weight, especially if she has high blood pressure, certain infections or heart, kidney or lung problems. However, the causes of preterm labor—which often results in a low birth weight baby—are poorly understood. Research suggests that the following factors may be particularly effective in preventing low weight births: smoking cessation, proper maternal nutrition, and adequate treatment of maternal medical prenatal problems.

Healthy People 2010 Objectives:

- 16-10a. Reduce low birth weight to 5.0%
16-10b. Reduce very low birth weight to 0.9%

Data Sources and References:

1. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html
2. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, et al. *Births: Preliminary Data for 2008*. National vital statistics reports; vol 58 no 16. Hyattsville, MD: National Center for Health Statistics. 2010.

Epidemiology and Trends

Reducing births with low birth weight (LBW) is a Kansas MCH priority in the MCH 2015, the 5-year state MCH needs assessment. In Kansas, the percent of LBW increased slightly in 2008, to 7.2% from 7.1% in 2007. For 2008, the most recent year national data (preliminary) is available, the percent of Kansas births with LBW is 12.2% lower than for the U.S. (8.2%).

In 2008, no change in total LBW was reported for non-Hispanic white infants (6.8%) from 2007. A small decrease was reported for non-Hispanic black infants (13.1% to 12.9%). However, an increase was reported for Hispanic infants (5.6% to 6.2%).

Recent trends in LBW are influenced by the multiple birth rate. Twins and higher order multiples are much more likely to be born LBW than singletons. In 2008, 55.7% of all plural births in Kansas were LBW.

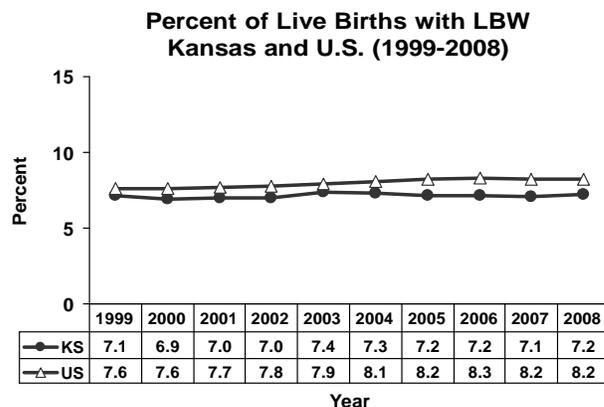
In Kansas, LBW is an important issue since 61.4% of all infant deaths occurred among the 7.2% of infants born at LBW in 2008. Similarly, 44.4% of infant deaths occurred among the 1.4% of infants born at VLBW in 2008.

The infant mortality rate (61.2/1,000 live births) for LBW infants with linked death and birth files (2005-2008 combined) was 21 times that for infants weighing 2,500 grams or more (2.9/1,000 live births). Similarly, the infant mortality rate for VLBW infants (245.7/1,000 live births) was 85 times higher than the rate for infants born weighing 2,500 grams or more.

The risk of LBW was greater for smokers than for nonsmokers (10.3% vs. 6.5%), creating an excess LBW risk of 3.8% associated with smoking. Other risk factors for LBW live births include low socioeconomic status, inadequate weight gain during the pregnancy, history of infertility problems, close inter-pregnancy spacing and age of mother (younger and older maternal age).

Live Births with LBW		
	# of LBW	Percent
Kansas (2008)	3,014	7.2%
U.S. (2008)	n.a.	8.2%

Note: U.S. data for 2008 are preliminary.
Source: Bureau of Public Health Informatics; National Vital Statistics Reports

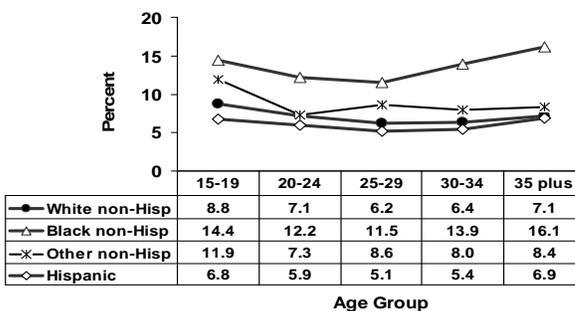


Note: U.S. data for 2008 are preliminary.
Source: Bureau of Public Health Informatics; National Vital Statistics Reports

Live Births with LBW (2006-2008, combined)		
Maternal Race/Ethnicity	# of LBW	Percent
White, non-Hisp	6,106	6.8%
Black, non-Hisp	1,111	12.9%
Other, non-Hisp	548	8.4%
Hispanic	1,167	5.8%

Source: Bureau of Public Health Informatics

**Percent of Live Births with LBW
by Age Group and Maternal Race/Ethnicity
Kansas (2006-2008, combined)**



Source: Bureau of Public Health Informatics

Preterm births

KANSAS GOAL: Reduce the percent of preterm births.

Indicators:

1. Percent of live birth infants at less than 37 weeks of gestation.
2. Percent of live birth infants at 34 to 36 weeks of gestation (late preterm).
3. Percent of live birth infants at 32 to 33 weeks of gestation (moderate premature).
4. Percent of live birth infants at less than 32 weeks of gestation (very premature).

Definition: Most pregnancies last approximately 40 weeks. Babies born between 37 and 42 completed weeks of pregnancy are called full term. Babies born before 37 completed weeks of pregnancy are called premature. Most premature babies (71.2%) are born between 34 and 36 weeks of gestation. These are called late preterm births. Almost 13% of premature babies are born between 32 and 33 weeks of gestation, about 10% between 28 and 31 weeks, and about 6% at less than 28 weeks of gestation.¹

Significance: Approximately two-thirds of low birth weight (LBW) infants and 98% of very low birth weight (VLBW) infants are born preterm. In addition, preterm birth is the leading cause of those neonatal deaths not associated with birth defects. Survival rates of infants have been shown to increase as gestational age advances, even among very preterm infants. Therefore, reduction in preterm delivery holds the greatest promise for overall reduction in infant illness, disability, and death. Because the specific causes of preterm delivery are unclear, research is needed before tailored interventions can be developed. Preterm birth is associated with a number of modifiable risk factors, including the use of alcohol, tobacco, or other drugs during pregnancy and low prepregnancy weight or low weight gain during pregnancy. Other important risk factors for preterm birth are vaginal infection and domestic violence. Rates of preterm delivery in the United States increased over the last three decades of the 20th century. Between 1989 and 1996, this increase was due largely to an increase in multiple gestation. The gap between African American and white infants persists as well, for reasons that are largely unexplained and that have been shown to be independent of other known risk factors. Risk factors that African American women may disproportionately experience include short interpregnancy intervals and exposure to psychosocial stress.²

Healthy People 2010 Objectives:

- 16-11a. Reduce total preterm births to 7.6%
- 16-11b. Reduce live births at 32 to 36 weeks of gestation to 6.4%
- 16-11c. Reduce live births at less than 32 weeks of gestation to 1.1%

Data Sources and References:

1. March of Dimes. *Quick reference: fact sheets*. www.marchofdimes.com/professionals/14332_1157.asp
2. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.
3. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html
4. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, et al. *Births: Preliminary Data for 2008*. National vital statistics reports; vol 58 no 16. Hyattsville, MD: National Center for Health Statistics. 2010.
5. Martin JA, Osterman MJK, Sutton PD. *Are preterm births on the decline in the United States? Recent data from the National Vital Statistics System*. NCHS data brief, no 39. Hyattsville, MD: National Center for Health Statistics. 2010.

Epidemiology and Trends

Reducing premature births is a Kansas MCH priority in the MCH 2015, the 5-year State MCH needs assessment. According to the National Center for Health Statistics (NCHS) report⁵, since 2006 when the national rate peaked, preterm birth rates have declined significantly in 35 states. Kansas is one of the 35 states.

In 2008, the rate for preterm births, those occurring before 37 weeks gestational age, has been lower in Kansas than the U.S. (9.3% and 12.3%, respectively). However, this was still worse than the Healthy People 2010 goal of 7.6% or less. Among racial/ethnic groups, the non-Hispanic black prematurity rate was 40.2% higher than the non-Hispanic white rate (12.9% and 9.2%, respectively). Hispanic premature births were lower than the State average; the Hispanic prematurity rate met the Healthy People 2010 goal at 7.6%.

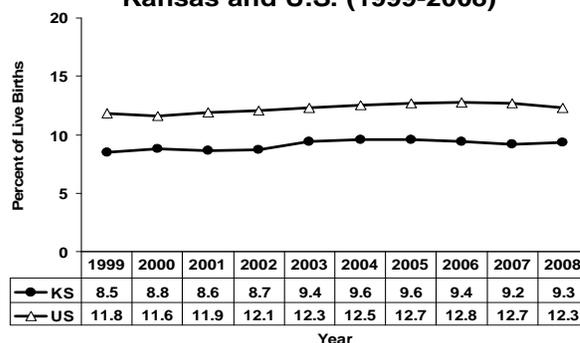
The trend continues for moderately and late premature infants (32 to 36 weeks) and very premature infants (less than 32 weeks): Kansas is performing better than the national average, but worse than the Healthy People 2010 goals of 6.4% and 1.1% respectively.

In 2008, 30.1% of Kansas births were delivered by cesarean, a 52.8% increase from 19.7% in 1999. There was an increase in cesareans among all gestational age groups. (For more information on cesarean delivery, please see page 18.) The induction rate in Kansas increased 67.1% from 17.0% in 1999 to 28.4% in 2008. An increasing trend was observed in inductions among all gestational age groups.

Total preterm births (< 37 weeks of gestation)		
2008		
	Number	Percent
Kansas	3,873	9.3%
U.S.	n.a.	12.3%
Late preterm (34 to 36 weeks of gestation)		
Kansas	2,777	6.7%
U.S.	n.a.	8.8%
Moderate preterm (32 to 33 weeks of gestation)		
Kansas	423	1.0%
U.S.	n.a.	1.6%
Very preterm (<32 weeks of gestation)		
Kansas	673	1.6%
U.S.	n.a.	2.0%

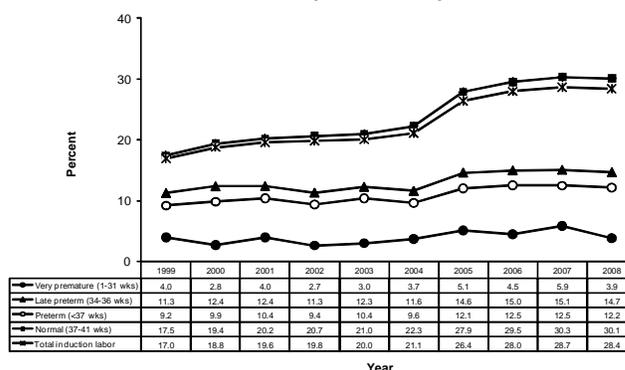
Note: U.S. data for 2008 are preliminary.
Source: Bureau of Public Health Informatics; National Vital Statistics Reports

Percent of Total Preterm Births (<37 weeks) Kansas and U.S. (1999-2008)



Note: U.S. data for 2008 are preliminary.
Data Source: Bureau of Public Health Informatics; National Center for Health Statistics

Induction of Labor Rates by Gestational Age Kansas (1999-2008)



Source: Bureau of Public Health Informatics
Gestational age: Based on the obstetric estimate of gestation.

Cesarean Delivery

KANSAS GOAL: Decrease cesarean delivery.

Indicator: Percent of all live births by cesarean delivery

Definition: Cesarean delivery — also known as a C-section — is a surgical procedure used to deliver a baby through an incision in the maternal abdominal and uterine walls.^{1,2} Some C-sections are planned due to pregnancy complications or a previous C-section.¹ But, in many cases, the need for a first-time C-section doesn't become obvious until labor has already started.¹

Significance: In 2007, nearly one-third (32%) of all births were cesarean deliveries in the United States. Although there are often clear clinical indications for a cesarean delivery, the short- and long-term benefits and risks for both mother and infant have been the subject of intense debate for over 25 years. Cesarean delivery involves major abdominal surgery, and is associated with higher rates of surgical complications and maternal rehospitalization, as well as with complications requiring neonatal intensive care unit admission. In addition to health and safety risks for mothers and newborns, hospital charges for a cesarean delivery are almost double those for a vaginal delivery, imposing significant costs.²

Healthy People 2010 Objective:

16-9. Reduce cesarean births among low-risk (full term, singleton, vertex presentation) women.

16-9a. Women giving birth for the first time to 15% of live births.

16-9b. Prior cesarean birth to 63% of live births.

Data Sources and References:

1. *C-section, definition.* www.mayoclinic.com/health/c-section/MY00214.
2. Menacker F, Hamilton BE. *Recent trends in cesarean delivery in the United States.* NCHS data brief, no 35. Hyattsville, MD: National Center for Health Statistics. 2010.

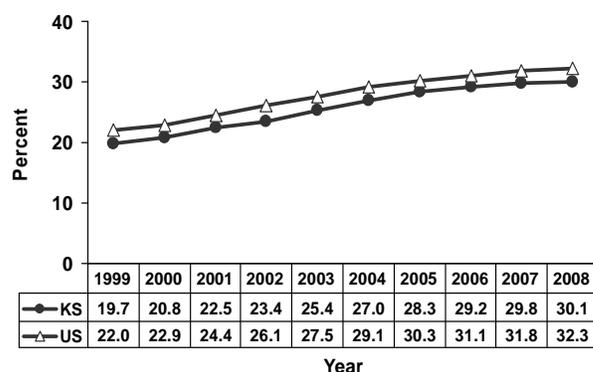
Epidemiology and Trends

In 2008, 30.1% of Kansas live births were delivered by cesarean section, a 52.8% increase from 19.7% in 1999. Cesarean rates increased for births at all gestational ages from 1999 to 2008. During the decade, the cesarean rate for very preterm infants (less than 32 weeks of gestation) increased by 28.8%. Rates for infants born late preterm (34 to 36 completed weeks of gestation) and term (37 to 41 completed weeks of gestation) rose by 41.3% and 54.3%, respectively. The increase mirrors similar trends at the national level.

As seen in the recent National Center for Health Statistics (NCHS) Data Brief², rates of cesarean delivery rise with increasing maternal age in Kansas. The rate for mothers aged 40 and older in 2008 was nearly twice the rate for mothers under age 20 (43.5% and 21.9%, respectively). Cesarean delivery rates were slightly higher for non-Hispanic Asian and non-Hispanic black women compared with non-Hispanic white women (31.7%, 31.3%, and 30.4%, respectively). Hispanic women and Non-Hispanic American Indian or Alaska Native women had the lowest cesarean delivery rate (27.8% and 27.9%, respectively).

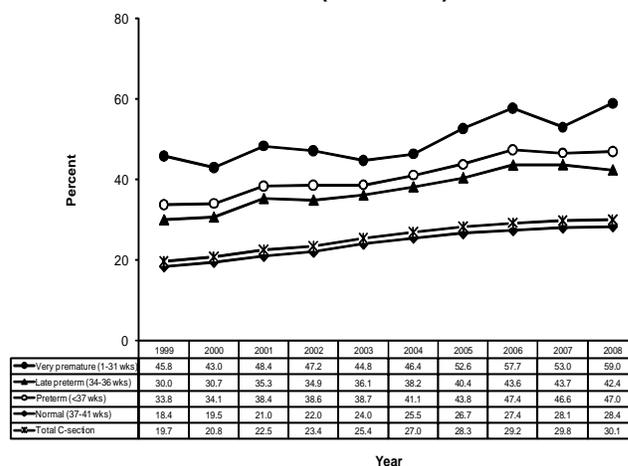
In addition to clinical reasons, nonmedical factors suggested for the widespread and continuing rise of the cesarean rate may include maternal demographic characteristics (e.g., older maternal age), physician practice patterns, maternal choice, more conservative practice guidelines, and legal pressures.²

Total Cesarean Delivery Rate (per 100 live births) Kansas and U.S. (1999-2008)



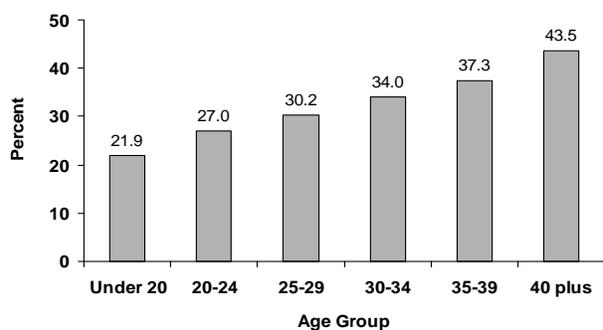
Note: U.S. data for 2008 are preliminary.
Source: Bureau of Public Health Informatics; National Vital Statistics Reports

Cesarean Delivery Rates by Gestational Age Kansas (1999-2008)



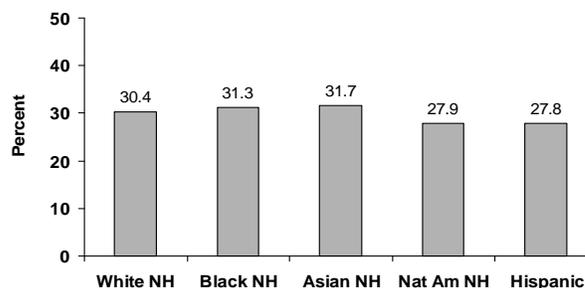
Source: Bureau of Public Health Informatics
Gestational age: based on the obstetric estimate of gestation.

Cesarean Delivery Rates by Age Group Kansas, 2008



Source: Bureau of Public Health Informatics

Cesarean Delivery Rates by Race/Ethnicity Kansas, 2008



NH: non-Hispanic; Nat Am: American Indian or Alaska Native
Source: Bureau of Public Health Informatics

Tobacco Use During Pregnancy

KANSAS GOAL: Decrease cigarette smoking among pregnant women.

Indicator: Percent of live births with reported tobacco use during pregnancy.

Definition: Live births with reported tobacco use on the birth certificate.

Significance: Cigarette smoking during pregnancy adversely affects the health of both mother and child.¹ The concern about smoking during pregnancy has been longstanding and is linked to adverse pregnancy outcomes, including low birthweight (LBW), intrauterine growth retardation, miscarriage, and infant mortality, as well as negative consequences for child health and development.² These adverse consequences in turn are associated with substantial economic and social costs.² Babies born to women who smoke are at substantially greater risk of LBW than babies born to nonsmokers.² Findings from other studies suggest that smoking is somewhat underreported on the birth certificate.³ Nonetheless, the trends and variations in maternal smoking based on birth certificate data are corroborated by data from surveillance data and nationally representative surveys.³ Final births data for 2007 (the most recent available) show that 11.8% of babies born to smokers were LBW compared with 7.4% of babies born to nonsmokers in the United States.⁴

Healthy People 2010 Objective:

16-17c. Increase abstinence from cigarettes among pregnant women to 99%.

Data Sources and References:

1. Centers for Disease Control and Prevention. *Smoking During Pregnancy — United States, 1990–2002*. MMWR 2004;53:911-915.
2. Martin JA, Hamilton BE, Sutton PD, et al. *Births: Final data for 2004*. National vital statistics reports; vol 55 no 1. Hyattsville, MD: National Center for Health Statistics. 2006.
3. Martin JA, Hamilton BE, Sutton PD, et al. *Births: Final data for 2003*. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.
4. Centers for Disease Control and Prevention. National Center for Health Statistics. *VitalStats: Birth Data Files*. www.cdc.gov/nchs/vitalstats.htm. [August 2010].
5. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html

Note: Adoption of the revised birth certificate produced substantive changes in the wording of the questions on tobacco use. The old certificate listed a tobacco use checkbox and a literal field for the number of cigarettes in the medical risk factor section. Smoking information was limited to whether the mother smoked anytime during the pregnancy. The new certificate asks about cigarette smoking in an item separate from medical risk factors. New fields address smoking behavior pre-pregnancy and during each trimester of the pregnancy. New data are not fully comparable with pre-2005 data. However, the new information will enable supplementary research into changes in smoking patterns before and during the pregnancy. It remains uncertain whether the changes will address what has been chronic underreporting of smoking on birth certificates. For more information, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf

Epidemiology and Trends

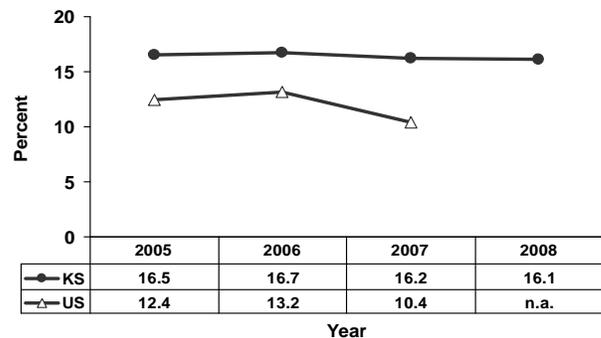
Cigarette smoking during pregnancy adversely affects the health of both mother and child. It increases the risk for adverse maternal conditions and poor pregnancy outcomes. Infants born to mothers who smoke weigh less than other infants, and low birthweight (<2,500 grams) is a key predictor for infant mortality.¹

In 2008, the percentage of pregnant women reporting smoking during pregnancy was 16.1%, a 0.6% decrease from 2007 (16.2%). Although no significant trend was detected, it appears that there may be a decreasing trend over the four-year period (2005-2008). It is not clear from this data whether this is due to an actual reduction in smoking or just a decrease in the reporting of this behavior.

In 2008, the rates of smoking during pregnancy among non-Hispanic white and non-Hispanic black mothers were highest at 18.5% and 18.2%, respectively. Hispanic mothers (5.4%) had the lowest rates. Teenagers 18-19 years and women in their early twenties had the highest smoking rates (24.7% and 23.5%, respectively). Smoking rates for women in their thirties and older were sharply lower, around 9%. Among women who reported smoking during pregnancy, 52.6% reported Medicaid as principal source of payment for this delivery, a 4.6% increase from 2007 (50.3%). These patterns are similar to those observed in the U.S.

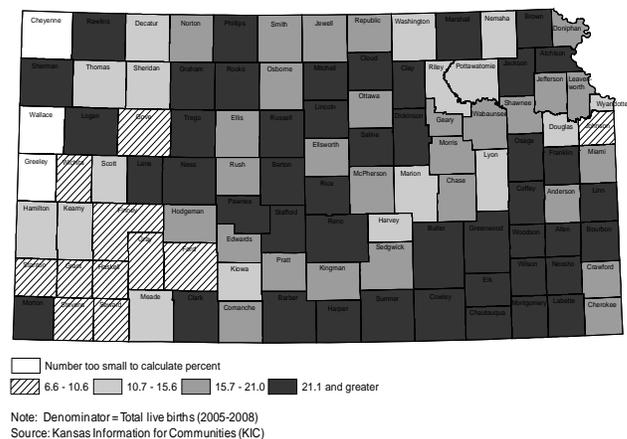
In 2008, 13.8% of women reported smoking during the last three months of pregnancy, a 0.7% increase from 2007 (13.7%). Among women who reported smoking during the last three months of pregnancy, 53.0% reported Medicaid as principal source of payment for this delivery. This is a 4.5% increase from 2007 (50.7%). Over the four year period (2005-2008), there was no significantly increasing or decreasing trend detected.

Percent of Women Reporting Smoking During Pregnancy Kansas and US (2005-2008)

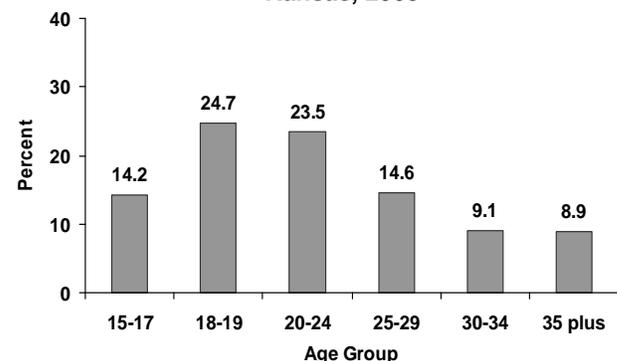


Note: Unknown/not stated were excluded from the denominator.
Source: Bureau of Public Health Informatics; National Vital Statistics Reports

Percent of Women Reporting Smoking During Pregnancy by County Kansas (2005-2008, combined)



Percent of Women Reporting Smoking During Pregnancy by Age Group Kansas, 2008



Source: Kansas Information for Communities (KIC)

Infant Mortality

KANSAS GOAL: Reduce infant deaths.

Indicator: Infant mortality rate per 1,000 live births.

Definition: Infant death - The death of a live-born infant which occurs within the first year of life (from birth through 364 days). Neonatal death - The death of a live-born infant which occurs prior to the twenty-eighth day of life. Postneonatal death - The death of a live-born infant which occurs from 28 through 364 days of life.

Significance: Infant mortality is an important indicator of the health of a nation or community because 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 In 2006, (the latest year that data are available for all countries), the U.S. ranked 28th in the world in infant mortality.² This ranking is due in large part to disparities which continue to exist among various racial and ethnic groups, particularly African Americans.³ Neonatal mortality tends to be closely associated with low birth weight and with influences occurring prenatally, during birth, and in the newborn period – such as poor maternal nutrition and health habits, lack of high quality obstetric and neonatal health services, and congenital anomalies not compatible with life.⁴ Postneonatal mortality generally tends to be associated with environmental circumstances for the infant, particularly those linked to poverty – such as inadequate food or sanitation, unsafe housing, lack of health care services, and inadequate supervision.⁴

Healthy People 2010 Objectives: Reduction in infant deaths.

16-1c. Decrease all infant deaths (within 1 year) to 4.5 per 1,000 live births.

16-1d. Decrease neonatal deaths (within the first 28 days of life) to 2.9 per 1,000 live births.

16-1e. Decrease postneonatal deaths (between 28 days to 1 year) to 1.2 per 1,000 live births.

Data Sources and References:

1. MacDorman MF, Rowley DL, Lyasu S, et al. Infant Mortality. In: Wilcox, LS, Marks, JS, editors. *From Data to Action: CDC's Public Health Surveillance of Women, Infants, and Children*. Atlanta GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 1994; p231-249.
2. National Center for Health Statistics. Health, United States, 2009: With Special Feature on Medical Technology. Hyattsville, Maryland. 2010.
3. Office of Minority Health, Centers for Disease Control and Prevention. *Eliminate Disparities in Infant Mortality* (n.d). www.cdc.gov/omh/AMH/factsheets/infant.htm. Accessed October 14, 2005.
4. Bureau of Family Health, Kansas Department of Health and Environment. Kansas Maternal and Child Health Year 2000 Objectives: Midcourse Review & 1996 Revisions, 1997; p11.
5. Crawford G, Moyer C, Oakley D. Kansas Annual Summary of Vital Statistics, 2008. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html
6. Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. *Deaths: Final data for 2007*. National vital statistics reports web release; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. Released May, 2010.
7. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2007*. Rockville, Maryland: U.S. Department of Health and Human Services, 2008.

Epidemiology and Trends

In 2008, 303 Kansas infants died before their first birthdays, representing an infant mortality rate (IMR) of 7.25 deaths per 1,000 live births, a 8.7% decrease from 2007 (7.94).⁵ The State's infant mortality has been losing ground compared to the national average. In 2007 (the most recent U.S. data are available), Kansas rate was 17.6% higher than the U.S. rate (6.75).⁶ Over the past decade, Kansas IMR has stagnated while the U.S. rate continued to decline.

The ratio of non-Hispanic black to non-Hispanic white infant mortality rates was 2.2 in 2008. Decreases in IMRs were observed for non-Hispanic white and non-Hispanic black infants from 1999 to 2008 (13.0% and 11.0%, respectively). However, a 135.6% increase was observed for Hispanic infants.*

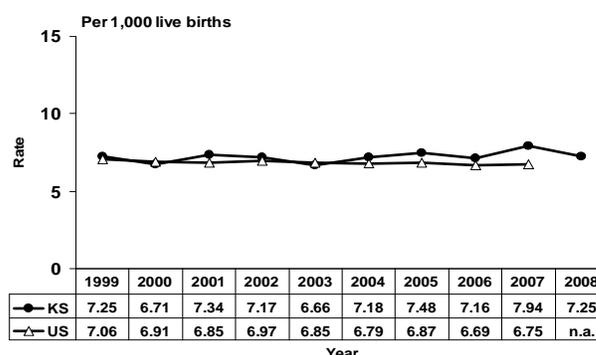
In 2008, 193 Kansas infants died before reaching 28 days of age, representing a neonatal mortality rate of 4.62 deaths per 1,000 live births. This rate is below that of the previous year (5.03). Neonatal mortality is generally related to short gestation and low birth weight, congenital malformations, and conditions occurring in the perinatal period, such as birth trauma or infection.⁷

In 2008, 110 Kansas infants died between the ages of 28 days and 1 year, representing a postneonatal mortality rate of 2.63 deaths per 1,000 live births. This rate is lower than the previous year (2.91). Postneonatal mortality is generally related to SIDS, congenital malformations, and unintentional injuries.⁷

Leading causes of infant deaths in 2008 were congenital anomalies (25.4%), followed by Sudden Infant Death Syndrome (SIDS) (17.2%), disorders relating to short gestation and low birth weight (15.5%), maternal factors and complication of pregnancy, labor and delivery (10.6%), and other causes (31.3%).⁵

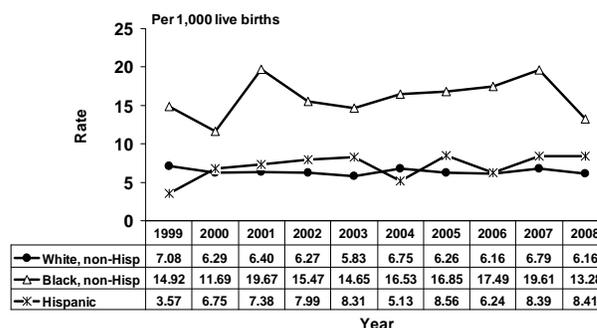
*Infant deaths (numerator) are based on race of child as stated on the death certificate and live births (denominator) are based on race of mother as stated on the birth certificate. Race cited on the death certificate is considered to be relatively accurate for white and black infants. For other race groups, however, race may be misreported on the death certificate. Hispanic origin and race for non-Hispanic origin are somewhat understated and better measured using data from the linked file of live births and infant deaths.⁶

**Infant Mortality Rates
Kansas and U.S. (1999-2008)**



Source: Bureau of Public Health Informatics, National Center for Health Statistics

**Infant Mortality Rates by Race/Ethnicity
Kansas (1999-2008)**



Source: Bureau of Public Health Informatics

**Infant Mortality Rate
Kansas, 2008**

Race/Ethnicity	Deaths	Rate per 1,000 Live Births
White, non-Hispanic	184	6.16
Black, non-Hispanic	39	13.28
Other, non-Hispanic	23	10.29
Hispanic	57	8.41

Source: Bureau of Public Health Informatics

**Infant Mortality
Kansas, 2008**

	Deaths	Rate per 1,000 Live Births
Infant deaths	303	7.25
Neonatal deaths	193	4.62
Post-neonatal deaths	110	2.63

Source: Bureau of Public Health Informatics

Congenital Anomalies (Birth Defects)

KANSAS GOALS: Reduce infant deaths related to all birth defects and congenital heart defects.

Indicators:

1. Percent of live births with birth defects.
2. Rate of neural tube defects per 10,000 live births.
3. Percent of pregnant women abstaining from alcohol, tobacco, and other drugs.

Definitions: Reportable birth defects to KDHE affect how the body looks, works or both. Birth defects can be found before birth, at birth, or anytime after birth. Birth defects may be caused by inheritable characteristics (like genes or chromosomes), environmental conditions, unknown factors, or by various combinations of these factors. Because the causes of most birth defects are unknown, 70% of babies with birth defects are born to two parents with no obvious health problems or risk factors.¹

Significance: There are more than 4,000 different known birth defects, ranging from minor to serious. Birth defects are the leading cause of death in the first year of life—8,000 annually or 20% of all infant deaths in the United States.¹ However, many of the 160,000 American children born with a birth defect are affected by less deadly difficulties like learning or mental difficulties, or physical disabilities.² Many parents assume that all birth defects are severe or even fatal, but the fact is that many are treatable or controllable with appropriate access to medical care, often immediately after birth (such as some heart structure problems), and sometimes even before the baby is born, like mother's use of folic acid. Nevertheless, birth defects still pose a significant burden on society with the average individual with a birth defect staying 1.5 days longer in the hospital and spending on average, an additional \$10,400 per hospital visit than individuals without birth defects.³

Healthy People 2010 Objectives: Reduction in infant deaths related to birth defects.⁴

16-1f. All birth defects to 1.1 per 1,000 live births.

16-1g. Congenital heart defects to 0.38 per 1,000 live births.

Data Sources and References:

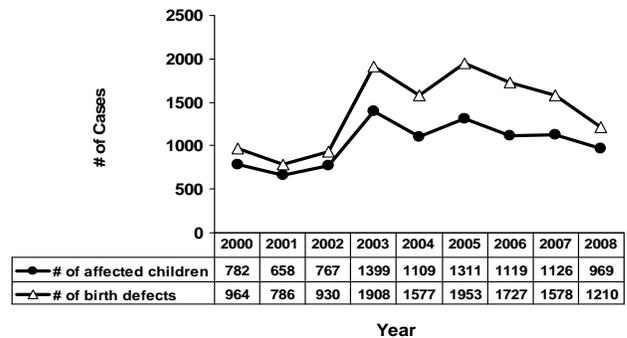
1. Centers for Disease Control and Prevention. *Birth Defects*. www.cdc.gov/ncbddd/bd/default.htm
2. National Birth Defects Prevention Network (NBDPN). *Guidelines for Conducting Birth Defects Surveillance*. Sever, LE, ed. Atlanta, GA: National Birth Defects Prevention Network, Inc., June 2004.
3. Russo, C. A. (Thomson Medstat) and Elixhauser, A. (AHRQ). *Hospitalizations for Birth Defects, 2004*. HCUP Statistical Brief #24. January 2007. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/reports/statbriefs/sb24.pdf
4. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.
5. Kansas Department of Health and Environment. Birth Defects Information System (BDIS). Surveillance data, 2001-2008.
6. Kansas Department of Health and Environment. Kansas Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Program data for clients who delivered in CY 2008-2010.

Epidemiology and Trends

Birth defects are an important health issue in Kansas. From 2000 through 2008, there were 361,093 live births that occurred to residents of Kansas. Of these births, there were 9,240 children (2.6% of all live births in Kansas) that had at least one reported birth defect. During this same time frame, the Birth Defects Information System (BDIS) received reports on a total of 12,633 birth defects. This averages about 1,170 reports per year since 2003. The increase reporting for birth defects in 2003 is attributed to statewide education effort led by BDIS; whereas, the increase in 2005 stems from an education effort led by vital statistics with the introduction of the revised birth certificate.

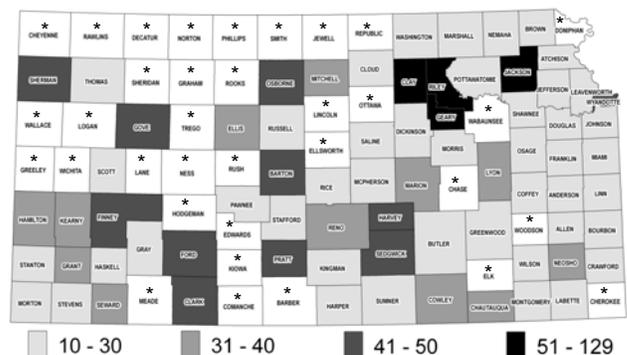
There are several areas where Kansas can work to prevent major birth defects of the baby's brain and spine. Folic acid (vitamin B9) taken prior to pregnancy and within the first few months of pregnancy can prevent brain (anencephaly) and spine (spina bifida) defects. These defects will be collectively referred to here as neural tube defects (NTDs). From 2001 through 2008, there were 139 NTDs reported to BDIS.⁵ The rate of NTDs is highest for births in Kansas mothers less than 20 years of age or in mothers older than 34 years of age. Kansas Hispanic mothers had a higher rate (6.4 per 10,000 live births) of giving birth to a child with NTDs than non-Hispanics mothers (4.0 per 10,000 live births). From 2005-2008, Kansas mothers who have Medicaid (4.0 per 10,000 live births) had a higher rate of giving birth to a child with NTD than mothers who had private or employer insurance (2.3 per 10,000). In WIC clients (a high risk group), women aged 20-30 were significantly less likely to report the use of folic acid supplements (33.7%) than either women under 19 years (38.4%) or women over 30 years (35.9%).⁶

Unduplicated Count of Affected Children and Total Number of Birth Defects Reported Kansas (2000-2008)



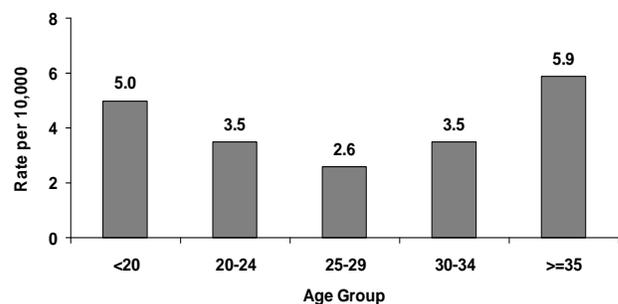
Note: In 2005, revised birth certificate was implemented.
Source: KDHE, Birth Defects Information System as reported of March 15, 2010

The Rate of Birth Defect Cases per 1,000 Live Births by Mother's County During Pregnancy Kansas (2001-2008)



Source: KDHE, Birth Defects Information System, 2001-2008.
Note: a * means cannot estimate rate, less than 10 cases

Rate of NTDs* per 10,000 Live Births by Mother's Age in Years Kansas (2001-2008, Total 139 Cases)



*Neural tube defects (anencephaly and spina bifida)
Source: KDHE, Birth Defects Information System

Newborn Metabolic Screening

KANSAS GOAL: Reduce morbidity and mortality in infants with metabolic and genetic conditions.

Indicators:

1. Number and percent of newborns screened at birth for conditions mandated by the Kansas Newborn Screening program.
2. Number of newborns with appropriate and timely follow-up.
3. Number of diagnosed newborns that receive appropriate and timely treatment and/or service interventions.

Definition: Tests of newborns that screen for serious, treatable genetic diseases. The newborn screening tests done in the United States are decided on a state-by-state basis.¹ However, nearly all states are screening for the 28 metabolic conditions recommended by the American College of Medical Genetics.

Significance: Newborn metabolic screening is an essential, preventive public health program for early identification of disorders that can lead to severe health problems. State screening of newborns for specified disorders began in the 1960s and has since become widely accepted throughout the world as an important and effective public health activity. On 1 July 2008, Kansas expanded screening to 29 conditions recommended by the American College of Medical Genetics.² The 29 conditions currently screened by Kansas are: Hearing, 5 fatty acid disorders (CUD, LCHAD, MCAD, TFP, VLCAD), 9 organic acid disorders (GA-1, HMG IVA, 3-MCC, Cbl-A,B, BKT, MUT, PROP, MCD), 6 amino acid disorders (ASA, CIT, HCY, MSUD, PKU, TYR-1), 2 endocrine conditions (CH, CAH), 3 hemoglobin conditions (Hb S/S, Hb S/β Thalassemia, Hb S/C), and 3 other conditions (BIO, GALT, CF).³ Newborn screening programs are important to the public's welfare because they identify certain disorders which, if untreated, may result in mental retardation, other disabilities and possibly lead to the death of the affected child. By identifying children early, a definitive diagnosis can be made and treatment can begin early enough to achieve healthy outcomes.

Healthy People 2010 Objectives: Related to Objectives 16.20: (Developmental) Ensure appropriate newborn bloodspot screening, follow-up testing, and referral to services. Related to Objective 16.21: (Developmental) Reduce hospitalization for life-threatening sepsis among children aged 4 years and under with sickling hemoglobinopathies (sickle cell).⁴

Data Source and Reference:

1. MedicineNet.com. www.medterms.com/script/main/art.asp?articlekey=4564
2. Kansas Department of Health and Environment. Kansas Newborn Screening program data, 2009. www.kdheks.gov/newborn_screening.
3. National Newborn Screening and Genetics Resource Center. 26 January 2010. <http://genes-r-us.uthscsa.edu>. Accessed 1 April 2010.
4. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2009.

Epidemiology and Trends

Approximately 43,000 Kansas newborns are screened each year. Of those, an estimated 2,800 newborns have out of range test results indicating a need for further testing. Newborn screening (NBS) follow-up coordinators at KDHE track children with out of range results to make sure that they receive further testing and, if needed, treatment. Of the 2,800 babies who have an out of range screen each year, about 60 will be diagnosed with a condition. In 2008, 62 newborns confirmed with metabolic conditions received appropriate follow-up.²

In Kansas, after an infant is 24 hours old, hospital personnel collect a blood spot specimen that is sent to the Kansas Health and Environmental Laboratories (KHEL) for processing. The neonatal screening staff at KHEL notifies the NBS follow-up coordinators of out of range results. The NBS follow-up coordinators serve as case managers. They notify the primary care physician (PCP) of the findings by phone, mail, or fax. The PCP is informed of consultation and referrals available through the Children and Youth with Special Health Care Needs program. The parents are also notified of the need to follow up with the PCP regarding out of range screening results. The NBS follow-up coordinators continue to provide case management services to assure that the infant has appropriate testing, diagnosis, referral and treatment services.

The Kansas program encompasses all components of a comprehensive state system:

- Screening - About 43,000 KS births/initial tests each year with about 2,800 needing retest.
- Follow-up - Appropriate health care providers are notified and staff track to assure retesting.
- Diagnosis - Newborns with positive screens see medical specialists for a final determination.
- Management - Families and their infants receive ongoing care through a medical team.
- Education - Information and education are available to families and to providers.
- Evaluation - Advisory council oversees program/systems to ensure effectiveness/efficiency.

Newborn Screening Indicators

Newborns Screened, Confirmed, Diagnosed and Received Treatment and/or Intervention Kansas, 2007 and 2008		
	2007	2008
# screened*	42,900	42,553
% of live births screened**	99.99%	99.97%
# confirmed	45	62
# diagnosed and received treatment and/or intervention	45	62

*Parent refusal of test: 1 case in 2007 and 13 cases in 2008

**Denominator: occurrence births (42,901 in 2007 and 42,566 in 2008)

Source: KDHE, Bureau of Public Health Informatics; Newborn screening program data, CY 2007 and 2008

Newborn Screening Results

Number of Infants with a Confirmed Diagnosis First Detected Kansas, 2008	
Condition	Number of Cases
Congenital Hypothyroidism (CH)	31
Galactosemia (Gal)	2
Congenital Adrenal Hyperplasia (CAH)	1
Cystic Fibrosis (CF)	7
Biotinidase	1
Hemoglobin	15
Amino Acid	4
Fatty Acid	1
Organic Acid	0

Source: KDHE, Newborn screening program data, CY 2008

Newborn Hearing Screening

SoundBeginnings - Kansas Early Hearing Detection and Intervention (EHDI) Program

KANSAS GOAL: Increase the proportion of newborns who are screened for hearing loss before age 1 month, have audiologic evaluation before age 3 months, and are enrolled in appropriate intervention services before age 6 months.

Indicators:²

1. Percent of newborns who have been screened for hearing before hospital discharge.
2. Percent of infants screened before 1 month of age.
3. Percent of infants with audiologic evaluation completed before 3 months of age.
4. Number of infants identified with permanent congenital hearing loss (PCHL).
5. Number of infants with PCHL enrolled in early intervention services before 6 months of age.

Definition: SoundBeginnings is the state funded EDHI program ran by the Kansas Department of Health and Environment. The program follows hearing screens of babies from the initial screens in the hospitals to appointments with hearing specialists, and to the agencies that provide services for children with hearing loss. Babies identified with hearing loss are referred to early intervention services so that they can receive the appropriate help for normal development of speech and language.

Significance: Hearing loss is the most common occurring birth defect with 3 out of every 1,000 babies is identified with hearing loss. This translated into 33 babies per day (or 12,000 each year) are born in the United States with permanent hearing loss.^{2,3} The American Academy of Pediatrics, the American Academy of Audiology, the Joint Committee on Infant Hearing, and the National Association of the Deaf recommend that all babies be screened for hearing loss before the baby leaves the hospital. Research has compared children with hearing loss who receive early intervention and amplification before 6 months of age with those who receive interventions after 6 months of age. By the time they enter first grade, children identified earlier are 1-2 years ahead of their later-identified peers in language, cognitive, and social skills. Even children with hearing loss in only one ear are ten times as likely to be held back at least one grade compared to a matched group of children with normal hearing. The program is extremely cost effective. At the time of graduation for a child with hearing loss identified early and given appropriate educational, medical, and audiological services more than \$400,000 in special education costs can be saved.

Healthy People 2010 Objective: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months.

Data Source and Reference:

1. SoundBeginnings program data, 2008. The data represents only those data reported to SoundBeginnings as of 15 March 2010.
2. Joint Committee on Infant Hearing. (2007). Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. *Pediatrics*. 120, p. 898-921.
3. National Center for Hearing Assessment and Management (NCHAM). Universal Newborn Hearing Screening: Fact Sheet. *University of Utah*. Logan, UT. www.infanthearing.org/resources/fact.pdf, Accessed 1 April 2010.

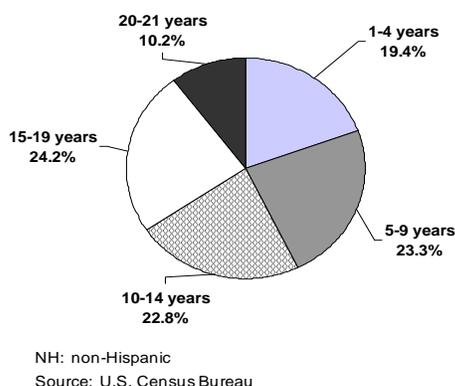
SECTION II

CHILDREN AND ADOLESCENTS

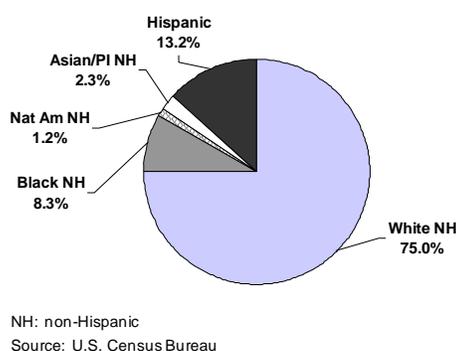
Demographics

Based on the Title V definition, the children and adolescents population group is defined as “a child from first birthday through 21st year.”¹ In 2008, there were 824,385 children and adolescents aged 1 to 21 years living in Kansas, which represents 29.4% of the Kansas population.¹ The Kansas population, like that of the nation, is becoming more racially and ethnically diverse.¹ One-in-four of Kansas children and adolescents belong to a racial or ethnic minority.¹ Looking across the age groups, three-in-ten young children (1 to 4 years) are part of a racial/ethnic minority versus two-in-ten young adults (20 to 21 years).¹ About 10% of Kansans age 15 to 21 are Hispanic, compared to 16.6% of young children.¹ Among families with children under 18, 29.4% are single-parent families versus married-couple families.²

**Children (ages 1-21) by Age Group
Kansas, 2008**



**Children (ages 1-21) by Race and Ethnicity
Kansas, 2008**



According to the 2008 American Community Survey, among people at least five years old living in Kansas in 2008, 10% spoke a language other than English at home.² Of those speaking a language other than English at home, 66% spoke Spanish and 34% spoke some other language; 42% reported that they did not speak English “very well.”³ Compared to the U.S. population (2008), a lower percentage of Kansas children under age 18 live in households with incomes below the 100% federal poverty level (17.1% versus 19.1% for the U.S.).⁴ Poverty is more common in Kansas families headed by single females (42.5% versus 38.9% for the U.S.)⁴ and those with children under the age of five in the household, regardless of race or ethnicity. Most Kansas children under age 18 living in poverty live in three population centers: Sedgwick County (Wichita), Wyandotte County (Kansas City, Kansas) and Shawnee County (Topeka).⁵

Data Sources and References:

1. Kansas Department of Health and Environment, Bureau of Family Health. *MCH2015*. www.datacounts.net/mch2015/documents/MCH2015_Report.pdf
2. U.S. Census Bureau, 2008 American Community Survey. *Kansas – Selected Social Characteristics*.
3. U.S. Census Bureau, 2008 American Community Survey. *Kansas – Population and Housing Narrative Profile: 2008*.
4. U.S. Census Bureau, Current Population Survey, 2009 Annual Social and Economic Supplement. *POV46: Poverty Status by State: 2008*.
5. U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE). *Estimates for Kansas counties, under age 18 in poverty, 2008*.

Children's Health Insurance Coverage

KANSAS GOAL: Increase health insurance coverage for Kansas children.

Indicators: Percent of children ages <18 without health insurance.

Definition: Insurance against loss by illness or bodily injury. Health insurance provides coverage for medicine, visits to the doctor or emergency room, hospital stays and other medical expenses. Policies differ in what they cover, the size of the deductible and/or co-payment, limits of coverage and the options for treatment available to the policy holder.¹

Significance: Health insurance is a mechanism to provide financial access to needed health care services by distributing the costs and risks. Health insurers manage and guarantee these costs and risks of providing health care services. Health insurance is purchased by employers, directly by individuals, and through state and federal government programs such as Medicare and Medicaid. People who are not covered by health insurance must pay for all services directly out of their incomes. Lack of health insurance is a risk factor in delaying or not receiving needed care.² Children without health insurance are less likely to have a regular health care provider; less likely to have a regular dentist, or to have had a dental visit in the last year; and more likely to be in fair or poor health than low-income, privately-insured children.³

Healthy People 2010 Objective: Increase the proportion of children with health insurance coverage to 100%.

Data Sources and References:

1. Investorwords.com. www.investorwords.com/2289/health_insurance.html.
2. Washington State Department of Health. The Health of Washington State. A statewide assessment of health status, health risks, and health care services. July 2002. Page 357.
3. Maine Marks for children, Families & Communities. *2007 Maine Marks. Indicator: Children and Youth With Health Insurance.* www.mainemarks.org/indicators2007/ind13.html.
4. U.S. Census Bureau, Current Population Survey (CPS) Table Creator for the Annual Social and Economic Supplement. www.census.gov/hhes/www/cpstc/cps_table_creator.html.
5. Kansas Health Institute. Annual Insurance Update 2010: Health Insurance in Kansas. July 2010. www.khi.org.

Immunization

KANSAS GOAL: Increase and/or maintain vaccination coverage levels among children aged 19 to 35 months.

Indicator: Percent of 19 to 35 month olds who have received the full schedule of age appropriate immunizations* against Measles, Mumps, Rubella, Polio, Diphtheria, Tetanus, Pertussis, *Haemophilus influenzae*, and Hepatitis B.

Definition: Immunizations (vaccinations) work by stimulating the immune system, the natural disease-fighting system of the body. A healthy immune system is able to recognize invading bacteria and viruses and produce substances (antibodies) to destroy or disable them. A vaccine typically contains an agent that resembles a disease-causing microorganism, and is made from weakened, killed, or the products/parts of microorganisms. The agent stimulates the body's immune system to recognize the agent as foreign, destroy it, and 'memorize' it, so that the immune system can more easily recognize and destroy any of these microorganisms that it later encounters. Sometimes the immune system's ability to recognize a microorganism decreases with time and periodic repeat injections (boosters) are needed to ensure continued protection against the microorganism.¹

Significance: Although the immunization status of children is not a health outcome, immunizations are closely linked to childhood diseases that can cause serious complications and even death. Immunization is one of the Healthy People 2010 Leading health Indicators that reflect the major public health concerns in the U.S. When a high percentage of population has immunity, the spread of these diseases is slower and more limited. Vaccination coverage levels of at least 90% are, in general, sufficient to prevent the circulation of microorganisms that cause vaccine-preventable diseases (VPDs). Because of its safety, ease, and high success rate, Kansas law requires that all children enrolled in public and private schools to be vaccinated against specific microorganisms. Maintenance of high vaccination coverage levels in early childhood is the best way to prevent the spread of VPDs in children and adults.³ Thus, immunization rates for two-year-old children (a group with little resistance to microorganisms but with a lot of contact to other groups in the population) can serve as one measure for the health of all children.

Healthy People 2010 Objective: Increase and/or maintain vaccination coverage levels among children aged 19 to 35 months.² Target: 90% for vaccine and specifically 80% for 4:3:1:3:3 vaccine series.

Data Sources and References:

1. MedicineNet.com. www.medterms.com/script/main/art.asp?articlekey=3909
2. Miller C, Fine A, Adams-Taylor S. *Monitoring Children's Health: Key Indicators, 2nd edition*. Washington, DC: American Public Health Association, 1989.
3. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. Page 14-37.
4. National Immunization Survey. www.cdc.gov/nip/coverage/#NIS
5. Kansas Department of Health and Environment. *Retrospective Immunization Survey*. www.kdheks.gov/immunize/retro_survey.html

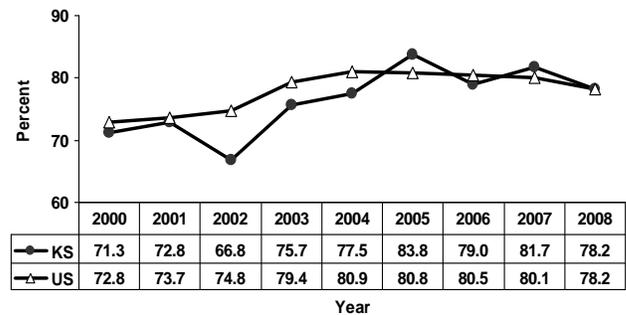
Note: *The 4:3:1:3:3 combination series includes four doses of Diphtheria, Tetanus, and Pertusis (DTaP) vaccine; three doses of Polio vaccine; one dose of Measles-Mumps-Rubella (MMR) vaccine; three doses of *Haemophilus influenzae* type b (Hib) vaccine, and three doses of Hepatitis B (HepB) vaccine.

Epidemiology and Trends

The percentage of children who have completed the 4:3:1:3:3 vaccine series has remained relatively stable in Kansas. Although a slight decline was observed beginning in 2006, this can be attributed to the nationwide shortage of the *Haemophilus influenzae type B* (Hib) vaccine.⁴ When Hib vaccine is excluded, the percent of children that completed DTaP (4): Polio (3): MMR (1): _ : HepB (3) vaccine series in Kansas is 80.1%. This is above the national average for 4:3:1: _ :3 vaccine series completed, which is 78.7% of children. Although Hib is not required for public school entry in 2010-2011, it is required for all students less than 5 years old in public preschool programs operated by a school. For students up through the 9th grade entering 2009-2010 school year, at least one dose of Varicella and three doses of hepatitis B are required.

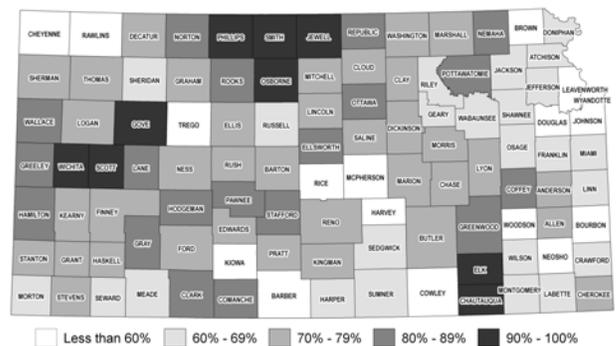
According to the 2008-2009 Retrospective Immunization Survey, the percent of Kansas children that completed the 4:3:1:3:3 vaccine series has remained the same as last year.⁵ While the retrospective survey reported that 63.1% of Kansas kindergarten children completed the vaccination series at 2 years, the corresponding National Immunization Survey (NIS) of 2004-2005 reported vaccine completion rates of 83.8% for Kansas children 19-35 months. These differences may stem from differences in reporting age of the child, sampling strategies, and Hib not being required for public school entry. The vaccine most missed by Kansas kindergartners at 2 years was DTaP (21.0%) followed by Hib (20.1%). Immunization rates for children were higher in the more rural western half of Kansas than the more urban eastern half of the state.

Estimated Vaccination Coverage of Children 19-35 Months with 4:3:1:3:3 Series Kansas and U.S. (2000-2008)



Note: In 2007 and 2008, the US had shortage of Hib vaccine.
Source: National Immunization Survey

Percent of Kansas Kindergartners at Age 2 that Completed 4:3:1:3:3 Vaccine Series by County (School Year 2008-2009)



Source: KDHE. Retrospective Immunization Survey, 2008-2009.

Lead Poisoning in Children

KANSAS GOALS:

1. Housing Goal: Eliminate lead hazards from where children live, play, and visit by providing a mechanism to allow the public to make lead-safe housing choices.
2. Health Goals: Increase the number of children <72 months of age that have received a blood lead test. Decrease the percentage of children tested whose blood lead levels are $\geq 10 \mu\text{g/dL}$.

Indicator: Number of lead poisonings in children 0 to 72 months of age.

Definition: An elevated blood lead level is defined as a level of lead in the blood high enough to require medical evaluation for the possibility of adverse mental, behavioral, physical, or biochemical effects. Lead plays no known useful function in the chemistry of the body.¹

Significance: Lead poisoning is a highly preventable health problem affecting Kansas children. High lead levels in the bodies of young children can affect the developing nervous system, resulting in delayed development, decreased IQ, slowed growth, increased aggression, and are at greater risks for developing hearing, learning, and behavior problems.^{2,3} High levels of lead (greater than $20 \mu\text{g/dL}$) can have adverse effects on the kidneys and blood-producing organs as well as the digestive and reproductive systems.¹ Very high blood lead levels (greater than $70 \mu\text{g/dL}$) can cause devastating health consequences, including seizures, coma and death. The population most vulnerable to lead poisoning are developing fetuses due to constant exposure from blood levels of mothers and easier incorporation into the body due to developing brain and nervous systems. The most common exposure to lead in children is through ingestion of lead dust from deteriorating lead based paint (older windows, doors and trim, or walls) or improper renovation, repair, or painting projects involving lead based paints.³ Early identification and treatment of lead poisoning reduces the risk that children will suffer permanent damage.² Prevention of lead poisoning exposure through education and avocation of healthy homes activities is the recommended primary goal for all MCH providers.

Healthy People 2010 Objective:

1. Housing Goal: Increase the proportion of persons living in pre-1950s housing that has been tested for the presence of lead-based paint. Target: 50%
2. Health Goal: Eliminate elevated blood lead levels in children. Target: 0%

Data Source and Reference:

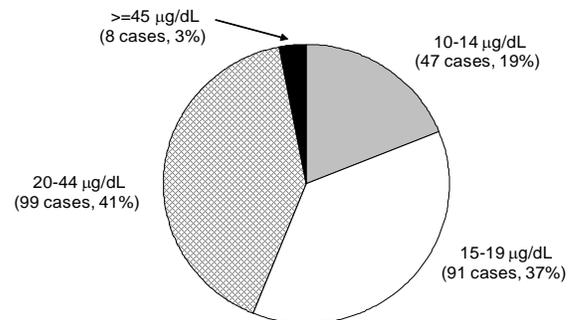
1. Miller C, Fine A, Adams-Taylor S. *Monitoring Children's Health: Key Indicators, 2nd Edition*. Washington, DC: American Public Health Association, 1989.
2. Bureau of Epidemiology and Disease Prevention, Division of Health, Kansas Department of Health and Environment. *Reportable Infectious Diseases in Kansas, 2005 Summary*. Page 71.
3. Lead-Free Kids campaign. Environmental Protection Agency (EPA). (2010). <http://www.leadfreekids.org/index.html>
4. Kansas Department Health and Environment (KDHE). Kansas Healthy Homes and Lead Hazard Prevention Program: Program Report 2007 through 2008. (2008). <http://www.kshealthyhomes.org>
5. Kansas Department Health and Environment (KDHE). Kansas Healthy Homes and Lead Hazard Prevention Program. Program Data, 2009.

Epidemiology and Trends

Lead poisoning in children remains a problem for Kansas. From 2007 through 2008, over 60,000 children under age 6 were tested for lead.⁴ Of the children tested, about 44% were eligible for Medicaid. There were 188 children under age six **confirmed** for lead poisoning (blood lead levels $\geq 10 \mu\text{g}/\text{dL}$) for the first time in 2007 and another 140 children under age six **confirmed** for lead poisoning for the first time in 2008. *Nearly 70% of these children confirmed for lead poisoning were under the age of two.* Over 130 children (40% of all confirmed cases) diagnosed with lead poisoning for the first time had blood levels equal to or exceeding $15 \mu\text{g}/\text{dL}$ between 2007 and 2008. During this same time frame, more than 220 families (67%) with a confirmed lead poisoning case successfully completed an in-home environmental investigation, while 25 (7.5%) of all confirmed case families refused an environmental investigation.

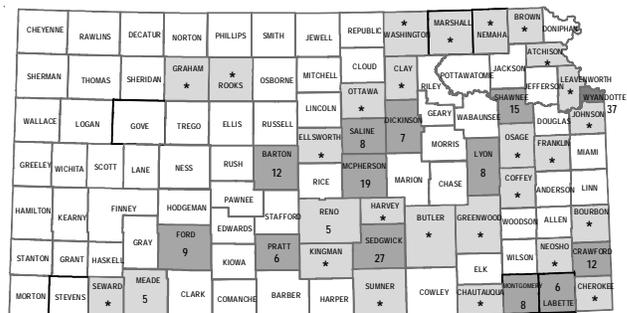
The prevalence of lead poisoning for children under six based on 2009 lead program data suggests a number of areas that Kansas could improve.⁵ Children were considered to have lead poisoning if they had one venous blood test or two filter paper blood tests with blood lead levels equal to or exceeding $10 \mu\text{g}/\text{dL}$. Of the 245 identified lead poisoning cases, 88 (36%) occurred in the six targeted 'high-risk' counties of Johnson, Reno, Saline, Sedgwick, Shawnee, and Wyandotte. These counties were considered 'high-risk' due to higher densities of 1) pre-1960 housing, 2) minority population groups, 3) children in poverty, and 4) children under the age of six. Slightly more females (52%) had lead poisoning than males. Sixty-three percent (154) of children identified with lead poisoning were eligible for Medicaid. Forty-nine percent of children with lead poisoning had blood lead level at or exceeding $20 \mu\text{g}/\text{dL}$ and were most common in toddlers (1-3 years old).

Percent of Prevalent Lead Poisoning Cases for Children Under 6 Years by Blood Lead Level Kansas, 2009



Source: KDHE, Kansas Healthy Homes and Lead Hazard Prevention Program, 2009

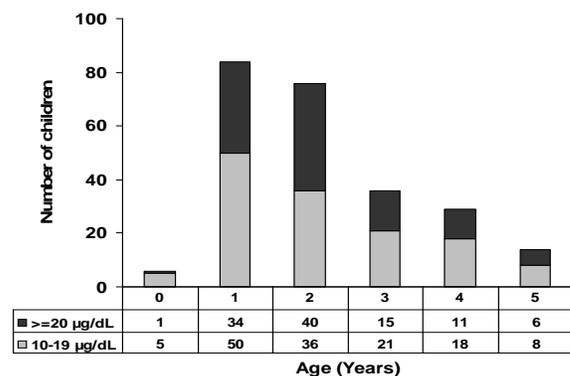
The Number (Prevalence) of Children Under 6 Years that Had Lead Poisoning by County Kansas, 2009



NOTE a * means less than 5 cases.

Source: KDHE, Kansas Healthy Homes and Lead Hazard Prevention Program, 2009.

Number of Children Under 6 Years with Lead poisoning by Age (Years) and Blood Lead Level Kansas, 2009



Source: KDHE, Kansas Healthy Homes and Lead Hazard Prevention Program, 2009

Oral Health

KANSAS GOALS: Increase the oral health status of Kansas children.

Indicators:

1. Percent of children whose parents report that the child's oral health is very good or excellent.
2. Percent of children in third grade who have dental caries in their primary or permanent teeth.
3. Percent of children in third grade who have received protective sealants on at least one permanent molar.

Definitions: (1) Tooth decay (cavities) are an infectious disease caused by bacteria, *Streptococci mutans*. Tooth decay occurs when these bacteria, which adhere to the surface of tooth, produce acids from carbohydrates that breaks down (demineralizes the enamel and dentin) the tooth. One widely accepted method to prevent tooth decays is through the use of (2) dental sealants, a plastic-like material attached to the chewing surfaces of permanent molar teeth. Dental sealant work by preventing the acid by-products of bacteria from contacting the tooth and thus prevents the pits and grooves where decay can occur.¹

Significance: Oral health is a good indicator of the overall short term and long term health of children. Although tooth decay is most common disease of childhood (5 times more common than asthma and 7 times more common than hay fever), it is largely preventable.²⁻⁴ Good nutrition, proper brushing practices, and the use of fluoride and dental sealants can prevent tooth decay from occurring. Prevention must begin early and continuously throughout childhood because 17% of children aged 2-4 years already have tooth decay, 52% of children by age eight have tooth decay, and 78% of children by age 17 have tooth decay.³ Once established, cavities require treatment because they only grow larger over time. If tooth decay is left untreated, the pain and resulting infections may affect the child's eating, speaking, playing, sleeping, and learning habits. Neither are the effects limited to small children, it is estimated that 7% of children by the age of 17 years have lost at least one permanent tooth due to decay.

Healthy People 2010 Objectives: (1) Reduce the proportion of children who have dental caries experience in their primary or permanent teeth to 42%. (2) Increase the proportion of children who have received dental sealants on their molar teeth to 50%.

Data Source and References:

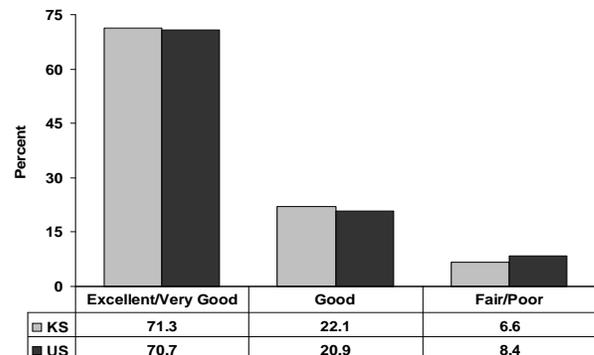
1. Kansas Department of Health and Environment. Bureau of Oral Health. (2004 and 2007). *Smiles Across Kansas: The Oral Health of Kansas Children*. <http://www.kdheks.gov/ohi/index.html>
2. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. Page 21-1.
3. National Center for Chronic Disease Prevention and Health Promotion. Division of Oral Health. (15 Dec 2009). *Children's Oral Health*. www.cdc.gov/OralHealth/topics/child.htm
4. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal, and Child Health Bureau. *Child Health USA 2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2006.
5. Child and Adolescent Health Measurement Initiative. *2007 National Survey of Children's Health, Data Resource Center for Child and Adolescent Health website*. www.nschdata.org

Epidemiology and Trends

According to the 2007 National Survey of Children's Health, one in seven parents of Kansas children reported that their child's teeth were in excellent or very good condition.⁵ This compares similarly to the nation. Parents of Kansas children aged 6-11 were significantly less likely (p-value<0.05) to report that their children's teeth were in excellent/very good condition (64.7%) than children aged 1-5 (78.2%) or children aged 12-17 (72.1%). This probably stems from less awareness by parents until decay has occurred and poorer dental care by children as they lose their baby teeth. The income gradient observed in oral health may partly explain some of the disparities seen in Kansas children. Significantly more (p-value<0.05) parents of white children (77%) reported that their child's teeth were in excellent or very good condition than parents of black (60%) or Hispanic (46.9%) children. A significantly higher (p-value<0.05) percentage Kansas children in two parent biological or adoptive families (77%) report that their child had excellent or very good teeth than two-parent stepfamilies (62.5%) or single mother families (58.8%). These disparities may be influenced by differences in insurances. Significantly more (p-value<0.05) Kansas children with private insurance (79.2%) reported having teeth in excellent or very good condition than children with public insurance (57.6%).

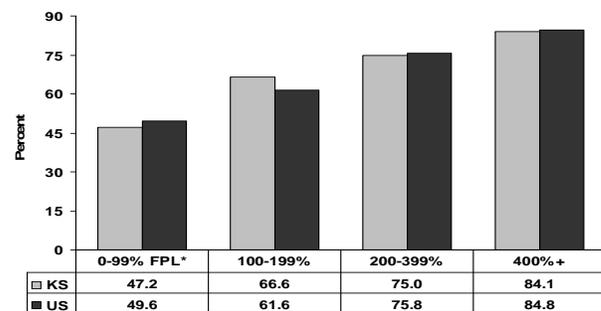
Kansas dental health outcomes compares favorably with the rest of the U.S. Sixty-five percent of Kansas public water systems use fluoride compared to 69% nationally.³ Although Kansas children have fewer broken teeth than nationally, Kansas was not significantly different in prevalence of oral health problems - 10% for one oral health problem and 8% for more than one oral health problem.⁵ According to the 2007 Smiles Across Kansas, 21% of sampled 3rd graders had untreated dental decay.¹ About 36% of sampled 3rd graders had dental sealants, but this percentage was lower in black and Hispanic children.¹

Conditions of Child's Teeth (ages 1-17) as Rated by the Parents Kansas and U.S., 2007



Source: National Survey of Children's Health, 2007

Children's Teeth (ages 1-17) in Excellent/Very Good Condition by Income Kansas and U.S., 2007



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National Survey of Children's Health, 2007

Oral Health Problems of Children (ages 1-17) Kansas and U.S., 2007

Estimated Prevalence		
Issue	Kansas	U.S.
Tooth ache	10.4%	10.7%
Decay/cavities	17.3%	19.4%
Broken teeth*	2.8%	4.1%
Bleeding gums	2.1%	3.3%

Note * Significantly different

Source: National Survey of Children's Health, 2007

Injury

KANSAS GOAL: Reduce the number of deaths to children and adolescents caused by injuries.

Indicator: Rate (per 100,000) of injury deaths among children and adolescents.

Definition: Injury deaths include both unintentional and intentional, excluding adverse events due to medical care (children: ages 1-14, adolescents/young adults: ages 15-24).

Significance: Injuries, particularly unintentional injuries are the leading cause of death for children and adolescents/young adults both in Kansas and in the U.S. The risk of injury is so great that most persons are seriously injured at some time during their lives. Nevertheless, this widespread human problem is often taken for granted, in the belief that injuries happen by chance and are the result of unpredictable “accidents.” In fact, many injuries are not “accidents”, or random, uncontrollable events. Rather, most injuries are predictable and preventable.

Healthy People 2010 Objectives: 15-13. Reduce deaths caused by unintentional injuries to 17.5 deaths per 100,000 (all ages).

Data Source and Reference:

1. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html
2. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/ncipc/wisqars/

Note: The injury mortality data presented here are consistent with the External Cause of Injury Mortality Matrix for ICD-10 found on the National Center for Health Statistics (NCHS) website at http://www.cdc.gov/nchs/injury/injury_tools.htm (www.cdc.gov/nchs/data/injury/icd10_external.pdf).

Epidemiology and Trends

In 2008, injuries caused the deaths of 53 children aged 1 to 14 years and 259 adolescents and young adults aged 15 to 24 years in Kansas. In 2007 (the most recent year final death data is available), the Kansas injury death rate was slightly lower than the U.S. rate for children ages 1-14 (8.4 and 8.5, respectively) and lower for adolescents and young adults 15-24 (57.0 vs. 61.9).^{1,2}

In Kansas, 2007 through 2008, the injury death rates for both ages 1-14 and ages 15-24 were highest among Black non-Hispanic children (17.1 and 103.3, respectively). Motor vehicle crashes (44.2%, 34 deaths), drowning (18.2%, 14 deaths), and fires and burns (5.2%, 4 deaths) were the most common causes of unintentional injury death among children aged 1 to 14 years. Motor vehicle crashes (73.4%, 207 deaths) were the most common cause of unintentional injury death among adolescents and young adults aged 15 to 24 years, followed by poisonings (12.1%, 34 deaths), and drowning (3.2%, 9 deaths). For non-Hispanic white and Hispanic adolescents and young adults, unintentional injury resulted in the highest percent of injury deaths. However, for non-Hispanic black adolescents and young adults, homicides resulted in more deaths than unintentional injuries.

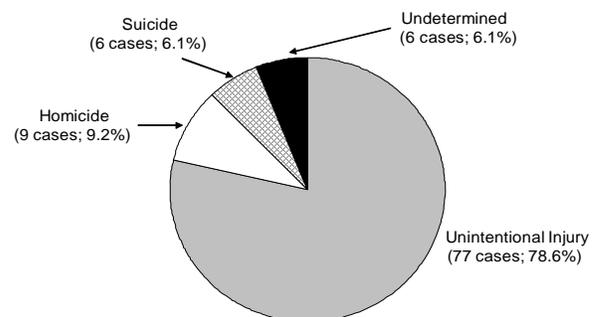
Injury Mortality

	Ages 1-14		Ages 15-24	
	Deaths	Rate*	Deaths	Rate*
Kansas (2008)	53	9.8	259	63.0
Kansas (2007)	45	8.4	234	57.0
U.S. (2007)	4,809	8.5	26,267	61.9

Race/Ethnicity (2007-2008)	Ages 1-14		Ages 15-24	
	Deaths	Rate*	Deaths	Rate*
White, non-Hispanic	62	8.0	342	53.6
Black, non-Hispanic	13	17.1	61	103.3
Hispanic	17	11.1	67	81.9

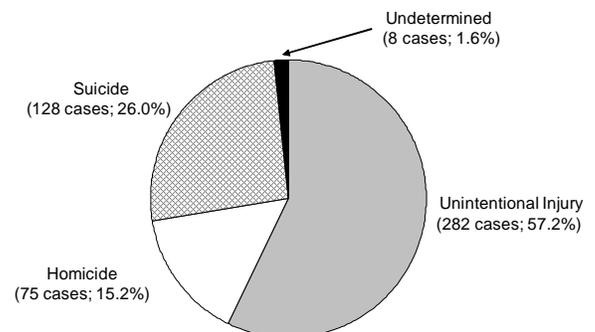
*Rate: Deaths per 100,000 population
Source: Bureau of Public Health Informatics

Injury Deaths by Intent (Ages 1-14) Kansas, 2007-2008



Source: Bureau of Public Health Informatics

Injury Deaths by Intent (Ages 15-24) Kansas, 2007-2008



Source: Bureau of Public Health Informatics

Missed School Days

KANSAS GOAL: Reduce the number of school days missed due to injury, disability, or illness

Indicator: Reduce the percentage of school aged children who have missed ten or more days of school from illness or injury in the past year.

Definition: Missed school days (student absenteeism) is defined by number of full days missed. Kansas State Department of Education records school days missed according to school membership, which is the number of days students have been enrolled in the school during the current school year.¹ For example, students who transferred in halfway through the year would only be accountable for the last half of the year that they were present at the current school.

Significance: Health-related problems play a major role in limiting the motivation and ability of students to learn. These health problems may impair student's sensory perceptions or cognition; affect school attendance, connectedness and engagement.² Studies show that better attendance is related to higher academic achievement for students of all backgrounds.³ Students who attend school regularly score higher on tests than their peers who are frequently absent.³ A growing body of evidence suggest that health disparities may partially explain how low social economic status leads to lower education achievement and education attainment.² Students who fail to meet the required minimum time for education instruction can be held back a grade or extend the time for high school graduation. These factors increase the chances of substance abuse, gang involvement, criminal activity, and the student dropping out from school.^{2,4}

Healthy People 2010 Objective:

7-1. Increase high school completion to 90%.

24-5. (Developmental) Reduce the number of school or work days missed by persons with asthma due to asthma.

Data Sources and References:

1. Kansas State Department of Education. 2007-2008 Data Mart School Year Data.
2. Basch, C.E. (Mar 2010). *Healthier Students Are Better Learners: A Missing Link in School Reforms to Close the Achievement Gap*. The Campaign for Education Equity. No. 6. Teachers College, Columbia University. www.equitycampaign.org
3. Epstein, JL; Sheldon, SB. (2002). Present and accounted for: Improving student attendance through family and community involvement. *Journal of Educational Research*, 95(5), p. 308-318.
4. Rumberger, R.; Lim S.A. (Oct 2008). *Why Students Drop Out of School: A Review of 25 Years of Research*. California Dropout Research Project. No. 15. www.lmri.ucsb.edu/dropouts.
5. Child and Adolescent Health Measurement Initiative. *2007 National Survey of Children's Health, Data Resource Center for Child and Adolescent Health website*. www.nschdata.org

Epidemiology and Trends

According to the 2007 National Survey of Children's Health, Kansas children missed slightly more days of school for illness or injury than the national average.⁵ There were no significant racial or ethnic differences in Kansas students who missed more than 11 days of school for injury or illness. However, a significantly (p -value<0.05) higher proportion of children with public insurance missed more school days than children with private insurance in Kansas. Eighteen and a half percent of Kansas children whose parents had incomes less than 100% Federal Poverty Level (FPL) missed 11 or more school days; whereas, 3.9% of Kansas children whose parents earned 200% or more FPL missed 11 or more days of school. Because single mothers are more likely to be in poverty than two parent households, this disparity in income and insurance type may explain why a significantly (p -value<0.05) greater proportion of children of single mothers (17.2%) missed 11 or more school days than children with two-parent families (5.2%). Another factor that may explain the higher proportion of children missing 11 or more days of school could be related to the prevalence of childhood disabilities, which accounts for 13% of the student body or 70,536 children. According to Kansas Department of Education data, a greater proportion of students with Individual Education Plan (IEP) missed 10 or more days of school than students without an IEP. However, IEPs for autism had a similar percentage of 10 or more school days missed in comparison to students who did not have an IEP.

School Days Missed

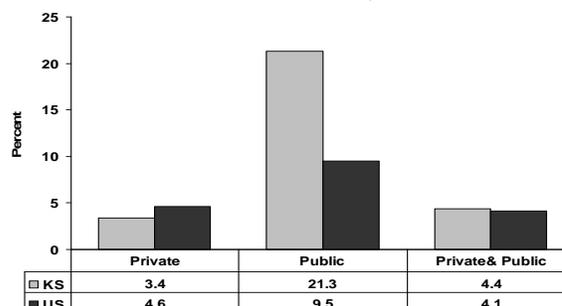
Percent of children (ages 6-17) who missed 11 or more days of during school year 2007 for injury or illness	
Kansas	7.0%
U.S.	5.8%

Source: National Survey of Children's Health, 2007 (Age 6-17 yrs.)

Percent of Kansas children who missed 10 or more days of public school by Individual Education Plan (IEP) type for 2007-2008 school year	
Primary Condition	Percent
Autism	21.4%
Developmental Disabilities	22.6%
Emotional Disturbances	35.9%
Hearing Impairments	23.6%
Specific Learning Disabilities	31.6%
Mental Retardation	29.0%
Orthopedic Impairments	35.2%
Speech/Language	16.7%
Other Health Impairments	32.0%
Multiple Disabilities	38.0%
No IEP/ Regular Education	21.3%

Note* This is for all absences including illness and injury
Source: KSDE, 2007-2008 Data Mart School Year data.

Percent of Children (ages 6-17) who Missed at Least 11 Days of School in the Past Year for Illness or Injury by Insurance Type Kansas and U.S., 2007



Source: National Survey of Children's Health, 2007

Overweight

KANSAS GOAL: Decrease the prevalence of overweight in Kansas children and adolescents.

Indicator: Percent of overweight or obese children and adolescents.

Definition: BMI is a common measure expressing the relationship (or ratio) of weight-to-height. It is a mathematical formula in which a person's body weight in kilograms is divided by the square of his or her height in meters (i.e., $wt/(ht)^2$). The BMI is more highly correlated with body fat than any other indicator of height and weight. Adults with a BMI of 25 to 29.9 are considered overweight, while individuals with a BMI of 30 or more are considered obese.¹ In children and teens, body mass index is used to assess underweight, overweight, and risk for overweight. Children's body fatness changes over the years as they grow. Also, girls and boys differ in their body fatness as they mature. This is why BMI for children, also referred to as BMI-for-age, is gender and age specific. BMI-for-age is plotted on gender specific growth charts. These charts are used for children and teens 2 - 20 years of age. For the 2000 CDC Growth Charts and additional information visit CDC's National Center for Health Statistics (www.cdc.gov/growthcharts).¹ Healthcare professionals use the following established percentile cutoff points to identify underweight and overweight in children (www.cdc.gov/nccdphp/dnpa/bmi/bmi-for-age.htm).

Underweight	BMI-for-age < 5 th percentile
Healthy weight	BMI-for-age 5 th percentile to < 85 th percentile
Overweight	BMI-for-age 85 th percentile to < 95 th percentile
Obese	BMI-for-age ≥ 95 th percentile

Significance: Overweight is the most common health problem facing US children.¹ The prevalence of obesity has increased dramatically in recent years in children of all ages. Obese children are at risk for becoming obese adults, and many known conditions observed in obese adults are now observed more frequently in youths. Type 2 diabetes represents a dramatic example.² Research has shown that overweight in children starts in the preschool years and over half of parents of overweight children are overweight themselves.²

Healthy People 2010 Objective: 19-3. Reduce the proportion of children and adolescents who are overweight or obese to 5%.

Data Sources and References:

1. Centers for Disease Control and Prevention (CDC). *BMI-Body mass index: BMI for children and teens*. <http://www.cdc.gov/nccdphp/dnpa/obesity/defining.htm>.
2. Quattrin, EL, Shaw, N, Shine, B, Chiang, E. *Obese children who are referred to the pediatric endocrinologist: characteristics and outcome*. *Pediatrics*. 2005;115(2)348-347.
3. Childhood Obesity Action Network. *State Obesity Profiles, 2009*. National Initiative for Children's Healthcare Quality, Child Policy Research Center, and Child and Adolescent Health Measurement Initiative. <http://www.childhealthdata.org/content/07ObesityReportCards.aspx>.
4. Centers for Disease Control and Prevention (CDC). *1991-2009 High School Youth Risk Behavior Survey Data*. <http://apps.nccd.cdc.gov/youthonline>.
5. Centers for Disease Control and Prevention (CDC). *Pediatric Nutrition Surveillance System*. <http://www.cdc.gov/pednss/>.

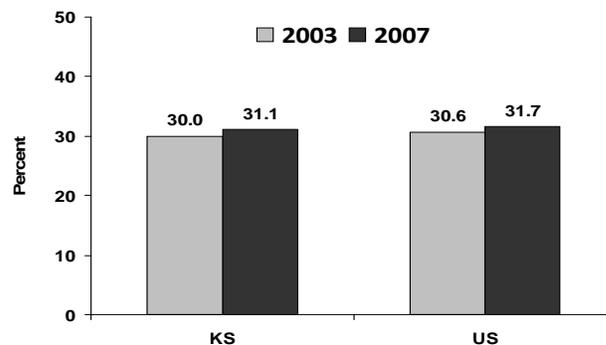
Epidemiology and Trends

According to the 2007 National Survey of Children's Health³, nearly one-in-three Kansas adolescents (10-17 years) is overweight or obese, which is similar to the national average and six times higher than the Healthy People 2010 objective (5%). Kansas ranked 30 in overall prevalence (1 is best). The Kansas prevalence of overweight and obese children has risen since 2003 (30.0%). The prevalence of overweight and obesity in Kansas among children in poor families (38.5%) is higher than the prevalence for children in higher-income families (23.5%). The overweight and obese prevalence for children covered by public insurance in Kansas (41.7%) was higher than the prevalence among children covered by private insurance (28.2%). Kansas children (ages 6-17) are more likely than their counterparts nationwide to participate in 4 or more days of vigorous physical activity per week, and less likely to engage in 4 or more hours of screen time per week (includes TV, videos, video games, etc.).

Related factors for Kansas high school students, from the 2009 Youth Risk Behavior Survey (YRBS)⁴ are as follows: 25.5% were overweight or obese; boys (15.0%) were more likely obese than girls (9.5%); Hispanics (16.7%) were more likely obese than whites (11.9%); 28.3% watched television 3 or more hours per day (on an average school day); 19.8% played video or computer games or used a computer for something that was not school work 3 or more hours per day (on an average school day); and 72.2% were physically active at least 60 minutes per day on less than 7 days.

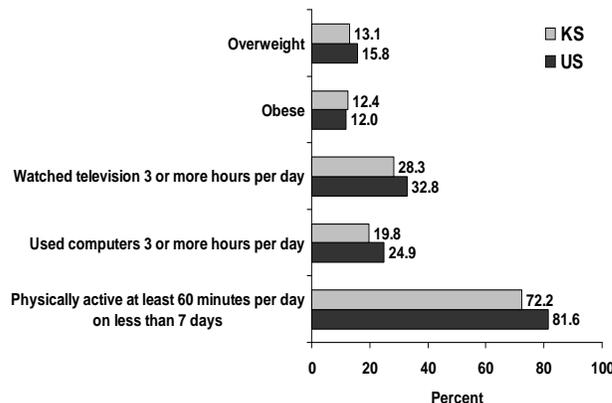
According to the 2008 Pediatric Nutrition Surveillance System (PedNSS)⁵, which assesses weight status of children from low-income families (below 185% of poverty level) participating in WIC, 30.0% of low-income children ages 24-59 months in Kansas were overweight or obese. This percent is not significantly different from the percent nationally (31.3%). The percentage of WIC participants overweight or obese remains about the same as 2007 (30.1%). There was an increasing trend during 1999-2004 followed by a slight decreasing trend or remained stable since 2004.

Percent of Adolescents (Ages 10-17) who are Overweight or Obese Kansas and U.S., 2003 and 2007



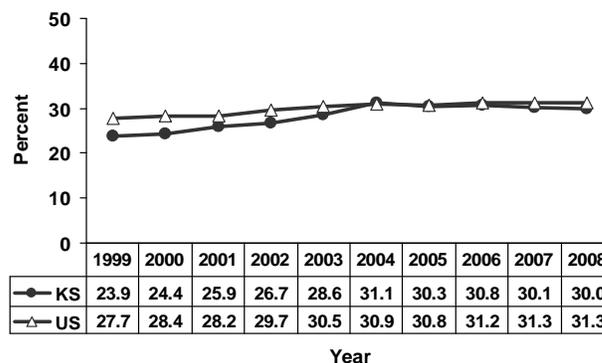
Source: National Survey of Children's Health

Percent of Adolescents' Selected Dietary Behaviors and Physical Activity (Grades 9-12) Kansas and U.S., 2009



Source: Youth Online: High School YRBS

Percent of WIC Children (24-59 months) Who are Overweight and Obese Kansas and U.S. (1999-2008)



Source: Pediatric Nutrition Surveillance System

Diabetes in Children and Adolescents

KANSAS GOAL: Reduce the number of hospitalizations for diabetes.

Indicator: Rate (per 1,000) of hospitalizations for children and adolescents. Hospitalizations in this report excludes visits to federal hospitals, Veteran’s Administrations hospitals, and private specialty clinics.¹ The indicator in this report uses hospitalizations in children with a code for either Type 1 or Type 2 diabetes mellitus during the hospital stay (ICD-9-CM 250) regardless of whether it was the main reason for visiting the hospital.

Definition: Diabetes mellitus are a group of diseases typified by high blood levels of glucose (a type of sugar) caused by errors in the making, or action of insulin (a chemical that helps get sugar into the cells), or both.² The causes and management of these two types of diabetes are dramatically different. *Type 1* diabetes develops when the body’s immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. To survive, people with type 1 diabetes must have insulin delivered by injection or a pump. In contrast, *Type 2* diabetes usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises in Type 2 diabetes, the pancreas gradually loses its ability to produce it.

Significance: Although most children with diabetes are diagnosed with Type 1, children diagnosed with Type 2 diabetes are becoming increasingly common.³ Regardless of the type of diabetes, both Type 1 and Type 2 diabetes can lead to *serious complications* such as heart disease and stroke, high blood pressure, blindness, kidney disease, and nervous system disease. However, people with diabetes can take steps to control the disease and lower the risk of complications through life style modification including healthy diet and physical activity. Children and adolescents diagnosed with Type 2 diabetes are generally between 10 and 19 years old, obese, have a strong family history for Type 2 diabetes, and have insulin resistance. Current evidence indicates that modifiable risk factors for Type 2 diabetes include obesity and lack of breastfeeding, suggesting that primary prevention efforts should focus on the prevention of obesity in children and the promotion of breastfeeding.⁴ When costs were calculated and analyzed in 2002, the average yearly health care cost for a person with diabetes was \$13,243.⁵ Therefore, efforts to prevent Type 2 diabetes in children can be a significant step toward controlling excessive health care costs in the future.

Healthy People 2010 Objectives: Relates to Objective 1-9: reduce hospitalization rates for three ambulatory-care sensitive conditions: pediatric asthma, uncontrolled diabetes, and immunization-preventable pneumonia and influenza.

Data Source and Reference:

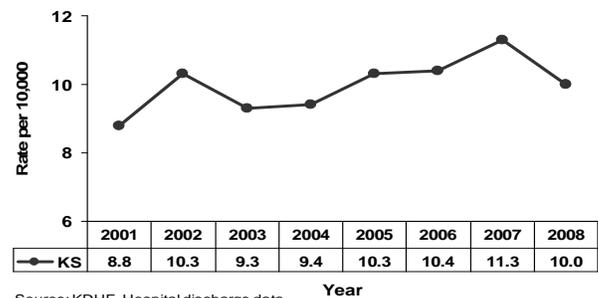
1. Kansas Department of Health and Environment (KDHE). Bureau of Public Health Informatics. Kansas Hospital Discharge Data. For further details see <http://kic.kdhe.state.ks.us/kic/dischargnl.html>
2. Centers for Disease Control and Prevention. Diabetes Program . (2007). National Diabetes Fact Sheet. <http://www.cdc.gov/diabetes/pubs/factsheets.htm>
3. Department of Health and Human Services. National Diabetes Education Program. 2010. <http://www.ndep.nih.gov/index.aspx>
4. Gahagan, S; Silverstein, J. (2003). Prevention and Treatment of Type 2 Diabetes Mellitus in Children, , With Special Emphasis on American Indian and Alaska Native Children . *Pediatrics*. v. 112 (4), p. e328.
5. Kim, S; Boye, KS. (2009). Excessive Hospitalizations and Its Associated Economic Burden among People with Diabetes in the United States, *Value Health*. v. 12 (2), p. 267-72.

Epidemiology and Trends

Since 2001, Kansas has seen a significant increase (p-value<0.05) in hospitalizations of children with diabetes (except for 2008). Hospitalizations for children with diabetes during this period has shown that the average length stay for a child covered by Medicaid is significantly (p-value<0.05) longer (by 2.7 hours) than children with diabetes covered by private insurance. Teenagers with diabetes have one of the highest rates of hospitalizations. The rate of hospitalizations for children with diabetes appears to vary across regions which may warrant further study.

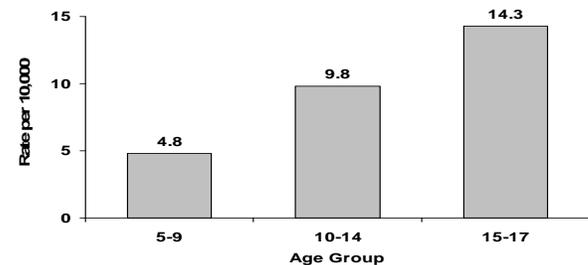
Since 2004, there has been a significant (p-value<0.05) increase in children (2 in every 5) with diabetes entering the hospital through the emergency room. Generally, teenagers (15-17 years) had the highest odds of entering the hospital through the emergency room. Non-Hispanic African American children with diabetes had higher odds (1.70; 95% confidence interval 1.23-2.36) entering through the emergency room than white children with diabetes.

Rate of Children (Ages 5-17) Hospitalized with Diabetes Kansas (2001-2008)



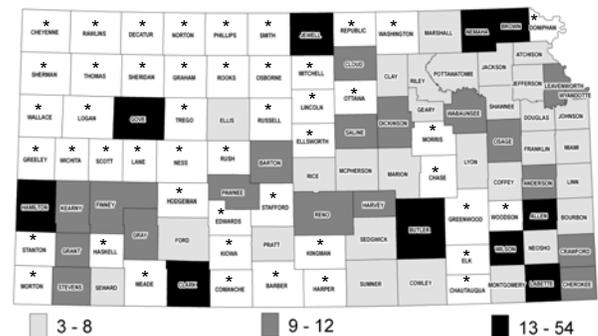
Source: KDHE, Hospital discharge data

Rate of Children (Ages 5-17) Hospitalized with Diabetes by Age Group Kansas, 2008



Source: KDHE, Hospital discharge data

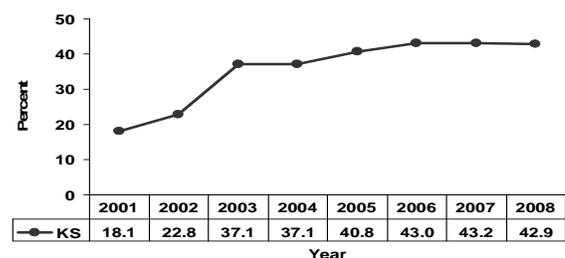
Rate of Children Hospitalized with Diabetes per 10,000 Children by County Kansas (2001-2008, Combined)



Source: KDHE, Hospital Discharge Data, 2001-2008.

Note: a * means cannot estimate rate, less than 10 cases

Percent of Children (Ages 5-17) Hospitalized with Diabetes Entering from the Emergency Room Kansas (2001-2008)



Source: KDHE, Hospital discharge data

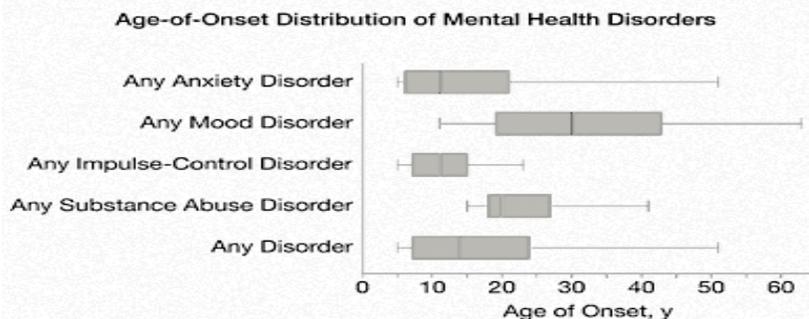
Behavioral/Mental Health

KANSAS GOAL: Improve the behavioral/mental health status of children and adolescents through early screening and referral.

Indicator: Percent of children and adolescents that receive behavioral/mental health services.

Definition: Mental health is how a child/adolescent thinks, feels, and acts when faced with life's situations.

Significance: For consumers of all ages, early detection, assessment, and linkage with treatment and supports can prevent mental health problems from compounding and poor life outcomes from accumulating. Early intervention can have a significant impact on the lives of children and adolescents who experience mental health problems. Emerging research indicates that intervening early can interrupt the negative course of some mental illnesses and may, in some cases, lessen long-term disability.¹ Early childhood is a critical period for the onset of emotional and behavioral impairments. Each year, young children are expelled from preschools and childcare facilities for severely disruptive behaviors and emotional disorders. Since children develop rapidly, delivering mental health services and supports early and swiftly is necessary to avoid permanent consequences and to ensure that children are ready for school.¹ A new survey of mental illness in the United States indicates that mental illnesses tend to strike early in life and delays in treatment leave affected individuals vulnerable to debilitating symptoms during their most productive years.² Half of all individuals who have a mental illness during their lifetimes report that the onset of disease occurred by age 14 years and three fourths by age 24 years, according to the National Institute of Mental Health (NIMH) National Comorbidity.²



Source: Kessler et al. *Arch Gen Psychiatry*. 2005;62:593-602.

Healthy People 2010 Objectives: (1) 18-6. (Developmental) Increase the number of persons seen in primary care who receive mental health screening and assessment. (2) 18-7. (Developmental) Increase the proportion of children with mental health problems who receive treatment.

Data Sources and References:

1. Shonkoff, JP, Phillips, DA. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC: National Academies Press; 2000.
2. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. *Related Articles, Links Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication*. *Arch Gen Psychiatry*. June 2005;62(6):593-602.
3. Kan Be Healthy Participation Report, Kansas Medical Assistance Programs Reporting Systems, Kansas Department of Social and Rehabilitation Services.
4. AIMS database, Mental Health Consortium, Kansas Community Mental Health Centers, Kansas.

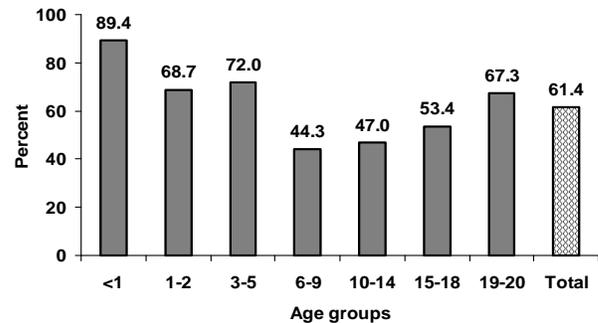
Epidemiology and Trends

Early and Periodic Screening, Diagnosis and Treatment (EPSDT) is a required service under the Medicaid Kan Be Healthy (KBH) program for categorically needy individuals under age 21.³ One component of EPSDT is developmental/mental health screening. The services can be provided within state and local health departments, school health programs, Head Start programs, community health centers and private practitioners. At the present time, developmental/mental health screening and referrals data are not captured separately from general exams. According to the 2007 National Survey of Children's Health, 24.7% of Kansas children age 10 months to 5 years received a standardized screening for developmental or behavioral problems (19.5% for the U.S.).

In 2008, the percent of children and adolescents (ages 0-21) that received behavioral and mental health services at community mental health centers (CMHCs)⁴ in Kansas was 6.2%, a 3.3% increase from 2007 (6.0%). During 2004-2008, there was an increasing trend detected with the annual percent change (6.6) considered significant. The primary reason for the increase in youth enrolled in mental health services was tied a goal of the Kansas public mental health system provide outreach and mental health services for children with a serious emotional disturbance (SED). According to the 2007 National Survey of Children's Health, 72.3% of children age 2-17 with problems requiring counseling who received mental health care (60.0% for the U.S.).

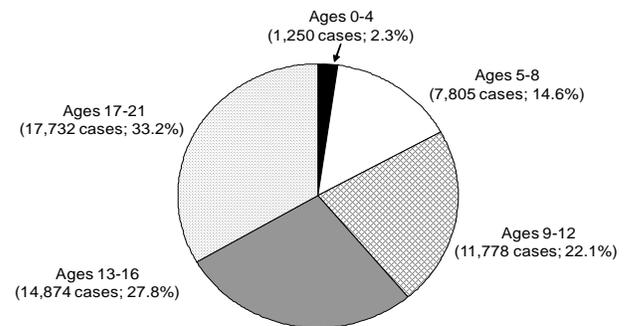
School failure, substance abuse, violence, and suicide were potential outcomes of mental and behavioral disorders and SED. Kansas YRBS data identified risk factors based on specific time frames. In the "during the past 30 days" time frame, students who smoked cigarettes was 16.9% in 2009 compared to 20.6% in 2007; 38.7% of students drank alcohol in 2009 compared to 42.4% in 2007; and 14.7% used marijuana in 2009 compared to 15.3 in 2007. Other questions revealed that 6.0% used Ecstasy one or more times during their life in 2009 compared to 8.6% in 2007; 21.5% of students felt so sad or hopeless almost every day for 2 or more weeks in a row that they stopped doing some usual activities during the 12 months in 2009 compared to 25.0% in 2007; and 6.1% attempted suicide during the past 12 months in 2009 compared to 6.7% in 2007.

KBH Eligibles Receiving at Least One Initial or Periodic Screen Kansas, FFY 2008



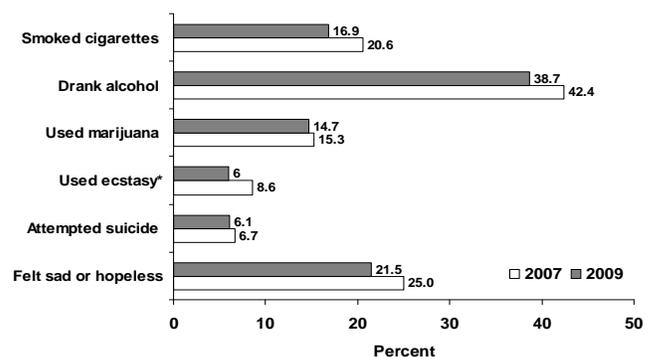
Source: Kan Be Healthy (KBH) Annual Participation Report.

Children/Adolescents Receiving Community Based CMHC Services By Age Group Kansas, 2008



Source: AIMS database, Mental Health Consortium, Kansas Community Mental Health Centers (CMHC).

Kansas Youth Risk Behavior Survey (YRBS) 2007 and 2009



*Change over time is statistically significant for $p < 0.05$.
Source: Kansas Youth Risk Behavior Survey

Teen Pregnancy

KANSAS GOAL: Reduce teenage pregnancy and resulting health, educational, economic and social consequences for mother and child.

Indicator: Pregnancy rate per 1,000 population for teenagers aged 15-17 years.

Definition: Teenage pregnancies include live births, fetal deaths, and abortions.

Significance: Although the rate of teen pregnancy in the United States dropped by more than 25% during the 1990s, more than 800,000 U.S. teens still become pregnant each year, and eight in 10 of these pregnancies are unintended.¹ Close to half of unintended pregnancies (45 percent) end in abortion.² Pregnancy Risk Assessment Monitoring System (PRAMS) data (1999) show that 66-84% of pregnancies in women less than 20 years of age where there is a live birth are unintended. Women whose pregnancies are unintended are less likely to adopt healthy behaviors and to start prenatal care early in the pregnancy.³ Infant mortality rates are highest among teenage mothers.⁴ Teenagers are at a higher risk of delivering a low birth weight live birth. Studies suggest that the higher mortality risk for infants of younger mothers may be related to socioeconomic factors as well as biologic immaturity. Also young maternal age may be a marker for poverty.³

Healthy People 2010 Objective: 9-7 Reduce pregnancies among adolescent females aged 15-17 to 43 pregnancies per 1,000.

Data Sources and References:

1. Guttmacher Institute. *National Day to Prevent Teen Pregnancy* (May 3, 2006). www.guttmacher.org/media/inthenews/2006/05/03/index.html
2. Henshaw, SK. *Unintended pregnancy in the United States*. Family Planning Perspective. 1998;30(1): Table 1.
3. O'Brien J, Benzyl B, Gilbert BC, et al. *PRAMS and Unintended Pregnancy* (n.d.). www.cdc.gov/PRAMS/UP.htm
4. Mathews TJ, MacDorman MF. *Infant mortality statistics from the 2006 period linked birth/infant death data set*. National vital statistics reports; vol 58 no 17. Hyattsville, Maryland: National Center for Health Statistics. 2010.
5. Ventura SJ, Abma JC, Mosher WD, Henshaw SK. *Estimated pregnancy rates by outcome for the United States, 1990–2005: An update*. National vital statistics reports; vol 58 no 4. Hyattsville, Maryland: National Center for Health Statistics. 2009. www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_04.pdf
6. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html
7. Oakley D. *Adolescent and Teenage Pregnancy Report Kansas, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/teenpreg.html

Epidemiology and Trends

In 2005 (the most recent year national data for this age group is available), the pregnancy rate for Kansas young teenagers 15-17 years (25.7 per 1,000) was 36.1% lower than the national rate (40.2).⁵

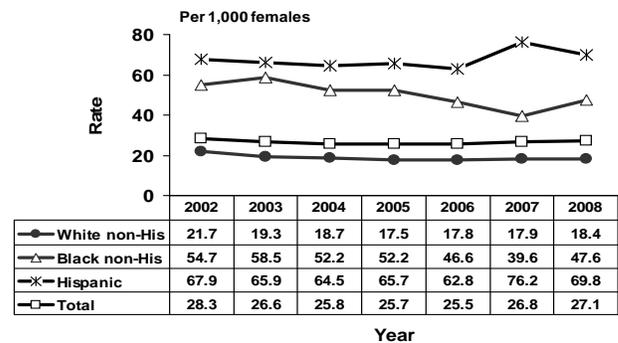
In 2008, young teenagers 15-17 years accounted for 3.3% (1,552) of the pregnancies (47,509) in Kansas. About 81.3% of the pregnancies in this age group resulted in a live birth (1,261), 18.2% in abortion (283), and the rest in stillbirths (8). The pregnancy rate for this age group was 27.1 per 1,000.^{6,7}

After declining steadily from 2002 to 2006, teenage pregnancy rates for ages 15-17 for all racial and ethnic groups increased between 2006 and 2008. The Hispanic teen pregnancy rate exceeded the non-Hispanic black teen pregnancy rate. The non-Hispanic black teen pregnancy rate has continued to decline at a faster rate than that for Hispanic teens during this period.

In Kansas, 2008, the teen birth rate (ages 15-17) was 22.0 per 1,000 females. This was 1.4% higher than 2007 (21.7) and the 2008 national preliminary rate (21.7). There was a decreasing trend over the interval 1999-2005 followed by an increasing trend from 2005-2008. The annual percent change (APC) was significant only for the segment corresponding to 1999-2005 (-3.5).

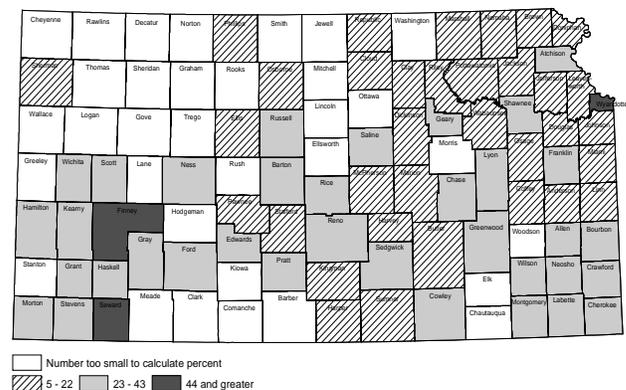
Chlamydia rates are an indicator of teen sexual activity and pregnancy risk. The rates of reported Chlamydia cases continue to increase in Kansas. In 2008, Female teenagers (ages 15-19) made up 29.9% of all cases reported to the state. Teenage males only made up 12.8% of all case reports for teenagers 15-19 years old. Large disparities in rate persist for minorities, particularly African Americans. According to the 2009 Kansas Youth Risk Behavior Survey (grade 9-12), 46.6% reported ever having sexual intercourse and 14.2% reported having sexual intercourse with four or more persons during their lifetime. Among students who were currently sexually active, only 60.1% reported using a condom during last sexual intercourse to prevent pregnancy.

Teen Pregnancy Rate (ages 15-17) by Race and Ethnicity Kansas (2002-2008)



Source: Bureau of Public Health Informatics

Teen Pregnancy Rate (ages 15-17) Kansas (2004-2008, combined)



Source: Bureau of Public Health Informatics

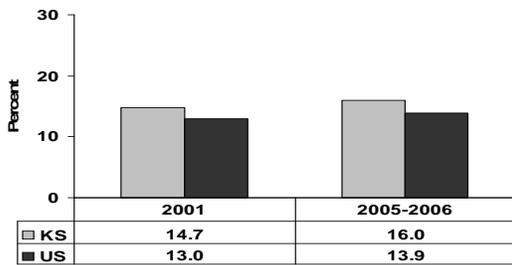
SECTION III

CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS

Demographics

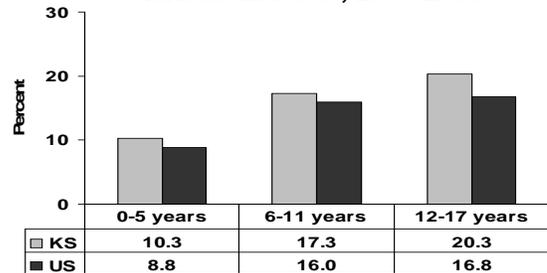
Children and Youth with Special Health Care Needs (CYSHCN) are defined as those who have or are at an increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that generally required by children and youth. According to the 2005-2006 National Survey of Children with Special Health Care Needs (CSHCN), 16.0% of Kansas children aged 0 to 17 (est. 108,024 children) had special health needs, which was slightly higher than 13.9% for the U.S. These rates represent a modest increase from the percentage reported in 2001 for Kansas and the U.S. The reasons for this increase are not fully understood. While it is possible that the number of CYSHCN is actually increasing, it is also possible that children's conditions are more likely to be diagnosed, due to increased access to medical care or growing awareness of these conditions on the part of parents and physicians.

**Prevalence of CYSHCN: Persons
Kansas and U.S.**



Source: National CSHCN Survey, 2001 and 2005-2006 (Age 0-17 yrs.)

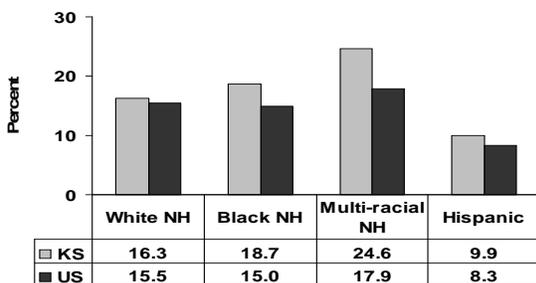
**Prevalence of CYSHCN: Age
Kansas and U.S., 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

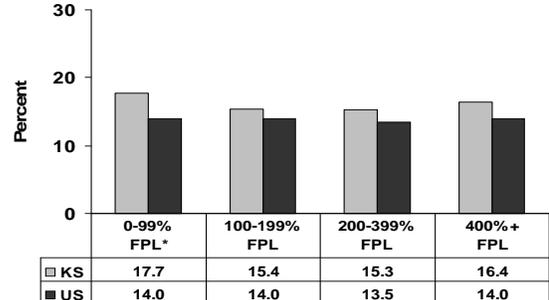
The demographics of CYSHCN highlight a number of disparities present in Kansas. The prevalence of special health care needs was nearly two times as great in adolescents, aged 12-17 years old, than in young children, aged 0-5 years. This age difference may be explained by conditions that cannot be diagnosed in early childhood or the result of complications that develop later on in childhood. In Kansas, Hispanic children (9.9%) were least likely to have a special health need in comparison to white (16.3%) or black (18.7%) children. The racial disparity may be partially explained by a higher rate of poverty in African-Americans because families with lowest income, below 100% federal poverty level [FPL], in Kansas reported a higher prevalence of CYSHCN. Unlike Kansas prevalence of CYSHCN, there is no added risk for children in the lowest income bracket nationally.

**Prevalence of CSHCN: Race/Ethnicity
Kansas and U.S., 2005-2006**



NH: non-Hispanic
Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

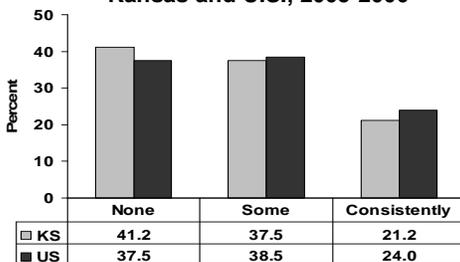
**Prevalence of CYSHCN: Family Income
Kansas and U.S., 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

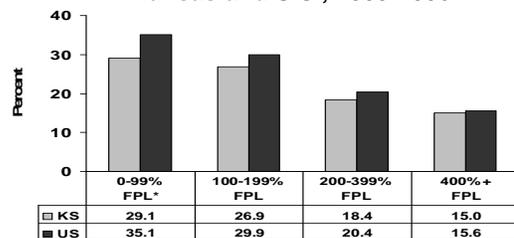
Low income CYSHCN are more consistently affected by their health condition than high income CYSHCN. The National Survey of CSHCN defines children being consistently affected by their health condition if their health condition impacted their daily lives usually, always or a great deal. Although Kansas children were less affected by their condition than nationally, Kansas still shows that CYSHCN below poverty were 2 times more likely to be consistently affected by their condition than CYSHCN whose family earned more than 400% FPL. CYSHCN in Kansas with public insurance (31.1%) were about 2.5 times more likely to be consistently affected by their condition than CYSHCN with private insurance (13.5%). Another disparity in Kansas is family structure. CYSHCN in single mother families (28.2%) were 2 times more likely to be consistently affected by their health condition than CYSHCN in two-parent biological families (15.5%) or two-parent step families (19.2%). The disparities in family structure and insurance type may partially be explained by the lower average annual income in single parent or children with public insurance than their peers. (*Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.)

**Prevalence of CYSHCN: Affect Daily Activities
Kansas and U.S., 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

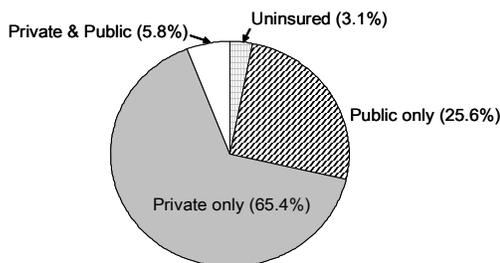
**Proportion of CYSHCN: Consistently
Affected in Daily Activities by Income
Kansas and U.S., 2005-2006**



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.
Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

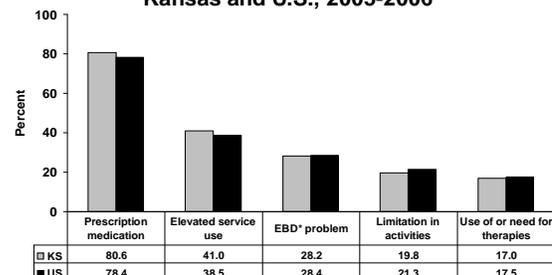
Kansas families with CYSHCN were more likely be insured than families who did not have CYSHCN. In Kansas, 96.9% of families reported that their children had insurance at the time of the 2005-2006 National Survey of CSHCN. About two-thirds of CYSHCN reported having private coverage; 25.6% have public coverage; 5.8% had both, and 3.1% had no insurance. Compared to 2001, a smaller percentage of CYSHCN was reported having private coverage (70.5% in 2001 vs. 65.4% in 2005-2006), and a higher percentage was reported to have public coverage (16.8% in 2001 vs. 25.6% in 2005-2006). Similar to the U.S., Kansas CYSHCN reported prescription medication as the most common need (80% of CYSHCN). The next most frequently reported need is for additional medical, mental health, or educational services (41.0%), followed by the need for help with emotional, behavioral, or developmental problems (28.2%), limitation in activities (19.8%), and the use of specialized therapies (17.0%).

**Type of Health Insurance Coverage for CYSHCN
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

**Proportion of CYSHCN: Experiencing Each
Consequence of Special Needs
Kansas and U.S., 2005-2006**



*EBD: Emotional/Behavioral/Developmental
Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Data Source and Reference: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

CYSHCN Insurance Coverage

KANSAS GOAL: Increase adequacy of insurance coverage for children and youth with special health care needs.

Indicator: Percent of children and youth with special health care needs (CYSHCN) ages 0 to 17 whose families have adequate private and/or public insurance to pay for the services they need.

Definition: ‘Adequate’ private and/or public insurance is defined as access to health services including preventive care, primary care and tertiary care. Adequate insurance covers costs of needed services, including: mental health, dental care, age-appropriate well-child care/monitoring, durable medical equipment, non-durable medical supplies, care coordination, prescriptions, specialty care, related therapies (e.g., physical therapy, occupational therapy, speech/language, audiology), in-home nursing. Adequate insurance also provides timely approval for needed care, clear information to parents and providers about coverage, resources, complaint procedures, and overall parent satisfaction.¹

Significance: CYSHCN often require an amount and type of care beyond that of typically developing children. These extra service needs for CYSHCN are more likely to incur catastrophic expenses than a typical developing child. Children and families often have disproportionately low incomes and, therefore, are at higher risk of being uninsured than other members of the population. Since children are more likely to obtain health care if they are insured, insurance coverage and the content of that coverage is an important indicator of access to care. CYSHCN who are uninsured are more likely to have parents report an unmet need, delay or forgo medical care, and cause financial strain on the family.² Since CYSHCN often require more and different services than typically developing children, under-insurance is a major factor in determining adequacy of health coverage. Adequacy of insurance ensures comprehensive care, which in turn reduces emergency room visits, hospitalizations, and time lost from school.³

Healthy People 2010 Objectives: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239. Related to Objective 1.1: Increase the proportion of persons with health insurance to 100%.³

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Jeffrey, JA; Newacheck, PW. (2006). Role of insurance for children with special health care needs: a synthesis of evidence. *Pediatrics*. 118(4), p. e1027-38.
3. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2008.
4. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
5. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs (CSHCN)*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).

Epidemiology and Trends

Kansas compares similarly to the U.S. in CYSHCN who have no gaps in insurance coverage from 2005 to 2006. According to the National Survey of CSHCN^{4,5}, nine out of ten Kansas CYSHCN reported having no breaks in their insurance coverage. This percent is comparable to the U.S. No statistically significant age differences in continual insurance coverage was Observed among CYSHCN. A significantly higher proportion of Kansas white CYSHCN (92.3%) reported no breaks in their insurance coverage than Hispanic CYSHCN (83%) or black CYSHCN (86.3%) in the past year. Nonetheless, Kansas racial/ethnic percentages for continual insurance coverage are comparable with the U.S. Similar to the U.S., CYSHCN in two parent families (92.7%) were significantly (p-value<0.05) more likely to reported having no breaks in insurance coverage than two-parent step (87.8%) or single-mother families (88.3%) in Kansas. However, slightly more very low income CYSHCN reported breaks in insurance coverage than nationally, but this was not statistically significantly.

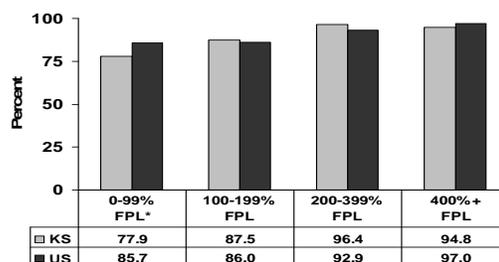
Paralleling the U.S. trends, Kansas has several areas to improve adequate insurance for CYSHCN in 2005-2006. The National Survey of CSHCN defines insurance to be adequate if parents answered usually or always to the following: 1) whether or not health insurance benefits met the child's needs, 2) whether non-covered charges were reasonable, and 3) whether the plan allows the child to see the providers he or she needs.⁵ Two out of three Kansas parents who had CYSHCN reported having adequate insurance. The adequacy of insurance did not statistically differ among racial/ethnic groups in Kansas. However, significantly more (p-value<0.05) parents of CYSHCN whose child had public insurance (80.9%) reported having adequate insurance than parents of CYSHCN whose child had private insurance (66.9%) in Kansas.

CYSHCN Insurance Coverage Kansas and U.S., 2005-2006

Child has <u>no</u> gaps in coverage during year prior to the interview.	
Kansas	90.7%
U.S.	91.2%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

CYSHCN Without Insurance Coverage Gaps: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

CYSHCN who have adequate public and/or private insurance to pay for the services they need.

Kansas	69.7%
U.S.	66.9%

Insurance usually or always met child's needs.

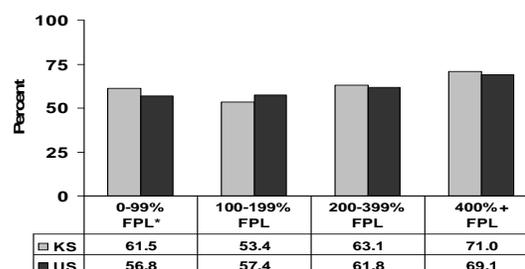
Kansas	89.4%
U.S.	87.3%

Insurance usually or always permitted child to see needed providers.

Kansas	92.6%
U.S.	90.7%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

CYSHCN Adequate Insurance Coverage: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Medical Home

KANSAS GOAL: Increase care within a medical home for children and youth with special health care needs.

Indicator: Percent of children and youth with special health care needs (CYSHCN) age 0 to 17 who receive coordinated, ongoing, comprehensive care within a medical home.

Definition: A medical home includes all of the following: (1) a regular source of primary medical care through a primary care provider; (2) a regular source of care that communicates in a way that is clear and understandable to the family; (3) a regular source of primary medical care that identifies, discusses, and addresses the comprehensive needs of the child and their family, and ensures age-appropriate well-child checks, including: vision, hearing, developmental, behavioral/mental health, oral health, newborn screening, immunizations; and (4) provides referrals and assistance from the regular source of primary medical care in accessing needed/desired services.¹

Significance: Providing primary care to children and youth in a ‘medical home’ is the standard of practice. Research indicates that children with a stable and continuous source of health care are more likely to receive appropriate preventive care and immunizations, are less likely to be hospitalized for preventable conditions, and are more likely to be diagnosed early for chronic or disabling conditions. (AAP Medical Home Policy Statement, presented in *Pediatrics*, Vol. 100 No. 1, July, 2002).² CYSHCN who have a medical home are associated with better outcomes in key areas of care including: family centeredness, treatment effectiveness, timeliness of care, and overall health.³ Furthermore, significantly less families with CYSHCN in a medical home reported cutting back work hours or stopped working than CYSHCN who lacked a medical home.⁴

Healthy People 2010 Objective: Related to Objective 16.22: (Developmental): Increase the proportion of children with special health care needs who have access to a medical home.²

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Homer, C. J.; Klatka, K.; Romm, D.; *et al.* (2008). A review of the evidence for medical home for children with special health care needs. *Pediatrics*. 122,(4), p. e922-37.
4. Derigne, L.; Porterfield, S. (2010). Employment change and the role of the medical home for married and single-mother families with children with special health care needs. *Soc Sci Med*. 70,(4); p. 631-41.
5. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
6. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs (CSHCN)*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).

Epidemiology and Trends

The 2005-2006 National Survey of CSHCN^{5,6} reports that slightly more than one out of two Kansas CYSHCN receive care within a medical home. The National Survey of CSHCN defined the presence of a medical home if parents of CYSHCN answered yes to the following: 1) the child has a personal doctor or nurse; 2) the child has a usual source of sick and well-child care; 3) the child has no problems obtaining needed referrals; 4) the family is satisfied with doctors' communication with each other and the child's school and other systems; 5) the family gets help coordinating the child's care if needed; 6) the doctor spends enough time with the child; 7) the doctor listens carefully to the parent; 8) the doctor is sensitive to the family's customs; 9) the doctor provides the family with enough information; 10) the parent feels like a partner in the child's care; and 11) the family received interpretation services when needed.⁶ Kansas had significantly more (p -value<0.05) CYSHCN receiving care within a medical home than nationally.

Although Kansas did well in the areas surveyed for medical home, a number of disparities remain. According to the National Survey of CSHCN, nine out of ten Kansas CYSHCN had no problems getting referrals for the services that they needed.⁴ Whereas, only seven out of ten Kansas parents who have CYSHCN reported that they received effective care-coordination for their child. The survey further indicates that the percent of Kansas CYSHCN who have a medical home did not significantly differ by age, race, or ethnicity. However, Kansas CYSHCN whose parents earned more than 400% FPL were 23 percentage points more likely to have a medical home than CYSHCN whose parents earned less than 100% FPL. This result may explain the higher percent of Kansas CYSCHN who have private insurance receiving care within a medical home than CYSHCN who have public insurance. The income differences in CYSHCN who have medical homes may also partially explain higher percentage of CYSHCN with medical home in two parent biological or adoptive families (62.2%) than in two-parent step families (49.8%) or single mother households (42.2%) in Kansas, both of the latter two groups tend to have lower median household incomes than two parent biological families.

CYSHCN Medical Home Kansas and U.S., 2005-2006

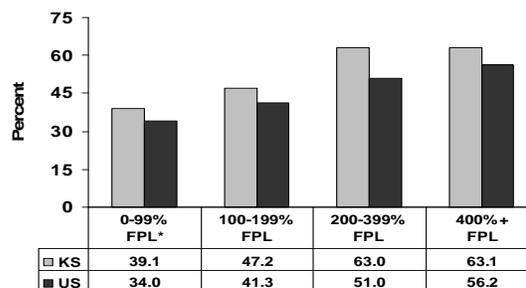
CYSHCN who receive coordinated, ongoing, comprehensive care within a medical home.	
Kansas	55.3%
U.S.	47.1%

The child has <i>no</i> problems obtaining referrals when needed.	
Kansas	88.6%
U.S.	78.9%

The child receives effective care coordination.	
Kansas	68.0%
U.S.	59.2%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

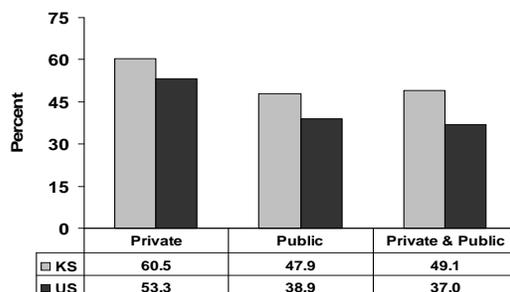
CYSHCN Medical Home: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

CYSHCN Medical Home: Insurance Types Kansas and U.S., 2005-2006



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Youth Transition

KANSAS GOAL: Increase the services necessary to transition to all aspects of adult life for youth with special health care needs.

Indicator: Percent of youth with special health care needs (YSHCN) who receive services necessary to make transition to all aspects of adult life.

Definition: A successful transition includes: (1) a plan that addresses employment, transportation, housing, independent living, physical/mental health, necessary accommodations, and includes appropriate agencies as part of the transition planning team, (2) a regular source of primary medical care that facilitates the transition from pediatric to adult providers, and (3) services/supports by age 21 that provide health insurance, post-secondary education, employment, transportation, housing, personal care attendant, Supplemental Security Income (SSI), Social Security Administration SSA-related work incentives (e.g., Plan for Achieving Self-Support (PASS), 1619 a&b).¹

Significance: The transition of youth into adulthood has become a national priority as evidenced by the President's "New Freedom Initiative: Delivering on the Promise" (March 2002). Over 90% of children with special health care needs now live to adulthood, but are less likely than their non-disabled peers to complete high school, attend college or be employed. Health and health care are cited as two of the major barriers to making successful transitions.²

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.²

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs (CSHCN)*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

According to the 2005-2006 National Survey of CSHCN³⁻⁵, Kansas youth with special needs transitioned better into adult life than their national peers. The National Survey of CSHCN defined a transition being successful if youth with special health care needs (YSHCN) aged 12-17 answered yes to the following: 1) whether doctors had discussed the shift to adult providers, 2) whether doctors had discussed the child's changing needs as he or she approached adulthood, 3) whether anyone had discussed insurance coverage in adulthood, and 4) whether the child was usually or always encouraged to take responsibility for his or her health.⁴ About one out of two Kansas YSHCN affirmed that they had talked about all four areas with their doctor during their transition. Kansas is significantly better (p-value<0.05) at transitioning youth than nationally.

There are several areas that Kansas could improve to ensure that all YSHCN transition successfully into adult life. In the National Survey of CSHCN, only half of Kansas physicians discussed with Kansas youth about shifting to adult providers, explained about future insurance needs, and offered guidance and support in the transition to adulthood.⁴ Typically in Kansas, the vocational/educational transition is more comprehensive than the transition into adult medical services. Yet, Kansas YSHCN living in poverty were about half as likely as high-income Kansas YSHCN to receive adequate transition services (30.1% vs. 58.0%, respectively). This income trend may partially explain the significantly (p-value<0.05) better transitioning of Kansas YSHCN who have private insurance (58.9%) than Kansas YSHCN who have public insurance (31.3%). Income may also partially explain the lower percentage of Kansas YSHCN in single mother households (38.2%) successfully transitioning than YSHCN from two parent adoptive or biological families (60%) or two-parent stepfamilies (55.4%) because single parent families have lower household median incomes than two parent families.

CYSHCN Youth Transition Kansas and U.S., 2005-2006

Youth with special health care needs, who receive the services necessary to make transitions to all aspects of adult life, including adult health care, work, and independence.	
Kansas	50.3%
U.S.	41.2%

Doctors have discussed shift to adult provider, if necessary.	
Kansas	47.1%
U.S.	42.0%

Doctors have discussed future health care needs if necessary.	
Kansas	70.0%
U.S.	62.5%

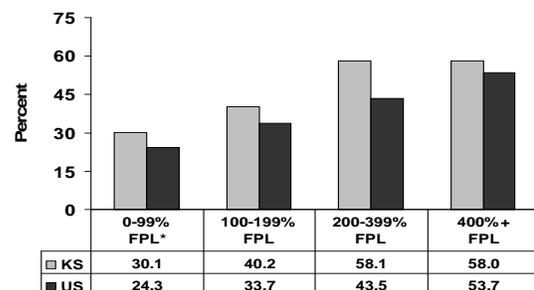
Doctors have discussed future insurance needs, if necessary.	
Kansas	43.7%
U.S.	34.1%

The child has usually or always been encouraged to take responsibility for health care needs	
Kansas	83.9%
U.S.	78.0%

The child receives anticipatory guidance in the transition to adulthood	
Kansas	48.9%
U.S.	38.2%

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

CYSHCN Youth Transition: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Special Health Care Needs Screening

KANSAS GOAL: Increase the proportion of children and youth who are screened early and continuously for special health care needs.

Indicator: Percent of CYSHCN who are screened early and continuously for special health care needs.

Definition: In public health, screening often refers to a strategy to detect disease in individuals without signs or symptoms of that disease in the population. However, in this document, the term screening is more comprehensive and includes ongoing monitoring and assessment of children and youth to promote health and well-being through family centered care practices.¹

Significance: Screening is critical to identify, as early as possible, children and youth in the general population who have special health care needs. Children identified early can receive the appropriate services and family support to reduce long term complications from the disease and impact on the activities of the child. Some needs may be identified in infancy, or during the perinatal period, while others may emerge later in childhood and adolescence. It is equally important that both children and youth with special health care needs have ongoing assessments to identify newly emerging issues including developmental/behavioral issues, oral health, and psychosocial issues, development and well-being. Ongoing assessments should also focus on identifying the unique strengths of each child and family.¹

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.²

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs (CSHCN)*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

According to the 2005-2006 National Survey of CSHCN³⁻⁵, nearly seven out of ten Kansas CYSHCN were screened early and continuously for special health care needs.⁴ Early and continuous screening is significantly higher (better) in Kansas (p-value<0.05) than the U.S. and ranked eleventh in the nation. CYSHCN were considered to be screened early and continuously if their parents answered yes to: 1) whether or not CYSHCN received routine preventive medical care in the past year, and 2) whether they received routine preventive dental care during the past year.

Among Kansas CYSHCN who were screened early and continuously for special health care needs, about four out of five reported receiving routine preventive medical care and routine preventive dental care in the past year.⁴

There are a number of areas that Kansas could work on that would improve the rates for early and continuous screening in CYSHCN. Kansas CYSHCN with highest family incomes, 400% or higher FPL, are 45% significantly more likely (p-value<0.05) to have a regular screen than children whose family income is below 100% FPL.⁴ Kansas CYSHCN who have private insurance were significantly more likely (p-value<0.05) to be periodically screened than children on public insurance. In Kansas, the differences in income level and insurance type may partially explain significantly less regular screens in Hispanics CYSHCN (55%) than whites CYSHCN (70%) or blacks CYSHCN (69%), because of higher proportion of Hispanic children are in poverty or uninsured. Kansas children aged 0-5 years old (53%) were significantly less likely to be screened than children aged 6-11 years old (72%) or children aged 12-17 years old (73%). An alternative explanation for this trend is the higher rates of poverty in young children than in older children. Because of the higher household income in two parent families, this may explain why Kansas CYSHCN in two parent biological or adoptive families (75%) were more likely to be screened than CYSHCN in two-parent stepfamilies (56%) or single mother households (60%).

CYSHCN Screened Kansas and U.S., 2005-2006

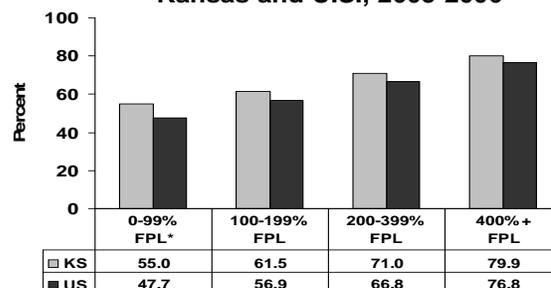
CYSHCN who are screened early and continuously for special health care needs.	
Kansas	68.5%
U.S.	63.8%

CYSHCN who have receive both a preventive medical and a dental care visit in the past 12 months	
Kansas	82.5%
U.S.	77.1%

CYSHCN who have receive both a preventive medical and a dental care visit in the past 12 months	
Kansas	80.9%
U.S.	78.5%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

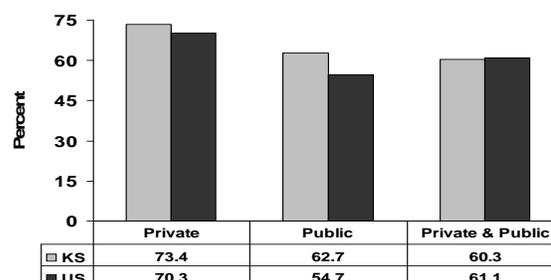
CYSHCN Screened: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

CYSHCN Screened: Insurance Types Kansas and U.S., 2005-2006



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Satisfaction with Services

KANSAS GOAL: Increase partnering in decision making and satisfaction with CYSHCN services.

Indicator: Percent of CYSHCN ages 0 to 17 years whose families partner in decision making at all levels and are satisfied with the services they receive.

Definition: Satisfaction with services includes: (1) satisfaction with the quality of regular source of primary care, getting referrals and appointments for needed services, coordination between primary and specialty care services; (2) satisfaction with their level of involvement/input in setting concerns and priorities to make decisions about their child's care plan; (3) knowing the steps to take when they are not satisfied with the services their child/family receives; (4) being supported financially for their involvement in state and local activities, including transportation, provision of stipends, employment of families, and child care; and (5) being effective partners in policy making at the state and local levels.¹ Family-centered care is based on the recognition that children live within the context of families - which may include biological, foster, and adoptive parents, step-parents, grandparents, other family caregivers, and siblings. Family-centered care is a process to ensure that the organization and delivery of services, including health care services, meet the emotional, social, and developmental needs of children; and that the strengths, and priorities of their families are integrated into all aspects of the service system. For example, family-centered care supports families as they participate as integral partners in the medical home and work with their children's health care professionals in making informed health care decisions. Family-centered care recognized that families are the ultimate decision-makers for their children, with children gradually taking on more and more of this decision-making as they mature.²

Significance: Family/professional partnerships have been incorporated into the MCHB strategic plan. The Omnibus Budget Reconciliation Act of 1989 (OBRA' 89) mandated that the States provide and promote family centered, community-based, coordinated care. Family satisfaction is also a crucial measure of system effectiveness.³

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.³

Data Source and Reference:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.
3. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
4. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
5. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).

Epidemiology and Trends

According to the 2005-2006 National Survey of CSHCN^{4,5}, two out of three Kansas families were satisfied with services received and indicated that they were partners in decision-making process at all levels.⁵ Although nine out of ten Kansas CYSHCN parents said that their doctor made them feel like a partner, only seven out of ten CYSHCN parents were satisfied with services received. Kansas is significantly better (p-value<0.05) for including families in decisions and being satisfied with services received than nationally.

Kansas could expand on the strengths of family satisfaction of services and partner in decision making to include all Kansas CYSHCN. In Kansas, CYSHCN whose family income were 400% or more FPL were 32% significantly more likely (p-value<0.05) to be satisfied with services and family inclusion than CYSHCN families who were near poverty level, 100 to 200% FPL.⁵ No significant racial, ethnic, or insurance differences were observed in Kansas. However, Kansas CYSHCN who had a medical home (86.8%) were more likely to be satisfied with services and family inclusion than CYSHCN who lacked a medical home (41.1%). The difficulty in establishing a medical home to coordinating the initial treatment needs of young children with special health care needs may explain the lower satisfaction of services in children aged 0-5. Whereas, the significantly lower percentage (p-value<0.05) of families who are satisfied with older youth aged 12-17 than families who had children aged 6-11 may partially be explained by how early and successful youth began transitioning into adulthood.

CYSHCN Satisfaction with Services Kansas and U.S., 2005-2006

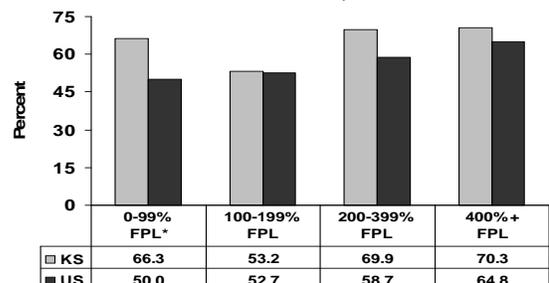
CYSHCN whose families' partner in decision-making and are satisfied with the services received.	
Kansas	65.6%
U.S.	57.4%

Doctors usually or always make the family feel like a partner.	
Kansas	91.1%
U.S.	87.7%

Family is very satisfied with services received.	
Kansas	66.8%
U.S.	59.8%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

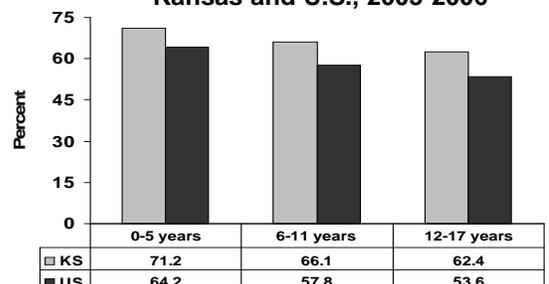
CYSHCN Satisfaction with Services: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

CYSHCN Satisfaction with Services: Age Group Kansas and U.S., 2005-2006



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Community-Based Service Systems

KANSAS GOAL: Increase CYSHCN access to organized community-based services.

Indicator: Percent of CYSHCN ages 0 to 17 years whose families report that community-based service systems are organized in a manner that they can easily use them.

Definition: Community-based service systems as defined by the National Survey of CSHCN includes all of the following: (1) a single coordinated service plan that involves all providers and a lead service coordinator who communicates with the family; (2) the ability to access comprehensive services for their child and family; (3) having specialty care available in their region of the state; (4) the degree to which the state service system has an enrollment/eligibility process that links families of CYSHCN (and their medical home) with a wide variety of public and private services and resources; and (5) private/public partnerships to provide community-based, comprehensive medical services for CYSHCN (e.g., data sharing, contracts, Memoranda of Agreement).¹ As defined, a community-based system of services is an infrastructure that facilitates the integration of services in several dimensions- including organization, delivery, and financing. The development of community-based systems of services is a response to the complexity and fragmentation of services for children with special health care needs and their families. Multiple service programs - each with its own funding streams, eligibility requirements, policies, procedures, and services sites - serve CYSHCN. Because of this nature, community based systems encompasses a range of services in different service sectors and the services and supports of individual communities themselves can have a positive effect on the growth and development of CYSHCN. Although much of this integration and coordination has been led by the public sector, the private sector has become increasingly active in this area in an effort to reduce health care costs.

Significance: Families, service agencies, and the Federal Interagency Coordinating Council (FICC) have identified major challenges confronting families in accessing coordinated health care and related services that families need for their children with special health care needs. Differing program eligibility criteria, duplication of and gaps in support and services, inflexible funding streams, and poor coordination among service agencies are the most common issues and concerns at local, state, and national levels. Addressing these issues will not only lead to a more efficient use of public funds, but also reduce the stress and burden on families with CYSHCN.²

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of states and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.²

Data Source and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs (CSHCN)*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

According to the 2005-2006 National Survey of CSHCN Survey³⁻⁵, nine out of ten Kansas families with CYSHCN reported that community-based service systems are organized in ways that the families can easily use them.⁴ The Kansas outcome is significantly higher/better (p-value<0.05) at providing community accessible services than nationally. Nonetheless, it continues to be a challenge to assure that services are available and accessible in all areas of the state, particularly in the rural west. This outcome was assessed using a single question asking parents whether they had any difficulties trying to use the range of services their children had needed over the past year.

Kansas can continue to improve upon this measure by ensuring greater care coordination for all CYSHCN. No significant racial, ethnic, income, or insurance differences were observed in Kansas.⁴ However, significantly more (p-value<0.05) Kansas CYSHCN who have a medical home (97.9%) reported having community services that are accessible than CYSHCN who lacked a medical home (86.3%). This better outcome in children who have a medical home may be attributed to the definition of medical home itself, which includes care coordination and ease of service use.

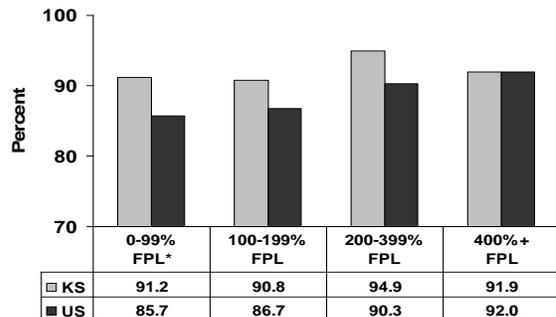
CYSHCN Community-Based Service Systems Kansas and U.S., 2005-2006

CYSHCN with community-based service systems that are organized so families can use them easily.	
Kansas	92.5%
U.S.	89.1%

Family has experienced <i>no</i> difficulties using services.	
Kansas	92.5%
U.S.	89.1%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

CYSHCN Community-Based Service Systems: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Financial Impact on Families

KANSAS GOAL: Decrease the proportion of families with CYSHCN reporting that their child's health causes financial strain on the family.

Indicator: Percent of CYSHCN families who report that their child's health causes financial strain on the family.

Definition: The amount and/or degree of financial strain suffered by a family are difficult to measure. This report will focus on self-report of parents in regards to financial strain or on cutting back or stopped working to care for the health needs of their child.

Significance: The costs of caring for children and youth with special health care needs (CYSHCN) are high, relative to those for typically developing children, because of elevated requirements for both primary and specialty medical care, as well as therapeutic and supportive services such as rehabilitation, environmental adaptations, assistive devices, personal assistance, and mental health, home health, and respite care.¹ These strains may cause families to lapse or drop medical insurance, forego medical care, or drop or alter childcare and work arrangements. Financial and family stress along with other factors increase the risk for child abuse in CYSHCN than in typically developing children.²

Healthy People 2010 Objective: Related to Objective 16.22: Increase the proportion of children with special health care needs who have access to a medical home.³

Data Sources and References:

1. Shattuck, P.T.; Parish S.L. (2008). Financial burden in families of children with special health care needs: variability among states. *Pediatrics*. 122, (1), p. 13-18.
2. Gilbert, R.; Widom, C.; Browne, K.; *et al.* (2009). Burden and consequences of child maltreatment in high-income countries. *Lancet*. 373, (9657), p. 68-81.
3. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. Child and Adolescent Health Measurement Initiative. *2007 National Survey of Children's Health*, Data Source Center for Child and Adolescent Health website (www.nschdata.org).

Epidemiology and Trends

According to the 2005-2006 National Survey of CSHCN, eight out of ten Kansas parents who have CYSHCN reported that their child's condition did not cause financial strain for their families.⁴ The percent of families reporting no financial strain in Kansas is similar to that reported nationally. No significant differences were observed in race, ethnicity, family structure, or insurance type in Kansas. However, Kansas families who have CYSHCN aged 6-11 (82.2%) were significantly more (p-value<0.05) likely to report that their child's health did not affect family's finances than Kansas families with CSHCN age 0-5 (72.6%). This result may partially be explained by young children needing more costly physical and developmental intervention services coupled with difficulties with connecting services to the appropriate payment sources. Difficulties with care coordination is further evidenced by significantly higher (p-value<0.05) proportion of Kansas families with CYSHCN who have a medical home (85.3%) reporting no financial strain on the family than Kansas families with CYSHCN who lack a medical home (70.8%).

According to the 2005-2006 National Survey of CSHCN, eight out of ten Kansas CYSHCN parents reported that their child's condition did not cause them to cut back or stop working and this percent is comparable to the US.⁴ No significant differences in race, ethnicity, or family structure were observed in Kansas parents cutting back or quitting their job to care for their child. However, significantly less (p-value<0.05) Kansas parents who have CYSHCN aged 0-5 (73.4%) reported that they did not alter their work habits than Kansas parents who have CYSHCN aged 6-11(80.4%) or aged 12-17 (82.8%). This age difference may be partially explained by the greater proportion of young families having public insurance.

CYSHCN Financial Impact on Families Kansas and U.S., 2005-2006

CYSHCN whose conditions did <u>not</u> cause financial problems for the family.	
Kansas	78.6%
U.S.	81.9%

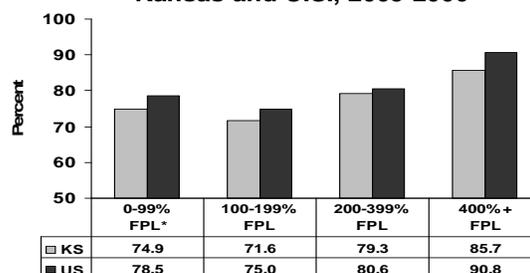
CYSHCN whose conditions did <u>not</u> cause family members to cut back or stop work	
Kansas	79.9%
U.S.	76.2%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.)

CYSHCN whose child care issues did <u>not</u> affect the parents' employment	
Kansas	86.0%
U.S.	84.1%

Source: NSCH, 2007 (Age 0-5 yrs.)⁵

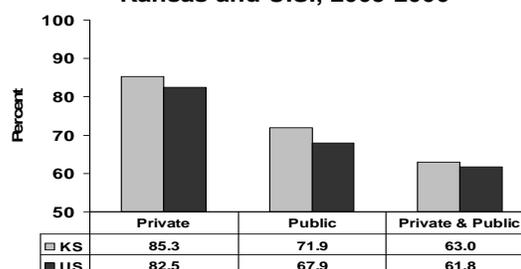
CYSHCN Whose Families Are Not Financially Impacted: Family Income Kansas and U.S., 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

CYSHCN Whose Condition Did Not Affect the Parents Employment: Insurance Kansas and U.S., 2005-2006



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

SECTION IV

HEALTH SYSTEMS INDICATORS

Poverty Status

KANSAS GOAL: Decrease the number of children and families in poverty.

Indicator: Percent of children and families in poverty.

Definition:

1. Poverty status is defined at the family level. Below a specific income, all family members are regarded to be in poverty. The Federal Poverty Level (FPL) takes into account the number of total individuals in a family unit, the number of unrelated children under age of 18, and whether the primary householder is over the age of 65. For more information, please visit www.census.gov/hhes/www/poverty/poverty.html.
2. Poverty is defined by the federal government each year as individuals/families who earn less than a certain amount of dollars per year. The federal poverty level for a family of four in 48 contiguous states and D.C. was \$17,050 in 2000 and \$21,200 in 2008. For more information, please visit <http://aspe.hhs.gov/poverty/figures-fed-reg.shtml>.

Significance: Poverty negatively influences child health and development in a number of ways. Children in poverty have higher rates of accidents, injuries, infections, deaths, developmental delays, and behavioral problems than children not in poverty.¹ Although children in poverty are more likely to have a chronic condition (asthma, diabetes, etc), they are more likely to delay or forego needed medical care including early intervention services than children not in poverty.^{1,2} Children in poverty also face a range of social problems including higher risks for physical and sexual abuse, non-marital teenage births, living in unsafe environments (crime, violence, pollution, heavy metals such as lead) and becoming high school drop outs.^{1,3}

Healthy People 2010 Objective: Relates to overall goal to eliminate health disparities among Americans including income. Related to objective 1.6: Reduce the proportion of families that experience difficulties or delays in obtaining health care or do not receive needed care for one or more family members. Related to objective 19.18: Increase food security among U.S. households and in so doing reduce hunger.

Data Source and References:

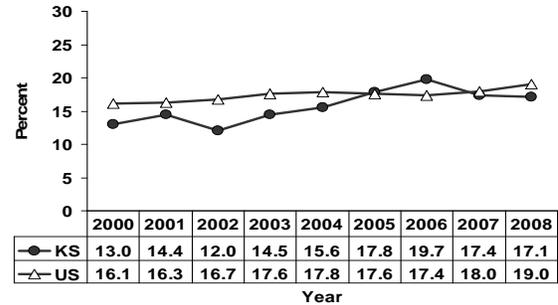
1. Aber, JL; Bennett, NG; Conley, DC; Li, J. (1999). The Effects of Poverty on Child Health and Development. *Annu Rev Public Health*. v. 18, p. 463-83.
2. Woolf, S; Johnson, R; Geiger, H. (2009). The Rising Prevalence of Severe Poverty in America: A Growing Threat to Public Health. *Am J Prev Med*. v. 31 (4), p. 332-341.
3. Frank, D; Casey, PH; Black, MM; Chilton, M. and et al. (2010). Cumulative Hardship and Wellness of Low-Income, Young Children: Multisite Surveillance Study. *Pediatrics*. v. 125, p. e1124-34.
4. U.S. Census Bureau. Current Population Survey (CPS). Annual Social and Economic (ASEC) Supplement. Pov46.Poverty Status by State(weighted). http://www.census.gov/hhes/www/cpstables/032009/pov/new46_001.htm
5. U.S. Census Bureau. Small Area Income & Poverty Estimates (SAIPE). Kansas, Under Age 18 in Poverty, 2008. <http://www.census.gov/cgi-bin/saipe/saipe.cgi>
6. Columbia University. National Center for Children in Poverty (NCCP). Demographics of Poor Children, Kansas State Profile, 24 Sept 2009. http://www.nccp.org/profiles/KS_profile_7.html

Epidemiology and Trends

Childhood poverty remains a problem for Kansas. For 2008, more than 100,000 Kansas children were in poverty.⁴ Six counties accounted for over half of all children in poverty for Kansas--Sedgwick (21,216 children), Wyandotte (11,433 children), Johnson (7,290 children), Shawnee (7,097 children), Douglas (2,783 children), and Finney (2,644 children).⁴ However, Kansas has seen a decrease in the children living in poverty from one in six for 2006 to one in five for 2008. The trend in Kansas is the opposite of the U.S., which as seen increases in children in poverty over the same time frame. The highest percent of children in poverty are in the rural Southeastern portion of Kansas; whereas the lowest percent of children in poverty are in the more urbanized Northeastern portion of the state.⁵

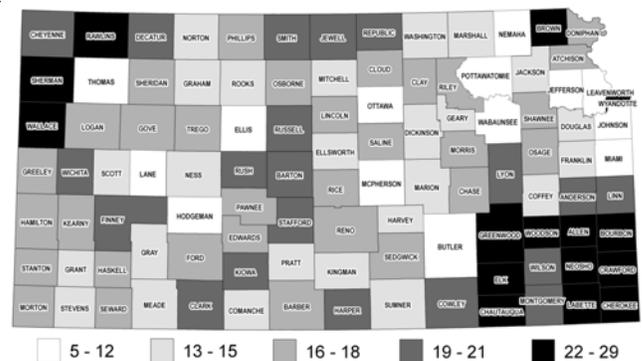
Some childhood populations are more prone to poverty than others in Kansas. According to 2005-2007 U.S. Census's Current Population Survey data compiled by NCCP, 34% of Kansas children in poverty have at least one parent employed full time, year round and another 45% of Kansas Children in poverty have at least one parent employed part-time or part of the year.⁶ Seventy percent of Kansas children in poverty live in single-parent households, and more children in Kansas who live in households headed by a single mother live below 100% federal poverty level (FPL) than nationally.^{4,6} More Kansas families with children under age 6 live in poverty (23%) than families who have children older than age 6 (16%).⁶ A greater portion of Kansas children living in poverty have parents without a high school degree (61%).⁶ A higher percentage of children are in poverty for Hispanic children (42%) than for white children (13%) in Kansas. This may be explained by the higher proportion of Hispanic children having an immigrant parent than white children because children who have immigrant parents (40%) are more likely to be living in poverty than children who have native-born parents (17%).⁶

Percent of Children Under 18 Years of Age Below 100% Federal Poverty Level Kansas and U.S. (2000-2008)



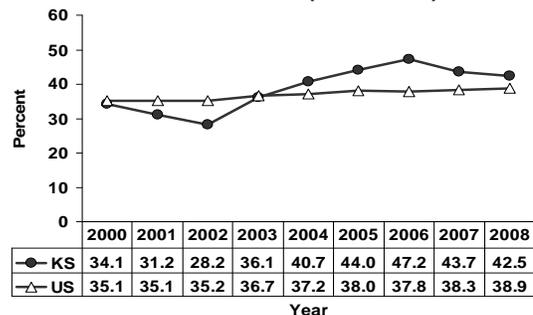
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, POV46: Poverty Status by State

Percent of Kansas Children (Under Age 18) Living in Poverty by County, 2008



Source: U.S. Census. SAIPE, 2008

Percent of Female Headed Families with Children that are Below 100% Federal Poverty Level Kansas and U.S (2000-2008)



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, POV46: Poverty Status by States

Linguistic Isolation

KANSAS GOAL: Eliminate health disparities among Kansans - gender, race/ethnicity, education, income, disability, geographic location, sexual orientation.

Indicator: Percent of households linguistically isolated (language spoken at home is other than English).

Definition: A linguistically isolated household is one in which no member 14 years and over (1) speaks only English or (2) speaks a non-English language and speaks English “very well.” In other words, all members of the household 14 years and over have at least some difficulty with English.¹

Significance: In the United States, the ability to speak English plays a large role in how well people can perform daily activities. How well a person speaks English may indicate how well he or she communicates with public officials, medical personnel, and other service providers.² It could also affect other activities outside home, such as access and the quality of health care received. People who do not have a strong command of English and who do not have someone in their household to help them on a regular basis are at even more of a disadvantage. Too often people with the greatest health burdens have limited access to relevant health information. In part, this is due to the complex and cumbersome ways health information often is presented, an individual’s limited abilities to fully interpret and understand complex health terminology and instructions, and to make personal decisions related to risk avoidance or risk reduction strategies. For instance, to follow health care instructions, patients need to be able to comprehend written and oral prescription instructions, directions for self-care, and plans for follow-up tests and appointments. In addition, health care providers may not communicate effectively with individuals. For instance, achieving informed consent for treatment is difficult when health care personnel cannot explain biological processes or treatment procedures in simplified language and patients cannot interpret health information. These situations hamper the effectiveness of health professionals’ efforts to prevent, diagnose and treat medical conditions, and limit many health care consumers’ abilities to make important health care decisions.

Healthy People 2010 Objective: Eliminate health disparities among Americans - gender, race/ethnicity, education, income, disability, geographic location, sexual orientation.

Data Source and Reference:

1. U.S. Census Bureau. 2008 American Community Survey. *Linguistic Isolation. Table S1602.* <http://factfinder.census.gov/>
2. U.S. Census Bureau. *Language Use and English-Speaking Ability: 2000.* www.census.gov/prod/2003pubs/c2kbr-29.pdf
3. U.S. Census Bureau. 2008 American Community Survey. *Kansas Population and Housing Narrative Profile: 2008.* <http://factfinder.census.gov/>
4. Kansas Health Institute. *Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook.* April, 2005. www.KHI.org

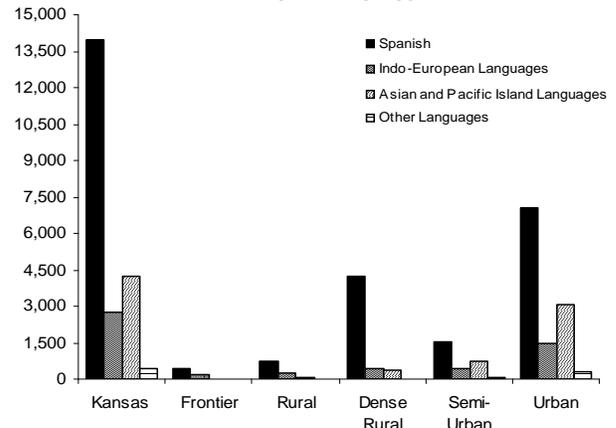
Epidemiology and Trends

According to the 2008 American Community Survey³, in Kansas, 2.3% of the households met the definition of being linguistically isolated compared to 4.8% of U.S. households. Nearly one-third (28.3%) of linguistically isolated households in Kansas spoke Asian and Pacific Island languages, 25.8% Spanish, 12.0% other Indo-European languages and 19.0% other languages.

Six percent of the people living in Kansas in 2008 were foreign born. Ninety-four percent were native, including 59% who were born in Kansas. Among people at least five years old living in Kansas in 2008, 10% spoke a language other than English at home. Of those speaking a language other than English at home, 66% spoke Spanish and 34 % spoke some other language; 42% reported that they did not speak English “very well.”³ Notable is a change in Spanish speaking population in Kansas, which has been steadily increasing. The increase mirrors similar trends at the national level.

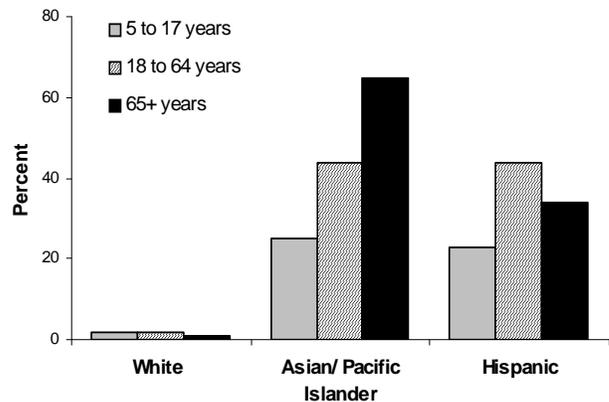
In “*Racial and Ethnic Minority Health Disparities in Kansas - A Data and Chartbook*,”⁴ which is based on the 2000 Census, the majority of linguistically isolated households are in urban counties, although dense rural counties also have a large number of these households. There are approximately 39 languages in Kansas represented by linguistically isolated households. The following tables and charts contain the latest information we have available are based on the 2000 Census.

Linguistically Isolated Households by Language By County Type



Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Percent by Age Group Who Do Not Speak English "Very Well"



Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Counties with Largest Number of Spanish-Speaking Households

Top 8 Counties	Number of Households
Sedgwick	2,654
Wyandotte	2,340
Finney	1,466
Johnson	1,299
Seward	1,164
Ford	1,118
Shawnee	632
Lyon	616

Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Counties with Largest Number of Asian/Pacific Islander Languages Households

Top 8 Counties	Number of Households
Sedgwick	1,681
Johnson	748
Douglas	363
Riley	231
Wyandotte	215
Finney	115
Saline	115
Geary	106

Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Utilization of Health Care

KANSAS GOAL: Improve utilization of Medicaid/SCHIP by Kansas children.

Indicators:

1. Percent Medicaid enrollees (ages 0-20) during the reporting year who received at least one initial periodic screen.
2. Percent of Medicaid enrollees (ages 0-20) who have received any dental services during the year.
3. Percent of SCHIP enrollees (ages 0-19) during the reporting year who received at least one initial periodic screen.
4. Percent of SCHIP enrollees (ages 0-19) who have received any dental services during the year.

Definition: (1) EPSDT - Early and Periodic Screening Diagnostic and Treatment services, Medicaid's comprehensive and preventive health program for eligible children under the age of 21, is commonly known in Kansas as KAN-Be-Healthy (KBH).¹ A child should be able to receive examination, treatment, and when necessary, referral services from one provider to another provider. This program allows participating individuals to receive any services which are medically necessary. In order to be considered a program participant and receive additional services, individuals must follow the screening schedule.² (2) HealthWave19, a traditional Kansas Medicaid Program, has no premium costs, no co-pays or deductibles for covered children.³ (3) HealthWave21 - State Children Health Insurance Program (SCHIP) is a Federal/State partnership, similar to Medicaid. The goal is to expand health insurance access to children whose family incomes exceed Medicaid guidelines. It was created for uninsured children, ages 0-19, living in households with income levels at or below 200% of the federal poverty level. Some families qualify for no premium health insurance. Others will have minimal monthly premiums. There are no co-pays or deductibles and no exclusions for pre-existing conditions with HealthWave21.³

Significance: Financial, structural, and personal barriers can limit utilization of health care. Financial barriers include not having copay for health insurance, not having enough health insurance to cover needed services, or not having the financial capacity to cover services outside a health plan or insurance program. Structural barriers include the lack of primary care providers, medical specialists, or other health care professionals to meet special needs or the lack of health care facilities. Personal barriers include cultural or spiritual differences, language barriers, not knowing what to do or when to seek care, or concerns about confidentiality or discrimination.⁴

Healthy People 2010 Objective: Improve access to comprehensive, high-quality health care services.⁴

Data Sources and References:

1. Kansas Department of Social and Rehabilitation Services. *HCBS/TBI Waiver, Policies & Procedures: Glossary*. www.srskansas.org/hcp/css/pdf/hippp/PTBIGlossary.pdf
2. General Definition. www.gwumc.edu/sphhs/healthpolicy/nrhs4/GSA/Subheads/gsa100.html
3. HealthWave History. www.kansashealthwave.org/hwhistory.asp
4. U.S. Department of Health and Human Services. *Healthy People 2010. 2nd Ed. With Understanding and Improving Health and Objectives for Improving Health*. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. Page 45 and Page 1-3.
5. Kan-Be-Healthy and SCHIP reports (Federal Fiscal Year 2008: 10/1/2007 - 9/30/2008).

Epidemiology and Trends

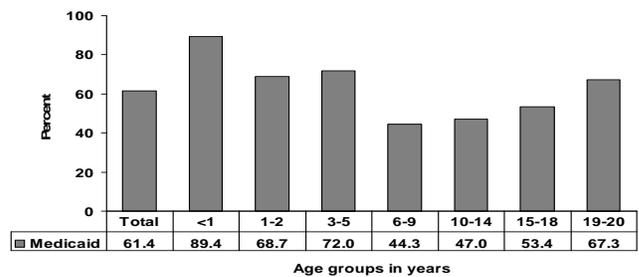
A report submitted by Kansas Department of Social and Rehabilitation Services (SRS) to the Center for Medicare and Medicaid Services (CMS) showed the participation ratio for Kansas Medicaid enrollees (ages 0-20) for KBH screens declined from 65.9% in FFY 2007 to 61.4% in FFY 2008⁵. This was mainly due to the number of eligibles who should receive at least one initial or periodic screen doubling in the 6-9 year old age group in FFY 2008 while the number of eligibles receiving at least one initial or periodic screen remained about the same for this age group, which lower the participant ratio to 44.3% in 2008 from 87.6% in 2007. For all other age groups, the participant ratio remained the same or increased in FFY 2008. Overall, the number of enrolled children continues to increase each year, as does the number actually getting into services. Although, the overall FFY2008 result did not reach the CMS goal of 80% participation in EPSDT (KBH) screening services, there has been much improvement in getting children into care.

The participation ratio for Kansas SCHIP enrollees (ages 0-20) was 46.7% in FFY 2008. This is a 93.8% increase over the 24.1% participation ratio in FFY2007*. The participant ratio increased in FFY2008 for children in all age groups. There has been a steady decline in the percent of SCHIP children receiving a screen. Comparing the Medicaid data to the SCHIP data, the SCHIP numbers and ratios are considerably lower.

The percentage of children in all age groups who access dental services in Medicaid and SCHIP continues to rise. When evaluating the trend in the last four years (2005-2008), the increase in the percentage of children enrolled who have received any dental services is statistically significant (p-value <0.000). The MCH program continues to play a key role in establishment of partnerships within and outside the Agency to improve access to dental services for both mothers and children.

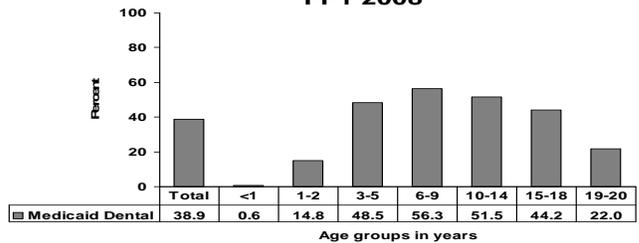
*Note: SCHIP was temporarily impacted by the Deficit Reduction Act citizenship documentation requirements during SFYs 2006 and 2007. It reduced the number of enrollees, delayed reauthorization of cases, and likely lowered the number of services provided.

**Medicaid Participant Ratio*
FFY 2008**



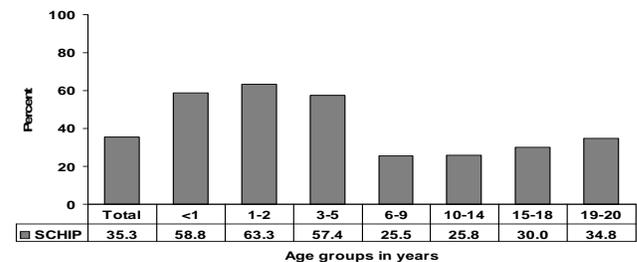
*Participant Ratio = $\frac{\text{Total eligibles receiving at least one initial or periodic screen}}{\text{Total eligibles who should receive at least one initial or periodic screen}}$
Source: Medicaid Kan Be Healthy annual participant report.
Report Period: 10/1/2007-9/30/2008

**Percent of Medicaid eligible children
receiving any dental services*
FFY 2008**



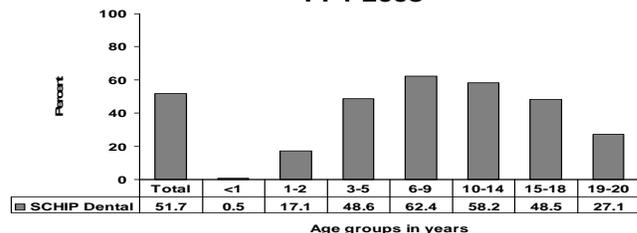
*Medicaid Dental % = $\frac{\text{Number of eligible receiving any dental services}}{\text{Number of individuals eligible for Kan Be Healthy}}$
Source: Medicaid Kan Be Healthy annual participant report.
Report Period: 10/1/2007-9/30/2008

**SCHIP Participant Ratio*
FFY 2008**



*Participant Ratio = $\frac{\text{Total eligibles receiving at least one initial or periodic screen}}{\text{Total eligibles who should receive at least one initial or periodic screen}}$
Source: SCHIP Kan Be Healthy annual participant report.
Report Period: 10/1/2007-9/30/2008

**Percent of SCHIP eligible children
Receiving any dental services*
FFY 2008**



*SCHIP Dental % = $\frac{\text{Number of eligible receiving any dental services}}{\text{Number of individuals eligible for Kan Be Healthy}}$
Source: SCHIP Kan Be Healthy annual participant report.
Report Period: 10/1/2007-9/30/2008

SECTION V
Special Projects

MCH2015

Pregnant Women and Infants Update

Infants born to mothers who smoke weigh less than other infants. Low birth weight (< 2,500 grams) is a key indicator in the deaths of infants. The MCH Program collaborates with the Kansas Tobacco Use Prevention Program and local grantee health agencies and other community providers in an effort to reduce the number of pregnant smokers. This is accomplished by a system that includes referral of pregnant women to a tobacco cessation Quitline and local tobacco cessation services, education and training in the use of the 5 A's counseling approach to smoking cessation as well as the use of brief interventions to assist pregnant women to quit smoking. In addition, legislation that provides for smoke-free environments in most public places and restaurants was passed into law during the 2010 Kansas legislative session that went into effect July 1, 2010.

In an effort to improve birth outcomes for very low birthweight infants by helping to ensure they are born in facilities for high-risk deliveries and neonates, Kansas maintains a system of a provider-driven perinatal referral system to facilitate access to consultation between obstetrical care providers and specialty maternal-fetal medicine professionals. Perinatal outcome data is provided to delivering hospitals who request data about their hospital or hospital group in an electronic format. In addition, the Perinatal Association of Kansas, the Greater Kansas Chapter of the March of Dimes and Maternal and Child Health (MCH) Program provided a forum for dialogue about state perinatal health issues and provide educational opportunities to MCH grantees, private providers and hospitals on current best practices. In addition, Kansas became a state-level partner with the national Healthy Mothers, Healthy Babies free texting services for sending health-related messages to pregnant women and new mothers, text4baby in March of 2010.

Early entry into prenatal care is seen as one factor in improving the health of mothers and infants. Kansas continues to exceed the national average on this measure. However, a three year declining trend was noted as well. The Kansas MCH Program provides 84 grantees to local communities serving almost all of the state's 105 counties. Through an outreach program consisting of primarily paraprofessional-level home visitation staff (Healthy Start Home Visitors), education, support and referrals to community services for families in need of those services were provided to approximately 7,000 women during 11,000 visits. MCH staff identifies women at risk for late entry into prenatal care in coordination with the state WIC, MCH and Family Planning Programs. In addition, a continued educational partnership with the Greater Kansas Chapter of the March of Dimes to disseminate information on perinatal health care topics with a focus on the importance of early prenatal care and the prevention of prematurity. In addition, MCH Program staff provided technical assistance to MCH grantees in developing and continuing transition services and print materials primarily in Spanish for the increasing Hispanic population in Kansas to encourage these women to seek early prenatal care. Workforce development and training is provided annually at the Governor's Conference on Public Health.

For more information or questions, please contact Joseph Kotsch at jkotsch@kdheks.gov or KDHE's Children and Families section.

MCH2015 Pregnant Women and Infants Breastfeeding Update

Nutrition and WIC Services (NWS) section continues to work towards promoting breastfeeding initiation and increasing the length of time that Kansans are breastfeeding. During the Maternal and Child Health Bureau's Five Years Needs Assessment in 2010, partners reaffirmed the importance of promoting exclusive breastfeeding for at least the first six months of an infant's life.

The NWS section continues to promote quality training and/or credentialing of health professionals involved in breastfeeding promotion and support by providing information about upcoming educational opportunities, stipends to cover registration and underwrite speakers on breastfeeding topics for the statewide conferences, including provision of the USDA's Loving Support Breastfeeding training to local clinic staff.

Through the Kansas Breastfeeding Coalition's Business Case for Breastfeeding Grant, the NWS section is assisting to train local partners on ways to assist employers in developing or enhancing a lactation support program in the workplace.

Peer counseling is a significant factor in improving breastfeeding initiation and duration rates among women in a variety of settings, including economically disadvantaged and WIC populations. The NWS section is working on maintaining the existing breastfeeding peer counseling programs with a goal of expanding the program to all counties.

The Kansas MCH program supports breastfeeding as the ideal nutrition for an infant and encourages local MCH grantees to participate in any available breastfeeding training (most often either directly provided by the Kansas WIC program or sponsored by them).

For more information or questions, please contact Martha Hagen at mhagen@kdheks.gov (Nutrition and WIC Services) or Joseph Kotsch at jkotsch@kdheks.gov (Children and Families section).

MCH2015 Children and Adolescents Reducing Risk Behaviors Update

Developed in 2000, HP2010 continues the Healthy People initiative by setting health priorities for the nation to be used by diverse groups at the state and local levels. These priorities were chosen based on scientific knowledge and available data in order to best measure progress over time. HP 2010 identifies 21 Adolescent Critical Health Objectives that span the following six topic areas: 1) mortality, 2) unintentional injury, 3) violence, 4) mental health and substance abuse 5) reproductive health, and 6) prevention of adult chronic diseases.

The Kansas Bureau of Family Health, Children and Families Section stakeholders chose to echo HP 2010 and addressing the 4th and 6th areas to address substance abuse by reducing risky behaviors relating to alcohol/drugs and tobacco use.

This new state performance measure will be realized through collaborating with our partners and stakeholders to develop a State Plan for Adolescent Health. The collaboration will enlist technical assistance from Center for Disease Control and Prevention – Division of Adolescent and School Health (CDC-DASH) to develop a plan to integrate evidence-based practices and evaluation strategies throughout Kansas to reduce substance abuse that includes alcohol, drugs and tobacco.

For more information or questions, please contact Jane Stueve at jstueve@kdheks.gov or KDHE's Children and Families section.

MCH2015
Children and Adolescents
Overweight and Obese Children Update

Nutrition and WIC Services (NWS) section continues to work towards decreasing the incidence of children in Kansas that are overweight or obese. During the Maternal and Child Health Bureau's Five Years Needs Assessment in 2010, partners reaffirmed the importance of decreasing the rate of childhood obesity.

The NWS section continues to do its best to work with local and state partners to encourage and promote events aimed at increasing healthy eating behaviors and physical activity of Kansas children. In addition, NWS staff continues to work to increase the number of well-trained MCH staff who plan, facilitate, deliver and evaluate healthy eating and physical activity messages, by sponsoring and promoting training opportunities.

The Kansas MCH program supports reducing the number of overweight and obese children and encourages local MCH grantees to participate in any relevant, evidence-based programs in support of this goal as part of their staff development process.

For more information or questions, please contact Sandy Perkins at sperkins@kdheks.gov (Nutrition and WIC services) or Joseph Kotsch at jkotsch@kdheks.gov (Children and Families section).

MCH2015 Children and Adolescents Medical Home Update

As the role of public health evolves, it becomes imperative that public health staff is knowledgeable about their community health needs, assets and resources, the diverse needs of their geographic region/culture and the issues impacting the overall health of their community members. It is important that public health staff assume a leadership role in developing health systems within those communities. To that end, gaining knowledge of processes and resources for conducting assessment, assuring services provision to meet the needs identified and understanding the critical component of policy development is essential in working toward integrated child health programs within local health systems. An important component of community assessment includes the concept of families having access to a health care delivery model in which a patient establishes an ongoing relationship with a physician or other personal care provider. This concept is called the Medical Home.

Role of the Maternal and Child Health Program

The Maternal and Child Health (MCH) 2015 Five-Year Needs assessment identified that all Kansas children and youth should receive health care through medical homes. This priority was held over from the 2010 five-year needs assessment as data shows that the number of uninsured children is rising and that the problem of underinsured may be greater than uninsured. There was concern that more needs to be done in this area with the advent of national health care reform. MCH is in a unique position to support families and providers through:

- Engage activities to educate families about the importance of care within a medical home.
- Enlist the support of community partners to increase enrollment in Medicaid and HealthWave, the Children's Health Insurance Program Reauthorization Act (CHIPRA), for eligible children.

Currently, forty safety net clinics and 28 satellite sites provide services for individuals/families without a private medical home. For migratory and seasonal farmworkers, the Farmworker Health Program coordinates a state-wide case management system providing covered health service vouchers from access point agencies (Primary Care Clinics and local health departments) to assist clients in obtaining Medicaid/HealthWave, Maternal & Infant program, nutrition/WIC, well-child exams, and family planning services.

The Health Resources and Services Administration (HRSA) reports the Kansas Health Policy Authority will expand and coordinate health insurance coverage to children between 200-250% of Federal Poverty Level (FPL) and Presumptive Eligibility (PE) for pregnant women through the State Health Access Program (SHAP). This technological initiative will assist in implementing the Legislature's mandate to expand coverage to children between 200% - 250% of FPL and PE for pregnant women.

KHPA will hire technical and program staff (including 12 out-stationed Eligibility Workers); deploy . . .300 computers/laptops and scanners to community-based agencies, train agency staff in use of the eligibility/enrollment tools. . . develop linguistically/culturally appropriate outreach, marketing and educational materials to assist in increasing insurance penetration rates in targeted populations and communities”(Retrieved June 2, 2010, from <http://www.hrsa.gov/statehealthaccess/kansas.htm>).

MCH will educate providers about SHAP program to enroll eligible children in health insurance programs and assist in identifying and implementing strategies increasing enrollment and linking to medical homes.

As the designee for a statewide infrastructure for health information exchange (HIE) facilitating strategic and operational plans with the primary goal to enable data sharing among healthcare stakeholders to coordinate patient care and support public entities to achieve population health goals and assist to develop medical homes, the Kansas Department of Health and Environment depends on partnerships and shared vision that every family will have a regular source of healthcare in a medical home to receive services that are family-centered, community-based, collaborative, comprehensive, flexible, coordinated and culturally competent and developmentally appropriate with the overall objective to improve health outcomes.

For more information or questions, please contact Brenda Nickel at bnickel@kdheks.gov or KDHE's Children and Families section.

MCH2015

Children and Youth with Special Health Care Needs Medical Home Update

In 2008, Kansas passed Sub. SB 81 (New Section 13), which defined the medical home in statute for Medicaid, SCHIP, and state employees. The economic downturn, staff reductions, and the ensuing debate on health care reform has slowed the intended implementation led by the Kansas Health Policy Authority.

The Children and Youth with Special Health Care Needs (CYSHCN) program continues to promote medical home objectives individually and in cooperation and collaboration with other state programs. The CYSHCN program readopted the Medical Home goal for Maternal and Child Health Bureau's Five Years Needs Assessment (2010-2015). The focus of this goal is improving access to and expanding services available within a Medical Home. The CYSHCN program's action plan includes: educating families, youth and providers about the components of a medical home and initiatives to support effective and successful system change; and utilizing community partnerships by linking community services and resources for CYSHCN and their families. The anticipated outcomes for this goal are to: empower consumers to taken an active role in their health care and partner with providers in healthcare decisions, integrate and coordinate all of service components within the medical home, and to improve the transition from a pediatric to adult medical home.

Through the Integrated Community Systems for Youth with Special Health Care (D-70) grant awarded by the Health Resources Services Administration, the CYSHCN program is working to strengthen patient-parent-provider partnerships, educate patients and providers about the medical home concept and to enhance access and services received within a Medical Home. Activities surrounding these efforts include: collaboration with the Kansas Academy of Family Physicians to host a series of Patient Centered Medical Home Learning Collaboratives; co-sponsoring conferences and workshops with Families Together, Inc.; development of educational materials for families about the medical home and how to partner with their doctor; provide education for health care professionals on interacting with people with disabilities; and collaborating with the Heartland Genetics Collaborative to develop a comprehensive health transition model that includes all professional domains who provide services and supports from time of diagnosis onward.

For more information or questions, please contact Mary Ann Bechtold at mbechtol@kdheks.gov or KDHE's CYSHCN program office.

MCH2015

Children and Youth with Special Health Care Needs Youth Transitioning into Adult Services Update

The Children and Youth with Special Health Care Needs (CYSHCN) program continues to be at the forefront of improving the transition of youth with special health care needs into adult services. During the Maternal and Child Health Bureau's Five Year Needs Assessment in 2010, parents and others reaffirmed the importance of transitioning all youth successfully.

This renewed emphasis by stakeholders has caused the CYSHCN program to reflect and expand upon existing services to improve the transition of youth with special health care needs into adulthood. Specialty clinics supported by CYSHCN offer transition clinics for older youth with special health care needs to begin the transition process from pediatric to adult health care systems. Partnerships with Families Together, Inc. has provided opportunities to promote the personal health care and transition notebooks for families and youth with special health care needs to encourage families to take a more active role in their health care. Additionally, contracts with education and family support organizations have resulted in a number of transition conferences to educate and inform parents and families about necessary steps for successful transitions.

In a related project, the CYSHCN program was awarded an Integrated Community Systems grant for Youth with Special Health Care Needs that focuses on preparing youth to transition from pediatric to adult health systems and partnering with their health care provider to develop or enhance their medical home. This grant seeks to improve the integration and coordination of transition supports and services including health care, education, employment, and independent community living. In partnership with the University of Kansas Center on Developmental Disabilities, a computer-based transition curriculum for youth is being developed to promote self-determination and provide opportunities to learn, practice, and master skills necessary for successful transitions. Although the primary emphases of the grant are on health and wellness, the grant seeks to improve all aspects of youth's transition in adult life. Lastly, a comprehensive resource tool kit and navigational guide will be developed and disseminated to assist youth, families, and providers to connect to community resources.

For more information or questions, please contact Heather Moore at hmoore@kdheks.gov or KDHE's CYSHCN program office.

MCH2015

Children and Youth with Special Health Care Needs Financial Impact on the Family Update

The Children and Youth with Special HealthCare Needs (CYSHCN) renewed its mission to provide leadership and guidance to limit the financial impact of CYSHCN's condition on their family's budget. At the Maternal and Child Health Bureau's Five Year Needs Assessment in 2010, parents and other stakeholders attested that financial concerns are one of the top issues faced by families who have CYSHCN.

The CYSHCN program continues to do its best to minimize the financial impact on families while ensuring that the program itself remains financially solvent. Since July of 2008, the CYSHCN program has experienced an expansion in the number of eligible conditions due to the newborn screening expansion to the 29 conditions recommended by the American College of Medical Genetics. The financial difficulties faced by the CYSHCN program mount over time because individuals with eligible genetic/metabolic diagnoses and meet the financial criteria may be served through their lifetime. In addition, with the economic downturn, more unemployed/underemployed families are seeking financial assistance to cover their child's medical care. Although there has been an increase in demand for services, there has not been an increase in funding to programs that serve CYSHCN. The Maternal and Child Health budget under Social Security's Title V Act has remained level funded, while the State's resources have declined steadily requiring the state to achieve a balanced budget by reduced spending. To fulfill the mission of the CYSHCN program given by stakeholders, the program has partnered with a variety of agencies to provide providers and consumers with information about the impact of the Health Care Reform Bill; assist families that have no insurance to apply for insurance; review the sliding fee scale in the CYSHCN program to better serve the most vulnerable children, and strengthen collaborative efforts to maximize available resources.

Pro-active interventions remain at the forefront to promote the Maternal and Child Health's core values of 1) prevention and wellness, 2) life course perspectives, 3) health equity, and 4) social determinants of health. These guiding values hold the hope that early, evidenced based interventions can reduce the impact of chronic health conditions as well as better utilization of financial resources to meet the health care needs of Kansas CYSHCN families.

For more information or questions, please contact Marc Shiff at mshiff@kdheks.gov or KDHE's CYSHCN program office.

State of Kansas Genetics Plan 2010

Mission: Improve availability and accessibility of genetic services in Kansas

Genetic and genetic-related health conditions have a significant impact on the health of the general population. Each year, there are approximately 40,000 live births in Kansas. Over 1,000 of these infants will have a genetic disease or major birth defect. Further, approximately 10% of all adults and 30% of children in hospitals are there due to genetically related problems.

Genetics plays a role in the susceptibility to many diseases, either specifically inherited or due to the interaction between an individual's genetics and their environment. Currently, there are more than 6,000 known genetic disorders(1). It has been almost 150 years since Gregor Mendel published his theories on inheritance in pea plants and our knowledge of the field has expanded rapidly since that time. Advanced genetic and genomic technologies will further increase our understanding of the pathophysiology of common diseases, increase opportunities to prevent diseases, and allow for earlier and more effective treatments and therapies.

Healthy People 2010 is a comprehensive, nationwide health promotion and disease prevention agenda designed to achieve two overarching goals:

- Increase quality and years of healthy life
- Eliminate health disparities

Healthy Kansans 2010 subsequently identified three issues common to multiple health focus areas:

- Reducing and Eliminating Health and Disease Disparities
- System Interventions to Address Social Determinants of Health
- Early Disease Prevention, Risk Identification, and Intervention for Women, Children and Adolescents

The State of Kansas Genetics plan mirrors these goals and will improve the health and quality of life for Kansans through integration of quality genetic services and technology into public health and reduce morbidity and mortality associated with genetic disorders. This plan is developed through the Kansas Department of Health and Environment in partnership with the genetics stakeholders across the state. The purpose of this document is to provide Kansas with direction over the next three to five years to optimize the potential benefits of new technologies and more effectively provide genetic services to residents. This plan includes a demographic overview of the State, a description of genetic and genetic-related services, a summary of the 2007 State Genetics Survey, and goals and objectives to improve the health and quality of life for Kansans as related to genetic disorders as a result of interviewing and convening stakeholders.

To view the full report, please visit www.kdheks.gov/newborn_screening/download/State_Genetics_Plan.pdf. For more information or questions, please contact Jamey Kendall at jkendall@kdheks.gov or KDHE's Newborn Screening Program.

Children and Youth with Special Health Care Needs Family Survey

Children and Youth with Special Healthcare Needs (CYSHCN) is a state and federally funded program that provides and promotes family centered community-based care coordination for children and youth with special health care needs. CYSHCN is involved in the planning, evaluating, and promoting health in children and youth with disabilities and chronic illnesses.

The CYSHCN program sets goals and objectives in line with national goals and objectives. In order to assess progress in meeting goals and objectives, performance measures are identified and data is gathered at periodic intervals. A convenience survey was conducted from February through June 2009 at CYSHCN contracting clinics. Parents and their children were asked 37 questions about patient history, satisfaction, care coordination, and transition planning. Seventeen percent (17%) of parents responded (215/1249). The key findings of the survey are as follows:

- Overall children, youth, and their parents are comfortable discussing the patient's health with physicians.
- A diverse population was surveyed. Adequate accommodations may not be provided to meet the needs of this diverse population while in clinical settings.
- Approximately three of five (60%) of families always receive information to help them understand or manage their children's/youth's health problems.
- Approximately two of five (40%) are always asked if their children's/youth's health is affecting family life, and 1 in 2 (50%) of providers always try to meet the child's/youth's needs within the community.
- Approximately one of three (33%) respondents have copies of their medical records.
- One of three (33%) respondents have taken steps to obtain an adult doctor or already have an adult doctor, and nearly 1 in 5 (20%) possesses a written transition plan.
- Transition plans lack information or provide information to help youth live independently.
- A large percentage of youth across various indicators indicated they do not need skills to manage their adult health, and 2 in 5 (40%) youth ages 15 and older indicated that they do not need information on higher education.

To view the full report, please visit www.kdheks.gov/cyshcn/download/Family_Survey.pdf. For more information or questions, please contact Marc Shiff at mshiff@kdheks.gov or KDHE's CYSHCN program office.

Children and Youth with Special Health Care Needs Physician Survey

Children with Special Health Care Needs (CSHCN) is a state and federally funded program that provides and promotes family-centered, community-based coordinated care (including care coordination services) for children with special health care needs and facilitates the development of community-based, systems of services for such children and their families. CSHCN is involved in planning, evaluating, and promoting the health of children and youth with disabilities. In order to assure availability of services, the CSHCN program contracts with specialty providers and multi-disciplinary clinics in the Kansas City and Wichita areas and supports some outreach specialty clinics in other parts of the state.

The state program sets goals and objectives in line with national goals and objectives. In order to assess progress in meeting goals and objectives, specific performance outcome measures are identified and data is gathered at periodic intervals. The physician survey was an attempt to determine if the components of continuous, comprehensive, and coordinated care within a medical home are supported in the clinics sponsored by CSHCN.

A survey questionnaire was sent to primary care providers (PCPs) identified by CSHCN sponsored specialty clinic staff to solicit information from these providers about their knowledge of specific performance relating to outcome measures identified in the CSHCN contracts. The survey asked about communication between specialty and primary care providers as well as activities supporting transition planning.

Two hundred thirty four (234) surveys were mailed, 67 surveys were returned, resulting in a response rate of about 30%. This level of response is average for these types of state health department surveys when no phone follow-up is done. The survey had approximately equal response rates from pediatricians and family practice practitioners. The data indicates that:

- MCH/CSHCN specialty vendor contract outcome objective: “that reports will be sent to the PCP within two weeks of the specialty appointment.” Only 12% of the PCP’s always receive information within two weeks of the specialty appointment. Another 61% said they usually receive specialty reports within two weeks.
- MCH/CSHCN specialty vendor contract outcome objective: “within the framework of the specialty clinics, 90% of the youth will receive the services necessary to make transitions to all aspects of adult life, including adult health care, work, and independence.” Only 3% of the specialty reports always address youth development in assuming personal care/management and transition planning to adult providers. Thirty-three (33%) usually address these issues. Most of the youth are seen once or twice per year by a specialty provider which further limits opportunities for youth engagement and care/management skills development.
In a 2006 Youth survey, youth indicated they prefer multiple opportunities in various settings to learn about their health/disability, and to practice skills they will need to master in order to live independently.
- Nearly all pediatricians encourage their patients to transition to adult health care when they reach age 18. Family practitioners, on the other hand, continue to see their patients into adulthood.

The survey results suggest that further collaboration between specialists and primary care providers is needed to improve co-management of children and youth with special health care needs to support the intent of the medical home concept in Kansas. Opportunities to support developmentally appropriate youth activities to learn, practice, and hone self management skills in multiple settings are being missed. Additional interventions should be considered to address this gap.

To view the full report, please visit www.kdheks.gov/cyshcn/download/physician_survey.pdf. For more information or questions, please contact Marc Shiff at mshiff@kdheks.gov or KDHE's CYSHCN program office.

Infant and Parental Characteristics at Birth Associated with Lost to Follow-up and Lost to Document in Kansas Newborn Hearing Screening

Garry Kelley, MS, Elizabeth Abbey, MS

Every year, approximately 100 infants and children are diagnosed with a permanent hearing loss in Kansas. Without appropriate intervention, children with hearing loss can experience delays in cognitive, verbal, behavioral, and emotional development. However, the ratio of lost to follow-up (LFU) to lost to document ratio is significantly higher in Kansas than the rest of the United States. With a grant from the CDC, a cohort study of 127,317 births that occurred in Kansas from 2006 through 2008 was used to examine the extent of infants' physical birthing situations and family social demographics in unconfirmed diagnoses, a proxy for the potential LFU, and failure to report results to newborn screening program, a marker for LTD. The populations at risk for LFU and LTD in Kansas are fairly similar, but differ from the birthing population. Significant differences in LFU and LTD were found for mother's insurance type and prenatal care and for infant's birth order and the presence of birth defects or history of hearing loss. Although family dynamics may be attributing to poor LFU in Kansas, the data suggests that targeted interventions with high risk infants or mothers through government insurers could improve program efficiency.

For more information or questions, please contact Garry Kelley at gkelley@kdheks.gov or KDHE's Bureau of Family Health.

Breastfeeding Initiation - National Immunization Survey (NIS) Results

Carol Moyer, MPH, RN
Bureau of Epidemiology and Public Health Informatics

Breast milk is the optimal infant food. Observational studies have shown positive infant outcomes are associated with a reduction in the risk of acute otitis media, non-specific gastroenteritis, severe lower respiratory tract infections, atopic dermatitis, asthma (young children), obesity, type 1 and 2 diabetes, childhood leukemia, sudden infant death syndrome (SIDS), and necrotizing enterocolitis.

For maternal outcomes, a history of lactation was associated with a reduced risk of type 2 diabetes, and breast and ovarian cancer. Early cessation of breastfeeding or not breastfeeding was associated with an increased risk of maternal postpartum depression.

A recent article in the Morbidity and Mortality Weekly Report (MMWR) summarized National Immunization Survey (NIS) data on racial and ethnic differences in breastfeeding. The NIS is a federally funded survey that collects data on breastfeeding initiation along with duration by state. NIS is an ongoing, random digit-dialed survey in 50 states and the District of Columbia that includes households with children aged 19-35 months at the time of interview. To allow for state level analysis stratified by racial/ethnic group, survey results were combined from the 2004-2008 surveys creating a cohort of children born during 2003-2006.

This NIS report highlighted demographic characteristics nationally and select race/ethnicity differences by state. Nationally, only Asian or Pacific Islanders and Hispanics exceeded the HP2010 targets of 75 percent for initiation. Also, for breastfeeding six months or 12 months, only Asian or Pacific Islanders met the HP2010 targets of 50 percent and 25 percent respectively. Black non-Hispanic respondents had the lowest rates of initiation, and breastfeeding six months and 12 months. Other measures associated with breastfeeding (both initiation and duration) included college graduation and mother's age over 29.

The analyses by state included select racial/ethnic groups where the number of respondents was greater or equal to 50 respondents per group. When comparing percentage initiation among Kansas' mothers to the national estimates, white non-Hispanic and black non-Hispanic mothers were slightly higher and Hispanic mothers were slightly lower. These percentages were not significantly different.

When comparing Kansas' percentages with surrounding states, analysis using confidence intervals shows a significant difference in breastfeeding initiation among white non-Hispanic mothers between several states - Missouri's percentage (67.7%) is lower and Colorado's percentage (89.4%) is higher compared to Kansas. No statistical differences are indicated between black non-Hispanic and Hispanic mothers. This may be due to a lower number of respondents in these groups.

To view the full report, please visit www.kdheks.gov/ches/khsnews/khs46.pdf. For more information or questions, please contact Carol Moyer at cmoyer@kdheks.gov or KDHE's Bureau of Epidemiology and Public Health Informatics.

Stillbirths and Infant Deaths Kansas, 2008

Carol Moyer, MPH, RN, Greg Crawford, BA, David Oakley, MA
Bureau of Epidemiology and Public Health Informatics

Infant mortality is an important indicator of the health of a community or state. It is associated with a variety of factors such as economic development, general living conditions, social well-being where basic needs are met, rates of illness such as diabetes and hypertension and quality of the environment. The purpose of this report is to move beyond single-year statistics reported in the *Annual Summary of Vital Statistics* and provide a more long term view of the underlying percentages or rates. The time periods used predominately in this report are five years and 20 years. At least 20 years are used to evaluate or present trends.

In the last century, the infant mortality rate (IMR) has decreased dramatically (90.2%) from 73.5 deaths per 1,000 live births in 1912 (2,795 infant deaths) to 7.2 in 2008.

Even when considering the last 20 years (1989-2008), the overall trend in infant mortality rates decreased significantly.

The Kansas infant mortality rate did not decline in the last five years.

In the last 20 years (1989-2008), the Black non-Hispanic infant death rate has remained at least twice that of the White non-Hispanic population.

Analysis of the linked birth/death file (2005-2008) shows that prematurity or low birth weight is a primary risk factor in infant deaths (about 62 %).

Prematurity is an important risk factor for the non-Hispanic Black population (75.3% of infant deaths); non-Hispanic White population (60.6%) and the Hispanic population (59.3%).

Gestational age specific analysis shows an infant mortality rate of 46.8/1,000 live births for infants born prematurely, 16 times that for infants weighing 2,500 grams or more (2.9/1,000).

Similarly, the infant mortality rate for very premature infants (214.4/1,000) is 74 times higher than the rate for infants born weighing 2,500 grams or more.

The *Selected Special Statistics Stillbirths and Infant Deaths Kansas, 2008* summarizes vital records data on stillbirths and infant deaths. This report can be found at <http://www.kdheks.gov/bphi/index.html>. Persons inquiring about additional data needs can call (785) 296-8627.

Adequacy of Prenatal Care Utilization Index Kansas, 2008

Greg Crawford, BA
Edited by Carol Moyer, MPH, RN, David Oakley, MA
Bureau of Epidemiology and Public Health Informatics

Introduction

Prenatal care is defined as pregnancy-related health care services provided to a woman between conception and delivery. It is important to track because there is a strong association between prenatal care and pregnancy outcome. Pregnant women who receive inadequate care are at increased risk of bearing infants who have low birth weight, are stillborn, or die within the first year of life. This data can be analyzed to suggest population groups and geographic areas in need of intervention, therefore protecting the health of these future Kansans.

Accurate measurement of prenatal care depends on the accuracy of the index used. Beginning with 1998 data, the Kansas Department of Health and Environment (KDHE) transitioned from a modified Kessner Index to the Adequacy of Prenatal Care Utilization (APNCU) Index (often referred to as the Kotelchuck Index). This index attempts to characterize prenatal care (PNC) utilization on two independent and distinctive dimensions: adequacy of initiation of PNC and adequacy of received services (once PNC has begun). The index uses information readily available on the Kansas birth certificate (number of prenatal care visits, date of first prenatal visit, date of last menses, and gestational length of pregnancy). The APNCU Index combines these data to characterize adequacy of pregnancy-related health services provided to a woman between conception and delivery. The APNCU categorizes care as inadequate, intermediate, adequate or adequate plus. The index does not assess quality of the prenatal care that is delivered, only its utilization.

This summary is an enhancement of information contained in the 2008 *Annual Summary of Vital Statistics*. Both products can be found at <http://www.kdheks.gov/bphi/>.

Highlights

Beginning in 2005, the collection process for prenatal care data changed. Please see the Technical Notes. Adequacy of prenatal care utilization could be calculated on 39,508 Kansas resident live births in 2008, compared to 39,055 in 2007. This represented 94.5 percent of the 41,815 resident births reported. While births decreased by 0.3 percent from 2007, reporting on variables needed to calculate prenatal care utilization improved by 1.2 percent.

Of the 39,508 Kansas resident births for which prenatal care utilization could be calculated in 2008, 77.6 percent received adequate or better prenatal care, including 30.4 percent with adequate-plus care; 22.5 percent received less than adequate prenatal care, including 15.8 percent inadequate care.

In 2008, reported inadequate prenatal care utilization decreased by 1.8 percent compared to 2007. However, the percentage of adequate care increased by 5.0 percent.

Among mothers whose prenatal care utilization was classified as inadequate (6,238), the vast majority (5,946) were due to late initiation of care. Only a minority of women (292) who initiated their care within the first four months of care received inadequate care.

Among mothers of low birth weight infants, 80.0 percent received adequate or better care, while 16.9 percent experienced inadequate care.

The proportion of mothers who received adequate or better prenatal care was highest among White non-Hispanic (82.8 percent), followed by Asian/Pacific Islander non-Hispanic (80.9 percent) and Native American non-Hispanic (68.8 percent). The population group with the lowest percent was Hispanic (59.9).

The proportion of mothers reporting inadequate care were Black non-Hispanic (25.1 percent), Native American non-Hispanic (27.1 percent) and Hispanic (28.7 percent). These rates are more than twice that of White non-Hispanic women who experienced inadequate care at a rate of 11.8 percent.

The payer with the highest proportion of mothers who received adequate or adequate plus prenatal care was private insurance (88.6%) followed by Champus/Tricare (79.5%). The payer with the highest proportion of mothers with inadequate prenatal care was self pay (36.6%).

Among first births, the percent of mothers with adequate or adequate plus prenatal care (80.0) was 5.4 percent greater than among second or higher live births (75.9).

Among first births, the percent of mothers with inadequate prenatal care (13.3) was 22.9 percent less than among second or higher live births (17.3).

In all age groups, the proportion of mothers with inadequate prenatal care among second and higher order live births was significantly greater than among mothers of first births.

To view the full report, please visit www.kdheks.gov/hci/pdf/APNCU_08.pdf. For more information or questions, please contact Greg Crawford at gcrawford@kdheks.gov or KDHE's Bureau of Epidemiology and Public Health Informatics.

Adolescent and Teenage Pregnancy Report Kansas, 2008

David Oakley, MA

Edited by David Clark, Greg Crawford, BA, Carol Moyer, MPH, Laurie Stanley

Bureau of Epidemiology and Public Health Informatics

Introduction

Maintaining and improving family health is an essential component of the public health mission of the Kansas Department of Health and Environment. Facilitating healthy pregnancies and positive outcomes pays dividends to Kansas society in the form of reduced maternal and infant mortality and fit children capable of learning and growing into productive members of that society. It is in this role the department, through the Division of Health's Bureau of Public Health Informatics (BPHI), provides this report so progress in reducing adolescent and teen pregnancy can be monitored.

While the department provides a series of tables on teen and adolescent pregnancies in the *Kansas Annual Summary of Vital Statistics*, this report builds on that information by combining additional analytical tables into one resource. Adolescent and teen pregnancies are evaluated in a number of different ways. Thus, in this report the reader will see a number of different combinations of age groups, i.e., 10-14, 15-17, 18-19, and 10-19, used in the tabulations. This is not meant to confuse the reader but to provide the diverse audience of legislators, policy makers, media, program administrations and the public who closely monitor pregnancy issues with a data summary that meets their needs.

For purposes of this report adolescents and teens refer to persons who range in age from 10 to 19. Pregnancies are defined as stillbirths, abortions, and live births. Data for this report are obtained through analysis of reports and certificates registered with the BPHI Office of Vital Statistics. Readers will be able to review both the frequency of adolescent and teen pregnancies as well as the population-based rate. Using the population-based rates, comparisons among counties or with the state are possible. Multi-year rates are prepared for those instances where low counts may inordinately influence a single-year rate.

Several of these tables are taken from the *2008 Annual Summary of Vital Statistics*. Both products can be found at <http://www.kdheks.gov/bphi/>. Other tabulations of pregnancy data are possible at the Kansas Information for Communities (KIC) Website: <http://kic.kdhe.state.ks.us/kic/preg.html>.

Highlights

Teenage females (10-19) accounted for eleven percent (11.3) of the pregnancies (47,509) in 2008. Eighty-three percent (82.6) of the teenage pregnancies resulted in a live birth (4,439), seventeen (16.9) percent in abortion (910) and the rest in stillbirths (22).

The pregnancy rate for females ages 10-19 was 28.6 per 1,000 women in 2008, up 2.9 percent from 2007 (27.8).

The rate for teens 10-17 (10.9) remained unchanged from 2007. The rate for teens 15-19 (55.0) rose 3.4 percent from 2007 to 2008. The rate for teens 10-14 (0.7) dropped 12.5 percent from 2007 to 2008.

Despite an increase in the number and rate of teenage pregnancies in each of the last four years (2005-2008), the longer term trend is still downward. Teenage pregnancy rates (10-19) dropped 14.4 percent overall during the past two decades 1989-2008.

Of the 5,371 Kansas females age 10-19 who were pregnant in 2008, most (98.8 percent) were between 15 and 19 years of age. The Kansas teenage pregnancy rates for females 15-19 years of age decreased 19.8 percent between 1989 and 2008. Teen pregnancy rates for females ages 10-17 decreased 26.8 percent during this same time frame.

In 2008, densely-settled rural counties had the highest pregnancy rates for 10-19 year old females, followed by semi-urban and urban.

The five-year (2004-2008) teen pregnancy rate for Kansas resident females 10-19 years of age was 27.3. Thirty-eight of the state's 105 counties have five-year teen pregnancy rates greater than the state rate. The lowest five-year rate in the state was in Decatur County with 5.4 pregnancies per 1,000 females 10-19 years of age. The highest rate was in Wyandotte County with 52.3 per 1,000 females 10-19 years of age.

To view the full report, please visit [www.kdheks.gov/hci/adol_teen_preg/Adolescent Teenage Pregnancy_08.pdf](http://www.kdheks.gov/hci/adol_teen_preg/Adolescent_Teenage_Pregnancy_08.pdf). For more information or questions, please contact David Oakley at doakley@kdheks.gov or KDHE's Bureau of Epidemiology and Public Health Informatics.

Assessing Household Food Security in Kansas Using the Kansas Behavioral Risk Factor Surveillance System (BRFSS) Survey Data, 2008

Jamie S. Kim, MPH, David Thomason, MPA
Bureau of Family Health (BFH), Kansas Department of Health and Environment

Background: Kansas Department of Health and Environment (KDHE) is a participating member of the Governor’s Food Security Task Force. The Task Force recommended to the Governor in its 2006 report that hunger related questions be added to the Kansas Behavioral Risk Factors Surveillance (BRFSS). KDHE agreed to make the proposal on behalf of the Task Force. The standard “short form” six-items, a subset of the full 18-items of the U.S. Department of Agriculture Food Security Survey Module, were proposed and added to the 2008 BRFSS. The purpose of asking the food security questions is to assess the pervasiveness of hunger in Kansas.

Food Security — access to all people at all times to enough food for an active, healthy life — is one of several conditions necessary for a population to be healthy and well nourished.¹ Food security is especially important for children because the nutritional content of their diet affects not only their health, but also their physical, mental, and social development — and thus their future health and well-being.²

Objective: This population-based study examined the pervasiveness of hunger in Kansas.

Methods: We analyzed the 2008 Kansas BRFSS survey data, state-added food security module (N=4,294). All estimates were weighted to be representative of the entire Kansas population/household, except those who are institutionalized or homeless. All estimates and associated standard errors were generated using SUDAAN 10.0.1. SUDAAN (Software for the Statistical Analysis of Correlated Data) produces accurate variance estimates for complex survey designs.

The household food security statistics presented are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors known to characterize households having difficulty meeting basic food needs. Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies a lack of money or other resources to obtain food as the reason.¹

The food security status of each interviewed household is determined by the number of food-insecure conditions and behaviors the household reports. Households are classified as **food secure** if they report no food-insecure conditions or if they report only one food-insecure condition. They are classified as **food insecure** if they report two or more food-insecure conditions.^{1,3,4}

Results: In 2008, a total of 4,134 households were interviewed in the Kansas BRFSS, state-added food security module. These represent an estimated 566,888 of Kansas households. Of these households, 561,133 households whose food security status were known as they provided a valid response to any of the questions in the food security scale.

Food secure: These households had access, at all times, to enough food for an active, healthy life for all household members.⁵

- 90.2% (est. 506,091) of Kansas households were food secure through 2008, compared to 85.4% for the U.S. households.

Food insecure: At times during the year, these households were uncertain of having, or unable to acquire, enough food to meet the needs of all their members because they had insufficient money or other resources for food. Food-insecure households include those with *low food security* and *very low food security*.⁵

- 9.8% (est. 55,042) of Kansas households were food insecure at some time during 2008, compared to 14.6% for the U.S. households.

Low food security: These food-insecure households obtained enough food to avoid substantially disrupting their eating patterns or reducing food intake by using a variety of coping strategies, such as eating less varied diets, participating in Federal food assistance programs, or getting emergency food from community food pantries.⁵

- 6.1% (est. 34,464) of Kansas households had low food security in 2008, compared to 8.9% for the U.S. households.

Very low food security: In these food-insecure households, normal eating patterns of one or more household members were disrupted and food intake was reduced at times during the year because they had insufficient money or other resources for food.⁵

- 3.7% (est. 20,578) of Kansas households had very low food security at some time during 2008, compared to 5.7% of the U.S. households

Kansas Households classified as having *very low food security* reported the following specific conditions¹:

- 98.1% reported that the food they bought just did not last and they did not have money to get more.
- 95.8% reported that they could not afford to eat balanced meals.
- 100% reported that an adult had cut the size of meals or skipped meals because there was not enough money for food.
- 90.2% reported that this had occurred in 3 or more months.
- In 95.5%, respondents reported that they had eaten less than they felt they should because there was not enough money for food.
- In 76.9%, respondents reported that they had been hungry but did not eat because they could not afford enough food.

Food insecurity was more prevalent among:

- Single mothers
- Women of childbearing age (18-44 years)
- Black non-Hispanic
- Hispanic
- Living with a disability
- Low income
- Obese

Conclusions: About one-in-ten households in Kansas lack access to a secure supply of food. In Kansas, those most at risk for experiencing food insecurity are single mothers, women of childbearing age, low-income persons, black non-Hispanics, Hispanics, persons living with a disability, and obese persons.

Public Health Implications: The information gained will allow program staff to understand the magnitude of hunger and plan appropriate and targeted intervention activities. State and local agencies and non-profit community programs will have access to the information gained through the survey.

Limitations:

- Cross-sectional surveillance survey
- Self-reporting
- Recall bias
- Only landlines used (likely to miss some lower income households)
- Non-response

Acknowledgements: We would like to thank Dr. Mark Nord in the Food Assistance Branch at the Economic Research Service of the U.S. Department of Agriculture, Dr. Ghazala Perveen, Ms. Nimisha Bhakta and Ms. Ginger Taylor in the Bureau of Health Promotion, Kansas Department of Health and Environment, and the Kansas WIC and BFH staff for their support and assistance with this project.

References:

1. Nord, Mark, Margaret Andrews, and Steven Carlson. Household Food Security in the United States, 2008. ERR-83, U.S. Dept. of Agriculture, Econ. Res. Serv. November 2009
2. Nord, Mark. Food Insecurity in Households with Children: Prevalence, Severity, and Household Characteristics. EIB-56. U.S. Dept. of Agriculture, Econ. Res. Serv. September 2009
3. U.S. Household Food Security Survey Module: Six-Item Short Form. July 2008
4. Bickel, Gary, Mark Nord, Cristofer Price, William Hamilton, and John Cook. Guide to Measuring Household Food Security, Revised 2000. U.S. Department of Agriculture, Food and Nutrition Services, Alexandria, VA. March 2000
5. Food Security in the United States: Key Statistics and Graphic. www.ers.usda.gov/Briefing/Foodsecurity/stats_graphs.htm

For more information or questions, please contact Dave Thomason at dthomason@kdheks.gov or KDHE's Bureau of Family Health.

SECTION VI

Appendices

COUNTY ABBREVIATIONS

AL	Allen	GL	Greeley	OB	Osborne
AN	Anderson	GW	Greenwood	OT	Ottawa
AT	Atchison	HM	Hamilton	PN	Pawnee
BA	Barber	HP	Harper	PL	Phillips
BT	Barton	HV	Harvey	PT	Pottawatomie
BB	Bourbon	HS	Haskell	PR	Pratt
BR	Brown	HG	Hodgeman	RA	Rawlins
BU	Butler	JA	Jackson	RN	Reno
CS	Chase	JF	Jefferson	RP	Republic
CQ	Chataqua	JW	Jewell	RC	Rice
CK	Cherokee	JO	Johnson	RL	Riley
CN	Cheyenne	KE	Kearny	RO	Rooks
CA	Clark	KM	Kingman	RH	Rush
CY	Clay	KW	Kiowa	RS	Russell
CD	Cloud	LB	Labette	SA	Saline
CF	Coffey	LE	Lane	SC	Scott
CM	Comanche	LV	Leavenworth	SG	Sedgwick
CL	Cowley	LC	Lincoln	SW	Seward
CR	Crawford	LN	Linn	SN	Shawnee
DC	Decatur	LG	Logan	SD	Sheridan
DK	Dickinson	LY	Lyon	SH	Sherman
DP	Doniphan	MN	Marion	SM	Smith
DG	Douglas	MS	Marshall	SF	Stafford
ED	Edwards	MP	McPherson	ST	Stanton
EK	Elk	ME	Meade	SV	Stevens
EL	Ellis	MI	Miami	SU	Sumner
EW	Ellsworth	MC	Mitchell	TH	Thomas
FI	Finney	MG	Montgomery	TR	Trego
FO	Ford	MR	Morris	WB	Wabaunsee
FR	Franklin	MT	Morton	WA	Wallace
GE	Geary	NM	Nemaha	WS	Washington
GO	Gove	NO	Neosho	WH	Wichita
GH	Graham	NS	Ness	WL	Wilson
GT	Grant	NT	Norton	WO	Woodson
GY	Gray	OS	Osage	WY	Wyandotte

TECHNICAL NOTES

In this report, data analysis and display were based on suggestions of the Maternal and Child Health Services, Health Resources and Services Administration. Table 1 includes the guidelines for measures with small sample sizes used in this document.

TABLE 1

Number of Events	Calculate Rate/ Percent	Method of Analysis
At least 20 events in the numerator and /or at least 50 events in the denominator.	Yes	Used calculated rate or percent
Fewer than 20 events (numerator) and/or 50 events in the denominator.	Yes	Combine 3-5 years so there will be at least 10 in the numerator and 50 in the denominator

Procedures: Calculate rates (at least 20 events in one year)

Example: 25 infant deaths and 860 live births

calculate rate:

$$\frac{25 \text{ infant deaths}}{860 \text{ live births}} \times 1,000 = 29.1 \text{ (rate)}$$

Mortality Data

Death data are classified according to the World Health Organization’s International Classification of Diseases (ICD). The ICD – 10 classification system uses an alpha-numeric coding system denoting both the nature of injury and external causes.

Category	ICD-10 Coding
Vital Statistics - Death	
Injury	U01-U03, V01-Y36, Y85-Y87, Y89
Suicide	U03, X60-X84, Y870
Homicide	U01-U02, X85-Y09, Y871
Unintentional Injury	V01-X59, Y85-Y86

Weighting Procedure

Weighting is a process by which the survey data such as the Behavioral Risk Factor Surveillance System is adjusted to account for unequal selection probability and response bias and to more accurately represent the population from which the sample was drawn. The responses of each person interviewed are assigned a weight which accounts for the density stratum, the number of telephone numbers in the household, the number of adults in the household, and the demographic distribution of the sample. Alterations in the weighting formulas are made to arrive at estimates for prevalence of households and among children in specific age groups.

2005 Revisions to Certificates

Beginning with the reporting of 2005 data, Kansas implemented the 2003 revision of the U.S. standard certificates and reports. Please note that not all states have implemented the use of the new certificate format. Therefore, some information routinely collected on Kansas occurrence events may not be provided on births and deaths that involve Kansas residents who had events in another state.

While most data items on the certificates are comparable to past years, certain items have changed considerably. These changes can affect comparability with previous years data. Three data elements addressed in this report are: prenatal care visits, smoking, and race-ethnicity.

Prenatal care visits

In previous years, the mother or prenatal care provider reported the month of pregnancy in which the mother began prenatal care. As of 2005, this item was replaced by the exact dates of first and last prenatal visit. Therefore, the month prenatal care began is now calculated from the last normal menses date and the date of first prenatal care visit. Unfortunately, because exact dates are harder to get, the month prenatal care began now has high numbers of missing data. The missing data have been removed from totals when calculating percentages.

As a result of changes in reporting, levels of prenatal care utilization based on the new revised data are lower than those based on data from previous certificates. For example, 2004 data for Kansas indicates that 86.5% of residents began care in the first trimester compared to 75.0% based on the 2006 revised data. The Adequacy of Prenatal Care Utilization Index (APNCU) showed a small increase in the proportion of women receiving less than adequate care between 2004 (18.7 %) and 2006 (21.6%). Much of the difference between 2004 and 2006 is related to changes in reporting and not to changes in prenatal care utilization. Accordingly, prenatal care data in this report is not directly comparable to data collected from previous certificates.

Smoking

Adoption of the revised birth certificate produced substantive changes in the wording of the questions on tobacco use. The old certificate listed a tobacco use checkbox and a literal field for the number of cigarettes in the medical risk factor section. Smoking information was limited to whether the mother smoked anytime during the pregnancy. The new certificate asks about cigarette smoking in an item separate from medical risk factors. New fields address smoking behavior prepregnancy and during each trimester of the pregnancy. New data are not fully comparable with pre-2005 data. However, the new information will enable supplementary

research into changes in smoking patterns before and during the pregnancy. It remains uncertain whether the changes will address what has been chronic underreporting of smoking on birth certificates.

Race-Ethnicity

The revised certificate contains significant changes in the way self-reported race and ethnicity is collected. The race item was revised to allow the reporting of multiple races and can capture up to 15 categories and eight literal entries. In addition, Hispanic origin is now collected as a separate question from ancestry. These changes were implemented to provide a better picture of the nation's variation in race and Hispanic origin. The expanded racial and origin categories are compliant with the provisions of the Statistical Policy Directive No. 15, Race and Ethnic Standards for Federal Statistics and Administrative Reporting, issued by the Office of Management and Budget (OMB) in 1997.

For this report, race and Hispanic origin categories are combined. Self-reported single race data are utilized for White Non-Hispanic, Black Non-Hispanic, Native American Non-Hispanic, Asian/Pacific Islander Non-Hispanic, and Other Non-Hispanic. If more than one racial category is checked, the person's race is classified as "Multiple" and is collapsed into the Other Non-Hispanic category. Data shown for Hispanic persons include all persons of Hispanic origin of any race. These particular groupings are categories that reflect the cultural and ethnic identities of subgroups of the population commonly addressed in the public health field and on which health disparities can be measured.

For more information, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf, www.kdheks.gov/ches/download/Disparity_Eval_2008.pdf, and www.kdheks.gov/hci/as/2006/AS2006.html.

Glossary

Adequacy of Prenatal Care Utilization (APNCU)

Index: An assessment of the adequacy of prenatal care measured by the APNCU Index (often referred to as the Kotelchuck Index), a composite measure based on gestational age of the newborn, the trimester prenatal care began, and the number of prenatal visits made.

African American/"Black" (2000): The 2000 Census category "Black or African American" describes a person having origins in any of the Black racial groups of Africa. It includes people who indicate their race as "Black, African Am., or Negro," or provide written entries such as African American, Afro American, Kenyan, Nigerian, or Haitian.

Age-Adjusted Death Rate: A calculation by which the age composition of a population is defined as constant so that differences in age composition can be eliminated from the analysis.

American Indian or Alaska Native (2000): The 2000 Census category "American Indian or Alaska Native" describes a person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment. It includes people who classified themselves as described below.

American Indian. This category includes people who indicated their race as "American Indian," entered the name of an Indian tribe, or reported such entries as Canadian Indian, French American Indian, or Spanish American Indian.

American Indian tribe. Respondents who identified themselves as American Indian were asked to report their enrolled or principal tribe. Therefore, tribal data in tabulations reflect the written entries reported on the questionnaires. Some of the entries (for example, Iroquois, Sioux, Colorado River, and Flathead) represent nations or reservations. The information on tribe is based on self-identification and therefore does not reflect any designation of federally or state-recognized tribe.

Information on American Indian tribes is presented in summary files. The information for Census 2000 is derived from the American Indian Tribal Classification List for the 1990 census that was updated based on a December 1997, Federal Register Notice, entitled "*Indian Entities Recognized and Eligible to Receive Service From the United States Bureau of Indian Affairs*," Department of the Interior, Bureau of Indian Affairs, issued by the Office of Management and Budget.

Alaska Native. This category includes written responses of Eskimos, Aleuts, and Alaska Indians as well as entries such as Arctic Slope, Inupiat, Yupik, Alutiiq, Egegik, and Pribilovian. The Alaska tribes are the Alaskan Athabascan, Tlingit, and Haida. The information for Census 2000 is based on the American Indian Tribal Classification List for the 1990 census, which was expanded to list the individual Alaska Native Villages when provided as a written response for race.

Apgar score: A summary measure of the condition of the infant based on heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each factor is given a score of 0, 1, or 2; the sum of these five values is the Apgar score, ranging from 0 to 10.

Asian (2000): The 2000 Census category "Asian" describes a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. It includes "Asian Indian," "Chinese," "Filipino," "Korean," "Japanese," "Vietnamese," and "Other Asian."

Asian Indian. This category includes people who indicated their race as "Asian Indian" or identified themselves as Bengalese, Bharat, Dravidian, East Indian, or Goanese.

Chinese. This category includes people who indicate their race as "Chinese" who identify themselves as Cantonese, Chinese American, or Taiwanese.

Filipino. This category includes people who

indicate their race as “Filipino” or who report entries such as Filipino, Philippine, or Filipino American.

Japanese. This category includes people who indicate their race as “Japanese” or who report entries such as Nipponese or Japanese American.

Korean. This category includes people who indicate their race as “Korean” or who provide a response of Korean American.

Vietnamese. This category includes people who indicate their race as “Vietnamese” or who provide a response of Vietnamese American.

Cambodian. This category includes people who provide a response such as Cambodian or Cambodia.

Hmong. This category includes people who provide a response such as Hmong, Laohmong, or Mong.

Laotian. This category includes people who provide a response such as Laotian, Laos, or Lao.

Thai. This category includes people who provide a response such as Thai, Thailand, or Siamese.

Other Asian. This category includes people who provide a response of Bangladeshi; Bhutanese; Burmese; Indochinese; Indonesian; Iwo Jiman; Madagascar; Malaysian; Maldivian; Nepalese; Okinawan; Pakistani; Singaporean; Sri Lankan; or Other Asian, specified and Other Asian, not specified.

See Pacific Islander.

Behavioral Risk Factor Surveillance Survey

(BRFSS): The world’s largest telephone survey tracks health risks in the United States. Information from the survey is used to improve the health of the American people. Coordinated by the Centers for Disease Control and Prevention (CDC) and conducted by State health departments.

Kansas BRFSS: The Kansas BRFSS adapted from the National BRFSS. This surveillance system is based on a research design developed by the CDC and used in all 50 states, the District of Columbia, and three U.S. territories.

Birth rate: Measures the number of births that occur to 1,000 adults of reproductive age in any given

year. Birth rates are based on information collected from birth certificates, combined with population estimates generated by the U.S. Bureau of the Census.

Birth weight: The weight of the fetus or infant at the time of delivery.

Body Mass Index (BMI): A measure of weight relative to height. A BMI of less than 25 is considered ideal or healthy; a BMI of 25-29 is considered overweight; and a BMI greater than 30 is considered to be indicative of obesity. BMI is calculated by dividing an individual’s weight in kilograms by the individual’s height in meters squared.

CDC: Centers for Disease Control and Prevention, based in Atlanta, GA.

Community: Any set of persons within the society that differs from other sets due to demographic, economic or social characteristics such as age, sex, education level, race, religion, income level, lifestyle, beliefs, etc.

Congenital anomalies: Defects existing at the usually before birth regardless of causation.

Crude death rate: The number of deaths per 1,000 population, calculated by Number of Deaths divided by Population of the Area, multiplied by 1,000. See Mortality.

Death rate: A death rate is a ratio between mortality and population; the number of deaths per specific number of people. This is the most widely used measure to determine the overall health of a community. Death rates are usually computed per 100,000 population. Rates allow meaningful comparisons between groups of unequal size.

Disparities: Differences (in health) among individuals and/or groups in a population.

Environmental factors: Qualities or contaminants of living and working surroundings that contribute to health and health care disparities such as poor air qual-

ity, crime, contaminated water, and exposure to toxic chemicals. Environmental factors in combination with individual, social and health system factors lead to health and healthcare disparities.

Ethnicity: The characteristic of a group of people that share a common and distinctive national, religious, linguistic or cultural heritage. A quality or affiliation resulting from similar national, religious, linguistic, or cultural heritage.

Family: As defined by the U.S. Census Bureau, a family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A household can contain only one family for purposes of census tabulations. Not all households contain families since a household may be a group of unrelated people or one person living alone.

Fertility rate: The number of live births per 1,000 females 15-44 years of age. Calculated by number of live births divided by female population ages 15-44 multiplied by 1,000.

Health: A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Health care organization: Any public or private institution involved in any aspect of delivering health care services.

Health maintenance organization (HMO): A type of managed care organization that provides comprehensive medical care for a predetermined annual fee per enrollee.

Healthy People 2010: Healthy People 2010 is a nationwide health promotion and disease prevention initiative that is committed to improving the health of all people in the United States during the first decade of the 21st century. Healthy People 2010 is designed to achieve two overarching goals: to increase quality and years of healthy life and to eliminate health dis-

parities in the United States.

Hebdomadal death: The death of a live-born infant which occurs prior to the seventh day of life.

Hispanic/"Hispanic or Latino" (2000): The data on the Hispanic or Latino population were derived from answers to a question that was asked of all people. The terms "Spanish," "Hispanic origin," and "Latino" are used interchangeably. Some respondents identify with all three terms while others may identify with only one of these three specific terms. Hispanics or Latinos who identify with the terms "Spanish," "Hispanic," or "Latino" are those who classify themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the questionnaire ("Mexican," "Puerto Rican," or "Cuban") as well as those who indicate that they are "other Spanish/Hispanic/Latino." People who do not identify with one of the specific origins listed on the questionnaire but indicate that they are "other Spanish, Hispanic, or Latino" are those whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Dominican Republic, or people identifying themselves generally as Spanish, Spanish-American, Hispanic, Hispano, Latino, and so on. All write-in responses to the "other Spanish/Hispanic/Latino" category were coded.

If an individual could not provide a Hispanic origin response, their origin was assigned using specific rules of precedence of household relationship. For example, if origin was missing for a natural-born daughter in the household, then either the origin of the householder, another natural-born child, or spouse of the householder was assigned. If Hispanic origin was not reported for anyone in the household, the Hispanic origin of a householder in a previously processed household with the same race was assigned. This procedure is similar to those used in 1990, except for Census 2000 race and Spanish surnames were used to assist in assigning an origin.

Household: As defined by the U.S. Census Bureau, a household includes all of the people who occupy housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room occupied (or if vacant, intended for occupancy)

as separate living quarters. Separate living quarters are those in which the occupants live separately from any other people in the building and that have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters.

ICD-10 Code: The cause-identifying number classified in the 10th Revision of the international classification of Diseases implemented by National Center for Health Statistics (NCHS) for deaths in 1999.

ICD-9 Code: International classification of Diseases, 9th Revision (1979-1998).

Incidence: Incidence is an estimate of the number of new cases of disease that develop in a population in a specified time period, usually one year. Incidence is often used as an indicator of the need for preventive measures, or to evaluate the effectiveness of existing programs. How often new cases of a health problem occur in a population.

Indian (American): See American Indian.

Infant death rate: The number of infant deaths per 1,000 live births, calculated as number of infant deaths divided by number of live births, multiplied by 1,000.

Infant death: The death of a live-born infant which occurs within the first year of life.

Interpreter: A person who not only translates from one language to another but assists in cross-cultural understanding between providers and patients.

Live birth: The complete expulsion or extraction of a product of human conception from its mother, irrespective of the duration of pregnancy, that, after such expulsion or extraction, shows any evidence of life such as breathing, heartbeat, pulsation of the umbilical cord, or voluntary muscle movement, whether or not the umbilical cord has been cut or the placenta attached.

Low birth weight: Weight of a fetus or infant at delivery which is under 2,500 grams (less than five pounds, 8 ounces).

Maternal death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (included in these deaths are ICD-10 codes A34, O00-O95, and O98-O99).

Maternal death rate: The number of maternal deaths per 100,000 live births.

Medicaid: A state and federal program which funds and provides specific and approved health care and related services for individuals meeting certain eligibility conditions.

Medicare: A federal health insurance program designed to provide health care for the elderly and the disabled.

Minority (2000): 2000 minority population includes all persons who are not Non-Hispanic White Alone (e.g., White Hispanics would be a minority population as would persons who classified themselves as both White and American Indian).

Morbidity: A term used to describe disease, sickness or illness, as a departure from normal physiological and psychological conditions. It is normally expressed as a morbidity rate. Morbidity rates give the closest frame of the quality of life and health status in a given population.

Mortality: A term used to describe death. It is normally expressed as a rate, expressing the proportion of a particular population who die of one or more diseases or of all causes during a specified unit of time, usually a year. It is also the probability of dying within a specified time period.

Neonatal death: The death of a live-born infant which occurs prior to the twenty-eighth day of life.

Neonatal death rate: The number of neonatal deaths per 1,000 live births calculated thus, number of neonatal deaths divided by number of live births multiplied by 1,000.

Occurrence data: Vital statistics compiled on the basis of where the vital event happened.

Other race/”Some other race” (2000): This category includes all other responses not included in the “White,” “Black or African American,” “American Indian or Alaska Native,” “Asian,” and “Native Hawaiian or Other Pacific Islander” race categories described above. Respondents providing write-in entries such as multiracial, mixed, interracial, or a Hispanic/Latino group (for example, Mexican, Puerto Rican, or Cuban) in the “Some other race” write-in space are included in this category.

Pacific Islander/”Native Hawaiian or Other Pacific Islander” (2000): The 2000 Census category “Native Hawaiian or Other Pacific Islander” describes a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicate their race as “Native Hawaiian,” “Guamanian or Chamorro,” “Samoan,” and “Other Pacific Islander.” (In this document “Asian” and “Pacific Islander” data are combined into one category.)

Native Hawaiian. This category includes people who indicate their race as “Native Hawaiian” or who identify themselves as “Part Hawaiian” or “Hawaiian.”

Guamanian or Chamorro. This category includes people who indicate their race as such, including written entries of Guam or Chamorro.

Samoan. This category includes people who indicate their race as Samoan or who identify themselves as American Samoan or Western Samoan.

Other Pacific Islander. This category includes people who provide a write-in response of a Pacific Islander group such as Carolinian; Chuukese (Trukese); Fijian; Kosraean; Melanesian; Micronesia; Northern Mariana Islander; Palauan; Papua New Guinean; Pohnpeian; Polynesian; Solomon Islander; Thitian; Tokelauan; Tongan; Yapese; or Other Pacific Islander, specified and Other Pacific Islander, not specified.

In this report “Asian” and “Pacific Islander” data are combined into one category. See also Asian.

Patients/consumers: Individuals, including accompanying family members, guardians, or companions, seeking physical or mental health care services, or other health-related services.

Perinatal death: Fetal deaths plus hebdomadal deaths.

Population: All people, male and female, child and adult, living in a given geographic area.

Postneonatal death: Death of a person ages between 28 days and one year.

Postneonatal death rate: The number of post neonatal deaths per 1,000 live births, calculated as number of Postneonatal deaths divided by the number of live births, multiplied by 1,000.

Prenatal care: Pregnancy-related health care services provided to a woman between conception and delivery.

Prevalence: Prevalence is an estimate of how many people have a specific condition or disease at a given point in time. This number is useful in assessing the level of medical and social care needed for current cases.

Race (2000): The data on race were derived from answers to the question on race that was asked of all people. The concept of race, as used by the Census Bureau, reflects self-identification by people according to the race or races with which they most closely identify. These categories are socio-political constructs and should not be interpreted as being scientific or anthropological in nature. Furthermore, the race categories include both racial and national-origin groups.

The racial classifications used by the Census Bureau adhere to the October 30, 1997, Federal Register Notice entitled, “Revisions to the Standards for the Classification of Federal data on Race and Ethnicity” issued by the Office of Management and Budget (OMB). These guidelines reflect “the increasing diversity of our Nation’s population, stemming from growth in interracial marriages and immigration.”

The OMB standards govern the categories used to collect and present federal data on race and ethnicity. The OMB requires five minimum categories (White, Black or African American, American Indian or Alaska Native, Asian and Native Hawaiian or Other Pacific Islander) for race. A sixth category, “Some other race,” was added with OMB approval. In addition to the five race groups, the OMB also states that respondents should be offered the option of selecting one or more races.

If an individual did not provide a race response, the race or races of the householder or other household members were assigned using specific rules of precedence of household relationship. For example, if race was missing for a natural-born child in the household, then either the race or races of the householder, another natural-born child, or the spouse of the householder were assigned. If race was not reported for anyone in the household, the race or races of a householder in a previously processed household were assigned.

Comparability of 2000 Census race data with previous censuses: Census 2000 race data are not directly comparable with data from 1990 and previous censuses. See the Census 2000 Brief, “Overview of Race and Hispanic Origin” at www.census.gov/prod/2001pubs/c2kbr01-1.pdf.

Residence data: Vital statistics compiled on the basis of the usual place of residence of the person(s) to whom the vital event occurred.

Socioeconomic status (SES): A measure of a person’s available advantages in comparison to others in society. The factors that make up socioeconomic status include income, wealth, education, and employment. In addition, some are investigating the link between perceived social status and health. A growing body of evidence indicates that socioeconomic status (SES) is a strong predictor of health. Better health is associated with having more income, more years of education, and a more prestigious job, as well as living in neighborhoods where a higher percentage of residents have higher incomes and more education.

Surveillance: The ongoing study of a condition, characteristic or disease, generally to detect changes in trends or distribution to initiate investigate or control measures.

Teenage pregnancy: A live birth, stillbirth or abortion occurring to a female under 20 years of age.

Trimester: A three-month period of time. First trimester care, for example, refers to care initiated in the first three months of pregnancy.

Very low birth weight: Weight of a fetus or infant at delivery which is under 1,500 grams (less than 3 pounds, 5 ounces).

Vulnerable: Susceptible to injury or harm. Those whose needs are not fully addressed by traditional service providers. People who feel they cannot comfortably or safely access and use the standard resources offered. They include but are not limited to those who are physically or mentally disabled, limited or non-English speaking, geographically or culturally isolated, medically or chemically dependent, homeless, frail/elderly and children.

Weeks gestation: The number of weeks between the last reported normal menses and the delivery of the fetus or infant.

White (2000): The 2000 census category “White” describes a person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as “White” or report entries such as Irish, German, Italian, Lebanese, Near Easterner, Arab, or Polish.

References:

1. Kansas Health Institute. *Racial and Ethnic Minority Health Disparities in Kansas*.
2. Crawford G, Moyer C, Oakley D. *Kansas Annual Summary of Vital Statistics, 2008*. Topeka, KS: Kansas Department of Health and Environment, 2009. www.kdheks.gov/hci/annsumm.html

Kansas Department of Health and Environment
Division of Health
Bureau of Family Health
1000 SW Jackson St., Suite 220
Topeka, KS 66612-1274
264-18

MEDIA MAIL--BOOKS