Kansas Maternal and Child Health

2014 Biennial Summary

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Susan Mosier, MD, Secretary | Department of Health & Environment | Sam Brownback, Governor

June 2015

Dear Fellow Kansans:

It is my pleasure to present to you the 2014 Maternal and Child Health Biennial Summary for the State of Kansas. This is our department's fifth 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 increased understanding of 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.

Please submit comments and your thoughts about this Summary and what it says about the health status of Kansas mothers and children by sending an email to Jamie Kim at jkim@kdheks.gov.

Sincerely,

Susan Mosier, MD, MBA
Secretary
State Health Officer
Kansas Department of Health and Environment

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EXECUTIVE SUMMARY

- In Kansas, 2011-2013, there was an increasing trend in the percent of women 18-44 who lack health insurance with about 25.3% of women lacking health insurance in 2013. In 2013, women at greatest risk of being uninsured were Hispanic, have less than a high school education, earn less than $25,000, reside in a rural county, or were widowed, divorced, or separated.

- The rate of smoking during pregnancy has declined significantly over the past nine years (2005-2013), but was still nearly 1.5 times the national rate. In 2013, the percent of pregnant Kansas women reporting smoking during pregnancy was 12.5%. The smoking rate was highest for non-Hispanic Native American women, 31.3%, followed by non-Hispanic white women, 14.4%, and non-Hispanic black women, 13.3%. Rates for Hispanic (4.0%) and non-Hispanic Asian women (1.8%) were substantially lower. Teenagers 18-19 years and women in their early twenties had the highest smoking rates (17.8% and 19.1%, respectively). Smoking rates for women in their thirties and older were sharply lower, around 7%.

- In recent years (2004-2013), the Kansas preterm and late preterm birth rates have declined significantly. In 2013, the rate for preterm births, those occurring before 37 weeks gestational age, was 8.9%. The non-Hispanic black prematurity rate was 55.2% higher than the non-Hispanic white rate (13.5% and 8.7%, respectively). Hispanic premature births (7.8%) were lower than the state average (8.9%).

- Recent years have witnessed a shift in early term (37-38 weeks) and full-term (39-40 weeks) deliveries. Early-term births declined to 23.0% in 2013 from 24.6% in 2012. Since 2006, the percentage of early-term births is down 19.3%, and the percentage of full-term births is up 14.9%.

- In 2013, nearly one-third (30.2%) of Kansas births were delivered by cesarean section, unchanged from 2012 and 2011, but slightly lower than the 2010 high (30.5%). During the decade (2004-2013), the cesarean delivery rates of Kansas births have increased for births at all gestational ages, except for the those born in 37-38 weeks (early term). Cesarean delivery rates for early term births declined to 31.2% after increasing every year since 1998 (19.8%) and peaking in 2007 at 34.0%.

- In Kansas, the percentage of low birthweight (LBW) decreased slightly in 2013 to 7.0% from 7.2% in 2012. The LBW rate in Kansas has remained consistently lower than the nation. LBW and very low birthweight (VLBW) infants contribute heavily to the total infant mortality rate. During 2011-2013, almost two thirds (64.1%) of infant deaths occurred among the 7.1% of infants who were born at LBW. Similarly, 47.6% of infant deaths occurred among the 1.3% 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.

- During the past decade (2004-2013), the infant mortality rate (IMR) has declined significantly. Kansas IMRs for non-Hispanic black mothers have consistently remained higher than those of non-Hispanic white and Hispanic mothers. In 2013, the IMR among non-Hispanic black infants (15.3) was three times higher than that of non-Hispanic white infants (4.9). Decreases in IMRs were observed for non-Hispanic white (statistically significant) and non-Hispanic black infants from 2004-2013. However, a slight upward trend was observed for Hispanic infants.

- In 2013, Kansas birth certificate data showed that mothers initiated breastfeeding in 84.2% of resident live births. This was an increase from the 81.7% reported in 2012 and exceeded the Healthy People 2020 goal of an 81.9% breastfeeding initiation rate. According to the most recent National Immunization Survey, Kansas initiation rate was 77.4% (children born in 2011). Although this was a decrease from the 76.1% (children born in 2010), during the three birth year period (2009-2011), a slightly upward trend was observed. While initiation rates made a good progress, exclusive breastfeeding at six months for Kansas showed an 11.4% duration rate. Healthy People 2020 goal is 25.5%.

- According to the 2011/12 National Survey of Children's Health, 30.2% of 10-17 years old were considered overweight or obese. Males were more likely than females to be overweight or obese (37.6% vs. 22.7%). Hispanic children (54.3%) have the highest rate of overweight or obese.

- In Kansas, for adolescents and young adults ages 15-24 (2011-2013), 61.1% of unintentional injury deaths were caused by motor vehicle crashes, 19.3% were caused by poisonings, and 4.3% 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.

- Systems of Care for CYSHCN: Effective promotion of health and health services for children and youth with special health care needs (CYSHCN) requires a system of care that is integrated, comprehensive, coordinated, family centered and consistent across the life course (or lifespan). The six core outcomes that the Federal Maternal and Child Health Bureau established to facilitate integrated systems of care for CYSHCN are: 1. Partners in Decision-Making, 2. Medical Home, 3. Adequate Health Insurance, 4. Early and Continuous Screening, 5. Ease of Community-Based Service Use, and 6. Transition to Adulthood (age 12-17 years only).[1]

- The 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN) estimates that 25.0% of Kansas CYSHCN age 0-11 met all five core outcomes, compared to 20.2% of the U.S., and Kansas ranks 7th in the nation. For CYSHCN age 12-17, 19.9% met all six core outcomes compared to 13.6% of the U.S., and Kansas ranks 4th in the nation.

- In Kansas, 52.7% of youth with special health care needs received services necessary to transition to all aspects of adult life compared to the national average of 40.0%. Kansas ranks 1st in the nation.

Reference:

1. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

INTRODUCTION

This fifth 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 impacting the health status of mothers and children. This context presents unique challenges related to emerging population health needs; nonetheless, the Kansas MCH program continually works to identify and address needs, set priorities, and advance the mission of MCH to improve the health of all women and children. There are more opportunities than before to collaborate, integrate systems, and translate shared vision into reality.

Steady progress has been made with developing program capacity to collect and analyze MCH data and monitor trends in child health that guide programming and inform policy decisions. A vast amount of information and data is collected annually as part of the federal application for MCH Services Block Grant funding. In addition to dramatic improvements in data quality, Kansas is now able to see trends in Kansas' performance on national and state priority measures, health status and outcomes, and the capacity of the state health system to meet the needs of mothers and children, including children and youth with special health care needs.

In addition to federal reporting, the MCH Services Block Grant data are used to prioritize MCH initiatives for the state. A five-year comprehensive MCH statewide needs assessment is conducted as part of the federal requirements. It is designed to be an opportunity to review data, gather input from stakeholders, build capacity, and identify priorities. The Bureau of Family Health (BFH) spent the past year conducting the needs assessment with an approach focused on not only creating a meaningful, responsive action plan, but also building a strong platform to maximize resources, develop and sustain mutually reinforcing relationships, and deliver outcomes. Kansas' most recent assessment, is referred to as MCH 2020. A snapshot of the priorities and measures is available on the Kansas MCH Block Grant website (http://www.kdheks.gov/c-f/mch.htm). The priorities are identified for the period 2016-2020 for each of the following MCH population domains and the corresponding National Performance Measures (NPMs):

- Women/Maternal Health
- Perinatal/Infant Health
- Child Health
- Adolescent Health
- Children & Youth with Special Health Care Needs
- Cross-Cutting or Lifecourse

Priority 1: Women have access to and receive coordinated, comprehensive care and services before, during and after pregnancy.
Domain(s): Women/Maternal Health; Cross-Cutting/Life Course
National Performance Measures:
- NPM1: Well-woman visit (Percent of women with a past year preventive medical visit)
- NPM14: Smoking during pregnancy and household smoking (A. Percent of women who smoke during pregnancy)

Priority 2: Services and supports promote healthy family functioning.
Domain(s): Cross-Cutting/Life Course
National Performance Measure(s):

- NPM14: Smoking during pregnancy and household smoking (B. Percent of children who live in households where someone smokes)

Priority 3: Developmentally appropriate care and services are provided across the lifespan.
Domain(s): Child Health
National Performance Measure(s):
- NPM6: Developmental screening (Percent of children, ages 10 through 71 months, receiving a developmental screening using a parent-completed screening tool)
- NPM7: Child injury (Rate of hospitalization for non-fatal injury per 100,000 children ages 0 through 9 and adolescents ages 10 through 19)

Priority 4: Families are empowered to make educated choices about nutrition and physical activity.
Domain(s): Perinatal/Infant Health
National Performance Measure(s):
- NPM4: Breastfeeding (A. Percent of infants who are ever breastfed and B. Percent of infants breastfed exclusively through 6 months)

Priority 5: Communities and providers/systems of care support physical, social, and emotional health.
Domain(s): Adolescent Health
National Performance Measure(s):
- NPM9: Bullying (Percent of adolescents, 12 through 17, who are bullied or who bully others)
- NPM10: Adolescent well-visit (Percent of adolescents, ages 12 through 17, with a preventive medical visit in the past year)

Priority 6: Professionals have the knowledge and skills to address the needs of maternal and child health populations.
Domain(s): Cross-Cutting/Life Course
National Performance Measures(s): None. State Performance Measure to be developed.

Priority 7: Services are comprehensive and coordinated across systems and providers.
Domain(s): Children and Youth with Special Health Care Needs
National Performance Measures(s):
- NPM11: Medical home (Percent of children with and without special health care needs having a medical home)

Priority 8: Information is available to support informed health decisions and choices.
Domain(s): Cross-Cutting/Life Course
National Performance Measures(s): None. State Performance Measure to be developed.

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 six MCH population domains: Women/Maternal Health, Perinatal/Infant Health, Child Health, Adolescent Health, Children and Youth with Special Health Care Needs (CYSHCN), and Cross-Cutting/Life Course.

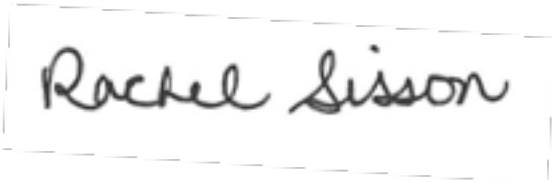
The report is divided into six sections. Sections I - IV present summaries of 31 important health issues for Women/Maternal Health and Perinatal/Infant Health (Section I), Child Health and Adolescent Health (Section II), Children and Youth with Special Health Care Needs (Section III), and Cross-Cutting/Life Course (Section IV). Each of the health issues is presented with a brief overview of the Kansas goal, definition, significance of the health issue, and Healthy People 2020 Objectives, when available. The race and ethnicity categories presented are consistent with Office of Management and Budget's (OMB) Directive 15[1,2], when 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 issues 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. (Please refer to the Technical Notes on page 106 - 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.

Acknowledgments

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



Rachel Sisson, MS, Director
Bureau of Family Health

Reference:

1. Directive No. 15. Race and Ethnic Standards for Federal Statistics and Administrative Reporting. May 12, 1977. http://wonder.cdc.gov/wonder/help/populations/bridged-race/Directive15.html
2. Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Federal-Register Notice. October 30, 1997. http://www.whitehouse.gov/omb/fedreg_1997standards

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SECTION I

WOMEN / MATERNAL HEALTH

AND

PERINATAL / INFANT HEALTH

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Demographics[1]

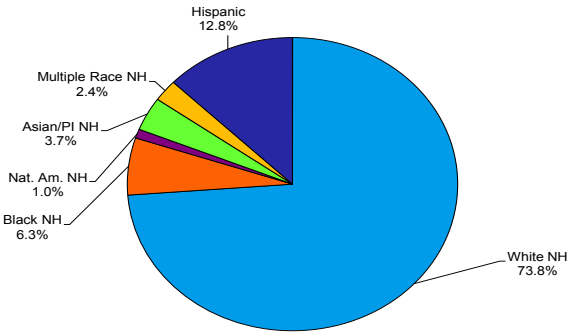
In 2013, there were an estimated 39,597 infants living in Kansas or about 1.4% of the total Kansas population (2,893,957). Women of reproductive age 15-44 accounted for 19.3% (558,538) of the Kansas population. The race and ethnicity composition for this group was estimated at 73.8% non-Hispanic white, 6.3% non-Hispanic black, 1.0% non-Hispanic Native American or Alaska Native, 3.7% non-Hispanic Asian and Pacific Islander, 2.4% non-Hispanic multiple race, and 12.8% Hispanic (any race).

Population Composition by MCH groupings
Kansas, 2013

Population Group	Age in Years	KS Population Estimate	KS %
Infants	***<1***	***39,597***	***1.4%***
Children	1-4	160,809	5.6%
Children	5-11	284,317	9.8%
Adolescent Males	12-22	237,724	8.2%
Young Adolescent Females	12-14	58,591	2.0%
Women of Childbearing Age	***15-44***	***558,538***	***19.3%***
Teen Women	***15-19***	***97,016***	***3.4%***
Adult Women	***20-44***	***461,522***	***15.9%***
Total MCH Population		1,339,576	46.3%
Others		1,554,381	53.7%
Total Population		2,893,957	100.0%

Source: U.S. Census Bureau

Women (ages 15-44) by Race and Ethnicity
Kansas, 2013



NH: non-Hispanic
Source: U.S. Census Bureau

In 2013, a total of 38,805 live births occurred to Kansas residents. This was a decrease of 3.7% from the 40,304 births reported in 2012. The birth rate decreased 4.3%, from 14.0 births per 1,000 population in 2012 to 13.4 births per 1,000 population in 2013. Geary (28.0), Seward (20.6), Ford (20.0), and Finney (19.0) counties had the highest county birth rates per 1,000 population.

In 2013, 32.1% of all Kansas live births occurred to women in the 15-24 age-group, 56.3% of live births occurred to women in the 25-34 age-group and 11.4% occurred to women in the 35-44 age-group. In 2013, 71.8% of Kansas live births were to non-Hispanic white mothers, 6.9% were to non-Hispanic black mothers, 5.4% were to mothers of non-Hispanic other/multiple races, and 15.9% were to Hispanic mothers. Even though Hispanic women comprise only 12.1% of women of reproductive ages, they had 15.9% of all live births.

During 2013, 56.7% of live births occurred in six urban counties (Douglas, Johnson, Leavenworth, Sedgwick, Shawnee and Wyandotte), and those counties have 70.0% (201) of the practicing obstetricians.[2] The remaining 99 Kansas counties accounted for 43.3% of all births where 30.0% (87) of the state's 288 obstetricians practice. Twenty-nine rural and frontier counties average fewer than 40 births per year.

Data Sources and References:

1. Oakley D, Crawford G, Moyer C, Zornes R. *Kansas Annual Summary of Vital Statistics, 2013*. Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html
2. Provider Network reports of Obstetricians and Gynecologists for the three KanCare Managed Care Organizations, as of March 26, 2015.

Women's Health Care Coverage

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

Indicator: The 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 services is a leading Healthy People 2020 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. Use of clinical preventive services, such as early prenatal care, can serve as indicators of access to quality health care services.[1] Research has shown having health insurance increases timely initiation of prenatal care, promotes access to cesarean section deliveries for high risk births and increases access to neonatal intensive care for high risk babies.[2] Limitations in access to care 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.[1]

Healthy People 2020 Objective: Related to Access to Health Services (AHS) Objective 1.1. Increase the proportion of persons with health insurance. (Target: 100%).[3]

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.
2. 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
3. U.S. Department of Health and Human Services. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
4. U.S. Department of Health & Human Services, Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System.
5. 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.*

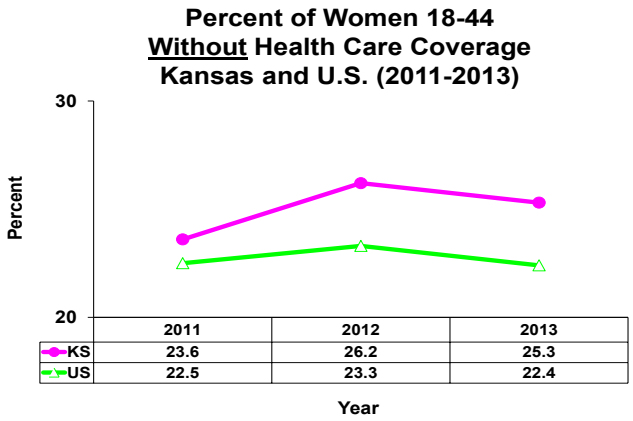
Epidemiology and Trends

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[4], approximately 25.3% of Kansas women ages 18 to 44 years lacked health care coverage in 2013, which is above the national average of 22.4%. Non-Hispanic black women were nearly twice as likely as non-Hispanic white women to be uninsured, and Hispanic women were more than two and half times as likely.

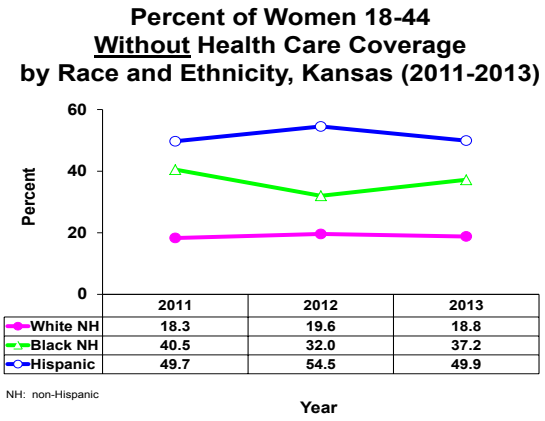
In 2013, 73.3% of women in Kansas reported having a usual source of care. Among women, non-Hispanic whites were most likely to report a usual source of care (80.0%), followed by non-Hispanic blacks (62.2%); Hispanic women were least likely to report a usual source of care (49.0%). Having a usual source 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.[5]

Women 18- 44 Without Health Care Coverage Kansas, 2013			
	Weighted percentage	95% CI*	
Kansas	25.3	23.6	27.1
U.S.	22.4	21.8	22.9
Race/Ethnicity			
White, non-Hispanic	18.8	17.1	20.6
Black, non-Hispanic	37.2	28.6	46.7
Other race, non-Hispanic	31.7	21.5	44.0
Multi race, non-Hispanic	24.3	15.9	35.3
Hispanic	49.9	44.5	55.2
Education			
Less than high school	51.1	44.7	57.5
High school or GED	33.8	30.0	37.8
Some college	26.0	23.1	29.1
College	6.9	5.6	8.6
Annual Household Income			
Less than $15,000	45.1	39.2	51.1
$15,000 - $24,999	46.8	42.2	51.5
$25,000 - $34,999	29.2	24.0	35.0
$35,000 - $49,999	16.5	12.7	21.1
$50,000+	4.8	3.6	6.4
Marital Status			
Married/Unmarried couple	19.8	17.8	21.9
Divorced/Separated	38.5	33.5	43.8
Widowed	40.0	18.6	66.0
Never married	29.7	26.2	33.4
Population Density			
Frontier	26.5	17.8	37.5
Rural	28.4	22.9	34.7
Densely-settled rural	31.1	26.9	35.7
Semi-urban	22.7	19.0	26.9
Urban	24.1	21.8	26.6

*CI: Confidence Interval
Source: Behavioral Risk Factor Surveillance System Survey



Source: Behavioral Risk Factor Surveillance System Survey



Source: Behavioral Risk Factor Surveillance System Survey

Prenatal Care

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

Indicator: The 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: Early identification of maternal disease and risks for complications of pregnancy or birth are the primary reason for first trimester entry into prenatal care. This can help ensure that women with complex problems and women with chronic illness or other risks are seen by specialists. Early high-quality prenatal care is critical to improving pregnancy outcomes.[2]

Healthy People 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 10.1: Increase the proportion of pregnant women who receive prenatal care beginning in the first trimester. (Target: 77.9%)[2]

Data Sources and References:

1. Washington State Department of Health. *The Health of Washington State.* Maternal and Child Health: Prenatal Care, p.249. 2002.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
3. Oakley D, Crawford G, Moyer C, Zornes R. *Kansas Annual Summary of Vital Statistics, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html
4. Centers for Disease Control and Prevention. National Center for Health Statistics. VitalStats. www.cdc.gov/ nchs/vitalstats.htm.

Note:

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 2013, 79.4% of infants were born to pregnant women receiving prenatal care in the first trimester, a slight increase from 2012 (78.8%).[3] The U.S. data for 2013 on this measure was 74.2%.[4] Kansas exceeded the U.S. on this measure by 7.0% in 2013 and above the Healthy People 2020 goal of 77.9%. During 2005-2013, Joinpoint regression analysis showed a significantly decreasing trend over the interval 2005-2007 followed by a significantly increasing trend from 2007-2013.

In 2013, a total of 38,805 live births occurred to Kansas residents. Of these live births, 38,569 had "Date of First Prenatal Care Visit" 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 79.4%. Kansas 2013 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.

In counties shaded pink on the map below, 77.9% or more of the mothers meet or exceed the Healthy People 2020 target for beginning prenatal care in the first trimester of pregnancy. Women in Rawlins, Trego, Graham, Mitchell and Sherman counties were more likely to obtain early prenatal care. Women in Stanton, Finney, Seward, Scott and Chautauqua were least likely to obtain early prenatal care. In general, women in rural areas are less likely to get prenatal care.

Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester

	Number	Percent
Kansas (2013)	30,618	79.4%
U.S. (2013)	3,396,272	74.2%

Source: Bureau of Epidemiology and Public Health Informatics, National Vital Statistics Reports (VitalStats)

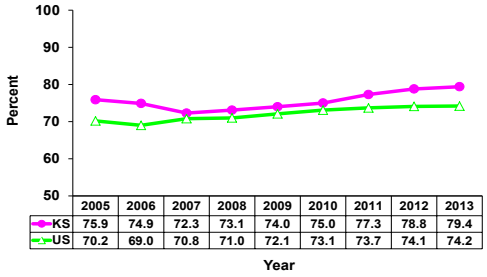
Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester Kansas, 2013

Race/Ethnicity	Number	Percent
White, non-Hispanic	23,002	83.2%
Black, non-Hispanic	1,762	69.7%
Other, non-Hispanic	1,712	75.4%
Hispanic	4,130	67.7%

Age groups	Number	Percent
10-14	17	56.7%
15-17	464	64.9%
18-19	1,460	68.4%
20-24	6,931	72.8%
25-29	9,934	81.8%
30-34	8,137	85.0%
35 plus	3,675	82.7%

Source: Bureau of Epidemiology and Public Health Informatics.

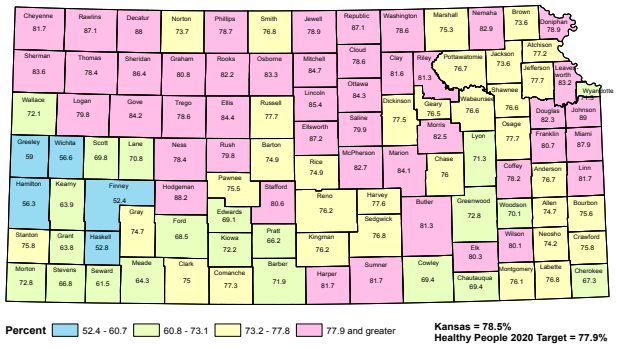
Percent of Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester Kansas and U.S. (2005-2013)



	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	75.9	74.9	72.3	73.1	74.0	75.0	77.3	78.8	79.4
US	70.2	69.0	70.8	71.0	72.1	73.1	73.7	74.1	74.2

Source: Bureau of Epidemiology and Public Health Informatics; National Center for Health Statistics (VitalStats)

Percent of Infants Born to Pregnant Women Receiving Prenatal Care Beginning in the First Trimester by County of Residence Kansas, 2011-2013



Source: Bureau of Epidemiology and Public Health Informatics

Breastfeeding

KANSAS GOAL: Increase the incidence and duration of breastfeeding.

Indicators:
1. The percent of Kansas infants in which breastfeeding was initiated.
2. The percent of Kansas infants breastfed at least 6 months.
3. The percent of Kansas infants breastfed at least 1year.
4. The percent of Kansas infants exclusively breastfed at 6 months.

Significance: Advantages of breastfeeding are indisputable. The American Academy of Pediatrics recommends all infants (including premature and sick newborns) exclusively breastfeed for about six months as human milk supports optimal growth and development by providing all required nutrients during that time. Breastfeeding strengthens the immune system, improves normal immune response to certain vaccines, offers possible protection from allergies, and reduces probability of SIDS. Research demonstrates breastfed children may be less likely to develop juvenile diabetes; and may have a lower risk of developing childhood obesity, and asthma; and tend to have fewer dental cavities throughout life. The bond of a nursing mother and child is stronger than any other human contact. A woman's ability to meet her child's nutritional needs improves confidence and bonding with the baby and reduces feelings of anxiety and post natal depression. Increased release of oxytocin while breastfeeding, leads to a reduction in post-partum hemorrhage and quicker return to a normal sized uterus over time, mothers who breastfeed may be less likely to develop breast, uterine and ovarian cancer and have a reduced risk of developing osteoporosis.[1]

Healthy People 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 21: Increase the proportion of infants who are breastfed.[1,2]
MICH-21.1: Ever. (Target: 81.9%)
MICH-21.2: At 6 months. (Target: 60.6%)
MICH-21.3: At 1 year. (Target: 34.1%)
MICH-21.4: Exclusively through 3 months. (Target: 46.2%)
MICH-21.5: Exclusively through 6 months. (Target: 25.5%)

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
2. U.S. Department of Health and Human Services. *Healthy People 2020.* www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
3. Centers for Disease Control and Prevention. *National Immunization Survey.* www.cdc.gov/breastfeeding/data/NIS_data/
4. Hagen, M. Kansas Department of Health and Environment, Nutrition and WIC Services. *Breastfeeding E-News.* March 2015 and November 2014. www.kansaswic.org/breastfeeding/clinical_lactation_newsletter.html
5. Centers for Disease Control and Prevention. *National Survey of Maternity Practices in Infant Nutrition and Care (mPINC).* www.cdc.gov/breastfeeding/data/mpinc/results.htm

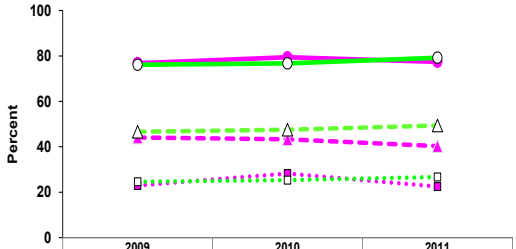
Epidemiology and Trends

In 2013, Kansas birth certificate data showed that mothers initiated breastfeeding in 84.2% of resident live births. This was an increase from the 81.7% reported in 2012 and exceeded the Healthy People 2020 target of an 81.9% breastfeeding initiation rate. Non-Hispanic Asian mothers had the highest breastfeeding initiation rate (89.7%), followed by non-Hispanic white (85.6%) and Hispanic (83.3%) mothers. Non-Hispanic black mothers had the lowest breastfeeding initiation rate (71.2%). Over the past 9 years (2005-2013), a significantly increased breastfeeding initiation was observed from 75.6% in 2005 to 84.2% in 2013.

According to the most recent National Immunization Survey (NIS), Kansas initiation rate was 77.4% (children born in 2011). Although this was a decrease from the 76.1% (children born in 2010), during the three birth year period (2009-2011), a slightly upward trend was observed. While initiation rates made a good progress, exclusive breastfeeding at six months for Kansas showed an 11.4% duration rate. Healthy People 2020 goal is 25.5%. Babies who are breastfed exclusively for six months receive the most benefits from breastfeeding as do their mothers. Preventative health through exclusive breastfeeding can save health care dollars through reduction in acute illnesses and chronic disease.[3,4]

Based on the Maternity Practices in Infant Nutrition and Care Survey, known as the mPINC, 62 (85%) Kansas hospitals that deliver babies participated in the survey. The graph right shows how Kansas compares with the U.S. averages for ten areas. Each of these areas corresponds with Baby Friendly Hospital initiative ten steps. Kansas hospitals are doing well in teaching prenatally about breastfeeding and teaching breastfeeding techniques which results in early initiation. However, there are few policies to support these measures to assure that all staff is trained in assisting breastfeeding families. This may be reflected in poor rates of exclusive breastfeeding at six months in Kansas.[4,5]

Percent of Children Who Were Breastfed, by Birth Year
Any Breastfeeding
Kansas and U.S., 2009-2011

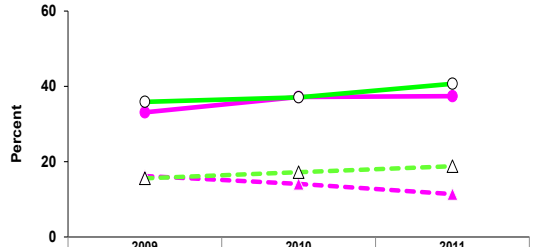


	2009	2010	2011
KS - Ever breastfeeding	76.8	79.4	77.4
US - Ever breastfeeding	76.1	76.7	79.2
KS - At 6 Months	44.1	43.3	40.3
US - At 6 Months	46.6	47.5	49.4
KS - At 12 Months	23.0	28.2	22.5
US - At 12 Months	24.6	25.3	26.7

Year of Birth

Source: CDC National Immunization Survey
Note: Dual-frame sample that includes respondents surveyed on landline or cellular telephones.

Percent of Children Who Were Breastfed, by Birth Year
Exclusive Breastfeeding
Kansas and U.S., 2009-2011

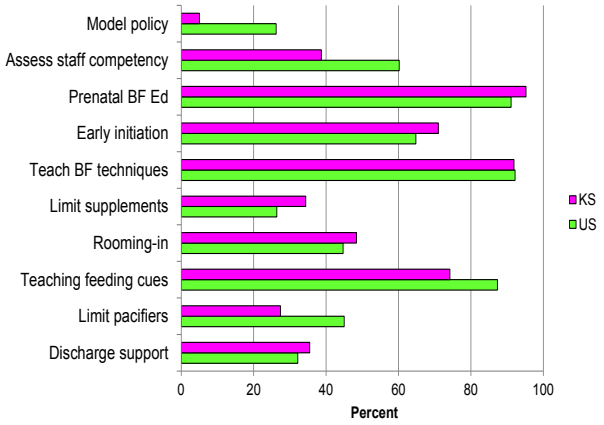


	2009	2010	2011
KS - Through 3 months	33.1	37.2	37.4
US - Through 3 months	35.9	37.1	40.7
KS - Through 6 months	16.2	14.1	11.4
US - Through 6 Months	15.6	17.2	18.8

Year of Birth

Source: CDC National Immunization Survey
Note: Dual-frame sample that includes respondents surveyed on landline or cellular telephones.

Percent of Hospitals with Recommended Policies and Practices Consistent with the Ten Steps to Successful Breastfeeding
Kansas and U.S., 2013



Source: CDC National Survey of Maternity Practices in Infant Nutrition and Care (mPINC), 2013

Low Birthweight

KANSAS GOAL: Reduce the percent of births with low birthweight.

Indicators:
1. The percent of live birth infants weighing less than 2,500 grams.
2. The percent of live birth infants weighing less than 1,500 grams.

Definition: Low birthweight (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 birthweight infants (VLBW) are live born infants weighing less than 1,500g (3.3lb).

Significance: The general category of low birthweight infants includes preterm infants and infants with intrauterine growth retardation. Many risk factors have been identified for low birthweight babies including: both young and old maternal age, poverty, late prenatal care, smoking, substance abuse, and multiple births. Advanced maternal age and in vitro fertilization has increased the number of multiple births. Multiple births often result in shortened gestation and low or very low birthweight infants. In United States, in 2010, 68.0% of all infant deaths occurred to the 8.2% of low birthweight infants and over half (53%) of all infant deaths occurred to the 1.5% of very low birthweight infants. Infants born to non-Hispanic black women have the highest rates of low birthweight, particularly very low birthweight. In 2012, 13.2% of non-Hispanic black infants were born low birthweight and 2.9% were born at very low birthweight--these rates are 1.9 and 2.6 times the rates for infants born to non-Hispanic whites women (7.0% and 1.1%, respectively). Infants born to Puerto Rican women also have elevated rates of low and very low birthweight (9.4% and 1.8%, respectively).[1]

Healthy People 2020 Objectives: Related to Maternal, Infant, and Child Health (MICH) Objective 8: Reduce low birthweight and very low birthweight.[1,2]
MICH - 8.1 Low birthweight. (Target: 7.8%)
MICH - 8.2 Very low birthweight. (Target: 1.4%)

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
2. U.S. Department of Health and Human Services. *Healthy People 2020.* www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
3. Oakley D, Crawford G, Moyer C, Zornes R. *Kansas Annual Summary of Vital Statistics, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html
4. Martin JA, Hamilton BE, Osterman MJ, et al. *Births: Final Data for 2013.* National vital statistics reports; vol 64 no1. Hyattsville, MD: National Center for Health Statistics. 2015.

Epidemiology and Trends

In Kansas, the percent of LBW decreased slightly in 2013 to 7.0% from 7.2% in 2012.[3] Kansas' LBW percentage has been lower than the national average (7.0% and 8.0%, respectively, in 2013).[4] 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. During 2011-2013, 54.2% of all plural births in Kansas were LBW. Non-Hispanic black mothers are more likely than non-Hispanic white mothers to give birth to a LBW (13.3% and 6.6% respectively). About 77.7% of infants who died were born to non-Hispanic black mothers and were LBW, compared to 61.5% of infants of non-Hispanic white mothers.

In Kansas, regardless of maternal race and ethnicity, LBW is associated with a small percentage of live births, but a disproportionately larger percentage of infant deaths. During 2011-2013, among the infant deaths where birthweight was known, 64.1% of infants who died were LBW in comparison to 7.1% for all live births at LBW. Similary, 47.6% of infant deaths occurred among the 1.3% of infants born at VLBW.

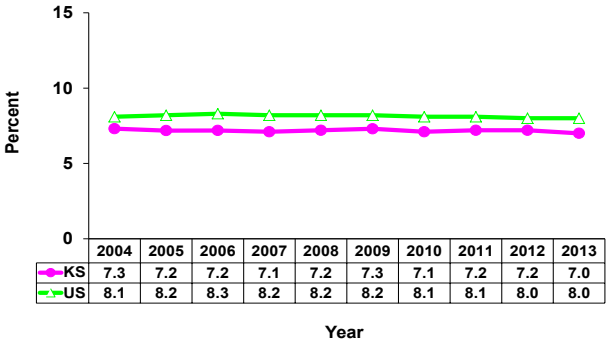
The infant mortality rate (55.9/1,000 live births) for LBW infants with linked death and birth files (2009-2013 combined) was 22 times that for infants weighing 2,500 grams or more (2.5/1,000 live births). Similarly, the infant mortality rate for VLBW infants (226.5/1,000 live births) was 89 times higher than the rate for infants born weighing 2,500 grams or more.

In 2013, the risk of LBW was greater for smokers than for nonsmokers (11.0% vs. 6.5%), creating an excessive LBW risk of 4.5% 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 (2013)	2,728	7.02%
U.S. (2013)	n.a.	8.0%

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

Percent of Live Births with LBW
Kansas and U.S., 2004-2013



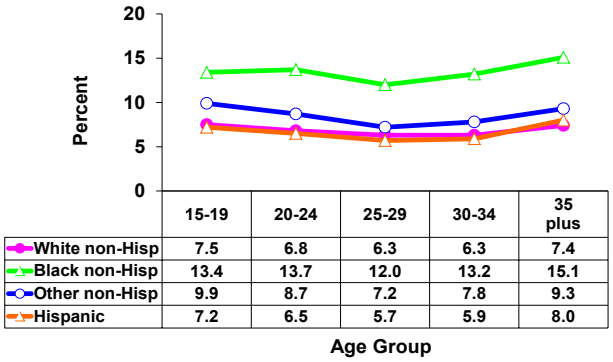
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	7.3	7.2	7.2	7.1	7.2	7.3	7.1	7.2	7.2	7.0
US	8.1	8.2	8.3	8.2	8.2	8.2	8.1	8.1	8.0	8.0

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

Live Births with LBW (2011-2013, combined)		
Maternal Race/Ethnicity	# of LBW	Percent
White, non-Hisp	5,655	6.6%
Black, non-Hisp	1,055	13.3%
Other, non-Hisp	560	8.2%
Hispanic	1,209	6.5%

Source: Bureau of Epidemiology and Public Health Informatics

Percent of Live Births with LBW
by Age Group and Maternal Race/Ethnicity
Kansas (20011-2013, combined)



	15-19	20-24	25-29	30-34	35 plus
White non-Hisp	7.5	6.8	6.3	6.3	7.4
Black non-Hisp	13.4	13.7	12.0	13.2	15.1
Other non-Hisp	9.9	8.7	7.2	7.8	9.3
Hispanic	7.2	6.5	5.7	5.9	8.0

Source: Bureau of Epidemiology and Public Health Informatics

Preterm and early term births

KANSAS GOAL: Reduce the percent of preterm and early term births.

Indicators:

1. The percent of live birth infants at 37 to 38 weeks of gestation (early term).
2. The percent of live birth infants at less than 37 weeks of gestation (preterm).
3. The percent of live birth infants at 34 to 36 weeks of gestation (late preterm).
4. The percent of live birth infants at 32 to 33 weeks of gestation (moderate premature).
5. The percent of live birth infants at less than 32 weeks of gestation (very premature).

Definition: Most pregnancies last approximately 40 weeks. Babies born between 39 and 40 completed weeks of pregnancy are called full term. Babies born between 37 and 38 weeks of pregnancy are called early term births. 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: Babies born preterm, before 37 completed weeks of gestation, are at increased risk of immediate life-threatening health problems, as well as long-term complications and developmental delays. Among preterm infants, complications that can occur during the newborn period include respiratory distress, jaundice, anemia, and infection, while long-term complications can include learning and behavioral problems, cerebral palsy, lung problems, and vision and hearing loss. As a result of these risks, preterm birth is a leading cause of infant death and childhood disability. Although the risk of complications is greatest among those babies who are born the earliest, even those babies born "late preterm" (34 to 36 weeks' gestation) and "early term" (37, 38 weeks' gestation) are more likely than full-term babies to experience morbidity and mortality. Infants born to non-Hispanic black women have the highest rates of preterm birth, particularly early preterm birth. In United States, in 2012, 16.5% of non-Hispanic black infants were born preterm and 5.9% were born early preterm--these rates are 1.6 and 2.0 times the rates for infants born to non-Hispanic whites women (10.3% and 2.9%, respectively). Infants born to Puerto Rican, Cuban, and American Indian/Alaska Native mothers also had elevated rates of preterm and early preterm birth. Non-medically indicated early term births (37, 38 weeks) present avoidable risks of neonatal morbidity and costly NICU admission. Early elective delivery prior to 39 weeks is an endorsed perinatal quality measure by the Joint Commission, National Quality Forum, ACOG/NCQA, Leapfrog Group, and CMS/CHIPRA.[2]

Healthy People 2020 Objectives: Related to Maternal, Infant, and Child Health (MICH) Objective 9: Reduce preterm births.[3]
MICH-9.1 Total preterm births. (Target: 11.4%)
MICH-9.2 Late preterm or live births at 34 to 36 weeks of gestation. (Target: 8.1%)
MICH-9.3 Live births at 32 to 33 weeks of gestation. (Target: 1.4%)
MICH-9.4 Very preterm or live births at less than 32 weeks of gestation. (Target: 1.8%)

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, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
3. U.S. Department of Health and Human Services. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
4. Oakley D, Crawford G, Moyer C, Zornes R. *Kansas Annual Summary of Vital Statistics, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html
5. Martin JA, Hamilton BE, Osterman MJ, et al. *Births: Final Data for 2013.* National Vital Statistics Reports; vol 64 no 1. Hyattsville, MD: National Center for Health Statistics. 2015.

Epidemiology and Trends

In 2013, 6.2% of Kansas babies were born at 34 to 36 weeks gestation, 1.1% were born at 32-33 weeks, and 1.5% were "very preterm" (less than 32 weeks).[4] Overall, the rates for preterm births, those occurring before 37 weeks gestational age, has been lower in Kansas than the U.S.[5] (8.9% and 11.4%, respectively, in 2013). In the past decade (2004-2013), the Kansas preterm and late preterm birth rates have declined significantly. A similar trend was observed at the national level. The preterm birth rate varies by race/ethnicity. In 2013, 13.5% of Kansas babies born to non-Hispanic black mothers were born preterm, compared to 8.7% of babies born to non-Hispanic white mothers. Hispanic premature births (7.8%) were lower than the state average. Preterm births were also down among Kansas infants born in singleton deliveries in 2013, to 7.2% from 7.3% in 2012. The singleton preterm rate is also down 7.7% since 2004 (7.8%). "Analyzing births in singleton deliveries separately can be important because of the shorter average gestations of multiple births and their accordant influence on overall gestational age measures."[5]

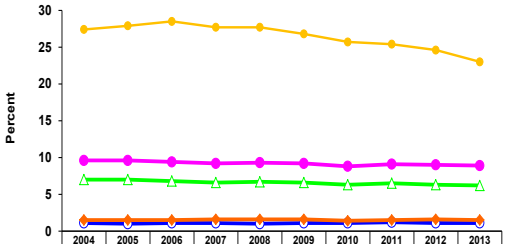
Recent years have also witnessed a shift in early term (37-38 weeks) and full-term (39-40 weeks) deliveries. Early-term births declined to 23.0% in 2013 from 24.6% in 2012. Since 2006, the percentage of early-term births is down 19.3%, and the percentage of full-term births is up 14.9%. A similar trend was observed at the national level. "Reductions in late-preterm and early-term deliveries from 2006 to 2013 may be related to heightened understanding of the increased neonatal risk at these gestational ages compared with full term, and with subsequent recommendations and efforts to reduce nonmedical deliveries prior to 39 weeks."[5]

The induction rate in Kansas decreased from 28.7% in 2007 to 27.6% in 2013. A decreasing trend was observed in induction among all gestational age groups. About 30.2% of Kansas births were delivered by cesarean in 2013, where methods of delivery were known, an increase from 28.9% in 2004. There was an increase in cesareans among all gestational age groups, except for the those born in 37-38 weeks (early term). (For more information on cesarean delivery, please see page 18.)

Early term births (37 and 38 weeks) 2013		
Kansas	8,926	23.0%
U.S.	n.a.	24.8%
Total preterm births (< 37 weeks of gestation)		
	Number	**Percent**
Kansas	3,448	8.9%
U.S.	n.a.	11.4%
Late preterm (34 to 36 weeks of gestation)		
Kansas	2,409	6.2%
U.S.	n.a.	8.0%
Moderate preterm (32 to 33 weeks of gestation)		
Kansas	442	1.1%
U.S.	n.a.	1.5%
Very preterm (<32 weeks of gestation)		
Kansas	597	1.5%
U.S.	n.a.	1.9%

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

Early Term and Preterm Birth Rates Kansas, 2004-2013

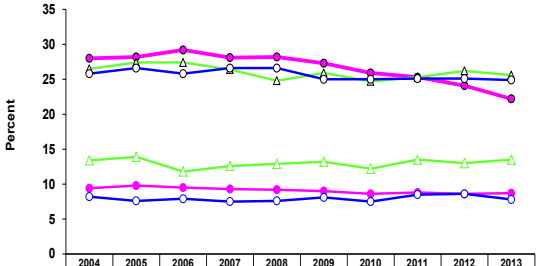


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Early Term (37-38 wks)	27.4	27.9	28.5	27.7	27.7	26.8	25.7	25.4	24.6	23.0
Preterm (<37 wks)	9.6	9.6	9.4	9.2	9.3	9.2	8.8	9.1	9.0	8.9
Late Preterm (34-36 wks)	7.0	7.0	6.8	6.6	6.7	6.6	6.3	6.5	6.3	6.2
Moderate Preterm (32-33 wks)	1.1	1.0	1.1	1.1	1.0	1.1	1.1	1.2	1.1	1.1
Very Preterm (<31 wks)	1.5	1.5	1.5	1.6	1.6	1.6	1.4	1.5	1.6	1.5

Year

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

Early Term and Preterm Birth Rates by Race/Ethnicity Kansas, 2004-2013



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White NH early term	28.0	28.2	29.2	28.1	28.2	27.3	25.9	25.3	24.1	22.2
Black NH early term	26.5	27.4	27.4	26.4	24.8	25.9	24.7	25.3	26.2	25.6
Hispanic early term	25.8	26.6	25.8	26.6	26.6	25.0	25.0	25.1	25.1	24.9
White NH preterm	9.4	9.8	9.5	9.3	9.2	9.0	8.6	8.8	8.6	8.7
Black NH preterm	13.4	13.9	11.8	12.6	12.9	13.2	12.2	13.5	13.0	13.5
Hispanic preterm	8.2	7.6	7.9	7.5	7.6	8.1	7.5	8.5	8.6	7.8

Year

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

Non-Medically Indicated Early Elective Deliveries

KANSAS GOAL: Reduce the proportion of all preterm, early term, and early elective deliveries.

Indicator: The percent of non-medically indicated early elective deliveries.

Definition:

Numerator: Number of inductions or cesareans without labor or spontaneous rupture of membranes among deliveries at 37, 38 weeks' gestation without conditions possibly justifying elective delivery <39 weeks according to The Joint Commission.
Denominator: Number of deliveries at 37, 38 weeks' gestation without conditions possibly justifying elective delivery <39 weeks according to The Joint Commission.

Significance: Babies born preterm, before 37 completed weeks of gestation, are at increased risk of immediate life-threatening health problems, as well as long-term complications and developmental delays. Among preterm infants, complications that can occur during the newborn period include respiratory distress, jaundice, anemia, and infection, while long-term complications can include learning and behavioral problems, cerebral palsy, lung problems, and vision and hearing loss. As a result of these risks, preterm birth is a leading cause of infant death and childhood disability. Although the risk of complications is greatest among those babies who are born the earliest, even those babies born "late preterm" (34 to 36 weeks' gestation) and "early term" (37, 38 weeks' gestation) are more likely than full-term babies to experience morbidity and mortality. Infants born to non-Hispanic black women have the highest rates of preterm birth, particularly early preterm birth. In United States, in 2012, 16.5% of non-Hispanic black infants were born preterm and 5.9% were born early preterm--these rates are 1.6 and 2.0 times the rates for infants born to non-Hispanic whites women (10.3% and 2.9%, respectively). Infants born to Puerto Rican, Cuban, and American Indian/Alaska Native mothers also had elevated rates of preterm and early preterm birth. Non-medically indicated early term births (37, 38 weeks) present avoidable risks of neonatal morbidity and costly NICU admission. Early elective delivery prior to 39 weeks is an endorsed perinatal quality measure by the Joint Commission, National Quality Forum, ACOG/NCQA, Leapfrog Group, and CMS/CHIPRA.[1]

Healthy People 2020 Objectives: Related to Maternal, Infant, and Child Health (MICH) Objective 9: Reduce preterm births.[1,2]

Data Sources and References:

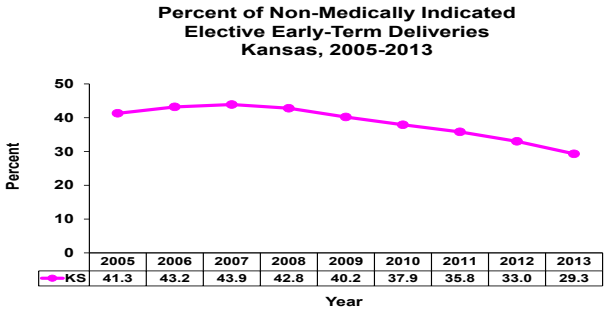
1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
2. U.S. Department of Health and Human Services. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf

Epidemiology and Trends

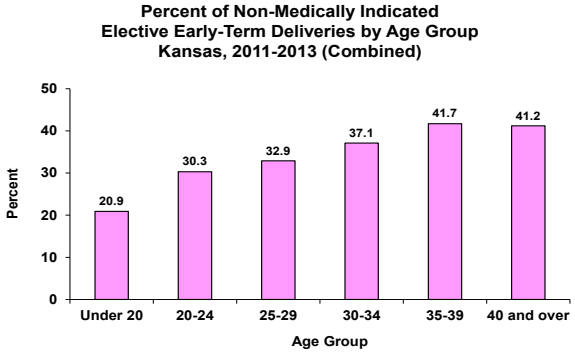
Gestational age is defined using the clinical estimate of completed weeks from the birth certificate. Clinical estimate of gestational age was found to be more accurate than gestational age using last menstrual period based on a medical chart review of late preterm cesarean delivery (unpublished). Non-Medically Indicated (NMI) inductions are induced labor without any indication for delivery. NMI cesareans are cesarean deliveries without any indication for delivery and no attempt of labor.

In Kansas, in 2013, the percent of Non-Medically Indicated (NMI) singleton live births of 37 and 38 weeks gestation* was 29.3%, a decrease from 2012 (33.0%). During the nine year period (2005-2013), there was a statistically significant increasing trend over the interval 2005-2008 (Annual Percent Change (APC)=1.45), followed by a statistically significant decreasing trend from 2008-2013 (APC=-7.22). Women with NMI singleton live births were more likely to be older, married, non-Hispanic white, live in rural areas, and have private insurance.

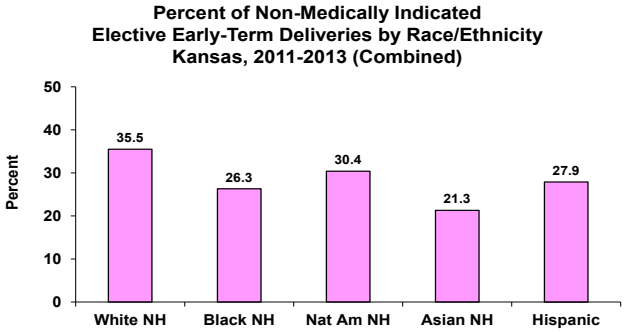
**Applying an algorithm developed by Dr. William Sappenfield based on the Joint Commission perinatal core measure, birth certificate data were used to identify singleton deliveries occurring at 37-38 weeks that were not medically indicated. The algorithm excludes women with potential medical indications for early delivery and infants with specific chromosomal disorders or birth defects. The NMI early term rate was then computed as the number of births at 37-38 weeks gestation due to non-indicated induced labor or cesarean section with no trial of labor, divided by the number of births at 37-38 weeks gestation remaining after exclusions. Gestational age was determined by clinical estimate of gestation on birth certificate.*



Source: Bureau of Epidemiology and Public Health Informatics

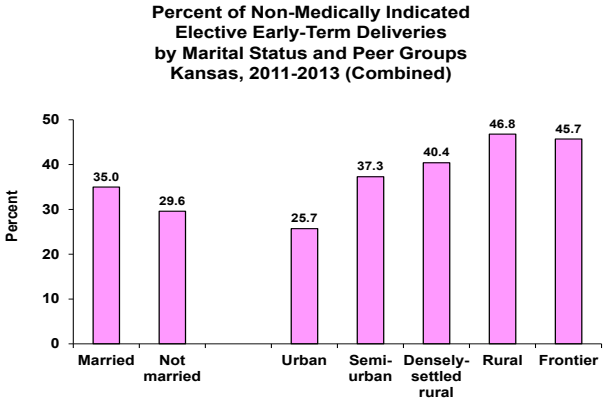


Source: Bureau of Epidemiology and Public Health Informatics



NH: non-Hispanic; Nat Am: American Indian or Alaska Native

Source: Bureau of Epidemiology and Public Health Informatics



Source: Bureau of Epidemiology and Public Health Informatics

Cesarean Delivery

KANSAS GOAL: Decrease cesarean delivery.

Indicator: The 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] Some C-sections are planned due to pregnancy complications or a previous C-section. But, in many cases, the need for a first-time C-section doesn't become obvious until labor has already started.[1]

Significance: Cesarean delivery can be a life-saving procedure for certain medical indications. However, for most low-risk pregnancies, cesarean delivery poses avoidable maternal risks of morbidity and mortality, including hemorrhage, infection, and blood clots—risks that compound with subsequent cesarean deliveries. Much of the temporal increase in cesarean delivery (over 50% in the past decade), and wide variation across states, hospitals, and practitioners, can be attributed to first-birth cesareans. Moreover, cesarean delivery in low-risk first births may be most amenable to intervention through quality improvement efforts. This low-risk cesarean measure, also known as nulliparous term singleton vertex (NTSV) cesarean, is endorsed by the ACOG, The Joint Commission (PC-02), National Quality Forum (#0471), Center for Medicaid and Medicare Services (CMS) – CHIPRA Child Core Set of Maternity Measures, and the American Medical Association-Physician Consortium for Patient Improvement.[2]

Healthy People 2020 Objectives: Related to Maternal, Infant, and Child Health (MICH) Objective 7: Reduce cesarean births among low-risk (full-term, singleton, vertex presentation) women.[3]
MICH-7.1 Women giving birth for the first time. (Target: 23.9%)
MICH-7.2 Prior cesarean birth. (Target: 81.7%)

Data Sources and References:

1. *C-section, definition*. www.mayoclinic.com/health/c-section/MY00214.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
3. U.S. Department of Health and Human Services. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
4. Martin JA, Hamilton BE, Osterman MJ et.al. *Births: Final Data for 2013.* National vital statistics reports; vol 64 no 1. Hyattsville, MD: National Center for Health Statistics. 2015.

Epidemiology and Trends

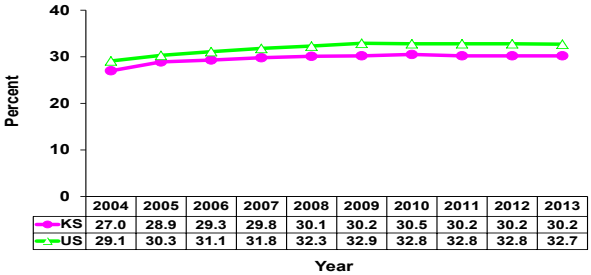
In 2013, 30.2% of Kansas live births were delivered by cesarean section, unchanged from 2012 and 2011, but slightly lower than the 2010 high (30.5%). The U.S. cesarean delivery rate declined to 32.7%, which had been stable at 32.8% for 2010-2012.[4]

During the decade (2004-2013), the cesarean delivery rates of Kansas births have increased for births at all gestational ages, except for the those born in 37-38 weeks (early term). Cesarean delivery rates for early term births declined to 31.2%, after increasing every year since 1998 (19.8%) and peaking in 2007 at 34.0%. The cesarean rate for very preterm infants (less than 32 weeks of gestation) increased by 22.6%. Rates for infants born late preterm (34 to 36 completed weeks of gestation) and term (37 to 40 completed weeks of gestation) rose by 19.9% and 19.2%, respectively.

The 2013 cesarean delivery rates rise with increasing maternal age in Kansas, similar to the pattern observed for the U.S. The rate for mothers aged 40 and older in 2013 was nearly 2.5 times the rate for mothers under age 20 (48.1% and 20.4%, respectively). In 2013, cesarean delivery rates slightly declined for maternal age groups under 20, 25-29, and 35-39. However, rates rose for maternal age groups 20-24, 30-34, and 40 and over. The largest change was among women aged 40 and over (from 44.4% in 2012 to 48.1% in 2013).

In 2013, cesarean delivery rates were slightly higher for non-Hispanic Native American and non-Hispanic black women compared with non-Hispanic white women (33.9%, 32.2% and 30.9%, respectively). Hispanic women had the lowest cesarean delivery rate (26.7%). Changes in the cesarean delivery rate in 2013 from 2012 varied by race and ethnicity. The rates slightly declined for non-Hispanic black and non-Hispanic Asian women. However, rates increased for non-Hispanic white, non-Hispanic Native American, and Hispanic women.

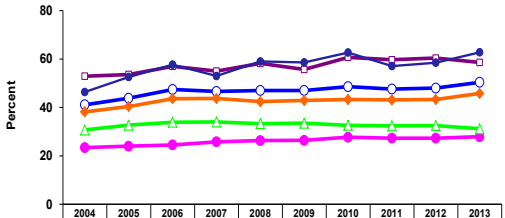
Total Cesarean Delivery Rate
Kansas and U.S., 2004-2013



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	27.0	28.9	29.3	29.8	30.1	30.2	30.5	30.2	30.2	30.2
US	29.1	30.3	31.1	31.8	32.3	32.9	32.8	32.8	32.8	32.7

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

Cesarean Delivery Rates by Gestational Age
Kansas, 2004-2013

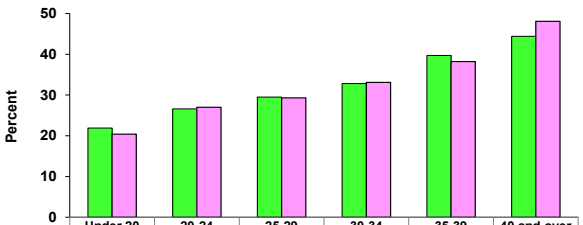


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Term (39-40 wks)	23.4	24.0	24.5	25.8	26.3	26.4	27.7	27.3	27.3	27.9
Early Term (37-38 wks)	30.7	32.7	33.9	34.0	33.3	33.5	32.6	32.4	32.5	31.2
Preterm (<37 wks)	41.1	43.8	47.4	46.6	47.0	47.0	48.6	47.6	48.0	50.4
Late Preterm (34-36 wks)	38.2	40.4	43.6	43.7	42.4	42.9	43.3	43.1	43.3	45.8
Moderate Preterm (32-33 weeks)	52.9	53.6	57.0	55.0	58.2	55.7	60.7	59.7	60.4	58.6
Very Preterm (<31 wks)	46.4	52.6	57.7	53.0	59.0	58.6	62.7	57.1	58.5	62.8

Year

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

Cesarean Delivery Rates by Age Group
Kansas, 2012 and 2013

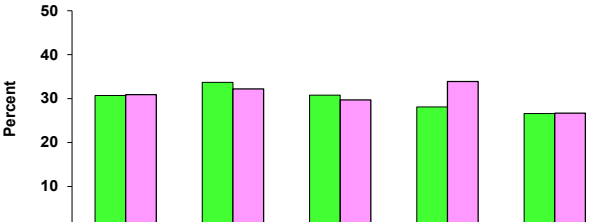


	Under 20	20-24	25-29	30-34	35-39	40 and over
2012	21.9	26.6	29.5	32.8	39.7	44.4
2013	20.4	27.0	29.3	33.1	38.2	48.1

Age Group

Source: Bureau of Epidemiology and Public Health Informatics

Cesarean Delivery Rates by Race/Ethnicity
Kansas, 2012 and 2013



	White NH	Black NH	Asian NH	Nat Am NH	Hispanic
2012	30.7	33.7	30.8	28.1	26.6
2013	30.9	32.2	29.7	33.9	26.7

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

Tobacco Use During Pregnancy

KANSAS GOAL: Decrease cigarette smoking among pregnant women.

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

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

Significance: Women who smoke during pregnancy are more likely to experience a fetal death or deliver a low birth weight baby. Further, secondhand smoke (SHS) is a mixture of mainstream smoke (exhaled by smoker) and the more toxic side stream smoke (from lit end of nicotine product) which is classified as a "known human carcinogen" by the US Environmental Protection Agency, the US National Toxicology Program, and the International Agency for Research on Cancer. Adverse effects of parental smoking on children have been a clinical and public health concern for decades and were documented in the 1986 U.S. Surgeon General Report. The only way to fully protect non-smokers from indoor exposure to SHS is to prevent all smoking in the space; separating smokers from non-smokers, cleaning the air, and ventilating buildings do not eliminate exposure. Unfortunately, millions (more than 60%) of children are exposed to SHS in their homes. These children have an increased frequency of ear infections; acute respiratory illnesses and related hospital admissions during infancy; severe asthma and asthma-related problems; lower respiratory tract infections leading to 7,500 to 15,000 hospitalizations annually in children under 18 months; and sudden infant death syndrome (SIDS). Higher intensity medical services are also required by children of parents who smoke including an increased need for intensive care unit services when admitted for flu, longer hospital stays; and more frequent use of breathing tubes during admissions.[1]

Healthy People 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 11: Increase abstinence from alcohol, cigarettes, and illicit drugs among pregnant women.
11-3. Cigarette smoking. (Target: 98.6%)[2]

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 7th ed. 2015.
2. U.S. Department of Health and Human Services. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
3. Centers for Disease Control and Prevention. Smoking During Pregnancy - United States, 1990-2002. MMWR 2004; 53:911-915.
4. Oakley D, Crawford G, Savage C. *Kansas Annual Summary of Vital Statistics, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html

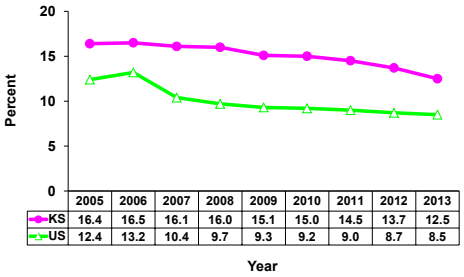
Epidemiology and Trends

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 tend to weigh less than other infants, and low birthweight (<2,500 grams) is a key predictor for infant mortality.[3]

In 2013, the percentage of pregnant Kansas women reporting smoking during pregnancy was 12.5%, a decrease from 2012 (13.7%).[4] Over the nine year period (2005-2013), there was a significant decreasing trend detected. The smoking rate was highest for non-Hispanic Native American women, at 31.3%, followed by non-Hispanic white women, 14.4%, and non-Hispanic black women, 13.3%. Rates for Hispanic (4.0%) and non-Hispanic Asian women (1.8%) were substantially lower. Teenagers 18-19 years and women in their early twenties had the highest smoking rates (17.8% and 19.1%, respectively). Smoking rates for women in their thirties and older were sharply lower, around 7%. Overall, in 2013, Medicaid paid for the delivery of 13,151 (33.9%) Kansas live births. Among women who reported smoking during pregnancy, 65.6% had births reimbursed by Medicaid, according to Medicaid claims data. This was a slight increase from 2012 (65.3%).

In 2013, 10.5% of Kansas women reported smoking during the last three months of pregnancy, decreased from 2012 (11.5%). Among women who reported smoking during the last three months of pregnancy, 67.6% had births reimbursed by Medicaid, according to Medicaid claims data. This was a increase from 2012 (66.9%).

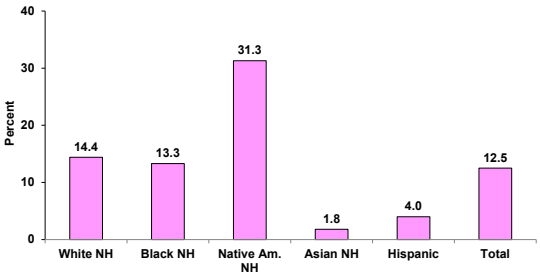
Women Reporting Smoking During Pregnancy
Kansas and US, 2005-2013



	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	16.4	16.5	16.1	16.0	15.1	15.0	14.5	13.7	12.5
US	12.4	13.2	10.4	9.7	9.3	9.2	9.0	8.7	8.5

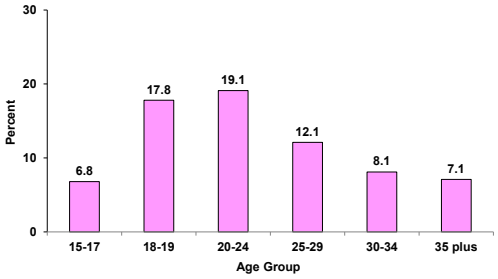
Sources: Bureau of Epidemiology and Public Health Informatics; National Vital Statistics Reports (VitalStats)

Women Reporting Smoking During Pregnancy
By Race/Ethnicity
Kansas, 2013



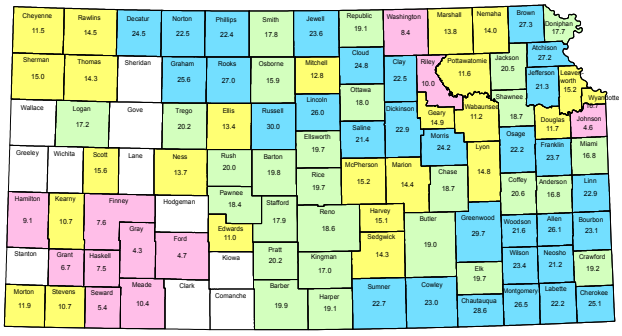
NH: non-Hispanic
Source: Bureau of Epidemiology and Public Health Informatics

Women Reporting Smoking During Pregnancy
by Age Group
Kansas, 2013



Source: Bureau of Epidemiology and Public Health Informatics

Women Reporting Smoking During Pregnancy
by County
Kansas (2011-2013, combined)



Source: Bureau of Epidemiology and Public Health Informatics

Infant Mortality

KANSAS GOAL: Reduce infant deaths.

Indicator: The 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] The U.S. infant mortality rate has substantially declined over the last century, and has essentially reached a plateau since 2002. Based on final data, in 2013, 23,440 infants died before age one year, representing an infant mortality rate of 5.96 deaths per 1,000 live births.[2] A significant disparity exists in U.S. infant deaths between racial groups[3], particularly African Americans.[4] Neonatal mortality is related to gestational age, low birth weight, congenital malformations and health problems originating in the perinatal period, as infections or birth trauma. Postneonatal mortality is generally related to Sudden Unexpected Infant Death (SUID)/Sudden Infant Death Syndrome (SIDS), unintentional injuries and congenital malformations. Infant mortality continues to be an extremely complex health issue with many medical, social, and economic determinants, including race/ethnicity, maternal age, education, smoking and health status.[3]

Healthy People 2020 Objectives: Related to Maternal, Infant, and Child Health (MICH) Objective 1.3: Reduce the rate of all infant deaths (within 1 year). (Target: 6.0 infant deaths per 1,000 live births)[3,5]

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. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. *Deaths: Final Data for 2013.* National Vital Statistics Reports; vol 64 no 2. Hyattsville, MD: National Center for Health Statistics. 2015.
3. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
4. 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.
5. U.S. Department of Health and Human Services. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
6. Oakley D, Crawford G, Savage C. *Kansas Annual Summary of Vital Statistics, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html

Epidemiology and Trends

In 2013, 248 Kansas infants died before their first birthday, representing an infant mortality rate (IMR) of 6.39 deaths per 1,000 live births, a slight increase from 2012 (6.30).[6] In 2013, the Kansas rate was 7.2% higher than the U.S. rate (5.96).[2] The Healthy People 2020 target for infant deaths is 6.0 infant deaths per 1,000 live births. While a statistically significant decrease in trend was detected with the annual percent change (APC) of -2.22, during the past decade (2004-2013), more work is needed to meet this target.

Kansas IMRs for non-Hispanic black mothers have consistently remained higher than those of non-Hispanic white and Hispanic mothers.[6] In 2013, the IMR among non-Hispanic black infants (15.3) was three times higher than that of non-Hispanic white infants (4.9). Decreases in IMRs were observed for non-Hispanic white (statistically significant with APC of -3.63) and non-Hispanic black infants from 2004 to 2013. However, a slight upward trend was observed for Hispanic infants.

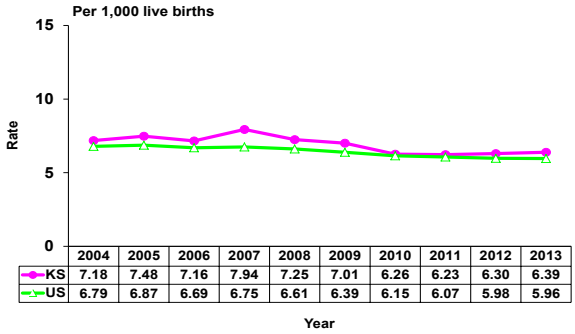
In 2013, 166 Kansas infants died before reaching 28 days of age, representing a neonatal mortality rate of 4.3 deaths per 1,000 live births. This rate was the same as in 2012. Neonatal mortality is generally related to short gestation and low birth weight, congenital malformations, and conditions occurring in the perinatal period such as birth trauma or infection.[3]

In 2013, 82 Kansas infants died between the ages of 28 days and 1 year, representing a postneonatal mortality rate of 2.1 deaths per 1,000 live births. This rate was slightly lower than the previous year (2.0). Postneonatal mortality is generally related to Sudden Infant Death Syndrome (SIDS), congenital malformations, and unintentional injuries.[3]

Of all infant deaths in 2013, 44.8% were attributed to conditions originating in the perinatal period, 23.8% to congenital anomalies, 13.7% to SIDS, and 17.7% to all other causes.[6]

**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.*[2]

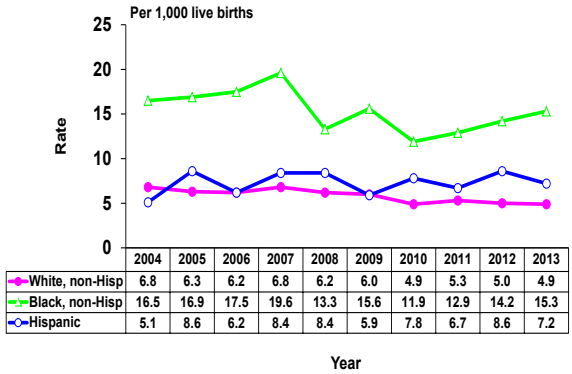
Infant Mortality Rates
Kansas and U.S., 2004-2013



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	7.18	7.48	7.16	7.94	7.25	7.01	6.26	6.23	6.30	6.39
US	6.79	6.87	6.69	6.75	6.61	6.39	6.15	6.07	5.98	5.96

Source: Bureau of Epidemiology and Public Health Informatics; National Center for Health Statistics

Infant Mortality Rates by Race/Ethnicity
Kansas, 2004-2013



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White, non-Hisp	6.8	6.3	6.2	6.8	6.2	6.0	4.9	5.3	5.0	4.9
Black, non-Hisp	16.5	16.9	17.5	19.6	13.3	15.6	11.9	12.9	14.2	15.3
Hispanic	5.1	8.6	6.2	8.4	8.4	5.9	7.8	6.7	8.6	7.2

Source: Bureau of Epidemiology and Public Health Informatics

Infant Mortality Rate
Kansas, 2013

Race/Ethnicity	Deaths	Rate per 1,000 Live Births
White, non-Hispanic	137	4.9
Black, non-Hispanic	39	15.3
Other, non-Hispanic	24	10.5
Hispanic	44	7.2

Source: Bureau of Epidemiology and Public Health Informatics

Infant Mortality
Kansas, 2013

	Deaths	Rate per 1,000 Live Births
Infant deaths	248	6.4
Neonatal deaths	166	4.3
Post-neonatal deaths	82	2.1

Source: Bureau of Epidemiology and Public Health Informatics

Newborn Metabolic Screening

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

Indicators:

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

Definition: Tests of newborns that screen for serious treatable diseases most of which are genetic.[1] The newborn screening tests done in the United States are decided on a state-by-state basis.[1] Nearly all states are screening for 28 of the 29 core metabolic conditions recommended by the American College of Medical Genetics (ACMG).

Significance: Screening programs for newborns and children have been shown to be cost-effective and successful and have been shown to prevent mortality and morbidity.[2] Their success reflects the systems approach from early screening to appropriate early intervention and treatment.[2] Kansas newborns are screened for 28 of the 29 core metabolic conditions recommended for inclusion in all state screening programs by the ACMG.[3] Since 2008, severe combined immunodeficiency (SCID) and critical congenital heart disease (CCHD) have been added to the ACMG panel. The state laboratory utilizes tandem mass technology (MS/MS), a major technological advance in newborn screening.[3] The 28 metabolic conditions currently screened by Kansas are: 6 amino acid disorders (PKU, MSUD, HCY, TYR-1, ASA, CIT), 5 fatty acid disorders (MCAD, VLCAD, LCHAD, TFP, CUD), 9 organic acid disorders (IVA, GA-1, HMG, MCD, MUT, Cbl-A,B, 3-MCC, PROP, BKT), 3 hemoglobin conditions (Hb SCA, Hb S/C, Hb S/Th), 2 endocrine conditions (CH, CAH), and 3 other conditions (BIO, GALT, CF).[3]

Healthy People 2020 Objectives: Related to Maternal, Infant, and Child Health (MICH) Objective 32.2: Increase the proportion of screen-positive children who receive follow-up testing within the recommended time period. (Target: 100%)

Data Source and Reference:

1. MedicineNet.com. www.medterms.com/script/main/art.asp?articlekey=4564
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 2009.
3. Kansas Department of Health and Environment. Kansas Newborn Screening Program data as reported of June 1, 2015. www.kdheks.gov/newborn_screening.
4. National Newborn Screening and Genetics Resource Center. http://genes-r-us.uthscsa.edu.

Epidemiology and Trends

Approximately 40,000 Kansas newborns are screened each year. Of those, an estimated 3,000 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 approximately 3,000 babies who have an out of range screen each year, about 70 will be diagnosed with a condition. In 2013, 81 newborns confirmed with metabolic conditions received appropriate follow-up.

In Kansas, hospital personnel or midwives 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 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 coordinator continues to provide case management services to ensure that the infant has appropriate testing, diagnosis, referral and treatment services.

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

- Screening - About 40,000 KS births/initial tests each year with about 3,000 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, 2012 and 2013		
	2012	**2013**
# screened	40,859	39,214
% of live births screened*	99.2%	98.6%
# confirmed	71	81
# diagnosed and received treatment and/or intervention	71	81

*Denominator: Occurrence births (41,163 in 2012 and 39,776 in 2013)

Source: Bureau of Epidemiology and Public Health Informatics; Newborn Screening Program data, CY 2012 and 2013

Newborn Screening Results

Number of Infants with a Confirmed Diagnosis First Detected Kansas, 2013	
Conditions	**Number of Cases**
Congenital Hypothyroidism	37
Galactosemia	4
Congenital Adrenal Hyperplasia	2
Cystic Fibrosis	10
Biotinidase	1
Hemoglobin	12
Amino Acid	8
Fatty Acid	5
Organic Acid	2

Source: Newborn Screening Program data, CY 2013. Data reported as of June 1, 2015

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:

1. The percent of newborns who have been screened for hearing before hospital discharge.
2. The percent of infants screened before 1 month of age.
3. The percent of infants with audiologic evaluation completed before 3 months of age.
4. The number of infants identified with permanent congenital hearing loss (PCHL).
5. The 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: The advantages of early detection of hearing impairments are indisputable and include necessary follow-up of free and appropriate enrollment in rehabilitation and education programs.[1]

Healthy People 2020 Objective: Related to Hearing and Other Sensory or Communication Disorders Objective 1.1: Screen for hearing loss no later than age 1 month. (Target: 90.2%)[1]

Data Source and Reference:

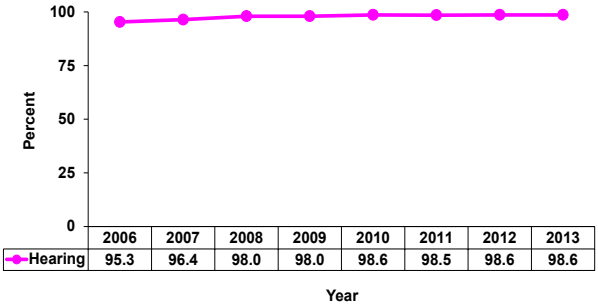
1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
2. SoundBeginnings program data. The data represents only those data reported to SoundBeginnings as of June 1, 2014.

Epidemiology and Trends

In 1999, Kansas passed legislation for universal newborn hearing screening. According to Kansas law, every child born in the state of Kansas, within five days of birth, unless a different time period is medically indicated, shall be given a screening examination for detection of hearing loss.

In 2013, 98.6% of Kansas infants were screened, and 1.4% of those infants were referred for further testing. The percentage of infants who had a hearing screening prior to one month of age is 96.8%. For those infants who were referred for a complete audiologic evaluation, 65.0% were completed before three months of age. In 2013, there were 63 infants who were reported as identified with permanent hearing loss, and 34 of those infants were enrolled in early intervention before six months of age.[2]

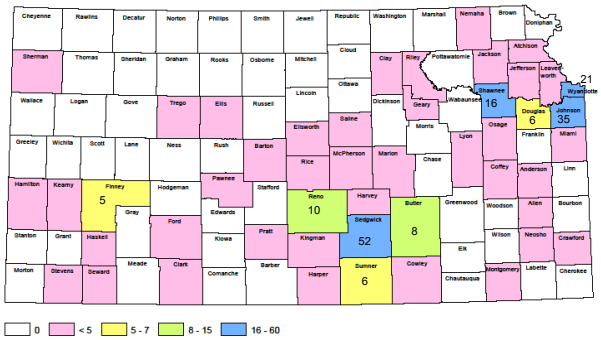
Percent of Infant Hearing Screened Prior to Hospital Discharge Kansas (2006-2013)



	2006	2007	2008	2009	2010	2011	2012	2013
Hearing	95.3	96.4	98.0	98.0	98.6	98.5	98.6	98.6

Source: Sound Beginnings program data as reported of June 1, 2015

Number of Infants Identified with Hearing Loss by County Kansas (2011-2013, Total 225)



This map represents only those cases reported to Sound Beginnings as of June 1, 2015.
Counties which reported fewer than 5 cases - Not reported to protect confidentiality.

Source: Sound Beginnings program data.

Early Hearing Detection and Intervention Indicators Kansas, 2013

Percent of Infants Screened Before Hospital Discharge	
# of infants screened	39,212
# of infants born	39,773*
Percent	**98.6%**

Percent of Infants Screened Before 1 Month of Age	
# of infants screened	38,507
# of infants born	39,773*
Percent	**96.8%**

Percent of Infants Referred from Hospital Screening	
# of infants referred	500
# of infants screened	39,212
Percent	**1.3%**

Percent of Infants with Audiologic Evaluation Completed by 3 Months of Age	
# of infants evaluated by 3 months	294
# of infants evaluated	432
Percent	**68.0%**

Number of Infants Identified with Permanent Congenital Hearing Loss (PCHL)	
# of infants identified	**63**

Number of Infants with PCHL Enrolled in Early Intervention by 6 Months of Age	
# of infants enrolled	**34**

*Occurrence data
Source: Newborn Hearing Screening Program (SoundBeginnings) data, 2013. Data reported to SoundBeginnings as of June 1, 2015.

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SECTION II

CHILD HEALTH

AND

ADOLESCENT HEALTH

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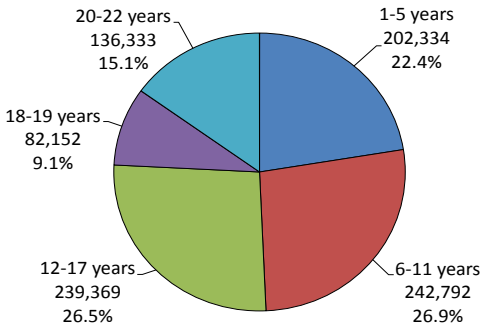
Demographics

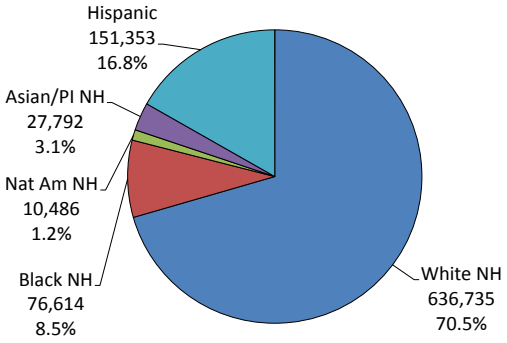
In 2013, there were 902,980 children and adolescents aged 1 to 22 years living in Kansas, which represents 31.2% of the Kansas population. The Kansas population, like that of the nation, is becoming more racially and ethnically diverse.[1] About three-in-ten Kansas children and adolescents belong to a racial or ethnic minority. Across the age groups, three-in-ten young children (1 to 5 years) are part of a racial/ethnic minority versus two-in-ten young adults (20 to 22 years). About 14.3% of Kansans age 15 to 22 are Hispanic, compared to 19.1% of young children. Among families with children under 18, 29.1% are single-parent families versus married-couple families (70.5%).[2]

Children (ages 1-22) by Age Group
Kansas, 2013



Total: 902,980
Source: U.S. Census Bureau

Children (ages 1-22) by Race and Ethnicity
Kansas, 2013



NH: non-Hispanic
Source: U.S. Census Bureau

According to the 2013 American Community Survey, among people at least five years old living in Kansas, 10.9% spoke a language other than English at home. Of those speaking a language other than English at home, 66.6% spoke Spanish and 33.4% spoke some other language; 39.2% reported that they did not speak English "very well." [2] Based on the 2013 Current Population Survey, compared to the U.S. population, a lower percentage of Kansas children under age 18 live in households with incomes below the 100% federal poverty level (18.1% versus 19.9% for the U.S.).[3] Poverty is more common in Kansas families headed by single females (31.5% versus 41.3% for the U.S.)[3] 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 largest population centers: Sedgwick County (Wichita), Wyandotte and Johnson Counties (Kansas City metropolitan area) and Shawnee County (Topeka).[4]

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, American Community Survey. *DP02: Kansas - Selected Social Characteristics, 2013.*
3. U.S. Census Bureau, Current Population Survey, 2013 Annual Social and Economic Supplement. POV46: Poverty Status by State: 2013. www.census.gov/hhes/www/cpstables/032014/pov/toc.htm
4. U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE). *Estimates for Kansas counties, under age 18 in poverty, 2013.* www.census.gov/did/www/saipe/

Children's Health Insurance Coverage

KANSAS GOAL: Increase health insurance coverage for Kansas children.

Indicators: The 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: There is well documented benefit for children in having health insurance. Research has shown that children who acquire health insurance are more likely to: have access to a usual source of care; receive well child care and immunizations; have developmental milestones monitored; and received prescriptions drugs, appropriate care for asthma and basic dental services. Serious childhood problems are more likely to be identified early in children with insurance, and insured children with special health care needs are more likely to have access to specialists. Insured children not only receive more timely diagnosis of serious health care conditions, but experience fewer avoidable hospitalizations, improved asthma outcomes and fewer missed school days.[2]

Healthy People 2020 Objective: Related to Access to Health Services Objective 1: Increase the proportion of persons with health insurance. (Target: 100%)[2]

Data Sources and References:

1. Investerwords.com. www.investorwords.com/2289/health_insurance.html.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. U.S. Census Bureau, Current Population Survey (CPS) Table Creator for the Annual Social and Economic Supplement. www.census.gov/cps/data/cpstablecreator.html.
4. U.S. Census Bureau, Small Area Health Insurance Estimates (SAHIE), 2013. www.census.gov/did/www/sahie

Epidemiology and Trends

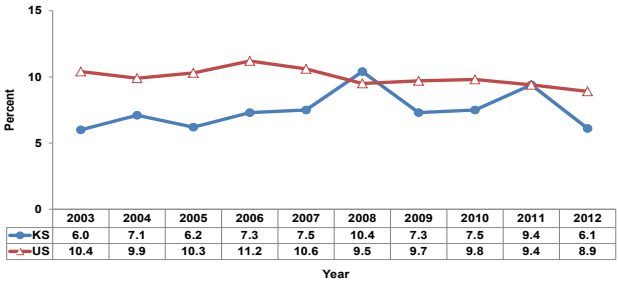
Data from the U.S. Census Current Population Survey (CPS)[3] show that the percentage of Kansas children under 18 years old without health insurance decreased from 9.4 in 2011 to 6.1 in 2012, a 35.1% decrease. The U.S. percentage also decreased from 9.4 in 2011 to 8.9 in 2012.

In Kansas, based on the 3-year average CPS estimates (2010-2012), 7.7% children were uninsured. With an uninsured rate of 8.9%, children in poverty were more likely to be uninsured than children not in poverty (7.4%). About one-third of children (37.6%) were publicly insured by sources such as Medicare, Medicaid, military health care, and the State Children's Health Insurance Program (CHIP). About 10.3% of Hispanic children did not have any health insurance, compared with 8.1% for non-Hispanic white children and 7.8% for non-Hispanic black children. Non-Hispanic white children had high rates of private health insurance coverage (64.9%) compared to non-Hispanic black and Hispanic children (41.0% and 31.8%, respectively). Non-Hispanic black and Hispanic children were the most likely to have public coverage (62.8% and 61.1%, respectively).

As family income increases, rates of private coverage increase and rates of public coverage and no coverage decrease. Children with family incomes below 100% of the poverty level were the most likely to have public coverage (77.1%) or be uninsured (8.9%). The majority (94.3%) of children with family incomes of 400% or more of the poverty level were privately insured. The CPS results indicate that a child's insurance status is related to a wide range of child and family characteristics. Socioeconomic characteristics and parental employment were found to have an especially strong relationship with a child's insurance status.

Nearly half (49.8%) of all uninsured Kansas children under age 19 live in four largest population centers: Sedgwick County (Wichita), Johnson and Wyandotte counties (Kansas City metropolitan area), Shawnee County (Topeka), and Douglas County (Lawrence). However, the southwest corner of the state has many counties with high concentrations of uninsured children under age 19.[4]

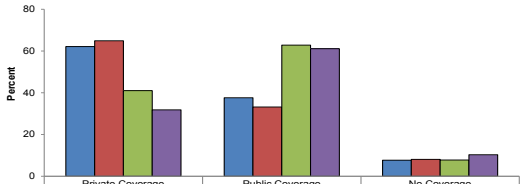
Percent of Uninsured Children Under 18 years
Kansas and U.S., 2003-2012



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
KS	6.0	7.1	6.2	7.3	7.5	10.4	7.3	7.5	9.4	6.1
US	10.4	9.9	10.3	11.2	10.6	9.5	9.7	9.8	9.4	8.9

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements.
www.census.gov/hhes/www/hlthins/data/historical/HIB_tables.html

Health Insurance Coverage Among Children Under 18 years
By Race/Ethnicity and Type of Coverage*
Kansas (3-year average 2010-2012)

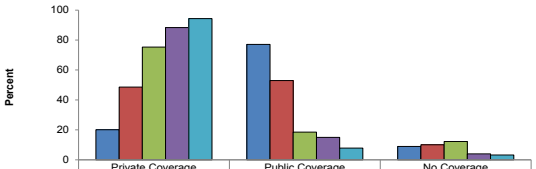


	Private Coverage	Public Coverage	No Coverage
Total	62.1	37.6	7.7
White alone	64.9	33.2	8.1
Black alone	41.0	62.8	7.8
Hispanic	31.8	61.1	10.3

*Totals equal more than 100% because children may have more than one source of coverage.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements, 2011-2013
http://www.census.gov/cps/data/cpstablecreator.html

Health Insurance Coverage Among Children Under 18 years
By Federal Poverty Level and Type of Coverage*
Kansas (3-year average 2010-2012)

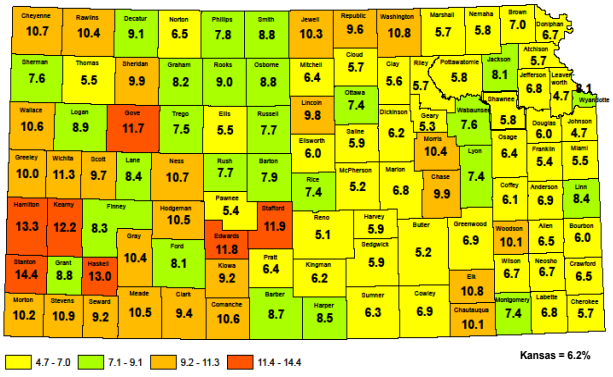


	Private Coverage	Public Coverage	No Coverage
<100% FPL	20.1	77.1	8.9
100%-199% FPL	48.6	52.9	10.0
200%-299% FPL	75.3	18.5	12.2
300%-399% FPL	88.3	15.0	4.0
400% FPL or More	94.3	7.8	3.2

*Totals equal more than 100% because children may have more than one source of coverage.
FPL: Federal poverty level.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements, 2011-2013
http://www.census.gov/cps/data/cpstablecreator.html

Percent of Uninsured Children Under 19 years by County
Kansas, 2013



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates

Immunization

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

Indicator: The percent of 19 to 35 month olds who have received the full schedule of age appropriate immunizations* against diphtheria, tetanus, pertussis, polio, measles, mumps, rubella, *Haemophilus influenzae* type b, hepatitis B virus, varicella and pneumococcal disease.

Definition: Immunization status is a measurable indicator of non-susceptibility to specific infectious diseases. Immunity to disease is the ability of an individual to resist infection and may be conferred through artificial immunization or through previous natural infection.[1]

Significance: Infectious diseases remain important causes of preventable illness in the United States despite significant reductions in incidence in the past 100 years. Vaccines are among the safest and most effective preventive measures.[2]

Healthy People 2020 Objective: Related to Immunization and Infectious Diseases (IID) Objective 8: Increase the proportion of children 19 and 35 months who receive the recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella and PCV vaccine. (Target: 80%)[2]

Data Sources and References:

1. Miller C, Fine A, Adams-Taylor S. *Monitoring Children's Health: Key Indicators, 2nd edition.* Washington, DC: American Public Health Association, 1989.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
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.
4. Centers for Disease Control and Prevention. National Immunization Survey. www.cdc.gov/vaccines/imz-managers/coverage/nis/child/index.html
5. Kansas Department of Health and Environment. *Retrospective Immunization Coverage Survey, 2008-2009 Results (School Year 2012-2013).* www.kdheks.gov/immunize/retro_survey.html

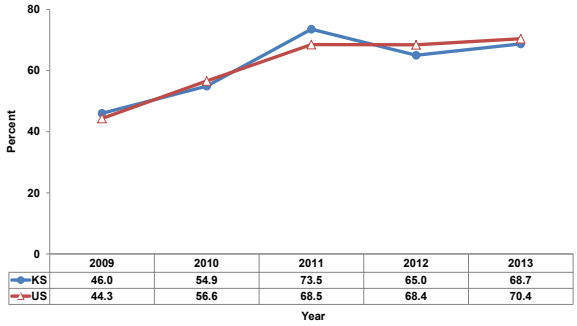
Note: **The 4:3:1:3:3:1:4 combination series includes 4 doses of Diphtheria,Tetanus, and Pertussis (DTaP) vaccine, 3 doses of Polio vaccine, 1 dose of Measles-Mumps-Rubella (MMR) vaccine, ≥3 or ≥4 doses* ***(full series)*** *of Haemophilus influenzae type b (Hib) vaccine* ***depending on brand type****, 3 or more doses of Hepatitis B (HepB) vaccine, 1 or more doses of varicella vaccine, and 4 or more doses of pneumococcal conjugate vaccine (PCV).*

Epidemiology and Trends

Vaccine coverage is of great public health importance.[3] By having greater vaccination coverage, there is an increase in herd immunity, which leads to lower disease incidence and an ability to limit the size of disease outbreaks.[3] According to the 2013 National Immunization Survey (NIS), Kansas immunization rates for 4:3:1:3:3:1:4 combination [DTaP4-Polio3-MMR1-Hib3-HepB3***(full series)***-Var1-PCV4] increased from 65.0% in 2012 to 68.7% in 2013.[4] This was below the national average (70.4 %) and the Healthy People 2020 goal of 80%. Overall, an increasing trend was observed over the last 5 year period (2009-2013).

The 2012-2013 Kansas Retrospective Immunization Coverage Survey (RS)** indicated that the statewide immunization coverage level for the 4:3:1:3:3:1:4 series for children by 24 months of age was 47.0%. By the time these children were 35 months of age, the 4:3:1:3:3:1:4 series had reached 55.4%. This vaccination series increased significantly from 24 months of age to 35 months of age. Compared to the 2011-2012 RS, at 24 months of age, this series (57.2%) was significantly lower in the 2012-2013 RS by approximately 10% percentage points, and remains below the Healthy People 2020 goal of at least 80%. The results from the 2012-2013 RS were compared with the results from the 2009 NIS, which refers to the same time period in this retrospective survey. The coverage level for this series was significantly lower in the 2012-2013 RS [55.4% (95%CI 53.7-57.1)] when compared to the Kansas NIS [65.8% (95%CI 57.2-74.3)]. One potential reason for the differences in coverage levels could be due to Hib3 and PCV4 not being required for school entry. While the Hib3 estimate did not vary significantly between the two surveys, PCV4 was significantly lower in the RS compared to the Kansas NIS coverage. This may reflect a lack of recording this immunization series on the kindergarten immunization record. Additionally, NIS results for Kansas were not significantly different than the national NIS coverage level [63.6% (95% CI 62.3-64.9)].[5]

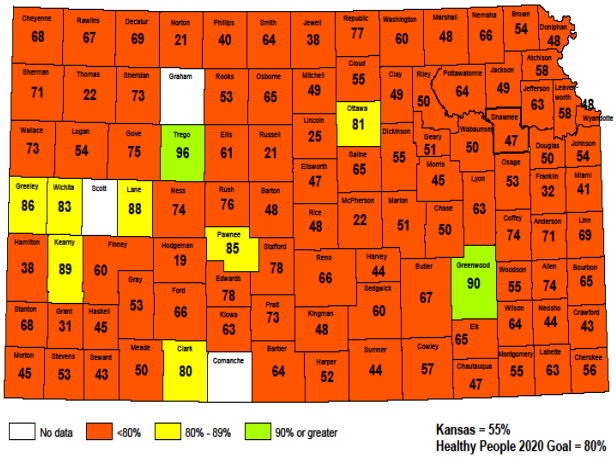
Estimated Vaccination Coverage with 4:3:1:3:3:1:4 Series*
Among Children 19-35 Months of Age
Kansas and U.S., 2009-2013



	2009	2010	2011	2012	2013
KS	46.0	54.9	73.5	65.0	68.7
US	44.3	56.6	68.5	68.4	70.4

*DTaP4-Polio3-MMR1-Hib3***(full series)**-HepB3-Var1-PCV4
Source: National Immunization Survey

4:3:1:3:3:1:4 Series* Coverage Levels by County
Kansas Retrospective Immunization Coverage Survey
2008-2009 Results (School Year 2012-2013)



*DTaP4-Polio3-MMR1-Hib3-HepB3-Var1-PCV4

The Kansas Certificates of Immunizations and other immunization records for children enrolled in a kindergarten class in Kansas public and private schools during the 2012-2013 school year were collected and evaluated for immunization coverage levels. The 2009 NIS data used here are the 4:3:1 plus ≥3 doses of Haemophilus influenzae (Hib) vaccine of* ***any type*, ≥3 doses of hepatitis B vaccine, ≥1 dose of varicella vaccine, and ≥4 doses of pneumococcal conjugate vaccine. This was due to Hib vaccine brand type could not be differentiated.*

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 ≥ 10 µg/dL.

Indicator: The 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 body chemistry.[1]

Significance: Lead poisoning is a preventable health problem affecting Kansas children. Lead levels can affect the developing nervous system of young children, resulting in delayed development, decreased IQ, learning problems, and behavior problems. High levels of lead (greater than 20 µg/dL) can have adverse effects on the kidneys and blood-producing organs as well as the digestive and reproductive systems. Very high blood lead levels (greater than 70 µg/dL) can cause devastating health consequences, including seizures, coma, and death. The developing fetus is very susceptible to lead exposure from the blood of the mother. Early identification and treatment of lead poisoning reduces the risk that children will suffer permanent damages.[2]

Healthy People 2020 Objective: Related to Environmental Health (EH) Objective 8: Reduce blood lead levels in children.
EH-8.1 Eliminate elevated blood lead levels in children. (Target: Not applicable)
EH-8.2 Reduce the mean blood lead levels in children. (Target: 1.4µg/dL average blood lead level in children aged 1 to 5 years)

Data Source and Reference:

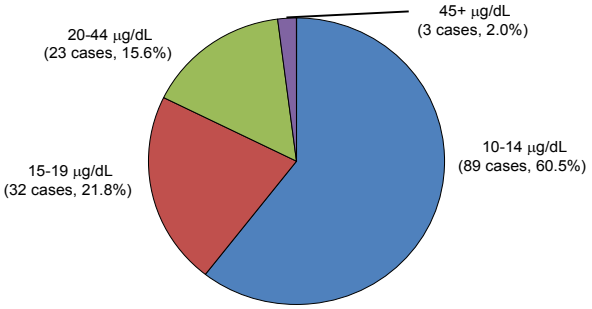
1. Miller C, Fine A, Adams-Taylor S. *Monitoring Children's Health: Key Indicators, 2nd ed.* Washington, DC: American Public health Association, 1989.
2. Kansas Department of Health and Environment, Division of Health, Bureau of Epidemiology and Disease Prevention. *Reportable Infectious Diseases in Kansas, 2005 Summary.*
3. Kansas Department of Health and Environment, Epidemiology and Public Health Informatics. Data generated on December 1, 2014 from EpiTrax.

Epidemiology and Trends

In 2013, the number of children less than 72 months old with confirmed elevated (≥10 µg/dL) blood lead level was 147. The age range of confirmed cases was 3-66 months. The median age was 26 months with an average age of 29 months. The 12-23 month age group accounted for 37.4% of the lead poisoning cases in children less than six years old and represented the age group with the highest incidence rate of blood lead poisoning and the highest levels of blood lead. Males comprised 54.8% of the confirmed cases. Distribution of cases by race/ethnicity was not available. The ratio of urban counties* to non-urban counties was about 1:2, 42 and 85 cases, respectively. The chart below shows that 39.5% of confirmed cases had a blood lead level greater than 15 µg/dL. There were 26 cases (17.6%) with a blood lead level ≥20µg/dL, a level that might warrant an environmental risk assessment.

For the purpose of this report, **urban counties are defined as counties with a population density of 150.0 or more persons per square mile, and represent the four largest metropolitan areas in the state [Kansas City (Johnson, Leavenworth and Wyandotte counties), Wichita (Sedgwick County), Topeka (Shawnee County) and Lawrence (Douglas County). **Non-urban counties** represent the remaining 99 counties in Kansas.*

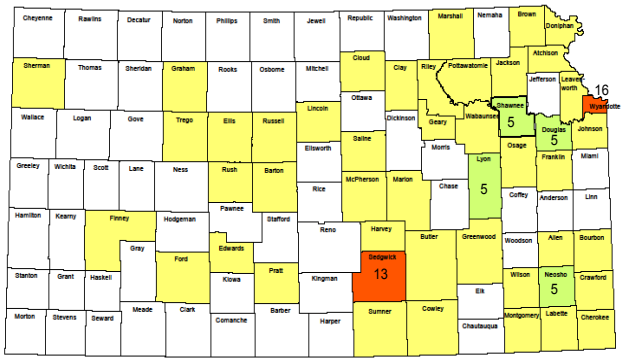
Positive Blood Lead Results (≥10 µg/dL)
For Children 0 to 71 months
Kansas, 2013



Total = 147

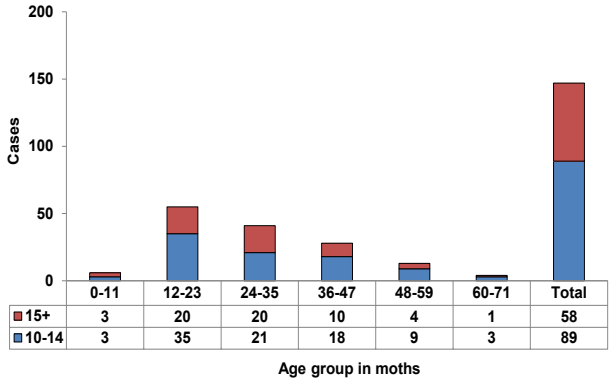
Source: Bureau of Epidemiology and Public Health Informatics
Data generated on December 1, 2014 from EpiTrax

Number of Lead Poisoning Cases (≥10 µg/dL)
for Children 0 to 71 Months by County
Kansas, 2013 (Total 147)



Counties with more than 1 but less than 5 cases were not reported to protect confidentiality.
Source: Bureau of Epidemiology and Public Health Informatics; Data generated on December 1, 2014 from EpiTrax

Lead Poisoning Cases (≥10 µg/dL) by Age Group
Kansas, 2013



	0-11	12-23	24-35	36-47	48-59	60-71	Total
15+	3	20	20	10	4	1	58
10-14	3	35	21	18	9	3	89

Source: Bureau of Epidemiology and Public Health Informatics
Data generated on December 1, 2014 from EpiTrax

Oral Health

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

Indicators:

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

Definitions: 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 decay is through the use of dental sealants, a plastic-like material attached to the chewing surfaces of permanent molar teeth. Dental sealants 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: Dental caries affects two-thirds of children by the time they are 15 years of age. Developmental irregularities, called pits and fissures, are the sites of 80-90% of childhood caries. Sealants selectively protect these vulnerable sites, which are found mostly in permanent molar teeth. Targeting sealants to those at greatest risk for caries has been shown to increase their cost-effectiveness. Although sealants have the potential to combine with fluorides to prevent almost all childhood tooth decay, they have been underutilized. In addition to being an excellent service in preventing tooth decay, sealants may also be a surrogate indicator of dental access, oral health promotion and preventive activities, and a suitable means to assess the linkages that exist between the public and private service delivery systems. Publicly managed sealant programs are usually school-based or school-linked and target underserved children, thus providing entry to other services. It has been stated on several occasions that dental sealants are the oral health equivalent to immunization.[2]

Healthy People 2020 Objectives: Related to Oral Health (OH) Objective 12: Increase the proportion of children and adolescents who have received dental sealants on their molar teeth.[3]
OH-12.1 Increase the proportion of children aged 3 to 5 years who have received dental sealants on one or more their primary molar teeth. (Target: 1.5%)
OH-12.2 Increase the proportion of children aged 6 to 9 years who have received dental sealants on one or more of their permanent first molar teeth. (Target: 28.1%)

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.* www.kdheks.gov/ohi/index.html
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
4. National Survey of Children's Health. 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

According to the 2011/12 National Survey of Children's Health[4], the parents of 71.8% of Kansas children reported that their children's teeth were in excellent or very good condition, similar to the U.S. (71.3%).

In Kansas, the condition of children's teeth varies by a number of factors:

- Non-Hispanic white children (78.9%) were more likely than non-Hispanic black children to have excellent or very good teeth, as described by their parents (78.9% vs. 76.5%). Only 46.7% of Hispanic children were reported to have excellent or very good teeth.

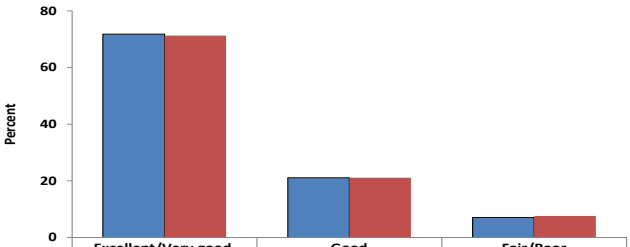
- Teeth conditions improved with increasing family incomes (reported as a ratio to the poverty level). High income families were more likely to report that their children's teeth were in excellent or very good condition. Among families at 400% of the Federal Poverty Level (FPL) or higher, 86.4% of children have excellent or very good teeth. Fewer families with incomes 0-99% FPL reported having their children with excellent or very good teeth (46.0%).

- Children with special health care needs are less likely than children without such needs to have excellent or very good teeth (58.4% vs. 75.3%).

- Children who received coordinated, comprehensive care within a medical home were more likely than children without a medical home to have excellent or very good teeth (78.3% vs. 63.2%).

Parents also reported on oral health problems (toothache, decayed teeth, or unfilled cavities) that may have occurred in the previous 12 months. Parents of 18.1% of Kansas children were reported to have one or more oral health problems.

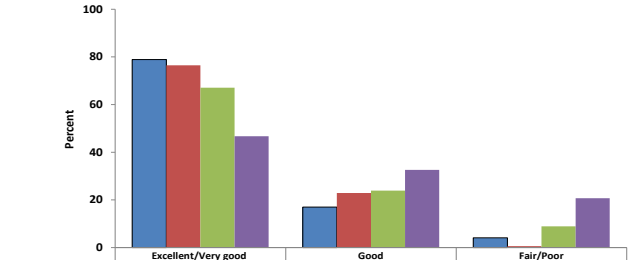
Overall Conditions of Children's Teeth
Children age 1-17 years
Kansas and U.S., 2011/12



	Excellent/Very good	Good	Fair/Poor
Kansas	71.8	21.1	7.1
US	71.3	21.1	7.6

Source: National Survey of Children's Health, 2011/12

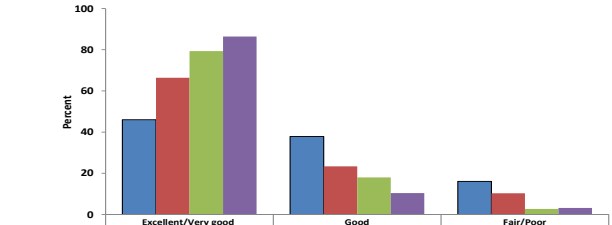
Overall Conditions of Children's Teeth
Children age 1-17 years by race/ethnicity
Kansas, 2011/12



	Excellent/Very good	Good	Fair/Poor
White, non-Hispanic	78.9	17.0	4.1
Black, non-Hispanic	76.5	22.9	0.6
Other, non-Hispanic	67.1	23.9	8.9
Hispanic	46.7	32.6	20.7

Source: National Survey of Children's Health, 2011/12

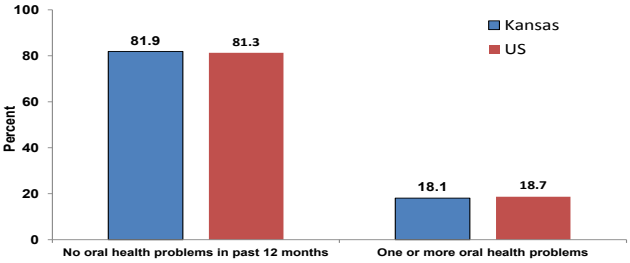
Overall Conditions of Children's Teeth
Children age 1-17 years by household income level
Kansas, 2011/12



	Excellent/Very good	Good	Fair/Poor
0-99% FPL	46.0	37.9	16.1
100%-199% FPL	66.4	23.4	10.3
200%-399% FPL	79.3	18.0	2.7
400% FPL or higher	86.4	10.4	3.2

Source: National Survey of Children's Health, 2011/12

Prevalence of Oral Health Problems
In the Past 12 Months
Kansas and U.S., 2011/12



Source: National Survey of Children's Health, 2011/12

Injury

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

Indicator: The 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.[1]

Healthy People 2020 Objectives: Related to Injury and Violence Prevention (IVP) Objective 1: Reduce fatal and nonfatal injuries. (Target: 53.3 deaths per 100,000 population)[2]

Data Source and Reference:

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.
2. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
3. Oakley D, Crawford G, Savage C. *Kansas Annual Summary of Vital Statistics, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html
4. 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 2013, injuries caused the deaths of 58 children aged 1 to 14 years and 201 adolescents and young adults aged 15 to 24 years in Kansas. The Kansas injury death rate was higher than the U.S. rate for children ages 1-14 (10.2 and 6.9, respectively). For adolescents and young adults 15-24 (48.0 vs. 48.5), the rates were similiar.[3,4]

In Kansas, in a three-year period from 2011 through 2013, the injury death rates for both ages 1-14 and ages 15-24 were highest among non-Hispanic black children (11.2 and 64.2, respectively). Motor vehicle crashes (35.4%, 45 deaths), drowning (17.3%, 22 deaths), and fires and burns (14.2%, 18 deaths) were the most common causes of unintentional injury death among children aged 1 to 14 years. Motor vehicle crashes (61.1%, 225 deaths) were the most common cause of unintentional injury death among adolescents and young adults aged 15 to 24 years, followed by poisonings (19.3%, 71 deaths), and drowning (4.3%, 16 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

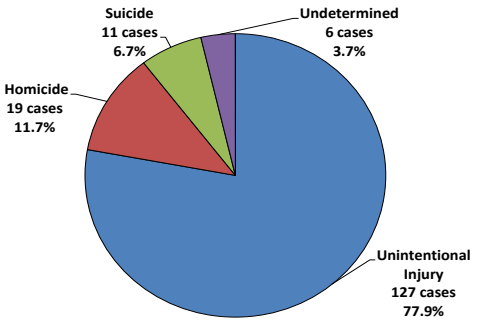
	Ages 1-14		Ages 15-24	
	Deaths	Rate*	Deaths	Rate*
Kansas (2013)	58	10.2	201	48.0
U.S. (2013)	3,960	6.9	21,320	48.5

Race/Ethnicity (2011-2013)	Ages 1-14		Ages 15-24	
	Deaths	Rate*	Deaths	Rate*
White, non-Hispanic	104	8.8	489	53.6
Black, non-Hispanic	16	11.2	67	64.2
Hispanic	29	9.5	81	47.2

*Rate: Deaths per 100,000 population

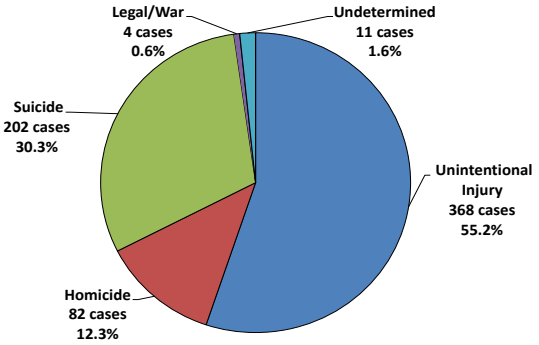
Source: KS - Bureau of Epidemiology and Public Health Informatics
US - WISQARS Injury Mortality Report

Injury Deaths by Intent (Ages 1-14)
Kansas, 2011-2013



Source: Bureau of Epidemiology and Public Health Informatics

Injury Deaths by Intent (Ages 15-24)
Kansas, 2011-2013



Source: Bureau of Epidemiology and Public Health Informatics

Overweight

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

Indicator: The percent of overweight or obese children and adolescents.

Definition: Body mass index (BMI) is a measure used to determine childhood overweight and obesity. It is calculated using a child's weight and height. BMI does not measure body fat directly, but it is a reasonable indicator of body fatness for most children and teens. A child's weight status is determined using an age- and sex-specific percentile for BMI rather than the BMI categories used for adults because children's body composition varies as they age and varies between boys and girls. CDC Growth Charts are used to determine the corresponding BMI-for-age and sex percentile.[1] For children and adolescents (aged 2-19 years):

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

For the 2000 CDC Growth Charts and additional information visit: www.cdc.gov/growthcharts and www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html).

Significance: Childhood overweight/obesity is a serious health problem in the United States, and the prevalence of overweight among preschool children has doubled since the 1970s. There have been significant increases in the prevalence of overweight in children younger than 5 years of age across all ethnic groups. Onset of overweight in childhood accounts for 25% of adult obesity, but overweight that begins before age 8 and persists into adulthood is associated with an even greater degree of adult obesity. Childhood overweight is associated with a variety of adverse consequences including an increased risk of cardiovascular disease, type 2 diabetes mellitus, asthma, social stigmatization, and low self-esteem.[2]

Healthy People 2020 Objective: Related to Nutrition and Weight Status (NWS) Objective 10: Reduce the proportion of children and adolescents who are considered obese.[3]
NWS 10.1 Children aged 2 to 5 years (Target: 9.6%)
NWS 10.2 Children aged 6 to 11 years (Target: 15.7%)
NWS 10.3 Adolescents aged 12 to 19 years (Target: 16.1%)
NWS 10.4 Children and adolescents aged 2 to 19 years (Target: 14.6%)

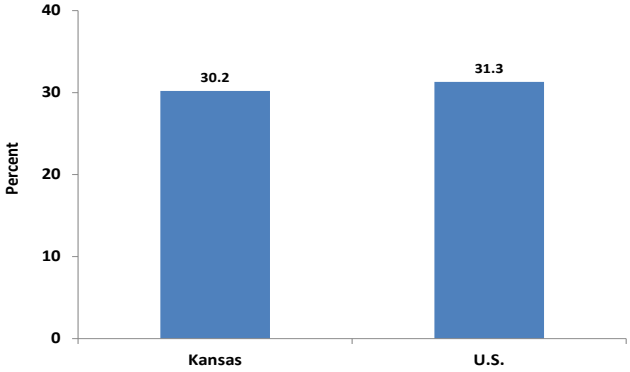
Data Sources and References:

1. Centers for Disease Control and Prevention (CDC). *Childhood overweight and obesity.* www.cdc.gov/obesity/childhood/basics.html
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf
4. National Survey of Children's Health. 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.child-healthdata.org
5. Centers for Disease Control and Prevention (CDC). *2005-2013 High School Youth Risk Behavior Survey Data.* http://nccd.cdc.gov/youthonline/App/Default.aspx.

Epidemiology and Trends

According to the 2011/12 National Survey of Children's Health[4], 30.2% of 10-17 years olds were considered overweight or obese using parent reported height and weight. Males were more likely than females to be overweight or obese (37.6% vs. 22.7%). Hispanic children (54.3%) had the highest rate of overweight or obese, followed by non-Hispanic black children (34.8%). Non-Hispanic white children had the lowest overweight or obese rate (22.4%). As family income rises, the rate of overweight falls: 42.9% of children with family incomes below 100% of the Federal Poverty Level (FPL) were overweight or obese, compared to 21.4% of children with family incomes of 400% of FPL and above.

Prevalence of Overweight or Obese in Children Aged 10 to 17 years Kansas and U.S., 2011/12



Source: National Survey of Children's Health, 2011/12

The 2013 Kansas Youth Risk Behavior Survey indicates that among Kansas high school students:

Obesity

- 12.6% were obese and 16.3% were overweight.

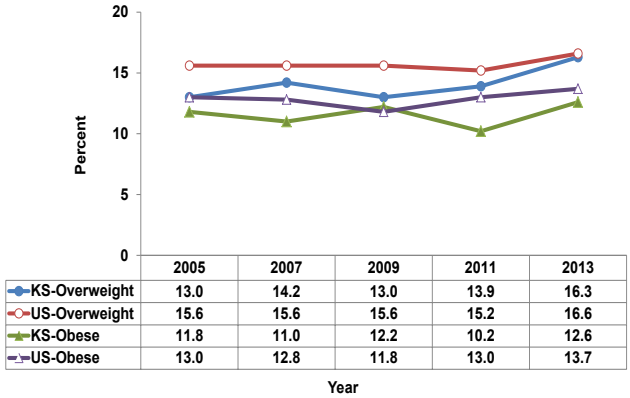
Unhealthy Dietary Behaviors

- 6.4% did not eat fruit or drink 100% fruit juices during the 7 days before the survey.
- 4.8% did not eat vegetables during the 7 days before the survey.
- 6.4% drank a can, bottle, or glass of soda or pop three or more times per day during the 7 days before the survey.
- 15.9% did not drink milk during the 7 days before the survey.
- 14.6% did not eat breakfast during the 7 days before the survey.

Physical Inactivity

- 14.4% did not participate in at least 60 minutes of physical activity on any day during the 7 days before the survey.
- 45.1% did not attend physical education classes in an average week when they were in school.
- 25.0% watched television 3 or more hours per day on an average school day.
- 33.9% played video or computer games or used a computer 3 or more hours per day for something that was not school work on an average school day.
- 38.8% did not play on at least one sports team run by their school or community groups during the 12 months before the survey.

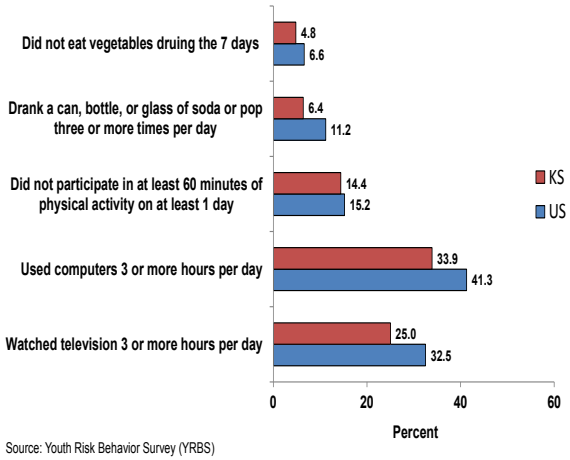
Overweight and Obesity among High School Students (9th-12th Grade) Kansas and U.S., 2005-2013



	2005	2007	2009	2011	2013
KS-Overweight	13.0	14.2	13.0	13.9	16.3
US-Overweight	15.6	15.6	15.6	15.2	16.6
KS-Obese	11.8	11.0	12.2	10.2	12.6
US-Obese	13.0	12.8	11.8	13.0	13.7

Source: Youth Risk Behavior Survey (YRBS)

Percent of Selected Dietary Behaviors and Physical Activity among High School Students (9th-12th Grade) Kansas and U.S., 20013



Source: Youth Risk Behavior Survey (YRBS)

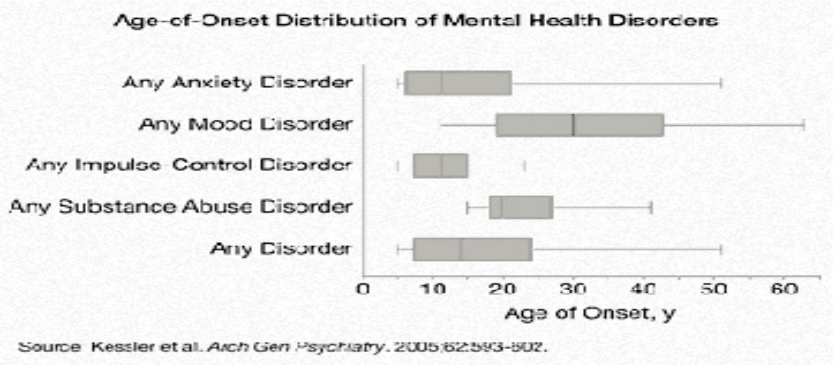
Behavioral/Mental Health

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

Indicator: The 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]



Healthy People 2020 Objectives: Related to Mental Health and Mental Disorders (MHMD) Objective 6: Increase the proportion of children with mental health problems who receive treatment. (Target: 75.8%)

Data Sources and References:

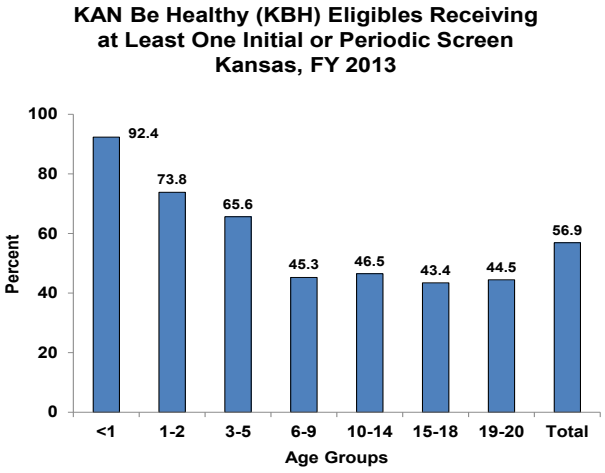
1. Shonkoff, JP, Phillips, DA. *From Neurons to Neighborhoods: The Science of Early Childhood Development.* Washington, DC: National Academies Press; 2000.
2. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. *Related Articles, Links Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey* Replication. Arch Gen Psychiatry. June 2005;62(6):593-602.
3. Kansas Department of Health and Environment, Kansas Medical Assistance Programs Reporting Systems. Kan Be Healthy Participation Report.
4. AIMS database, Mental Health Consortium, Kansas Community Mental Health Centers, Kansas.
5. 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.
6. Centers for Disease Control and Prevention (CDC). *2011 and 2013 High School Youth Risk Behavior Survey Data.* http://nccd.cdc.gov/youthonline/App/Default.aspx.

Epidemiology and Trends

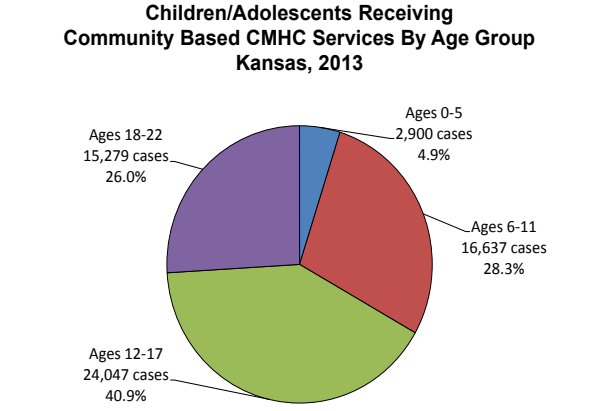
Early and Periodic Screening, Diagnosis and Treatment (EPSDT) is a required service under the Medicaid KAN Be Healthy (KBH) program for categorically needy individuals under age 21.[3] One component of EPSDT is developmental/mental health screening. The services can be provided within state and local 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 2011/12 National Survey of Children's Health, 37.0% of Kansas children age 10 months to 5 years received a standardized screening for developmental or behavioral problems (30.8% for the U.S.).

In 2013, the percent of children and adolescents (ages 0-22) that received behavioral and mental health services at community mental health centers (CMCHCs)[4] in Kansas was 6.2%, a slight decrease from 2012 (6.3%). According to the 2011/12 National Survey of Children's Health, 72.2% of Kansas children age 2-17 with problems requiring counseling who received mental health care (61.0% for the U.S.).

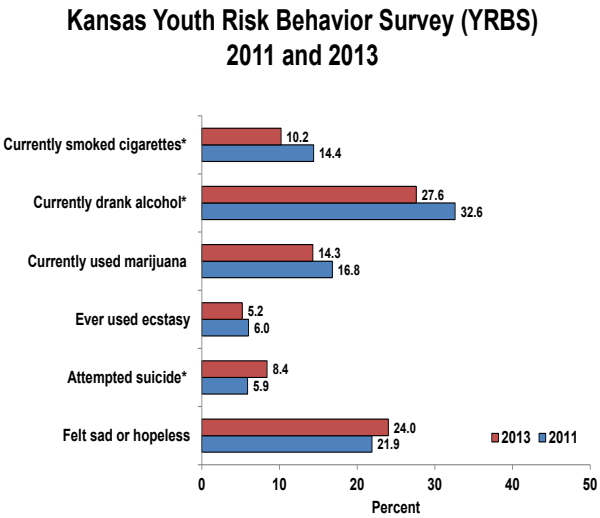
Mental and behavioral disorders and SEDs in children and adolescents can lead to school failure, alcohol or illicit drug use, violence, or suicide.[5] The 2013 Kansas Youth Risk Behavior Survey[6] showed that compared to 2011, fewer students reported smoking cigarettes (10.2% vs. 14.4%), having at least one drink of alcohol on at least 1 day during the 30 days before the survey (27.6% vs. 32.6%), using marijuana at least once during the 30 days before the survey (14.3% vs. 16.8%), and using ecstasy at least once in their lifetime (5.2% vs. 6.0%). However, more students reported attempting suicide (8.4% vs. 5.9%) and feeling sad or hopeless (24.0% vs. 21.9%) during the 12 months before the survey.



Source: KAN Be Healthy (KBH) Annual Participation Report



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



*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: The 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 2020 Objective: Related to Family Planning (FP) Objective 8: Reduce pregnancy rates among adolescent females. FP-8.1 Reduce the pregnancy rate among adolescent females aged 15 to 17 years. (Target: 36.2 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, Curtin SC, Abma JC, Henshaw SK. Estimated pregnancy rates and rates of pregnancy outcomes for the United States, 1990-2008. National vital statistics reports; vol 60 no 7. Hyattsville, MD: National Center for Health Statistics. 2012. www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_07.pdf
6. Oakley D, Crawford G, Savage C. Kansas Annual Summary of Vital Statistics, 2013. Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/annsumm.html
7. Savage C, Oakley D, Crawford G. *Adolescent and Teenage Pregnancy Report Kansas, 2013.* Topeka, KS: Kansas Department of Health and Environment, 2014. www.kdheks.gov/hci/teenpreg.html
8. Centers for Disease Control and Prevention (CDC). *2013 High School Youth Risk Behavior Survey Data.* nccd.cdc.gov/youthonline/App/Default.aspx.

Epidemiology and Trends

In 2013, young teenagers aged15-17 years accounted for 2.0% (841) of the pregnancies (42,740) in Kansas. About 85.7% of the pregnancies in this age group resulted in a live birth (721), 13.3% in abortion (112), and the rest in stillbirths (8). The pregnancy rate for this age group was 14.6 per 1,000. In 2008 (the most recent year national data for this age group is available), the pregnancy rate for Kansas young teenagers aged 15-17 years (27.1 per 1,000) was 31.4% lower than the national rate (39.5).[5] The overall pregnancy rate for those aged 15-17 declined significantly over the 10 year period, 2004-2013. Pregnancy rates declined significantly for all races and for Hispanics. Hispanic teens had the highest rate (31.3) in 2013.

In 2013, the teen birth rate in Kansas (aged 15-17 years) was 12.5 per 1,000 females. This was 13.8% lower than 2012 (14.5) and similar to the 2013 national rate (12.3). Overall, there was a statistically significant decreasing trend observed over the 10 year period, 2004-2013. Teen birth rates declined significantly for all races and for Hispanics. Hispanic teens had the highest rate (29.0) in 2013.

The 2013 Kansas Youth Risk Behavior Survey[8] indicates that among Kansas high school students:

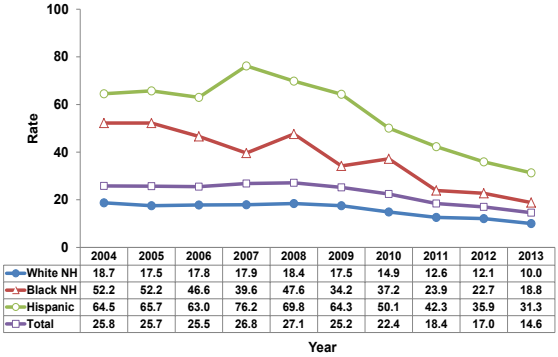
Sexual Risk Behaviors

- 39.1% ever had sexual intercourse.
- 3.1% had sexual intercourse for the first time before age 13 years.
- 10.8% had sexual intercourse with four or more persons during their life.
- 43.8% did not use a condom during last sexual intercourse.
- 11.5% did not use any method to prevent pregnancy during last sexual intercourse.
- 76.7% did not use birth control pills to prevent pregnancy during last sexual intercourse.

Alcohol and Other Drug Use

- 18.0% drank alcohol or used drugs before last sexual intercourse.

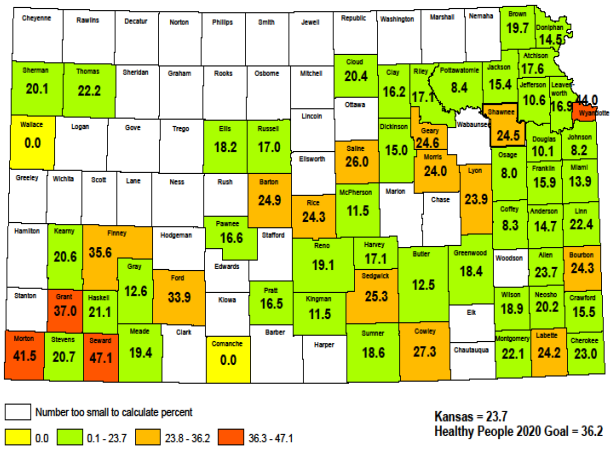
Teen Pregnancy Rate (Aged 15-17 Years) by Race and Ethnicity Kansas, 2004-2013



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White NH	18.7	17.5	17.8	17.9	18.4	17.5	14.9	12.6	12.1	10.0
Black NH	52.2	52.2	46.6	39.6	47.6	34.2	37.2	23.9	22.7	18.8
Hispanic	64.5	65.7	63.0	76.2	69.8	64.3	50.1	42.3	35.9	31.3
Total	25.8	25.7	25.5	26.8	27.1	25.2	22.4	18.4	17.0	14.6

Source: Bureau of Epidemiology and Public Health Informatics

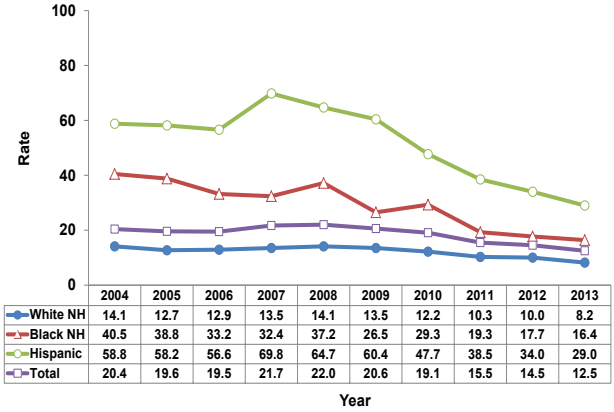
Teen Pregnancy Rate* (Aged 15-17 Years) Kansas, 2009-2013 (Combined)



*Pregnancies per 1,000

Source: Bureau of Epidemiology and Public Health Informatics

Teen Birth Rate (Aged 15-17 Years) by Race and Ethnicity Kansas, 2004-2013



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White NH	14.1	12.7	12.9	13.5	14.1	13.5	12.2	10.3	10.0	8.2
Black NH	40.5	38.8	33.2	32.4	37.2	26.5	29.3	19.3	17.7	16.4
Hispanic	58.8	58.2	56.6	69.8	64.7	60.4	47.7	38.5	34.0	29.0
Total	20.4	19.6	19.5	21.7	22.0	20.6	19.1	15.5	14.5	12.5

Source: Bureau of Epidemiology and Public Health Informatics

Bullying

KANSAS GOAL: Reduce the number of adolescents who are bullied or who bully others.

Indicator: The percent of adolescents, ages 12 through 17, who are bullied or who bully others.

Definition:

Numerator: Number of adolescents in grades 9 through 12 who report that they are bullied on school property or electronically in the past year.
Denominator: Number of adolescents in grades 9 through 12.

Significance: Bullying, particularly among school-age children, is a major public health problem. Current estimates suggest nearly 30% of American adolescents reported at least moderate bullying experiences as the bully, the victim, or both. Specifically, of a nationally representative sample of adolescents, 13% reported being a bully, 11% reported being a victim of bullying, and 6% reported being both a bully and a victim. Studies indicate bullying experiences are associated with a number of behavioral, emotional, and physical adjustment problems. Adolescents who bully others tend to exhibit other defiant and delinquent behaviors, have poor school performance, be more likely to drop-out of school, and are more likely to bring weapons to school. Victims of bullying tend to report feelings of depression, anxiety, low self-esteem, and isolation; poor school performance; suicidal ideation; and suicide attempts. Evidence further suggests that people who are the victims of bullying and who also perpetrate bullying (i.e., bully-victims) may exhibit the poorest functioning, in comparison with either victims or bullies. Emotional and behavioral problems experienced by victims, bullies, and bully-victims may continue into adulthood and produce long-term negative outcomes, including low self-esteem and self-worth, depression, antisocial behavior, vandalism, drug use and abuse, criminal behavior, gang membership, and suicidal ideation.[1]

Healthy People 2020 Objective: Related to Injury and Violence Prevention (IVP) Objective 35: Reduce bullying among adolescents. (Baseline: 19.9%, Target: 17.9%)

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program Application/Annual Report Guidance.* 7th ed. 2015.
2. Centers for Disease Control and Prevention (CDC). *2013 High School Youth Risk Behavior Survey Data.* nccd.cdc.gov/youthonline/App/Default.aspx.
3. Kann L, Kinchen S, Shanklin SL, et al. *Youth Risk Behavior Surveillance – United States 2013.* MMWR 2014;63(SS-4):1-168.

Epidemiology and Trends

According to the 2013 Youth Risk Behavior Survey (YRBS)[2]:

Electronically Bullied

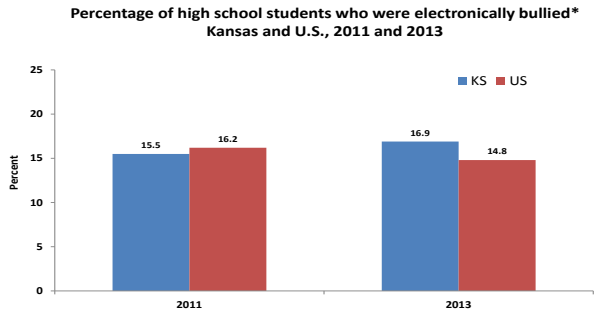
Approximately, 16.9% (95%CI*: 15.0-19.0) of Kansas students had been electronically bullied, including being bullied through e-mail, chat rooms, instant messaging, websites, or texing, during the 12 months before the survey, similar to the U.S. (14.8%, 95CI: 13.7-15.9). The prevalence of having been electronically bullied was higher among female (25.2%, 95%CI: 22.2-28.5) than male (9.0%, 95%CI: 7.2-11.2) students; higher among non-Hispanic white (18.3%, 95%CI: 16.0-20.8) than Hispanic (13.5%, 95%CI: 10.5-17.3) students; higher among 9th grade (30.7%, 95%CI: 26.1-35.8) than 11th grade (17.8%, 95%CI: 14.2-22.2) and 12th grade (15.5%, 95%CI: 11.2-21.2) students; and higher among 10th grade (23.0%, 95%CI: 17.9-29.1) than 12th grade (15.5%, 95%CI: 11.2-21.2) students.

Bullied on School Property

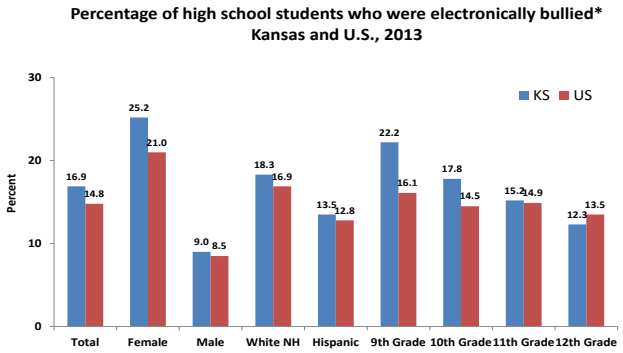
Over one-fifth (22.1%, 95%CI: 19.1-25.4) of Kansas students had been bullied on school property during the 12 months before the survey, similar to the U.S. (20.5%, 95%CI: 18.0-23.3). The prevalence of having been bullied on school property was higher among females (26.2%, 95%CI: 22.0-30.9) than male (18.2%, 95%CI: 15.0-21.8) students; higher among non-Hispanic white (23.1%, 95%CI: 19.5027.1) than Hispanic (16.9%, 95%CI: 13.1-21.7%) students; higher among 9th grade (30.7%, 95%CI: 26.1-35.8) than 11th grade (17.8%, 95%CI: 14.2-22.2) and 12th grade (15.5%, 95%CI: 11.2-21.2) students; and higher among 10th grade (23.0%, 95%CI: 17.9-29.1) than 12th grade (15.5%, 95%CI: 11.2-21.2) students.

*95%CI: 95% confidence interval

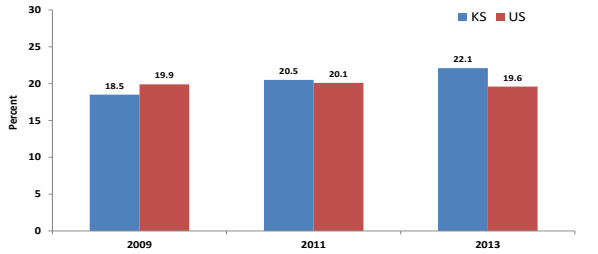
Note: 1. The estimates for non-Hispanic American Indian or Alaskan Native, non-Hispanic Asian, non-Hispanic black, and non-Hispanic Native Hawaiian or other Pacific Islander students are not reported here due to small sample size (<100 respondents for the subgroup). 2. T-tests were used to determine pairwise differences between subpopulations. Differences between prevalence estimates were considered statistically significant if the t test p value was <0.05.[3]



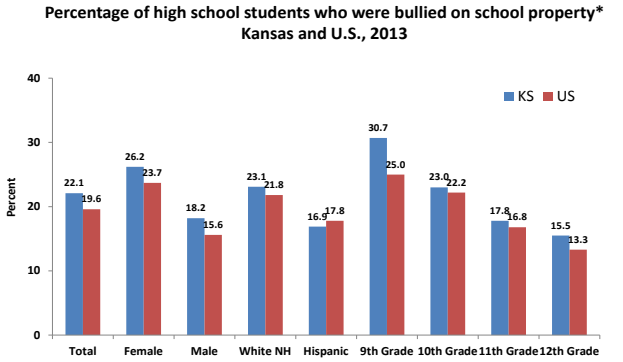
Source: Youth Risk Behavior Survey, 2013
*During the 12 months before survey, including being bullied through e-mail, chat rooms, instant messaging, web sites, or texting.



Source: Youth Risk Behavior Survey, 2013
NH=non-Hispanic
*During the 12 months before survey, including being bullied through e-mail, chat rooms, instant messaging, web sites, or texting.



Source: Youth Risk Behavior Survey, 2013
*During the 12 months before survey.



Source: Youth Risk Behavior Survey, 2013
NH=non-Hispanic
*During the 12 months before survey.

Adverse Childhood / Family Experiences

KANSAS GOAL: Reduce adverse childhood experiences among children.

Indicator: The percent of adverse childhood/family experiences among children (experiences of emotional, physical, or sexual abuse and household dysfunction).

Definition:

Numerator: Number of children age 0 to 17 years with one or more adverse childhood/family experiences, as reported by their parents.
Denominator: Number of children age 0 to 17 years.

Significance: Children who have Adverse Childhood Experiences (ACE) can have a number of problems both as children and as adults, including developmental issues, depression, aggression, lower income and socioeconomic status, and higher rates of health risk behaviors (e.g., risky sexual behaviors, alcohol, drug, and tobacco use). ACEs include experiences of emotional, physical, or sexual abuse, as well as household dysfunction (e.g., financial difficulties and household members who are substance abusers, mentally ill, or incarcerated).[1]

Healthy People 2020 Objective: Related to Injury and Violence Prevention (IVP)

Data Sources and References:

1. Maine Center for Disease Control and Prevention. *Maine Life Course Indicator Report.* www.gseprogram.org/uploads/16_31Agency.pdf
2. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Social-Determinants/determinants
3. National Survey of Children's Health. 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org
4. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2014.* Rockville, Maryland: U.S. Department of Health and Human Services, 2015. mchb.hrsa.gov/chusa14/

Epidemiology and Trends

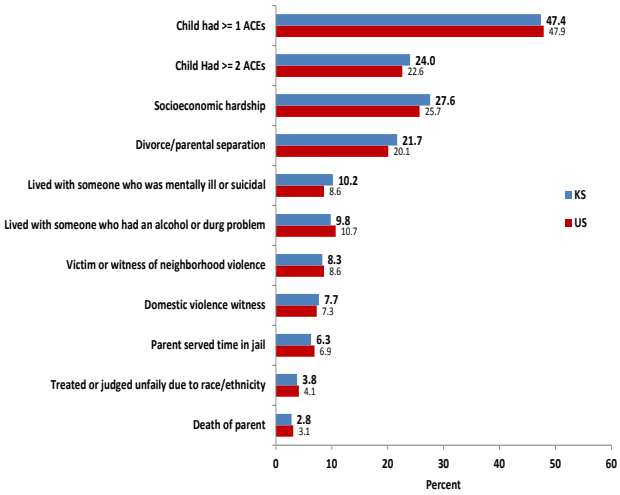
A history of exposure to adverse experiences in childhood (ACEs), including exposure to violence and maltreatment, is associated with health risk behaviors such as smoking, alcohol and drug use, and risky sexual behavior, as well as obesity, diabetes, sexually transmitted diseases, attempted suicide, and other health problems.[2] The 2011/12 National Survey of Children's Health (NSCH) asked parents and caregivers about children's exposure to nine such experiences: (1) socioeconomic hardship (reported that it was somewhat or very often hard to get by on the family's income, i.e., it was hard to cover the basics like food or housing), (2) divorce/separation of parent, (3) death of parent, (4) parent served time in jail, (5) witness to domestic violence, (6) victim of neighborhood violence, (7) lived with someone who was mentally ill or suicidal, (8) lived with someone with alcohol/drug problem, and (9) treated or judged unfairly due to race/ethnicity.[3,4]

In 2011/2012, nearly one-quarter (24.0%) of Kansas children aged 0 - 17 were reported to have experienced two or more of these nine ACEs. Economic hardship was the most commonly reported ACE (27.6%), followed by living with a parent who was divorced or separated after the child's birth (21.7%), living with someone who was mentally ill or suicidal for more than a couple of weeks (10.2%), living with someone who had a substance use or abuse problem (9.8%), and being a victim of or witness to neighborhood violence (8.3%). Similar findings were reported for the U.S.[3,4]

Exposure to ACEs among Kansas children varied by age groups. School-aged and adolescent children were more likely to experience two or more ACEs than younger children. The proportion of Kansas children who had experienced two or more ACEs was highest among non-Hispanic black children, of whom two-fifths (40.5%) had experienced two or more of these nine life events, compared to about one-fifth (20.5%) of non-Hispanic white children reporting experiencing two or more ACEs.

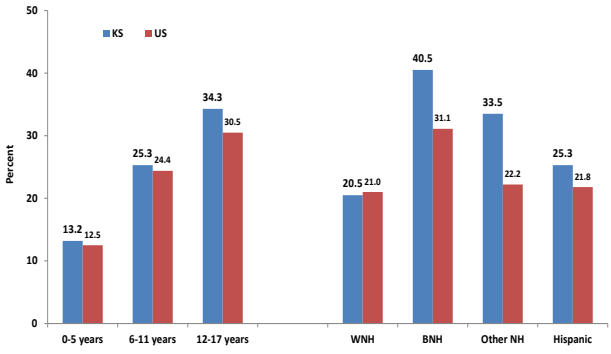
The proportion of experiencing two or more ACEs decreased with increasing family incomes. Exposure to two or more ACEs was more common among Kansas children living in poor. Nearly half of children living in households with incomes less than 100% of FPL (45.9%) had experienced two or more ACEs since birth, compared to about 10% of those in households with incomes of 400% or more of FPL.

Adverse Childhood Experiences (ACEs) Among Children Aged 0-17 Years
Kansas and U.S., 2011/12



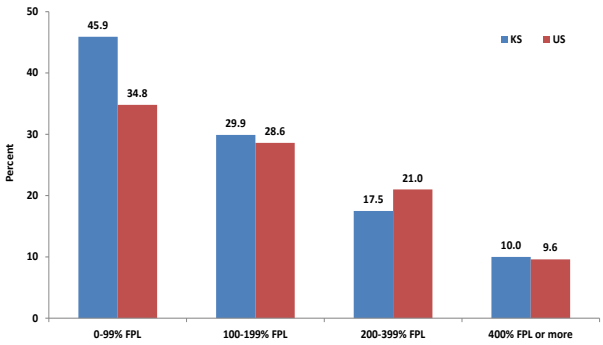
Source: National Survey of Children's Health, 2011/12

Children Aged 0-17 Years Experiencing two or more ACEs
by Age Groups and Race/Ethnicity
Kansas and U.S., 2011/12



*NH = Non-Hispanic
Source: National Survey of Children's Health, 2011/12

Children Aged 0-17 Years Experiencing two or more ACEs
by Household Poverty* Status
Kansas and U.S., 2011/12



*FPL =Federal Poverty Level; Based on the U.S. Department of Health and Human Services poverty guidelines, poverty was $23,050 for a family of four in 2012.

Source: National Survey of Children's Health, 2011/12

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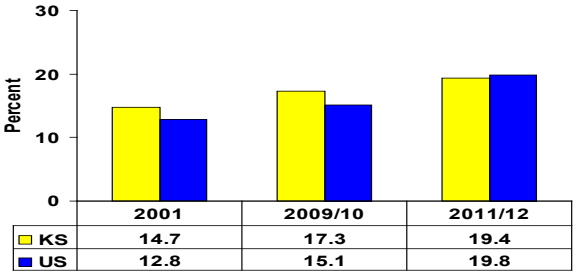
SECTION III

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 required by children and youth generally. According to the 2011/12 National Survey of Children's Health (NSCH)[1], 19.4% of Kansas children aged 0 to 17 (est. 139,623 children) had special health care needs, which was similar to the U.S. (19.8%). These rates represent an increase from the percentage reported in 2009/10 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.

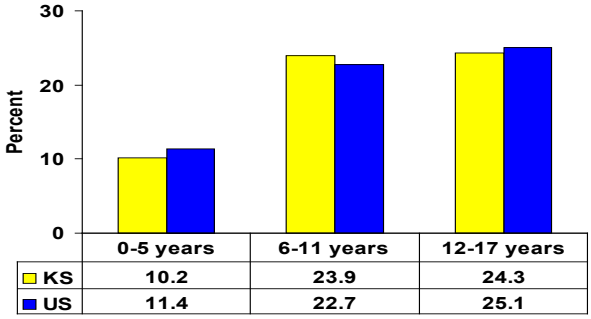
Prevalence of CYSHCN
Kansas and U.S.



Source: National CSHCN Survey, 2001 and 2009/10; National Survey of Children's Health, 2011/12 (aged 0-17 years)

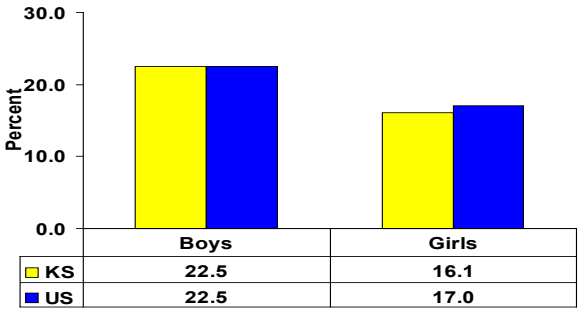
The prevalence of special health care needs within the child population increases with age. Older children in Kansas and the U.S. were twice as likely as younger children to have a special health care need. In Kansas, preschool children (aged 0-5 years) have the lowest prevalence of special health care needs (10.2%), followed by children aged 6-11 years (23.9%). Adolescents (aged 12-17 years) have the highest prevalence of special health care needs (24.3%). The higher prevalence of special health care needs among older children is likely attributable to conditions that are not diagnosed or that do not develop until later in childhood.[2] Special health care needs were more prevalent in boys than girls in Kansas and in the U.S. Among Kansas boys, 22.5% had special health care needs, compared to 16.1% of girls. A higher proportion of boys (7.7%) had special health care needs that included an ongoing emotional, behavioral or developmental problem which required treatment or counseling, compared to 5.1% of girls.

Prevalence of CYSHCN: Age
Kansas and U.S., 2011/12



Source: National Survey of Children's Health (aged 0-17 years)

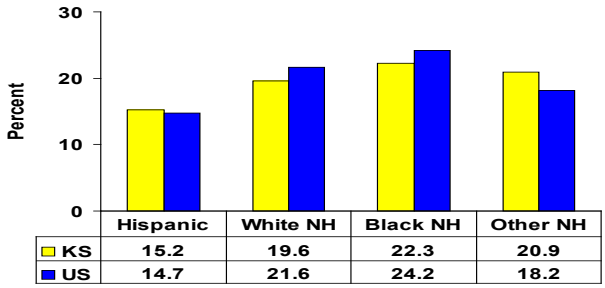
Prevalence of CYSHCN: Gender
Kansas and U.S., 2011/12



Source: National Survey of Children's Health (aged 0-17 years)

The prevalence of special health care needs varies by the child's race and ethnicity. Kansas Hispanic children (15.2%) were least likely to have a special health care need compared to non-Hispanic white children (19.6%) and non-Hispanic black children (22.3%). In Kansas, the prevalence of special health care needs varies by income group compared to the U.S. CYSHCN prevalence among low income families in Kansas, 0-99% of the federal poverty level (FPL), was higher (26.4%) than it is for the U.S. (20.8%). In 2012, the U.S. Department of Health & Human Services (HHS) poverty guidelines defined 100% of poverty as $23,050 for a family of four.

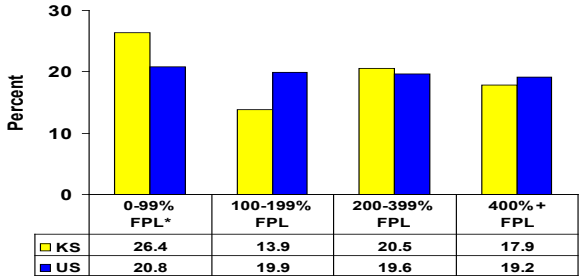
Prevalence of CSHCN: Race/Ethnicity
Kansas and U.S., 2011/12



	Hispanic	White NH	Black NH	Other NH
KS	15.2	19.6	22.3	20.9
US	14.7	21.6	24.2	18.2

NH: non-Hispanic
Source: National Survey of Children's Health (aged 0-17 years)

Prevalence of CYSHCN: Family Income
Kansas and U.S., 2011/12

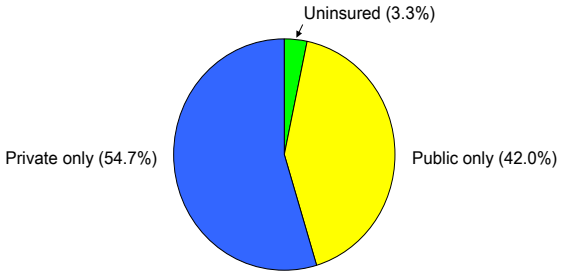


	0-99% FPL*	100-199% FPL	200-399% FPL	400%+ FPL
KS	26.4	13.9	20.5	17.9
US	20.8	19.9	19.6	19.2

*FPL: Federal Poverty Level
Source: National Survey of Children's Health, 2011/12 (aged 0-17 years)

In Kansas, 89.3% of CYSHCN were reported to have been insured for all of the previous 12 months, while the remaining 10.7% were uninsured for all or some part of the year. Overall, almost 96% of CYSHCN were reported to have some type of insurance at the time of the interview: about two-thirds (64.2%) had private coverage, 25.1% had public coverage, 6.2% had both, and 4.6% had no insurance. Compared to 2001, a smaller percentage of CYSHCN were reported to have private coverage (70.5% in 2001 vs. 62.4% in 2009-2010), and higher percentage were reported to have public coverage (16.8% in 2001 vs. 25.1% in 2009-2010). Both U.S. and Kansas CYSHCN report that the need for prescription medication is by far the most common (82.8% 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 (20.2%), and the use of specialized therapies (15.4%).

Type of Health Insurance Coverage for CYSHCN
Kansas, 2011/12



Source: National Survey of Children's Health (aged 0-17 years)

Data Source and Reference:

1. National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org
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.

Partners in Decision-Making

KANSAS GOAL: Increase partnering in shared decision-making for child's optimal health.

Indicator: The percent of children and youth with special health care needs age 0 to 18 years whose families partner in shared decision-making for child's optimal health.

Definition: Family-centered care[1] 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 recognizes 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. Satisfaction with services[2] 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.

Significance: Family/professional partnerships have been incorporated into the Maternal and Child Health Bureau (MCHB) Block Grant Application and 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 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 31: Increase the proportion of children with special health care needs who receive their care in family-centered, comprehensive, coordinated systems.[2]

Data Source and Reference:

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. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CSHCN.* http://eiri.usu.edu/Projects/MandM/
3. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
4. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

The 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN)[4] showed that overall 72.6% of Kansas families of Children and Youth with Special Health Care Needs (CYSHCN) partnered in shared decision-making for child's optimal health, compared to 70.3% for the U.S. The Kansas outcome is higher than the U.S. but not significant, and ranks 23rd in the nation.

Of the 72.6% of Kansas CYSHCN families that partnered in shared decision-making, 83.1% reported that doctors discussed range of health care/treatment options. Also 83.1% reported that doctors encouraged parents to ask questions or raise concerns and 86.3% reported that doctors made it easy for parents to ask questions or raise concerns. Nearly 87% reported that doctors considered and respected parents' treatment choices.

In Kansas, the "partners in decision-making" outcome was similar across the age groups, but slightly lower for school-aged children (age 6-11 years). CYSHCN in higher-income families were more likely to meet the outcome than CYSHCN in poverty. Nearly all CYSHCN who received services within a medical home met the outcome compared to CYSHCN without a medical home. A greater percentage of those with adequate insurance reported partnering in decision-making, compared to those without adequate insurance. By specific type of special health care needs, this outcome was achieved among nearly 82% with a need manged by prescription medication versus 60.8% of those with functional limitations.

Note: *This measure is based on whether CYSHCN have families who usually or always feel that they: 1) discuss with providers a range of options to consider for their child's treatment; 2) are encouraged to ask questions or raise concerns; 3) it is easy to ask questions or raise concerns; and 4) their health care providers consider and respect what treatment choices the parent feels would be best for child. The items used to develop this measure were revised substantially between 2005/06 and 2009/10. This outcome should not be compared with the results from outcome from the 2005/06 NS-CSHCN.*[4]

CYSHCN Families Partner in Shared Decision-Making Kansas and U.S., 2009/10

Families of CYSHCN were partners in shared decision-making for child's optimal health	
Kansas	72.6%
U.S.	70.3%

Kansas: Higher than U.S., but not significant

Doctors discussed range of health care/treatment options.	
Kansas	83.1%
U.S.	81.6%

Doctors encouraged parents to ask questions or raise concerns.	
Kansas	83.1%
U.S.	81.4%

Doctors made it easy for parents to ask questions or raise concerns.	
Kansas	86.3%
U.S.	86.2%

Doctors considered and respected parents' treatment choices.	
Kansas	86.7%
U.S.	84.4%

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Kansas CYSHCN subgroup	Families Partner in Shared Decision-Making % achieving outcome
Age 0-5 years	76.9%
Age 6-11 years	67.7%
Age 12-17 years	74.6%
<100% FPL*	66.0%
100%-199% FPL	75.3%
200%-300% FPL	72.2%
400%+ FPL	75.0%
Within a medical home	91.7%
Without a medical home	54.1%
Current insurance is adequate	80.4%
Current insurance is not adequate	58.0%
Managed by Rx meds	81.5%
Above routine need/ Use of services	70.2%
Rx meds and service use	67.1%
Functional limitations	60.8%

*FPL: Federal Poverty Level

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Medical Home

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

Indicator: The percent of children and youth with special health care needs age 0 to 18 who receive coordinated, ongoing, comprehensive care within a medical home.

Definition: A medical home[1] is an important mechanism for uniting the many segments of a child's care, including behavioral and oral health. The Maternal and Child Health Bureau (MCHB) at the Health Resources and Services Administration (HRSA) has identified specific criteria to establish whether a child's health care meets the definition of a medical home. This criteria includes: (1) whether the child has at least one personal doctor or nurse who knows him or her well and a usual source of sick care; (2) whether the child has no problems gaining referrals to specialty care and access to therapies or other services or equipment; (3) whether the family is very satisfied with the level of communication among their child's doctors and other programs; (4) whether the family usually or always gets sufficient help coordinating care when needed and receives effective care coordination; (5) whether the child's doctors usually or always spend enough time with the family, listen carefully to their concerns, are sensitive to their values and customs, provide any information they need, and make the family feel like a partner in their child's care; and (6) whether an interpreter is usually or always available when needed. For more information, please visit http://www.hrsa.gov/healthit/toolbox/Childrenstoolbox/BuildingMedicalHome/whyimportant.html or http://pediatrics.aappublications.org/content/110/1/184.full.pdf.

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. (American Academy of Pediatrics Medical Home Policy Statement, presented in *Pediatrics*, Vol. 100 No. 1, July, 2002).[2]

Healthy People 2020 Objective: Related to Access to Maternal, Infant, and Child Health (MICH) Objective 30.2: Increase the proportion of children with special health care needs who have access to a medical home (Target: 51.8%). Related to MICH Objective 31: Increase the proportion of children with special health care needs who receive their care in family-centered, comprehensive, coordinated systems.[2]

Data Sources and References:

1. U.S. Department of Health and Human Services. *What is a medical home? Why is it important?* www.hrsa.gov healthit/toolbox/Childrenstoolbox/BuildingMedicalHome/whyimportant.html
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org
4. National Survey of Children with Special Health Care Needs. NS-CSHCN 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

The 2011/12 National Survey of Children's Health (NSCH)[3] showed overall 53.8% of Kansas Children and Youth with Special Health Care Needs (CYSHCN) reported receiving care within a medical home, compared to 46.8% for the U.S. The Kansas outcome is higher than the U.S., but not significant.

Of the 53.8% of Kansas CYSHCN receiving care within a medical care, 92.8% had a personal doctor or nurse and 94.2% reported that they had a usual source for both sick and well care. Three-in-four Kansas CYSHCN (72.1%) reported receiving family-centered care (i.e., doctors spent enough time with a child, doctors listened carefully to a child's parent(s), doctors were sensitive to family customs and values, doctors provided information specific to child's health, and doctors helped family feel like partners in care). About 95.1% of Kansas CYSHCN reported that they had no need of any referrals or no problems obtaining referrals when needed. Less than half (45.6%) of Kansas CYSHCN reported receiving effective care coordination when needed (i.e., received help to coordinate child's health care when needed, received extra help to coordinate child's health care if needed, satisfied with communication among child's doctors when needed, and satisfied with doctors' communication to school or programs when needed).

Based on the 2009/10 NS-CSHCN[4], in Kansas, the "medical home" outcome measure was achieved for more of the younger versus older CYSHCN. Performance on this outcome improved with increasing family incomes. A greater percentage of those with adequate insurance reported receiving coordinated, comprehensive care within medical home, compared to those without adequate insurance. Children with more complicated needs were less likely to have a medical home, although they have great potential to benefit from one.

Note: *The American Academy of Pediatrics' (AAP) description of a "medical home" lists seven defining components: accessible, continuous, comprehensive, family-centered, coordinated, compassionate and culturally effective. The overall medical home measure is a composite score derived from five different subparts based on 19 different survey items. To qualify as having a medical home, a child must have a personal doctor or nurse and meet the criteria for adequate care on every needed component.[3] For additional details on medical home, please visit: www.childhealthdata.org/browse/medicalhome.*

CYSHCN Medical Home
Kansas and U.S., 2011/12

CYSHCN who received coordinated, ongoing, comprehensive care within a medical home.	
Kansas	53.8%
U.S.	46.8%

Kansas: Higher than U.S., but not significant.

Had a personal doctor or nurse.	
Kansas	94.2%
U.S.	92.8%

Had usual source(s) for both sick and well care.	
Kansas	94.8%
U.S.	92.9%

Received family-centered care from health providers.	
Kansas	72.1%
U.S.	67.0%

No need of any referrals or no problems getting needed referrals.	
Kansas	95.1%
U.S.	92.1%

Received effective care coordination.	
Kansas	45.6%
U.S.	42.9%

Source: National Survey of CSHCN, 2011/12 (Aged 0-17 yrs.)

Kansas CYSHCN subgroup	Medical Home % achieving outcome
Age 0-5 years	63.6%
Age 6-11 years	45.2%
Age 12-17 years	46.6%
<100% FPL*	36.0%
100%-199% FPL	47.4%
200%-300% FPL	51.9%
400%+ FPL	57.3%
Current insurance is adequate	58.1%
Current insurance is not adequate	32.4%
Managed by Rx meds	61.7%
Above routine need/ Use of services	38.2%
Rx meds and service use	43.8%
Functional limitations	34.6%

*FPL: Federal Poverty Level

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Adequate Health Insurance

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

Indicator: The percent of children and youth with special health care needs age 0 to 18 whose families have adequate private and/or public insurance to pay for the services they need.

Definition: Access to health insurance is an essential step in receiving needed pediatric health care. National studies suggest that children without health insurance are less likely to receive necessary preventive and acute care. Having health insurance is particularly important for children with special health care needs (CSHCN), who have increased ongoing medical needs. Among CSHCN, having health insurance is associated with improved health care quality, fewer unmet needs, and having a usual source of care. Having health insurance also is a financial safeguard for families. Uninsured CSHCN are more likely to experience high levels of family financial stress, and having health insurance has been shown to reduce burdensome out-of-pocket costs and financial stress among families of all income levels.[1]

Significance: Research indicates that children with a stable and continuous source of health care more likely to receive appropriate preventive services, less likely to be hospitalized and more likely to be diagnosed early for disabling conditions.[2]

Healthy People 2020 Objective: Related to Access to Health Services (AHS) Objective 1: Increase the proportion of persons with health insurance (Target: 100%). Related to Maternal, Infant, and Child Health (MICH) Objective 31: Increase the proportion of children with special health care needs(CSHCN) who receive their care in family-centered, comprehensive, coordinated systems.[2]

Data Sources and References:

1. Lucile Packard Foundation for Children's Health. *Children with Special Health Care Needs. A profile of Key Issues in California. November 2010.* www.lpfch.org/specialneeds
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org
4. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

According to the 2011/12 National Survey of Children's Health (NSCH)[3], 87.4% of Kansas CYSHCN had consistent health insurance coverage and 75.2% reported that current insurance coverage usually/always adequate to meet their needs.

The 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN)[4] showed that overall 60.0% of Kansas children and youth with special health care needs (CYSHCN) had consistent and adequate health insurance coverage, compared to 60.6% for the U.S. The Kansas outcome is slightly lower than the U.S. but not significant, and ranks 28th in the nation.

Of the 60.0% of Kansas CYSHCN who reported having consistent and adequate health insurance, 95.6% of CYSHCN reported having health insurance at the time of survey. Nearly 90% reported having no gaps in coverage during the year before the survey, and 67.3% reported having adequate current health insurance.

Among the 67.3% of Kansas CYSHCN that reported having adequate current health insurance, 67.3% reported that their current health insurance benefits met the child's needs. About 71.3% reported that costs not covered by insurance were usually or always reasonable, and 91.1% reported that insurance usually or always permitted the child to see needed providers.

In Kansas, there was not much difference among age groups, although adolescent insurance adequacy was slightly lower. Fewer CYSHCN families with incomes <100% FPL reported having adequate insurance: more than half in this group lacked the insurance they needed for services. A greater percentage of CYSHCN receiving services within a medical home had adequate insurance compared to CYSHCN without a medical home. By specific type of special health care needs, CYSHCN with functional limitations were less likely to have adequate insurance compared to CYSHCN with a need managed by prescription medication.

CYSHCN Insurance Coverage Kansas and U.S., 2009/10

Families of CYSHCN had consistent and adequate private and/or public insurance to pay for the services they need.	
Kansas	60.0%
U.S.	60.6%

Kansas: Lower than U.S., but not significant.

CYSHCN with health insurance at the time of survey.	
Kansas	95.6%
U.S.	96.5%

CYSHCN with no gaps in coverage during past 12 months.	
Kansas	89.3%
U.S.	90.7%

Adequacy of CYSHCN's current insurance.	
Kansas	67.3%
U.S.	65.7%
Current health insurance benefits met child's needs.	
Kansas	89.5%
U.S.	86.8%
Uncovered costs were reasonable.	
Kansas	71.3%
U.S.	71.3%
Health insurance let child see needed providers	
Kansas	91.1%
U.S.	89.5%

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Kansas CYSHCN subgroup	Adequate Insurance % achieving outcome
Age 0-5 years	65.2%
Age 6-11 years	59.6%
Age 12-17 years	57.9%
<100% FPL*	48.3%
100%-199% FPL	61.0%
200%-300% FPL	59.6%
400%+ FPL	67.7%
Within a medical home	70.6%
Without a medical home	49.9%
Managed by Rx meds	65.9%
Above routine need/ Use of services	67.0%
Rx meds and service use	53.2%
Functional limitations	52.1%

*FPL: Federal Poverty Level

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Early and Continuous Screening

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

Indicator: The percent of children and youth 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 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 31: Increase the proportion of children with special health care needs who receive their care in family-centered, comprehensive, coordinated systems.[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. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

The 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN)[3] showed that overall 82.9% of Kansas children and youth with special health care needs (CYSHCN) were screened early and continuously for special health care needs, compared to 78.6% for the U.S. The Kansas outcome is significantly higher than the U.S., and ranks 11th in the nation. This indicator was measured as those who had at least 1 preventive medical visit and at least 1 preventive dental visit in the past 12 months.

Of the 82.9% of Kansas CYSHCN who were screened early and continuously for special health care needs, 90.9% reported of receiving routine preventive medical care and 89.9% reported receiving routine preventive dental care in the past 12 months.

In Kansas, school-aged and adolescent children were more likely to receive preventive screenings than younger children. The proportions of CYSHCN achieving the screening outcome increased with family incomes. CYSHCN within a medical home were more likely to receive preventive screenings than CYSHCN without a medical home. By specific type of special health care needs, CYSHCN with a need managed by prescription medication were more likely to receive preventive screenings than CYSHCN with functional limitations.

CYSHCN Screened
Kansas and U.S., 2009/10

CYSHCN who were screened early and continuously for special health care needs.	
Kansas	82.9%
U.S.	78.6%

Kansas: Significantly higher than U.S. ($p<0.05$)

Continuous Screening: Well child check-up in past 12 months	
Kansas	90.9%
U.S.	90.4%

Continuous Screening: Preventive dental visits in past 12 months	
Kansas	89.9%
U.S.	85.9%

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Kansas CYSHCN subgroup	Screening % achieving outcome
Age 0-5 years	68.1%
Age 6-11 years	89.9%
Age 12-17 years	83.9%
<100% FPL*	80.4%
100%-199% FPL	82.3%
200%-300% FPL	83.0%
400%+ FPL	85.2%
Within a medical home	85.0%
Without a medical home	81.6%
Current insurance is adequate	84.0%
Current insurance is not adequate	84.1%
Managed by Rx meds	85.4%
Above routine need/ Use of services	76.1%
Rx meds and service use	85.6%
Functional limitations	77.5%

*FPL: Federal Poverty Level

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Ease of Community-Based Service Use

KANSAS GOAL: Increase children and youth with special health care needs access to organized community-based services.

Indicator: The percent of children and youth with special health care needs age 0 to 18 years whose families report that community-based service systems are organized so they can use them easily.

Definition: Community-based system of services[1] is an infrastructure that operates across service sectors. It 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. It is clear that communities and their resources affect the way families of CYSHCN find and use services. Therefore, the health of communities themselves can have a positive effect on the growth and development of CYSHCN. There now exists a number of initiatives to develop community-based systems of services and a number of related community development initiatives in communities throughout the Nation. The public sector has furnished much of the impetus for such initiatives, but the private sector, especially through the efforts of several national foundations, has increasingly become active in instituting such initiatives.

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 eligibility criteria, duplication and gaps in services, inflexible funding streams and poor coordination among service agencies are concerns across States. Addressing these issues will lead to more efficient use of public funds and reduced family stress.[3]

Healthy People 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 31: Increase the proportion of children with special health care needs who receive their care in family-centered, comprehensive, coordinated systems.[2]

Data Source 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. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

The 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN)[3] showed that overall 66.8% of Kansas children and youth with special health care needs (CYSHCN) families reported that community-based service systems were easy to use (i.e., no difficulties or frustration accessing services needed for their child in the past 12 months), compared to 65.1% for the U.S. The Kansas outcome is higher than the U.S. but not significant, and ranks 19th in the nation.

Of the 66.8% of Kansas CYSHCN families who reported that community-based service systems were easy to use, 66.9% reported that they experienced no difficulties or delays getting services. The table at right shows the results of the six subcomponent topics that describe difficulties with accessing care. About 64.3% of parents reported experiencing no frustration in getting services for their child.

In Kansas, achieving the "community-based services" outcome was similar across the age groups, but slightly higher for school-aged children. The proportions of CYSHCN achieving this outcome increased with family incomes. CYSHCN receiving care within a medical home were more likely to achieve this outcome than CYSHCN without a medical home. A greater percentage of those with adequate insurance reported achieving this outcome compared to those without adequate insurance. By specific type of special health care need, this outcome was achieved among nearly 80% with a need manged by prescription medication versus 43.4% of those with functional limitations.

Note: *Though the concept about ease of access to services remains the same, this measure was completely revised in 2009/10. This measure is now comprised of six difficulties with accessing care: 1) not eligible for services; 2) services not available in your area; 3) waiting lists or other problems getting appointments; 4) issues related to cost; 5) trouble getting the information you needed; 6) any other difficulties not mentioned and an assessment of how often parents were frustrated in their efforts to get services. Those CSHCN in the numerator answered YES to one of the six difficulties and usually or always to the frustration item. This measure is not comparable to the outcome from the 2005/06 NS-CSHCN survey.*[3]

CYSHCN Community-Based Service Systems Kansas and U.S., 2009/10

Community-based service Systems easy to use.	
Kansas	66.8%
U.S.	65.1%

Kansas: Higher than U.S., but not significant.

Experienced *no* difficulties or delays getting services.	
Kansas	66.9%
U.S.	65.9%
No difficulties or delays due to eligibility.	
Kansas	90.9%
U.S.	89.2%
No difficulties or delays due to availability.	
Kansas	89.9%
U.S.	88.8%
No difficulties or delays due to problems getting appointments.	
Kansas	83.2%
U.S.	82.2%
No difficulties or delays due to cost	
Kansas	84.7%
U.S.	85.1%
No difficulties or delays due to trouble getting needed information.	
Kansas	92.3%
U.S.	91.0%
No difficulties or delays for any other reason.	
Kansas	98.2%
U.S.	97.0%

Experienced no parental frustration in getting services for their child.	
Kansas	64.3%
U.S.	61.7%

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Kansas CYSHCN subgroup	Community-Based Services % achieving outcome
Age 0-5 years	66.7%
Age 6-11 years	68.3%
Age 12-17 years	65.6%
<100% FPL*	55.1%
100%-199% FPL	67.2%
200%-300% FPL	67.9%
400%+ FPL	73.0%
Within a medical home	83.4%
Without a medical home	50.5%
Current insurance is adequate	76.9%
Current insurance is not adequate	50.0%
Managed by Rx meds	79.4%
Above routine need/ Use of services	63.7%
Rx meds and service use	64.4%
Functional limitations	43.4%

*FPL: Federal Poverty Level

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Transition to Adulthood (age 12-17 years only)

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

Indicator: The percent of youth with special health care needs who receive the services necessary to make transition to all aspects of adult life.

Definition: 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 to adulthood has become a priority issue nationwide 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 2020 Objective: Related to Disability and Health (DH) Objective 5: Increase the proportion of youth with special health care needs whose health care provider has discussed transition planning from pediatric to adult health care (Target: 45.3%).[2]

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CSHCN.* April 2004.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
3. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

The 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN)[3] showed that overall 52.7% of Kansas youth with special health care needs (YSHCN), 12-17 years, received the services necessary to make appropriate transitions to adult health care, work and independence. While Kansas outcome ranks 1st in the nation and is significantly higher (p-value<0.05) than the national average of 40.0%, this means that almost half of Kansas youth do not receive the necessary transitions services.

Of the 52.7% of Kansas YSHCN that received the services necessary to make appropriate transitions, 57.7% reported that they received anticipatory guidance for transition to adult health care and 83.5% reported that their doctors or other health care providers usually or always encouraged them to take responsibility for their health care needs, such as taking medication, understanding their diagnosis, or following medical advice.

Among the 57.7% of Kansas YSHCN that received the anticipatory guidance, 59.8% reported that their health providers discussed the shift to adult health care providers, and 72.6% reported that their health providers discussed their changing health needs as they become an adult. About 66.5% reported that their health providers discussed health insurance as they become as adult.

In Kansas, achieving the outcome of receiving services necessary for transition was similar across the age groups. A greater percentage of those in higher-income families reported receiving services necessary for transition, compared to those in lower-income families. YSHCN within a medical home were more likely to receive services necessary for transition than YSHCN without a medical home. YSHCN receiving services with adequate current insurance were nearly twice as likely to report positively on this outcome compared to those without. By specific type of special health care needs, YSHCN with a need managed by prescription medication were more likely to receive services than YSHCN with functional limitations.

CYSHCN Youth Transition
Kansas and U.S., 2009/10

Youth with special health care needs, who received the services necessary to make appropriate transitions to adult health care, work and independence.	
Kansas	52.7%
U.S.	40.0%

Kansas: Significantly higher than U.S. (p<0.05)

Anticipatory guidance for transition to adult health care	
Kansas	57.7%
U.S.	45.7%
Doctors have discussed shift to adult provider, if necessary.	
Kansas	59.8%
U.S.	48.8%
Doctors discussed changing health needs as becomes an adult, if needed.	
Kansas	72.6%
U.S.	69.1%
Doctors discussed health insurance as becomes an adult, if nedded.	
Kansas	66.5%
U.S.	56.5%

Doctors encourages self management skills.	
Kansas	83.5%
U.S.	78.0%

Source: National CSHCN Survey, 2009/10 (Aged 0-17 yrs.)

Kansas CYSHCN subgroup	Transition % achieving outcome
Age 12-14 years	52.6%
Age 15-17 years	52.8%
<100% FPL*	29.5%
100%-199% FPL	51.7%
200%-300% FPL	53.7%
400%+ FPL	66.5%
Within a medical home	67.3%
Without a medical home	40.0%
Current insurance is adequate	65.3%
Current insurance is not adequate	32.0%
Managed by Rx meds	61.3%
Above routine need/ Use of services	34.1%
Rx meds and service use	55.8%
Functional limitations	35.5%

*FPL: Federal Poverty Level

Source: National Survey of CSHCN, 2009/10 (Aged 0-17 yrs.)

Financial Impact on Families

KANSAS GOAL: Decrease the proportion of families with children and youth with special health care needs reporting that their child's health causes financial strain on the family.

Indicators:

1. The percent of children and youth with special health care needs (CYSHCN) whose families pay more than $1,000 per year in out-of-pocket expenses for child's medical expenses in the past 12 months.
2. The percent of CYSHCN whose families experienced financial problems due to child's health need.
3. The percent of CYSHCN whose families spend 11 or more hours per week providing and/or coordinating health care for the child.
4. The percent of CYSHCN whose family members cut back and/or stopped working because of child's health needs.

Definition: The financial impact that children with special health care needs (CSHCN) have on their families. It is measured: 1) in dollars, as families often have substantial out-of-pocket expenses for their children's health care that are not covered by insurance; 2) the time spent by family members providing care directly or arranging for and coordinating their child's care; and 3) whether children's needs had required the parents to cut down on work or stop working altogether to care for their child - requring both the parent's time as well as a financial sacrifice.[1]

Significance: The costs of caring for CSHCN 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.[2] The demands on families may require that parents cut down their work hours or give up a job, at the same time that they face burdensome out-of-pocket health care costs.[1]

Healthy People 2020 Objective: Related to Maternal, Infant, and Child Health (MICH) Objective 31: Increase the proportion of children with special health care needs who receive their care in family-centered, comprehensive, coordinated systems.[3]

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. Shattuck PT, Parish SL. *Financial burden in families of children with special health care needs: Variability among states.* Pediatrics. 2008;122(1):13–18.
3. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Title V Maternal and Child Health Services Block Grant to States Program. Guidance and Forms for the Title V Application/Annual Report.* 6th ed. 2012.
4. National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org

Epidemiology and Trends

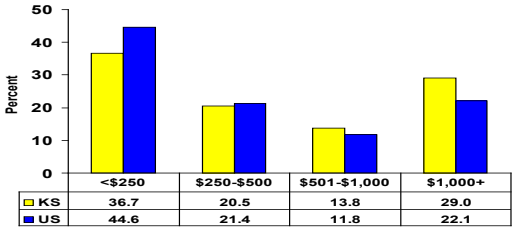
Families are often required to pay out of their pockets for health care services not fully covered by their insurance plans.[1] These services may include therapies, home health care, prescription drugs, mental health care, medical equipment, and dental services.[1] According to the 2009-2010 National Survey of Children with Special Health Care Needs (NS-CSHCN)[4], about one-third of Kansas children and youth with special health care needs (CYSHCN) families reported spending $1,000 or more on health care in the previous year for the care of their CYSHCN.

To further assess the financial impact of a child's condition on his or her family, the survey asked whether the child's condition had caused a financial problem.[1] It was reported that over 26% of CYSHCN have conditions that create financial problems for their families.

Many families devote substantial amounts of time to their children's health care.[1] They may participate in providing health are to their children through such task as administering medications and therapies, maintaining equipment, and providing transportation to appointments.[1] Families also spend time arranging or coordinating care for their children by making appointments, making sure that care providers are exchanging information, and following up on their child's health care needs.[1] While the families of 42.7% of CYSHCN spent less than an hour a week on these activities, the families of 36.8% devoted 1 to 4 hours a week to these tasks, and the families of 10.8% spent 11 hours a week or more.

The complexity of a child's special needs and the parents' need to devote time to the child's care sometimes requires that parents cut back on the number of hours they work or stop working completely to care for their child.[1] Overall, the parents of 23% of CYSHCN report having to stop work or cut back on their hours at work, or both, because of their children's needs. Nearly 20% of family member(s) avoided changing jobs in order to maintain health insurance for their child.

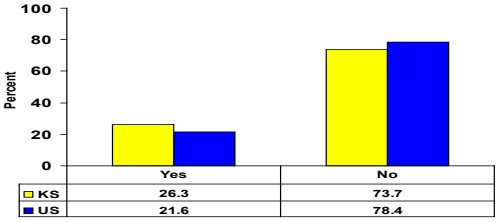
Percent of Annual Out-of-Pocket Expenditures for Care of CYSHCN Kansas and U.S., 2009/10



	<$250	$250-$500	$501-$1,000	$1,000+
KS	36.7	20.5	13.8	29.0
US	44.6	21.4	11.8	22.1

Source: National CSHCN Survey, 2009/10 (Aged 0-17 yrs.)

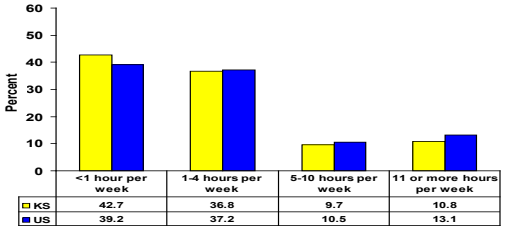
Percent of CYSHCN Whose Families Experience Financial Problems Due to Child's condition Kansas and U.S., 2009/10



	Yes	No
KS	26.3	73.7
US	21.6	78.4

Source: National CSHCN Survey, 2009/10 (Aged 0-17 yrs.)

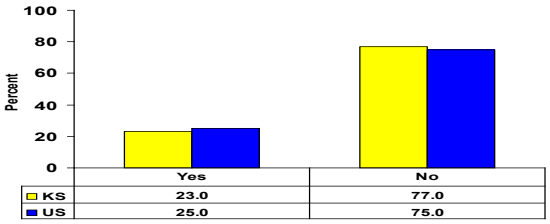
Percent of Time Spent Providing, Arranging, or Coordinating Health Care for CYSHCN, per Week Kansas and U.S., 2009/10



	<1 hour per week	1-4 hours per week	5-10 hours per week	11 or more hours per week
KS	42.7	36.8	9.7	10.8
US	39.2	37.2	10.5	13.1

Source: National CSHCN Survey, 2009/10 (Aged 0-17 yrs.)

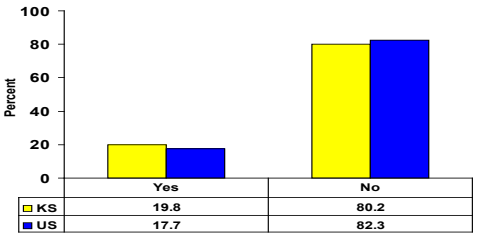
Percent of Impact of Child's Condition on Parent's Employment Kansas and U.S., 2009/10



	Yes	No
KS	23.0	77.0
US	25.0	75.0

Source: National CSHCN Survey, 2009/10 (Aged 0-17 yrs.)

Percent of Family member(s) avoided changing jobs in order to maintain health insurance for child Kansas and U.S., 2009/10



	Yes	No
KS	19.8	80.2
US	17.7	82.3

Source: National CSHCN Survey, 2009/10 (Aged 0-17 yrs.)

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SECTION IV

CROSS-CUTTING / LIFECOURSE

Poverty Status

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

Indicator: The percent of children and families in poverty.

Definition: Following the Office of Management and Budget's (OMB) Statistical Policy Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index (CPI-U). The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps).[1] For more information, please visit: www.census.gov/hhes/www/poverty/methods/definitions.html.

Significance: Poverty affects many aspects of a child's life, including living conditions, nutrition, and access to health care. A number of factors affect poverty status, and significant racial/ethnic disparities exist. A number of Federal programs work to protect the health and well-being of children living in low-income families. One of these is the National School Lunch Program, administered by the U.S. Department of Agriculture's Food and Nutrition Service. The program provides nutritionally-balanced low-cost or free lunches to children based on income.[2]

Healthy People 2020 Objective: Relates to Social Determinants of Health: Create social and physical environments that promote good health for all.[3]

Data Source and References:

1. U.S. Census Bureau. Social, Economic, and Housing Statistics Division: Poverty. Last Revised: June 25, 2012. www.census.gov/hhes/www/poverty/methods/definitions.html
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2011*. Rockville, Maryland: U.S. Department of Health and Human Services, 2011.
3. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39
4. Columbia University. National Center for Children in Poverty. *Kansas: Demographics of Poor Children*. www.nccp.org/profiles/KS_profile_7.html
5. U.S. Census Bureau. Current Population Survey (CPS). Annual Social and Economic (ASEC) Supplement. Pov46. Poverty Status by State (weighted). www.census.gov/hhes/www/poverty/data/incpovhlth/index.html
6. U.S. Census Bureau. Small Area Income and Poverty Estimates (SAIPE). Kansas, Under Age 18 in Poverty, 2013. www.census.gov/cgi-bin/saipe/saipe.cgi

Epidemiology and Trends

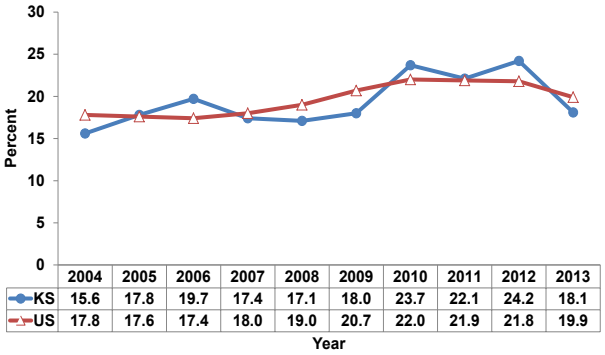
For 2013, the federal poverty level is $23,550 for a family of four. Children living in families with incomes below the federal poverty level are referred to as poor. But research suggests that, on average, families need an income of about twice the federal poverty level to meet their basic needs.[4]

In 2013, compared to the U.S. population, a lower percentage of Kansans lived in households with incomes below the federal poverty level (13.2% vs. 14.5% for the U.S.) and also a lower percentage of children under age 18 lived in households with incomes below the federal poverty level (18.1% vs. 19.9% for the U.S.). While a decreasing trend was observed during 2010-2013, overall the 10 year period (2004-2013), Kansas experienced an increase in the poverty rate for children under age 18. Similar trends were seen in the United States.[5]

In 2013, 131,251 Kansas children under 18 years of age were living in poverty. Most Kansas children under age 18 living in poverty live in four population centers: Sedgwick County (Wichita), Wyandotte and Johnson Counties (Kansas City metropolitan area), Shawnee County (Topeka), and Douglas County (Lawrence). Five counties accounted for over half of all children (72,206 children; 55.0%) in poverty for Kansas: Sedgwick (29,273), Wyandotte (17,136), Johnson (10,079), Shawnee (9,513), and Douglas (3,249). However, the rural southeastern portion of the state has many counties with high concentrations of children in poverty.[6]

In 2013, the percent of Kansas' families living at or below the federal poverty level (8.6%) is lower than the U.S. (11.2%). Poverty is more common in Kansas families headed by single females and those with children in the household, regardless of race or ethnicity. In 2013, the Kansas percent of female headed households living below 100% federal poverty level (31.5%) was below the U.S. percent (41.3%). However, for the years 2004-2012, the percent of Kansas female headed households living in poverty increased and exceeded the U.S. rate.[5]

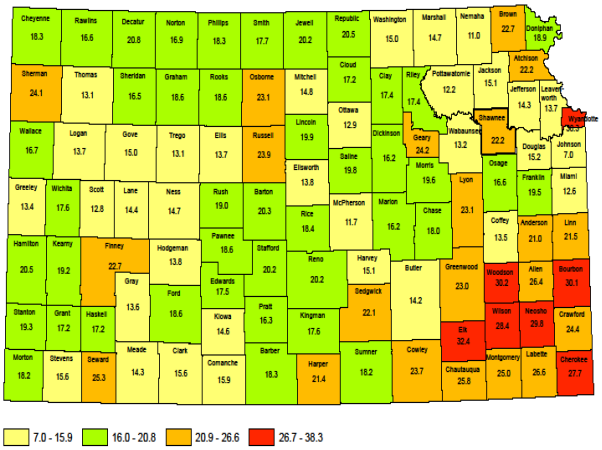
Percent of Children Under 18 Years of Age Below 100% Federal Poverty Level Kansas and U.S. (2004-2013)



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	15.6	17.8	19.7	17.4	17.1	18.0	23.7	22.1	24.2	18.1
US	17.8	17.6	17.4	18.0	19.0	20.7	22.0	21.9	21.8	19.9

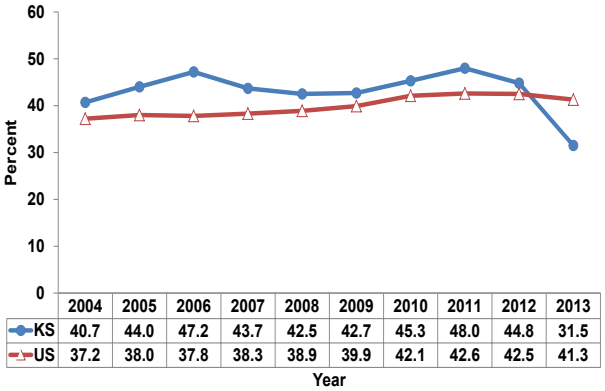
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement. POV46: Poverty Status by State

Percent of Children Under 18 Years of Age Living in Poverty by County Kansas, 2013



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates

Percent of Female Headed Families with Children that are Below 100% Federal Poverty Level Kansas and U.S (2004-2013)



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KS	40.7	44.0	47.2	43.7	42.5	42.7	45.3	48.0	44.8	31.5
US	37.2	38.0	37.8	38.3	38.9	39.9	42.1	42.6	42.5	41.3

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

Linguistic Isolation

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

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

Definition: A linguistically isolated household is one in which no person aged 14 or over speaks English at least "Very well." That is, no person aged 14 or over speaks only English at home, or speaks another language at home and speaks English "Very well." A linguistically isolated person is any person living in a linguistically isolated household. All the members of a linguistically isolated household are tabulated as linguistically isolated, including members under 14 years old who may speak only 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. 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.[1] 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.[2]

Healthy People 2020 Objective: Relates to Social Determinants of Health: Create social and physical environments that promote good health for all.[3]

Data Source and Reference:

1. U.S. Census Bureau. *Language Use and English-Speaking Ability:2000.* www.census.gov/prod/2003pubs/c2kbr-29.pdf
2. Department of Health and Human Services. *Understanding and Promoting Health Literacy (R01).* http://grants.nih.gov/grants/guide/pa-files/PAR-04-116.html
3. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39
4. U.S. Census Bureau. 2011-2013 American Community Survey. *Table S1602. Linguistic Isolation.* http://factfinder2.census.gov
5. U.S. Census Bureau. 2011-2013 American Community Survey. *Table DP02. Selected Social Characteristics in the United States.* http://factfinder2.census.gov

Epidemiology and Trends

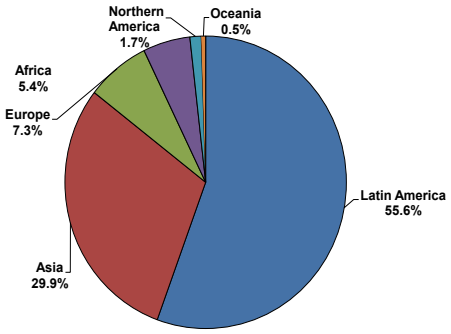
According to the 2011-2013 American Community Survey, in Kansas, 2.4% of the households met the definition of being linguistically isolated compared to 4.5% of U.S. households. In Kansas, the prevalence of linguistic isolation in households varies by language spoken at home. Linguistic isolation among households speaking Spanish was 23.5%, other Indo-European languages 8.9%, Asian and Pacific Island languages 28.0%, and other languages 13.7%.[4]

No one age 14 and over speaks English only or speaks English "very well" 2011-2013	
All Households	**Estimate**
Kansas	2.4%
U.S.	4.5%
Prevalence of Linguistic Isolation among Kansas Households by Language	
Spanish	23.5%
Other Indo-European languages	8.9%
Asian and Pacific Island languages	28.0%
Other languages	13.7%

Source: U.S. Census Bureau, American Community Survey, 3-year Estimates, 2011-2013

Ninety-three percent (93.2%) of the people living in Kansas in 2011-2013 were native residents of the United States. About 59.2% of these residents were living in the state in which they were born. Seven percent (6.8%) of the people living in Kansas in 2011-2013 were foreign born. Of the foreign born population, 34.7% were naturalized U.S. citizens, and 90.3% entered the country before the year 2010. About 9.7% of the foreign born entered the country in 2010 or later. Foreign born residents of Kansas come from different parts of the world.[5]

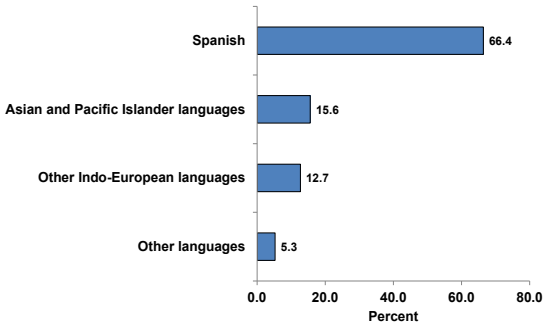
Foreign Born Residents Regions of the World Kansas, 2011-2013



Source: U.S. Census Bureau. American Community Survey, 3-Year Estimates, 2011-2013

Among people at least five years old living in Kansas in 2011-2013, 11.1% spoke a language other than English at home. Of those speaking a language other than English at home, 66.4% spoke Spanish and 33.6 % spoke some other language; 39.7% 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.[5]

Percent of the Population 5 Years and Over who Speak a Language Other than English Kansas, 2011-2013



Source: U.S. Census Bureau. American Community Survey, 3-Year Estimates, 2011-2013

Utilization of Health Care

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

Indicators:

1. The percent of Medicaid enrollees (ages 0-20) during the reporting year who received at least one initial periodic screen.
2. The percent of Medicaid enrollees (ages 0-20) who have received any dental services during the year.
3. The percent of CHIP enrollees (ages 0-19) during the reporting year who received at least one initial periodic screen.
4. The percent of CHIP 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 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 - Children Health Insurance Program (CHIP) 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 250% of the 2008 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 HeathWave21.[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 2020 Objective: Related to Access to Health Services.[5]

Data Sources and References:

1. Kansas Department for Children and Families. www.kmap-state-ks.us/Documents/Content/Provider%20Manuals/Gen%20benefits_090109_973.pdf
2. General Definition. sphhs.gwu.edu/departments/healthpolicy/CHPR/nnhs4/GSA/Subheads/gsa100.html
3. Kansas Department of Health and Environment. www.kdheks.gov/hcf/healthwave/about.html
4. U.S. Department of Health and Human Services. *Healthy People 2020*. www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39
5. KAN-Be-Healthy and Children Health Insurance Program (CHIP) reports (Federal Fiscal Year 2013: 10/1/2012 - 9/30/2013).

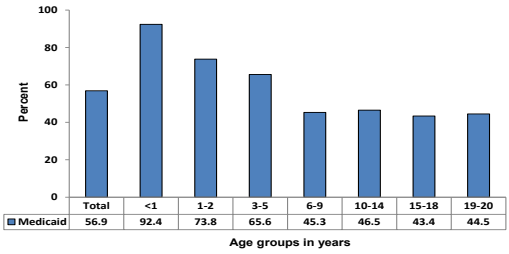
Epidemiology and Trends

A report submitted by Kansas Department of Department of Health and Environment to the Center for Medicare and Medicaid Services (CMS) showed an overall increase in participation of Kansas Medicaid enrollees (ages 0-20) for KAN Be Healthy (KBH) screens from 55.8% in Federal Fiscal Year (FFY) 2012 to 56.9% in FFY 2013[5]. The participation of Medicaid enrollees increased in FFY2013 for children across all age groups, except infants aged <1 year. In this age group, the participation rate decreased from 93.6% in FFY2012 to 92.4% in FFY2013. Overall, the number of eligible/enrolled children continues to increase each year, as does the number actually getting into services. Although the overall FFY2013 result did not reach the CMS goal of 80% participation in Early and Periodic Screening Diagnostic and Treatment (EPSDT) services, there has been much improvement in getting children into care.

The participation of Kansas Children Health Insurance Program (CHIP) enrollees (ages 0-20) was 43.2% in FFY 2013. This is a 5.3% decrease over the 45.6% participation in FFY2012. The participation decreased in FFY2013 for children in all age groups. There has been a steady decline in the percent of CHIP children receiving a screen. Comparing the Medicaid data to the CHIP data, the CHIP numbers and percentages are considerably lower.

The percentage of children in all age groups who access dental services in Medicaid continues to rise. When evaluating the trend in the last nine years (FFY2005-2013), the increase in the percentage of children enrolled who have received any dental services was statistically significant. However, CHIP children receiving any dental services declined over the 2010-2013 period. 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.

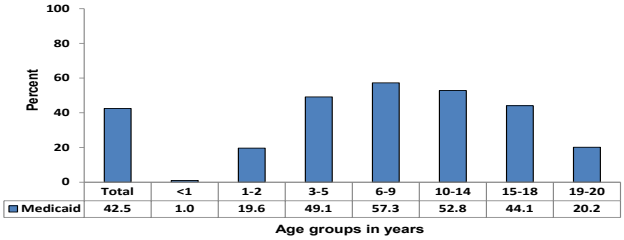
Percent of Medicaid Eligible Children Receiving at least one initial or periodic screen* Federal Fiscal Year 2013



*Medicaid Participant % = Total eligibles receiving at least one initial or periodic screen / Total eligibles who should receive at least one initial or periodic screen

Source: Medicaid Kan Be Healthy annual participant report.
Report Period: 10/1/2012-9/30/2013

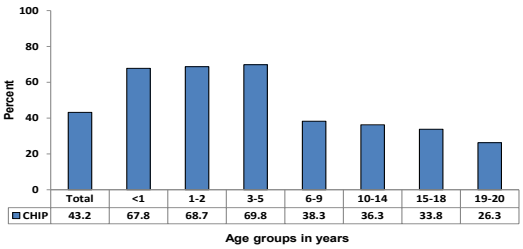
Percent of Medicaid Eligible Children Receiving Any Dental Services* Federal Fiscal Year 2013



*Medicaid Dental % = Number of eligible receiving any dental services / Number of individuals eligible for Kan Be Healthy

Source: Medicaid Kan Be Healthy annual participant report.
Report Period: 10/1/2012-9/30/2013

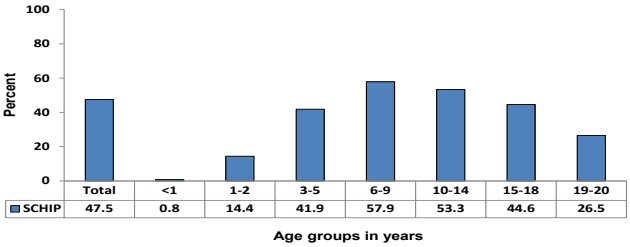
Percent of CHIP* Eligible Children Receiving at Least One Initial or Periodic Screen Federal Fiscal Year 2013**



*CHIP: State Children Health Insurance Program
**CHIP Participant % = Total eligibles receiving at least one initial or periodic screen / Total eligibles who should receive at least one initial or periodic screen

Source: SCHIP/Well Child for HW21 annual participant report.
Report Period: 10/1/2012-9/30/2013

Percent of CHIP* Eligible Children Receiving Any Dental Services Federal Fiscal Year 2013**



*CHIP: Children Health Insurance Program
**CHIP Dental % = Number of eligible receiving any dental services / Number of individuals eligible for KAN Be Healthy

Source: CHIP/Well Child for HW21 annual participant report.
Report Period: 10/1/2012-9/30/2013

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SECTION V

SPECIAL PROJECTS

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MCH2015
Pregnant Women and Infants Update

Infants born to mothers who smoke weigh less than other infants and are often categorized as low birth weight (<2,500 grams). Low birth weight is a key risk factor to consider when looking at the issue of infant mortality. The MCH Program in Kansas collaborates with the Kansas Tobacco Use Prevention Program, local MCH grantee agencies and a network of community providers to reduce the number of pregnant smokers through a referral system to a comprehensive set of tobacco cessation services provided by a Quitline, use of CDC and March of Dimes online educational information and referral to local tobacco cessation services. The Kansas Clean Indoor Air Act of 2010 continues to receive support against all challenges to change its mandates that provide smoke-free environments in most public places and restaurants.

Due to the fragile health of very low birthweight (VLBW) infants, the best care for them is when undertaken and maintained in hospitals with Level III nurseries that are capable of providing subspecialty care. In order to inform this process, the Kansas Maternal and Child Health Council (KMCHC) serve to provide expert opinions, advice and guidance to the Kansas Maternal Child Health (MCH) Program using a multidisciplinary team approach on this issue. Ten hospitals have been identified that self-designate as providing Level III nursery care. All of these hospitals are located in the eastern one-third of Kansas in the three largest metropolitan areas. Involved in this systems approach are the March of Dimes, Kansas Chapter; the Kansas MCH Program; and a referral system of providers from across the State. In addition, neonatal transportation services are provided by Wesley Medical Center in Wichita for high-risk obstetrical cases in outlying regions. The Kansas Perinatal Quality Collaborative (KPQC) was formed resulting from collaborative work of the March of Dimes, Kansas Chapter; the Kansas MCH Program and a host of other Kansas perinatal care stakeholders. The KPQC is a statewide, multi-stakeholder network dedicated to improving perinatal health in Kansas by leading the effort for improvements in service quality and access to care for women and babies using data-driven and evidence-based practices. Hospital quality improvement projects related to preterm and early term births are among the top priorities.

In 2013, 79.4% of infants were born to pregnant women receiving prenatal care in the first trimester, a slight increase from 2012 (78.9%). Kansas exceeds the Healthy People 2020 goal of 77.9%. Early entry into prenatal care has been identified as a factor involved in improving the health of mothers and babies and black mothers are more likely to enter into prenatal care late. MCH staff identifies women at risk for late entry into prenatal care in coordination with the state WIC and Family Planning Programs.

The Kansas MCH Program provides education, outreach and supportive activities to women in the prenatal and postpartum periods of their pregnancies through a statewide network of Healthy Start Home Visitors (HSHVs) that work out of local MCH grantee agencies primarily located in local health departments. Various HSHVs have received fairly broad training as certified breastfeeding educators, car seat safety technicians, and in the use the 5 A's counseling method to promote smoking cessation and trained in other areas that have been shown to improve the health and well-being of mothers, babies and children.

In an effort to address the identified needs and priorities for pregnant women and infants, a number of initiatives involving state and local programs have been launched.

Infant Mortality Collaborative Innovation and Improvement Network (CoIIN): The Kansas Department of Health & Environment (KDHE) along with several partners and organizations including the March of Dimes and the Kansas Infant Death and SIDS Network is actively engaged in the Infant Mortality Collaborative Improvement & Innovation Network (CoIIN) initiative, launched by the U.S. Department of Health & Human Services in 2012 and expanded in 2014 to include Kansas and other Region VII states. The National Institute for Children's Health Quality (NICHQ) is leading the work. Cross-state and region collaborative work begins involves learning networks/sessions for six identified CoIIN strategies. Each participating state selected two to three strategies to focus on as part of the national platform. Kansas' selections include: 1) Smoking cessation (before, during and after pregnancy); and 2) Early term and preterm birth. The Kansas CoIIN initiative is the overarching state initiative ("Blueprint") with other state and community infant mortality activities advancing the work to drive change, increase coordination, and enhance/improve services.

Perinatal Community Collaboratives/Birth Disparities Programs: The Kansas MCH Program and the March of Dimes, Kansas Chapter in collaboration with local communities and the broader network of local health care and community service providers are involved in an on-going process of developing grassroots perinatal care collaboratives using the March of Dimes, "Becoming A Mom/Comenzando Bien" as a consistent and proven prenatal care education curriculum. The March of Dimes Kansas Chapter began development of these community collaboratives in 2010, bringing prenatal education and clinical prenatal care together to create the comprehensive Healthy Babies are Worth the Wait/Becoming a Mom (BAM) program. There are currently seven established sites in Kansas. BAM partnerships have formed with the Kansas Department of Health and Environment, University of Kansas School of Medicine-Wichita, county health departments, federally qualified health centers, private obstetric practices and hospitals serving women with demonstrated high birth disparities. Preliminary birth outcome data shows statistically significant improvements including fewer preterm births and fewer low-birth weight babies. Sites are reporting increases in breastfeeding initiation rates and lowered infant mortality rates.

Communities Supporting Breastfeeding: The long-term goal of the Communities Supporting Breastfeeding (CSB) project is to improve exclusive breastfeeding rates for infants at three and six months of age in Kansas. The objective of this project is to assist six communities (Great Bend, Liberal, Hays, Parsons, Salina and Cowley County) to achieve the CSB designation by the Kansas Breastfeeding Coalition (KBC) as defined by the following six criteria needed to provide multifaceted breastfeeding support across several sectors in the community: 1) A local breastfeeding coalition with a page on the KBC website listing local breastfeeding resources; 2) Peer breastfeeding support group(s) such as La Leche League or similar mother-to-mother group; 3) One or more community hospitals participating in High 5 for Mom & Baby or Baby Friendly ® USA; 4) One business for every 1000 community citizens* or 25 (whichever is lesser) participate in the "Breastfeeding Welcome Here" program; 5) One business for every 5000 community citizens or 10 (whichever is lesser) receive a Breastfeeding Employee Support Award from Kansas Business Case for Breastfeeding ; and 6) A minimum of 20 child care providers in the community completing the KBC's How to Support the Breastfeeding Mother and Family course as provided by an approved training organization. *Number of community citizens defined by 2010 census.

Healthy Start/Delivering Change: Delivering Change is a comprehensive approach to eliminating disparities in perinatal health in Geary County, Kansas, that focuses on individual/family level health, evidence-based practices, standardized approaches, and quality improvement. The Kansas Department of Health and Environment (KDHE) as the lead agency, is aligning *Delivering Change* with Title V and Kansas MCH programs and services to directly support individual participants. *Delivering Change*

expands on existing work of the Geary County Perinatal Coalition to integrate a comprehensive array of services and maximizes the resources in Geary County through a system of mutually reinforcing activities that provide appropriate, high quality services to meet the needs of women, infants, and families. Key program models include: OB Navigator; Becoming a Mom/Comenzando bien©; Period of PURPLE Crying; Triple P – Positive Parenting Program; and Parents as Teachers. Key partners in delivering these programs include the Geary Community Hospital, the Geary County Health Department and Flint Hills OBGYN. *Delivering Change* uses a Collective Impact approach that will support achieving the three project goals: (1 Develop a comprehensive, coordinated perinatal system that leads to improved women's health; (2 Improve the quality of services available to pregnant women and new mothers; and (3 Develop a system of programs, services and partnerships that strengthen family resilience. A comprehensive process and outcome evaluation will ensure accountability through quality improvement and performance monitoring.

Critical Congenital Heart Defect Newborn Screening (CCHD): The Kansas Newborn Screening (NBS) program launched a comprehensive public health quality initiative in November 2013. The initiative was launched in partnership with birthing facilities in response to recommendations referred to the KDHE Secretary from the Newborn Screening Advisory Council. Recommendations addressed the need for all newborns to be screened for CCHD; assurance of prompt care; connection to resources; short- and long-term follow-up; systems to support hospital-based data collection, management, evaluation and quality assurance; and improvement of overall health outcomes for infants with CCHD. The successful initiative has resulted in Kansas hospitals and birthing facilities screening infants for CCHD prior to discharge.

For more information, please contact Traci Reed at treed@kdheks.gov, or KDHE's Bureau of Family Health, Children and Families Section.

MCH2015
Pregnant Women and Infants
Breastfeeding Update

The KDHE Nutrition and WIC Services (NWS) section continues to work toward promoting breastfeeding initiation and increasing the length of time that Kansans are breastfeeding. During the 5-Year MCH Statewide Needs Assessment (2010-2015), 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 statewide conferences such as the WIC Conference and the annual Kansas La Leche League conference. The USDA's Grow and Glow In Breastfeeding training is provided to all new WIC staff and other interested health professionals.

The NWS section collaborates with the Kansas Breastfeeding Coalition, Inc. (KBC) on several projects. NWS assists in training local partners on ways to assist employers in developing or enhancing a lactation support program through the KBC's Business Case for Breastfeeding Grant. NWS worked with the KBC on the KBC's second coalition building conference and the development of a letter with the Kansas Department of Labor about how businesses can support breastfeeding which is distributed in the Kansas New Business packet. Local WIC Staff are encouraged to participate on community breastfeeding coalitions. The Bureau of Family Health supports the KBC project – Communities Supporting Breastfeeding.

The NWS section assisted with promoting and supporting the KS Breastfeeding Summit, a joint project of the Kansas Health Foundation and the United Methodist Health Ministry Fund, and NWS has been involved in the development and monitoring of the High 5 for Mom and Baby project which provides education about breastfeeding support to Kansas birthing centers.

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 interested counties although funding is limited.

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 or KDHE's Bureau of Family Health, Nutrition and WIC Services.

MCH2015
Children and Adolescents
Reducing Risk Behaviors Update

Developed in 2010, Healthy People 2020 (HP2020) includes initiatives specific to adolescent health with an overall goal to improve the healthy development, health, safety, and well-being of adolescents and young adults. The HP2020 recognized that the behavioral patterns established during adolescent developmental periods help determine young people's current health status and their risk for developing chronic diseases in adulthood.[1]

HP2020 health objectives were selected by a group of stakeholders based on scientific knowledge and available data in order to best measure progress over time. HP2020 identified eleven adolescent health objectives: 1) adolescent wellness checkup, 2) after school activities, 3) adolescent-adult connection, 4) transition to self-sufficiency from foster care, 5) educational achievement, 6) school breakfast program, 7) illegal drugs on school property, 8) student safety at school as perceived by parents, 9) student harassment related to sexual orientation and gender identity, 10) serious violent incidents in public schools, and 11) youth perpetration of and victimization by crimes.

The KDHE Bureau of Family Health, Children and Families Section stakeholders echoed the HP 2020 goal in the development of a Kansas goal: to enhance the health of Kansas children and adolescents across the lifespan. The HP2020 objectives were also reflected in the Kansas priorities identified as part of the five year needs assessment (2010-2015): 1) all children and youth receive health care through medical homes; 2) reduce child and adolescent risk behaviors with an emphasis on alcohol reduction and deterring tobacco use among teens; and 3) all children and youth achieve and maintain healthy weight through activity and healthy eating.

In an effort to address the identified needs and priorities for children and adolescents, a number of initiatives involving state and local programs have been launched.

Maternal, Infant and Early Childhood Home Visiting Program: KDHE is the lead agency for the Maternal, Infant and Early Childhood Home Visiting (MIECHV) Program, a federal initiative to improve health and development outcomes for at-risk children through evidence-based home visiting programs offered on a voluntary basis to pregnant women and children birth to age five. The MIECHV Program is designed to strengthen and improve Title V MCH programs and activities, improve coordination of services for at-risk communities, and identify and provide comprehensive services to improve outcomes for families who reside in at-risk communities. In the at-risk Kansas communities targeted for implementation - Wyandotte County (urban Kansas City, Kansas) and Montgomery, Labette, and Cherokee counties (rural southeast Kansas) - Early Head Start, Healthy Families America, and Parents as Teachers evidence-based home visiting programs and, in Wyandotte County specifically, a promising approach serving pregnant and postpartum women affected by alcohol or other drugs, the Team for Infants Endangered by Substance Abuse (TIES) Program, have scaled up. Since the launch of MIECHV program services in January 2012 through December 2014, 781 enrolled pregnant women and families with infants and young children received home visiting services. A coordinated outreach and referral system has been established in the southeast Kansas counties and an established screening and referral system in Wyandotte County has expanded. An in-home intervention for mothers identified with depression was initiated with Wyandotte County MIECHV program sites. Front line and supervisory

staff from local implementing agencies have received enhanced training and consultation on a variety of topics. Rigorous process and impact evaluations are being conducted. A cross-program performance management and data system has been developed and implemented to collect and report data including 35 required indicators in the six MIECHV benchmark areas: 1) maternal & newborn health; 2) child injuries, child abuse & neglect, emergency visits; 3) school readiness & achievement; 4) domestic violence; 5) family economic self-sufficiency; and 6) coordination and referrals for other community resources and supports. Kansas data reported through September 2014 showed improvements in 29 of the 35 identified indicators across each of the benchmarks.

Early Childhood Comprehensive Systems: Building Health Through Integration: In August 2013, KDHE was awarded a three-year Early Childhood Comprehensive Systems: Building Health Through Integration (ECCS) grant. Named the Kansas Initiative of Developmental Ongoing Screening (KIDOS), the project goal is to expand and effectively coordinate, improve, and track developmental screenings and referrals for infant and toddlers (birth to age three) across early childhood support systems at the state and local levels including home visiting and early education settings, pediatricians and medical homes, intervention services, and child care programs and families. A state work group chaired by a pediatrician was convened to provide expertise and guidance for the KIDOS project. The Collective Impact approach is woven throughout the initiative. A comprehensive Community Toolkit has been developed to provide resources, tools, and guidance to communities coordinating comprehensive developmental screening systems. Technical assistance will be provided to community implementation teams. Another key objective is to build statewide capacity for quality training on the Ages and Stages Questionnaires (ASQ-3™ and ASQ: Social-Emotional). The KIDOS project will also enhance data collection systems for developmental screenings and referrals, and evaluate system and quality improvements.

Adolescent Health Plan: The most recent Maternal and Child Health five-year needs assessment is under way, and new priorities and objectives will be identified. As part of the comprehensive statewide needs assessment, the MCH Program partnered with Kansas State University to conduct an adolescent health assessment and develop a state adolescent health plan.

For more information, please contact Traci Reed at treed@kdheks.gov, or KDHE's Bureau of Family Health, Children and Families Section.

Reference:

1. National Research Council and Institute of Medicine. Committee on Adolescent Health Care Services and Models of Care for Treatment, Prevention, and Healthy Development. *Adolescent health services: Missing opportunities.* Lawrence RS, Gootman JA, Sim LJ, editors. Washington: National Academies Press, 2009. Available from: http://books.nap.edu/openbook.php?record_id=12063&page=1

MCH2015
Children and Adolescents
Overweight and Obese Children Update

The KDHE Nutrition and WIC Services (NWS) section continues to work towards decreasing the prevalence of children in Kansas that are overweight or obese. During the 5-Year MCH Statewide Needs Assessment (2010-2015), partners reaffirmed the importance of decreasing the rate of childhood obesity.

The NWS section continues 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. State nutritionists participate on the Association of State Public Health Nutritionists committees with an emphasis on healthy eating and physical activity. KS WIC nutritionists participate in the Nutrition and Physical Activity Collaborative (NuPAC) – a collaborative of many organizations in Kansas working to enhance nutrition and physical activity in Kansans.

The NWS section implemented training to all Kansas WIC staff during 2014 on the Kansas Baby Behavior Campaign based on the University of California Davis Human Lactation Center Baby Behavior research project. This program discourages overfeeding and future overweight. All local Kansas WIC staff (450+) and approximately 100 other health professionals received training. Local WIC Staff are encouraged to participate on community committees that promote healthy eating and physical fitness.

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. Local community leaders are organizing walks and runs to encourage exercise.

For more information or questions, please contact Martha Hagen at mhagen@kdheks.gov or KDHE's Bureau of Family Health, Nutrition and WIC Services.

MCH2015
Children and Youth with Special Health Care Needs Update

During the 5-Year MCH Statewide Needs Assessment (2011-2015), the Kansas Special Health Care Needs (KS-SHCN) Program, formerly known as Children and Youth with Special Health Care Needs program, adopted the objectives of ensuring children and families have access to a medical home, are supported in transition to adulthood in all aspects of adult life, and services minimize the financial impact for families of children and youth with special health care needs (CYSHCN). While these objectives remain a priority through 2015, a strategic planning process began mid-2013 in an effort to enhance and improve services provided to families through the KS-SHCN program. New priorities have been selected by families, providers, community partners, and other key stakeholders. These five priorities are: cross-system care coordination, behavioral health integration, addressing family caregiver health, direct health services and supports, and training and education. The new priorities align closely in many ways with the 2010-2015 objectives; however have provided a new direction for the program. The 2016-2020 Needs Assessment process will complete the strategic planning process with the selection of measurable objectives and key strategies.

For more information or questions, please contact Heather Smith at hsmith@kdheks.gov or KDHE's Bureau of Family Health, Special Health Services.

MCH2015
Children and Youth with Special Health Care Needs
Medical Home Update

The medical home approach continues to be central to the focus of the KS-SHCN program. While the strategic planning session did not highlight medical home explicitly, each priority addresses varying components of the medical home. Care coordination and direct health services are closely aligned with the medical home approach. Additionally, family caregiver health addresses the family-centered care and comprehensive nature of a medical home. Current activities fall within the training and education priority and include: supporting increased knowledge of medical home services; building medical home partnerships; and helping families navigate systems and access services. For the KS-SHCN program, behavioral and oral health providers are key partners to be integrated into the medical home team.

Medical home services have been identified through the MCH Block Grant public input survey, specifically related to improving access to primary care, care coordination, early and periodic screening, diagnosis, and testing, integrated and comprehensive services, referral to community resources and supports, health education and care management supports, and health care transition. Current SHCN program activities address many of these needs and will continue, and expand, into the future.

For more information or questions, please contact Heather Smith at hsmith@kdheks.gov or KDHE's Bureau of Family Health, Special Health Services.

MCH2015
Children and Youth with Special Health Care Needs
Youth Transitioning into Adult Services Update

The KS-SHCN program continues to be at the forefront of improving the transition of youth with special health care needs (YSHCN) into adult services. Although the KS-SHCN strategic plan has not specifically focused on transition services, this is a key component of providing comprehensive care coordination and will be addressed through training and education for providers, families, and youth. Data show transition to adult health care is a major health concern for 48.5% of the people who responded to that question for the CYSHCN 12-26 age group through the 2014 MCH Block Grant Public Input Survey. Additionally, when asked how well the respondent felt the state is doing to address transition for YSHCN, the majority (66 of 107) responded "I don't know." Seven responses indicated "ineffective" or "very ineffective." This shows a clear need in raising awareness of youth health care transition services and how to access available services.

A focus was placed on preparing youth to improve the integration and coordination of transition supports and services including health care, education, employment, and independent community living. A comprehensive transition model has been developed with the youth and their families in the center of the model. The model includes tools and resources across disciplines related to family health care supports, medical and school coordination, health care provider engagement, individualized health planning, and youth-directed healthcare education. Additionally, a partnership with the University of Kansas allowed for the development of a transition website, specific to Kansas resources and supports. This website, www.buildingalife.ku.edu, intends to help families and youth navigate the complex world of transition to adulthood.

For more information or questions, please contact Heather Smith at hsmith@kdheks.gov or KDHE's Bureau of Family Health, Special Health Services.

MCH2015
Children and Youth with Special Health Care Needs
Financial Impact on the Family Update

The KS-SHCN program continues to work towards minimizing financial impact on families. Through state and national funding partners, it is increasingly important to review services and ensure the program is meeting the needs of the families and individuals we serve. The purpose of the strategic plan is to support increased services, enhanced coordination, and stronger systems for CYSHCN. With the increased availability of affordable health coverage and continued reduction of medical specialists in the state, it is necessary for the program to reconsider how services are provided. Central to this process is providing support and accountability for the Title V and state funding received for these services.

The 3rd highest health concern for CYSHCN ages 0-11 years, as reported by the public input survey, was adequate insurance coverage; moving to 2nd for the 12-26 year old CYSHCN population. With this new process, program staff are researching new models of service delivery to better support families with accessing affordable, appropriate insurance coverage. Families may be able to obtain affordable coverage, however this does not assure all needs are being met. This will be the primary focus of our new priority related to direct health services and supports.

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 reducing spending. To address the growing needs of CYSHCN, the program reached out to local communities and implemented a regionalization to offer services at the community level, rather than a state level. In partnership with local health departments and other local entities, seven regional offices are now providing a local point of entry into the program. Additionally, expansion of clinic services through outreach to the Western regions of Kansas began this past year. The KS-SHCN program is dedicated to providing services to families at the community level and will continue to move towards improved community-based services.

For more information or questions, please contact Heather Smith at hsmith@kdheks.gov or KDHE's Bureau of Family Health, Special Health Services.

Kansas WIC and Medicaid: Where is the Gap?

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[1]Kansas Department of Health and Environment
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Background:
The purpose of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is to safeguard the health of low-income women, infants, and children up to age 5 who are at nutritional risk by providing nutritious foods, information on healthy eating, and referrals. In Kansas, Medicaid eligibility for pregnant women is 150% of federal poverty level and for WIC is 185%. Medicaid participation during pregnancy allows adjunctive income eligibility for the Kansas WIC program. Medicaid coverage for pregnant women includes paying for delivery. Therefore, it is important to identify demographics and location of Kansas women who are Medicaid participants but who do not enroll in WIC during pregnancy.

Study Question:
Who are the Kansas women that are Medicaid participants but do not enroll in WIC during pregnancy?

Methods:
We analyzed linked Kansas Birth Certificate-WIC-Medicaid-Hospital Discharge data, 2009-2011. WIC participants were identified through WIC records or birth certificates. Pregnant women who were Medicaid participants were identified through WIC records; birth certificates with Medicaid as the payer source; hospital discharge data with Medicaid as the payer source; or paid Medicaid claims indicating delivery. Medicaid coverage for delivery was used as a proxy for identifying pregnant women on Medicaid. Chi-square and Cochran–Mantel–Haenszel (CMH) statistics compared the distributions of demographics, risk factors, and health outcomes for Medicaid, WIC participants and Medicaid, non-WIC participants. Limitations of this study include the cross-sectional, self-reported nature of the data and the reliance on Medicaid data for delivery, rather than for prenatal care.

Results:
Approximately 21% of pregnant women who were Medicaid participants during pregnancy were non-WIC participants. There were significant differences in racial/ethnic distribution between the two groups. Medicaid, non-WIC participants were more likely to be non-Hispanic white than their WIC counterparts and less likely to be non-Hispanic black or Hispanic (any race). Medicaid, non-WIC participants were also more likely to live in urban areas, be married, aged >=25 years, and have had some college education. There was significant difference between Medicaid, WIC participants and Medicaid, non-WIC participants in the prevalence of low birthweight (8.2% vs. 10.8%) or preterm delivery (9.4% vs. 12.6%).

Conclusions:
Identifying characteristics and location of women who are Medicaid participants but who do not participate in WIC during pregnancy can highlight gaps in Kansas WIC services.

Public Health Implications:
State and local WIC programs in Kansas will have opportunities to collaborate with Medicaid, address gaps, and prioritize and develop an outreach campaign targeted where enrollment of WIC-eligible women is lowest.

For more information or questions, please contact Jamie Kim at jkim@kdheks.gov, Patrice Thomsen at pthomsen@kdheks.gov, or KDHE's Bureau of Family Health, Nutrition and WIC Services.

Profile of Children with Special Health Care Needs
The Kansas Mega Report

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A. Kansas' Children with Special Health Care Needs Population

Prevalence of CSHCN

According to the 2011/12 National Survey of Children's Health, the prevalence of Children with Special Health Care Needs (CSHCN) in Kansas (19.4%) was similar to the overall US population (19.8%). In Kansas, 29.7% of households had one or more CSHCN children, according to the 2009/10 NS-CSHCN. When stratified by age, the birth-to-age-5 group, had prevalence just above 10% (10.2%), the group of 6 to 11 years old had a prevalence of 23.9%, and the group of CSHCN 12 to 17 years old had the highest prevalence of 24.3% in Kansas. Gender distribution revealed CSHCN who are boys had a prevalence of 22.5% while girls had a prevalence of 16.1%. The income distribution reveals the prevalence in the 0 to 99% federal poverty level (FPL) was 26.4%, 13.9% in the 100 to 199% FPL group, 20.5% and 17.9% in the 200 to 399% and the 400% or greater groups respectively. The prevalence of CSHCN non-Hispanic blacks was 19.6%, followed by non-Hispanic whites with 22.3%. The lowest rate was seen in Hispanics where 15.2% of children were CSHCN.

B. Health and Functional Status

Screening Criteria for Special Needs Qualifiers

The screening criteria are not mutually exclusive and CSHCN may screen positive for multiple screening criteria. In Kansas, 82.8% of CSHCN screen positive for elevated use of prescription medication, 41.0% for elevated service use, 20.2% for functional limitations, 15.4% for their use of specialized therapies and 28.2% for ongoing emotional, developmental or behavioral conditions. The special needs qualifiers are mutually exclusive. Almost half of CSHCN qualified on prescription medication only (45.4%), almost a quarter qualified on both prescription medication and service use (24.3%) and another 19.7% qualified on functional limitation with or without prescription medication or service use. The qualifier with the lowest prevalence was for service use only which qualified 10.7% of CSHCN.

C. Core System Outcomes

Core Outcome #1: Partners in decision-making

Overall, almost 73% of CSHCN's caregivers felt they were included in shared decision-making for the child's optimal health. However that left over a quarter (27.4%) of parents feeling as if they were not adequately considered in the decision-making process for their child's health care.

Core Outcome #2: Medical Home

Approximately 46% of CSHCN in Kansas did not achieve the medical home outcome. Over 8% of CSHCN did not have a usual source of care and 7% did not have a personal doctor. Over 30% did not receive adequate help with care coordination, and 4.1% experienced big or small problems getting needed referrals. Over 30% of CSHCN and their families or caretakers did not receive family-centered care.

Core Outcome #3: Health Insurance Coverage

Kansas' CSHCN were largely insured privately, with 64.2% having only private insurance and 6.2% having both private and public insurance. A quarter of CSHCN were publicly insured (25.1%) and dually insured (6.2%). The remaining 4.6% of Kansan CSHCN were reported as uninsured. This means that overall, 95.4% of CSHCN are covered under some form of insurance.

Core Outcome #4: Developmental Screening for Children Under 5 Years of Age

In Kansas, 54.8% of children received developmental screening for children under 5 years old. The Kansas rates are higher, though comparable to the nationwide proportion of 49% of the nationwide CSHCN under 5 years old who received developmental screening.

Core Outcome #5: Ease of Access to Services

Overall, 66.8% of the families CSHCN met outcome #5 and felt an ease in accessing services. This leaves a third (33.2%) of families of CSHCN who experienced barriers to accessing services. Additionally, while 92.8% reported never or sometimes feeling frustration, the remaining 7.2%, or over 11,500 families, reported feeling usually if not always frustrated in trying to access services for CSHCN.

Core Outcome #6: Transition to Adulthood

Overall, only 52.7% achieved this outcome, while the remaining 47.3% CSHCN did not receive the necessary anticipatory guidance. Over 46% of CSHCN's doctors do not discuss a shift to adult providers, almost 40% of CSHCN's doctors do not discuss changing needs of becoming an adult and over 57% of CSHCN's doctors do not discuss continuity of insurance coverage when becoming an adult.

D. Impact on Families

Costs & consequences

In Kansas, almost 29% of families of CSHCN paid over $1000 and 36.7% paid under $250 per year in out-of-pocket costs. Just over 20% paid between $250 and $500 and 13.8% paid between $501 and $1000 per year. Over a quarter (26.3%) of the families of CSHCN in Kansas reported experiencing financial problems due to the child's health needs.

Time Spent Providing Care

Less than half (42.7%) of families of CSHCN reported spending less than an hour a week providing or coordinating health and medical care for CSHCN. Another 36.8% spent between 1 and 4 hours a week and almost 10% spent between 5 and 10 hours a week. This leaves over 10% who spent over 10 hours a week providing medical care to CSHCN. Relative to the nation, Kansas had smaller shares that spent over 5 hours with 9.7% spending 5 to 10 and 10.8% spending over 11 hours a week providing or coordinating health care.

Impact on Employment

In Kansas, 23% of CSHCN families reported their child's special needs condition had affected their employment, resulting in working fewer hours or stopping work altogether.

For more information or questions, please contact Jamie Kim at jkim@kdheks.gov or KDHE's Bureau of Family Health, Special Health Services.

Demonstrating the Value of MCH Programs: Lessons Learned from the Association of Maternal & Child Health Programs' Return on Investment Analytic Action Learning Collaborative

Krista Granger, MPH[1], Kayzy Bigler, BA[2], Donna Yadrich, MS[3], and Jamie Kim, MPH[2]
[1]Association of Maternal & Child Health Programs
[2]Kansas Department of Health and Environment
[3]Principal Patient-Centered Care Advocate, xamtee™ Therapeutic Garments by AudreySpirit, LLC

Issue: As budgets tighten at every level of public health service provision, demonstrating monetary returns on prevention activities in addition to impact on health outcomes has increased in importance. Among MCH programs and their partners, there has been a growing demand for technical assistance to calculate return on investment (ROI) for public health prevention activities.

The Kansas Special Health Care Needs (KS-SHCN) Program aims to provide quality, safe, and convenient seating services to KS-SHCN families. Kansas is a state with a large rural and frontier population, so providing outreach seating clinics in rural and frontier communities reaches more individuals than the static seating clinic, where families must travel long distances to receive services. Calculating the ROI to families and program payers of the KS-SHCN Program is an important factor for sustainability and advocacy to partners, communities, and funders.

Setting: AMCHP requested letters of intent for state or community teams to participate in an 8 month return on investment analytic action learning collaborative (ROI Analytic ALC). Four teams were selected to participate (Kansas, Michigan, Wyoming and New Mexico) with the expected outcome of completing an ROI analysis and creating a communications product of their proposed MCH program.

Project: From August, 2014 through February, 2015, teams participated in 5 monthly learning events, 5 check-in calls, at least 1 expert consultation call, and had access to a group webpage for resource sharing. Each monthly learning event focused on an ROI topic relevant to the stage in which participants were moving through to develop and complete their analysis. New content experts presented during each monthly learning event to provide variety of information, examples, and useful resources.

Accomplishments/Results: Each team created a communications product to meet their needs for program advocacy, justification for continued funding, or knowledge sharing with partners, colleagues, and the MCH community. Communications products include information on how to define and conduct an ROI analysis, background information on the MCH program being analyzed, challenges and lessons learned throughout the process, and/or final analysis results.

Kansas created a survey for families receiving outreach seating clinic services to collect data on travel costs, productivity loss, and satisfaction. By utilizing strategies learned and guidance from content experts, Kansas completed their analysis and found a positive ROI to families and program payers for the outreach seating clinics.

Barriers: Teams identified and addressed a range of concerns, including the condensed timeframe, competing staff priorities, access to data, and unexpected approval processes. Strategies for engagement will be shared to illustrate the support teams received in addressing these barriers.

Lessons Learned: Teams valued the structured format of participation in the ROI Analytic ALC to keep them on track and accountable for progress. Teams also benefited from the inclusion of program stakeholders, like Medicaid representatives or family delegates, on their teams to provide insight from unique perspectives.

Information for Replication: Necessary components for replication include dedicated staff for coordination of ROI Analytic ALC activities, partnerships with health economists and other ROI content experts, and time commitments from participating teams.

For more information or questions, please contact Kayzy Bigler at kbigler@kdheks.gov or KDHE's Bureau of Family Health, Special Health Services.

The Effect of Having a Medical Home and Reported Family Financial Burden Among Children with Special Health Care Needs Kansas, 2009-2010

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Background: One in four households in the United States include ≥1 children with special health-care needs (CSHCN); 23% of CSHCN live in families who reported financial burden (FB) meeting the child's healthcare needs. Prior studies demonstrated reduced FB association with receiving care within a MH. The relationship between these factors among CSHCN in Kansas has not been explored; therefore, we assessed the association between having a MH and reported FB.

Methods: Kansas data (n = 787 CSHCN; parent-reported telephone survey) from the 2009/10 National Survey of CSHCN were analyzed. Factors associated with reported FB (dichotomous variable Yes/No) included: healthcare through a MH (19-item composite measure) and covariates [e.g. child's age, sex, functional limitations, family structure, household education level, federal poverty level (FPL), insurance type, and access to healthcare] were assessed using weighted logistic regression.

Results: Overall, 49.4% CSHCN had received healthcare through a MH; 26.3% CSHCN lived in families that reported FB. Lack of a MH was associated with increased FB (adjusted odds ratio [aOR]: 1.84; 95% confidence interval [CI]: 1.08–3.17). Higher FB was reported among CSHCN living in families ≤200% FPL versus >400% FPL (aOR: 2.64: 95% CI: 1.21–5.75) and those having barriers accessing healthcare (aOR: 2.82: 95% CI: 1.64–4.84). CSHCN with none versus ≥3 functional difficulties (aOR: 0.06: 95% CI: 0.02–0.21), daily activities unaffected versus moderately/consistently affected (aOR: 0.49: 95% CI: 0.27–0.91), and with either public or private insurance versus uninsured (aOR: 0.28: 95% CI: 0.10–0.76) lived in families reporting less FB.

Conclusions: MH absence was associated with increased family FB among Kansas CSHCN. Our findings provide information to policymakers about provision of healthcare via MH.

For more information or questions, please contact Jamie Kim at jkim@kdheks.gov or KDHE's Bureau of Epidemiology and Public Health Informatics.

Stillbirths and Infant Deaths
Kansas, 2013

Reilly Reis, MS, Carol Moyer, MPH, RN, and Greg Crawford, BA
Bureau of Epidemiology and Public Health Informatics

Infant mortality is an important indicator of community health. It is associated with a variety of factors such as economic development, general living conditions, social wellbeing where basic needs are met, rates of illness such as diabetes and hypertension, and quality of the environment. This report builds on information in the Annual Summary of Vital Statistics, 2013 providing a long-term assessment of progress on infant mortality. The report uses five-year average infant mortality to evaluate trends.

In the last century, the Kansas single year infant mortality rate (IMR) has decreased dramatically, from 73.5 deaths per 1,000 live births in 1912 (2,795 infant deaths) to 6.4 in 2013 (248).

- The single-year Kansas IMR increased slightly from 2012 (6.3 deaths per 1,000 live births) to 6.4 in 2013. The Kansas rate exceeds the Healthy People 2020 (HP2020) objective of 6.0 deaths per 1,000 live births. The non-Hispanic white population IMR (4.9) met the HP2020 target. The Hispanic (7.2) and non-Hispanic black (15.3) rates did not.
- The non-Hispanic black infant mortality rate has remained more than twice that of the non-Hispanic white rate for most of the last 20 years.
- During 2009-2013, most Kansas resident infant deaths occurred soon after birth. Almost two-thirds (65.2% or 842 deaths) happened in the neonatal time period (less than 28 days).
- The leading cause of infant mortality was congenital anomalies (23.8%), followed by prematurity or low birth weight (19.4%), sudden unexplained infant death (SUID) causes (17.3%), and maternal factors and complications (10.5%).
- Perinatal deaths include stillbirths and hebdomadal deaths (less than seven days). Complications of placenta, umbilical cord, and membrane was the leading cause of stillbirths; Prematurity or low birthweight was the leading cause for hebdomadal deaths.
- The 2009-2013 premature infant mortality rate of 43.5 per 1,000 live births was over 20 times higher than the rate for infants born at term (2.1). The IMR for very premature infants was 195.7 deaths per 1,000 live births, approximately 93 times as high as than infants born at term.

The *Selected Special Statistics Stillbirths and Infant Deaths Kansas, 2013* summarizes vital records data on stillbirths and infant deaths. This report can be found at http://www.kdheks.gov/hci/IMR/2013_IMR_REPORT.pdf. For more information or questions, please contact Greg Crawford at gcrawford@kdheks.gov or KDHE's Bureau of Epidemiology and Public Health Informatics.

Adequacy of Prenatal Care Utilization Index
Kansas, 2013

Cathryn Savage, PhD, Greg Crawford, BA, and David Oakley, MA
Bureau of Epidemiology and Public Health Informatics

Improving family health is an essential role for public health agencies. Tracking the quantity of prenatal care pregnant women receive through the Adequacy of Prenatal Care Utilization (APNCU) Index enables public health agencies to identify inequities in the provision of care. Using birth certificate information, the Kansas Department of Health and Environment (KDHE) calculates the APNCU using methods developed by Dr. Milton Kotelchuck. In 2013, prenatal care defined as inadequate decreased by 2.6% compared to 2012, while adequate care stayed the same. Currently, Kansas' level of adequate care (81.9%) is better than the Healthy People 2020 target of 77.6%; inequities by population group and pay source continue.

To view the full report, please visit http://www.kdheks.gov/hci/pdf/APNCU_13.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, 2013

Cathryn Savage, PhD, David Oakley, MA, and Greg Crawford, BA
Bureau of Epidemiology and Public Health Informatics

Maintaining and improving family health is an essential component of the state's public health mission. Teen pregnancy accounts for a sizable burden on society. According to the Centers for Disease Control and Prevention (CDC), it is a "winnable battle." The Kansas Department of Health and Environment (KDHE) prepares this report annually to provide data to support assessment and evaluation of teen pregnancies in Kansas. KDHE has a number of programs directed at reducing teen pregnancy.

Pregnancy rates among Kansas resident females aged 10-19 dropped by 13.2% from 2012 to 2013. Rates among females aged 10-17, 15-17 and 18-19 as individual age groups also dropped in 2013. The 2013 Kansas pregnancy rate among females 15-17 years of age (14.6 per 1,000 population) compares favorably with the Healthy People 2020 national target of 36.2 pregnancies per 1,000 age group-specific female population. The state pregnancy rate for females aged 18-19 (62.4 per 1,000 population) also compares favorably with the Healthy People 2020 national target of 105.9 pregnancies per 1,000 age group specific female population.

While Kansas had lower teen pregnancy rates than the national targets, the state's birth rate for females aged 15-19 remained higher than the national rate. While teen birth rates for both Kansas and the U.S. have been declining since 2008, the gap between Kansas and the U.S. rate has narrowed. In 2013, the Kansas rate decreased 13.2%, while the preliminary U.S. rate decreased 9.5%.

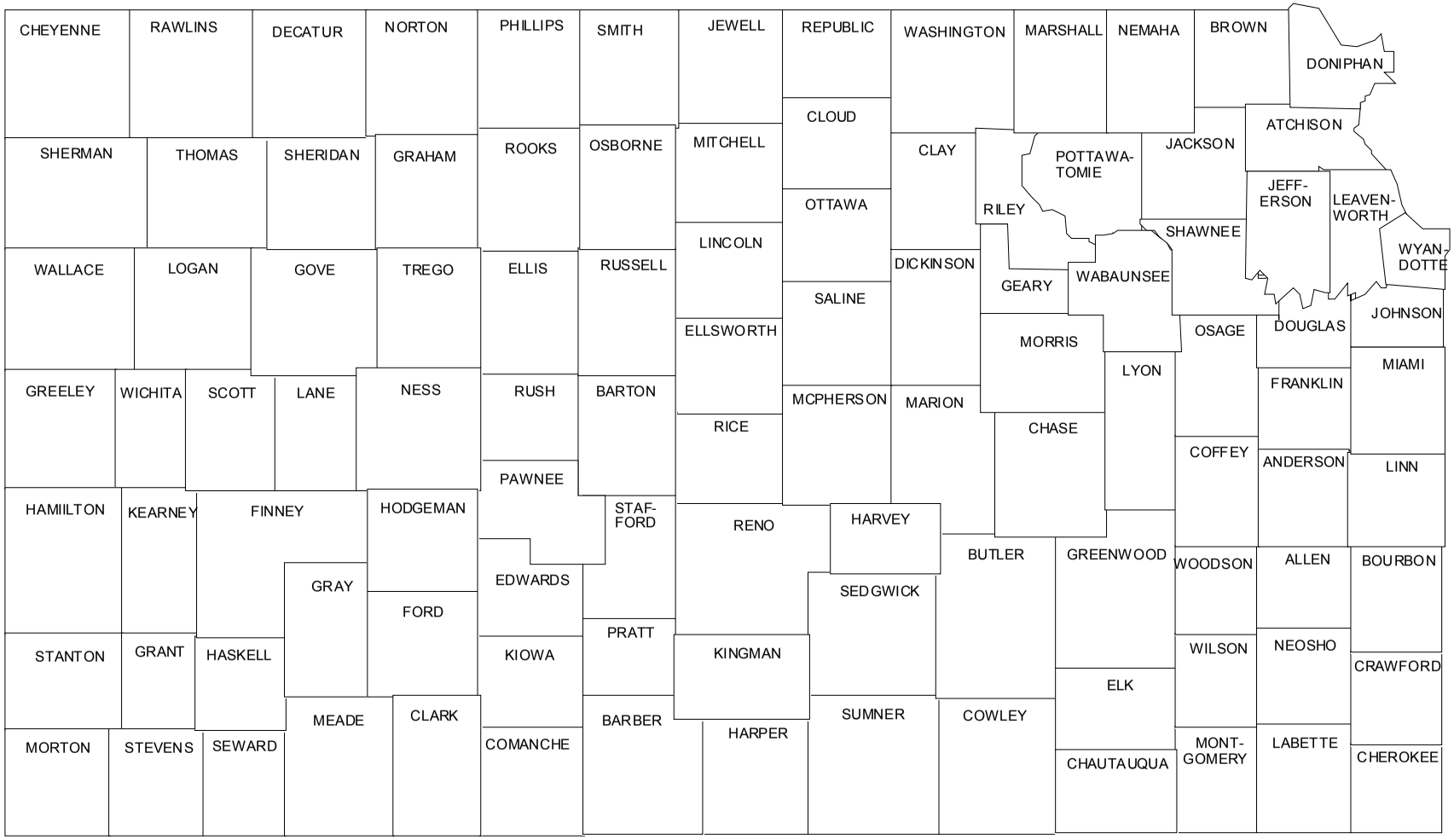
Disparities continue to exist among population groups in Kansas. For example, pregnancy rates examined in 2012 and 2013, showed non-Hispanic black and Hispanic teens between the ages of 10-17 years were slightly less than two and three times higher, respectively, than the rate for White non-Hispanics of the same age group in 2012. In 2013, Hispanic and non-Hispanic black pregnancy rates among 10-17 year olds decreased 9.4% and 24.5%, respectively, from 2012 to 2013, while the comparable non-Hispanic white rate decreased 17.0 percent during that time period. Inequities continue to exist among population groups in Kansas. For example, pregnancy rates for non-Hispanic black and Hispanic teens aged 10-17 are three times higher than the rate for White non-Hispanics of the same age group.

To view the full report, please visit http://www.kdheks.gov/hci/adol_teen_preg/Adolescent_Teenage_Pregnancy_13.pdf. For more information or questions, please contact Greg Crawford at gcrawford@kdheks.gov or KDHE's Bureau of Epidemiology and Public Health Informatics.

SECTION VI

APPENDICES

Map of Kansas



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	Chatauqua	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:

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

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

Data weighting is an important statistical process that attempts to remove bias in the sample. 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 are 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 non-Hispanic white, non-Hispanic black, non-Hispanic Native American, non-Hispanic Asian/Pacific Islander, and non-Hispanic other. If more than one racial category is checked, the person's race is classified as "Multiple" and is collapsed into the non-Hispanic other 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/hci/AS2013.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" (2010): "Black or African American" refers to a person having origins in any of the Black racial groups of Africa. It includes people who indicated their race(s) as "Black, African Am., or Negro" or reported entries such as African 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 (2010): "American Indian or Alaska Native" refers to a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. This category includes people who indicated their race(s) as "American Indian or Alaska Native" or reported their enrolled or principal tribe, such as Navajo, Blackfeet, Inupiat, Yup'ik, or Central American Indian groups or South American Indian groups.

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 (2010): "Asian" refers to 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 people who indicated their race(s) as "Asian" or reported entries such as "Asian Indian," "Chinese," "Filipino," "Korean," "Japanese," "Vietnamese," and "Other Asian" or provided other detailed Asian responses.

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 and 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 quality, 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 2020: Healthy People (HP) provides science-based, 10-year national objectives for improving the health of all Americans. HP2020 is the most recent agenda for improving the nation's health. They establish benchmarks and help monitor progress to encourage between-sector collaboration, help individuals make informed health decisions and measure the impact of prevention activities.

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

Hispanic/"Hispanic or Latino" (2010): "Hispanic or Latino" refers to a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

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

Maternal death: Deaths attributable to delivery or the complications of pregnancy, childbirth or the immediate time period following childbirth.

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 (2010): In the 2010 Census, just over one-third of the U.S. population reported their race and ethnicity as something other than non-Hispanic White alone. This group, referred to as the "minority" population for this report.

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" (2010): "Some Other Race" 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 reporting entries such as multiracial, mixed, interracial, or a Hispanic or Latino group (for example, Mexican, Puerto Rican, Cuban, or Spanish) in response to the race question are included in this category.

Pacific Islander/"Native Hawaiian or Other Pacific Islander" (2010): "Native Hawaiian or Other Pacific Islander" refers to a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicated their race(s) as "Pacific Islander" or reported entries such as "Native Hawaiian," "Guamanian or Chamorro," "Samoan," and "Other Pacific Islander" or provided other detailed Pacific Islander responses.

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 (2010): The OMB definitions of the race categories used in the 2010 Census. Starting in 1997, OMB required federal agencies to use a minimum of five race categories: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. For respondents unable to identify with any of these five race categories, OMB approved the Census Bureau's inclusion of a sixth category—Some Other Race—on the Census 2000 and 2010 Census questionnaires.

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 (2010): "White" refers to a person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicated their race(s) as "White" or reported entries such as Irish, German, Italian, Lebanese, Arab, Moroccan, or Caucasian.

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