Kansas

Selected Birth Outcome Findings from the Revised Birth Certificate 2005, Kansas

Research Summary

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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans. Through education, direct services, and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent illness, injuries and foster a safe and sustainable environment for the people of Kansas.

Abstract

Kansas adopted a new birth certificate form and implemented a new on-line electronic reporting system effective in 2005. The new certificate resulted in a number of changes to existing data items and the addition of new questions. Data on selected characteristics were analyzed to assess data quality and comparability issues.

Selected descriptive tabulations of data reported on the 2005 Kansas birth certificates for all in-state occurrence births are presented.

During 2005, there were 40,567 Kansas occurrence births using the new birth certificate. Almost one of every five births (18.3%) occurred to women of non-white race. The primary language spoken by birth mothers was non-English in over one in 10 (10.3%) births. The percentage of women smoking during the pregnancy declined from 16.1% in the first trimester of the pregnancy to 14.1% in the third trimester. Changes to the method of calculating the month prenatal care began affected the numbers and rates for trimester care began and Adequacy of Prenatal Care Utilization (APNCU). Resulting rates are not comparable with previous data years. Almost one in three birth mothers (31.7%) obtained WIC food for herself during the pregnancy. Medicaid was reported as the principal payment source for delivery for over one out of four births (27.3%)

Introduction

This is the first report to present selected maternal and infant health information exclusive to the revision of the Kansas birth certificate. The report addresses selected new birth certificate fields in order to recognize data quality and completeness issues, as well as to identify data comparability concerns between the old and new birth certificates.

The revision was an important opportunity to improve the content and quality of birth certificate information in Kansas.[1] In 2005, the Kansas Department of Health and Environment (KDHE) implemented the new certificate as part of a series of new certificates for all vital events. The certificates for birth and death were based on the 2003 U.S. standard certificates developed by the National Center for Health Statistics (NCHS) in collaboration with the registrars from the 57 vital statistics jurisdictions, health care and medical professionals, and public health researchers in the country.[2] Implementation of the new certificates coincided with KDHE's implementation of an enhanced electronic, on-line birth certificate data collection, Vital Statistics Integrated Information System (VSIIS).

Beginning with the 2005 data year, KDHE received birth certificate data in the new format. As a result a number of data elements were collected differently than in previous years. A number of new data elements were also collected and a number of changes were implemented in the medical portion of the certificate. Additionally, KDHE adopted NCHS methodology for calculating the month prenatal care began. The new method involved subtracting the date of last menses from the date of the mother's first

prenatal care visit. This compares to the old method in which the month care began was arbitrarily assigned by the provider submitting the birth record.

This report provides an overview of selected birth certificate information from Kansas occurrence births during 2005. The objective of this research is to identify quality and completeness issues, establish baseline data for future comparisons and review the comparability of selected statistics of the new data collection with that of legacy data collected before 2005.

Methods

Data presented in this report are from live birth certificates for 2005 for women who gave birth in Kansas. Live birth certificates were processed by the Office of Vital Statistics in the Division of Health's Center for Health and Environmental Statistics. Because many other state vital statistics jurisdictions have not yet adopted these changes, interstate exchange is not yet possible for the new data elements. Thus, this report reviews only Kansas occurrence births. Comparison of these findings (i.e., frequencies, percents) with reports based on Kansas resident births is not possible.

The race data are presented unmodified by either KDHE or NCHS. Persons for which a single race is selected and no other specified race is selected are coded to a single race category. Persons for whom two or more races are selected are coded as multiple-race.

Persons who selected one or more categories of Hispanic Origin were coded as Hispanic. Those who selected not-Hispanic were coded as not-Hispanic. If no selection occurred, Hispanic origin was coded as unknown. Since the report's purpose is to explore data quality/completeness, the "population group" method of reporting race and Hispanic origin, as implemented in the *2006 Annual Summary of Vital Statistics*, is not used in this report.

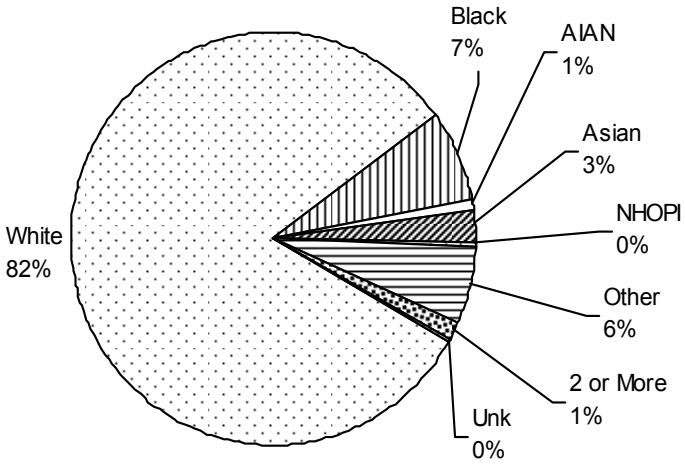
Many of the tables presented are consistent with a format developed and used by the National Association of Public Health Statistics and Information Systems (NAPHSIS) for comparison of data among states that have adopted the 2003 standard certificate. Detailed tables begin on page 13.

For purposes of this report, counts for the number of unknowns are included in the denominators when calculating percentage rates. The reason for reporting unknowns is to show the extent of missing data. Findings are based on responses to shaded portions of the new birth certificate (Appendix 1).

Results

In 2005, 40,567 Kansas occurrence births were reported on the new certificate. Of that figure, 98.3% of the births occurred to women who selected only one race (Table 1). Just over one percent (1.4%) selected two or more races (Figure 1). Over eight out of ten births (84.5%) occurred to women who were non-Hispanic (Table 1). Women of Hispanic origin accounted for 15.1% of the births.

Figure 1. Occurrence Births by Mother's Race, 2005, Kansas



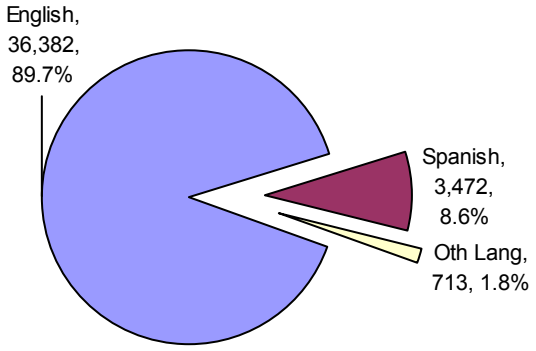
Of the 6,128 women of Hispanic origin, almost two out of five (37.6%) selected "other race" as their race. Legacy race data collection coded persons of Hispanic origin to the white race. No recoding is performed in the new data. Thus, counts for white births through 2004 are not compatible with totals from 2005 forward.

Just over one in 10 births (10.4%) involved a mother whose primary language was not English (Figure 2, Table 2). Of the 4,184 non-English speaking women, Spanish was the primary language for 83.0%.

Prenatal Care

Almost one percent of the births (0.8%) received no prenatal care during the pregnancy (Table 3). Of the 40,223 births for which prenatal care was selected on the birth certificate, 4.3% did not provide sufficient information for the date of first prenatal care visit in order to calculate month prenatal care began. It was also impossible to calculate the adequacy of prenatal care utilization index (APNCU) for these births. The date of last prenatal care visit was incomplete in 11.2% of the birth certificates in which prenatal care was indicated.

Figure 2. Occurrence Births by Primary Language Spoken in Home, 2005, Kansas



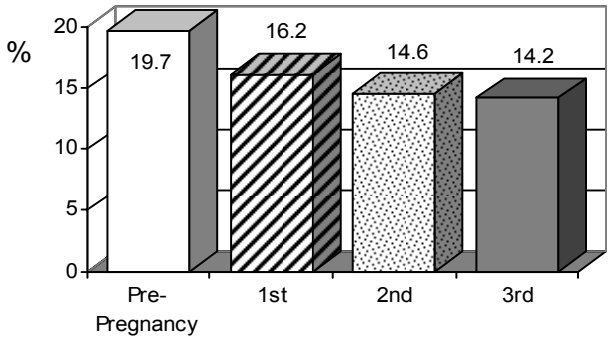
Infertility Treatment

A little over one percent (1.2%) of the births involved a pregnancy that resulted from infertility treatment (Table 4). Of the 498 births, 39.0% involved the use of fertility-enhancing drugs, artificial insemination or intrauterine insemination. Assisted reproductive technology (e.g. in vitro fertilization and gamete intrafallopian transfer) was involved in 58.2% of the births.

Smoking

The number of women who smoked before or during the pregnancy ranged from a high of 7,960 in the three months before the pregnancy to 5,733 during the third trimester of the pregnancy (Table 5). During the three trimesters of the pregnancy, the number of women who reported smoking decreased by 12.2%. Smoking information was unavailable for 0.5% (223) of the 40,567 births. The percent of women smoking during the pregnancy ranged from 16.1% in the first trimester; 14.6%, second trimester; to 14.1 percent, third trimester (Figure 3).

Figure 3. Smoking Rates among Women Giving Birth in Kansas by Pre-pregnancy and Pregnancy Trimester, 2005



Infections

Chlamydia was the infection most frequently treated or present during the pregnancy. There were 615 births (1.5%) reported involving Chlamydia (Table 6). Gonorrhea followed by Hepatitis B and Hepatitis C were the next most frequently reported infections.

Body Mass Index

Following the definitions of the U.S. Centers for Disease Control and Prevention,[3] the pre-pregnancy body mass index (BMI) was characterized as "obese" (BMI ≥ 30) in 21.0% of the births (Table 7). Pre-pregnancy BMI was characterized as "healthy weight" (BMI 18.5 - 24.9) for almost half of the women. BMI was unknown for 1.9% of the births.

Maternal Morbidity

The most frequently reported maternal morbidity characteristic was "third or fourth degree perineal laceration" with 626 births (1.5%) (Table 8). This was followed by "maternal transfusion," 114 births; "unplanned operating room procedure following delivery," 99 births; and "admission to intensive care unit," 51 births.

Delivery Method

Almost three out of 10 births (29.0%) involved a Cesarean section delivery (Table 9). Vaginal/spontaneous delivery was reported in almost 2 out of 3 (65.5%) births. Breech presentation was reported in 3.6% of the births.

Education

In almost one of five births (18.4%), the mother lacked a high school education (Table 10). In less than one percent of the births (0.5%) education was unknown. Almost eight percent (7.8%) of the births involved women with a master's degree or better.

WIC Use

WIC stands for the Special Supplemental Nutrition Program for Women, Infants, and Children and serves participants in which incomes are at or below 185% of the Federal poverty level.

Births in which the mother obtained WIC for herself, totaled 12,869 or 31.7% (Table 11). Almost six percent (5.8%) of the births lacked information on WIC participation.

WIC usage was most frequently associated with women for whom the principal payment for delivery was Medicaid, 7,113 or 17.5% of all births (Table 11). Of the 11,070 births for which Medicaid was the principal payment source, 64.3% involved WIC participation.

Of the 12,869 women who participated in WIC, almost one out of 10 (8.1%) delivered babies in which the birthweight was low (Table 12). Of the women who did not participate in WIC, 6.7% delivered low birthweight babies.

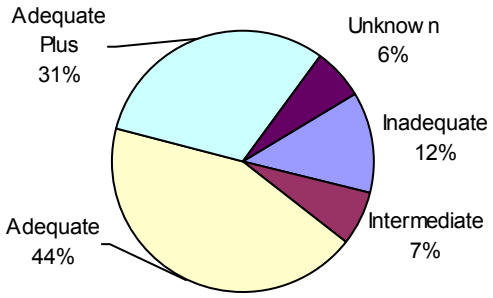
Among 2005 births 71.4% or 28,980 involved an indication that the infant was breastfed at discharge (Table 13). Breastfeeding status at discharge was unknown for almost six percent (5.7%) of births. Almost two out of three women (62.5%) who participated in WIC indicated breastfeeding at discharge, while almost four out of five women (77.2%) who did not participate in WIC indicated breastfeeding at discharge.

WIC participation increased based on the trimester care began for the woman (Table 14). WIC participation among the 29,662 women who began prenatal care in the first trimester was 26.7%. Among the 7,295 women who began prenatal care in the second trimester, WIC participation was 45.9%. WIC participation increased to 49.2% among the 1,311 women who began prenatal care in the third trimester.

Adequacy of Prenatal Care Utilization (APNCU)

Inadequate APNCU among 2005 Kansas occurrence births was 12.3% (Table 15). APNCU could not be calculated for 6.4% of the births (Figure 4). Women with adequate or adequate plus APNCU represented 74.7% of the births. The percentage of intermediate and inadequate APNCU was higher among women who participated in WIC than those who did not (26.3% vs.14.3%).

Figure 4. Adequacy of Prenatal Care Utilization Index for Kansas Occurrence Births, 2005



Pay source and APNCU

Deliveries in which the primary payment source was self-pay had the lowest percentage of low birthweight babies (6.0%) (Table 16). Low birthweight occurred in 6.1% of the deliveries in which private insurance was the primary pay, 6.9% in other pay source and 9.3% in Medicaid pay source.

Over half of the births involved private insurance as the principal source of payment for delivery in 2005 (Table 16). Almost three percent (2.9%) of the births had no pay

source information. Medicaid was the principal source for 27.3% of the births. Almost six percent (5.9%) of the births were listed as self-pay. The pay source for the remainder of the births was “other pay sources” (e.g. CHAMPUS/TRICARE, Indian Health Service).

The highest rate of inadequate and intermediate APNCU was among women for whom the principal pay source for the delivery was self-pay, 36.6% of 2,402 births (Table 17). Women for whom the principal pay source was private insurance had the lowest rate of inadequate and intermediate APNCU, 10.6% of 22,020 births. The rates were 29.1% for births in which Medicaid was the principal pay source and 23.4% in births where “other” was the principal pay source.

Among the 1,655 births in which the mother started prenatal care in the third trimester or received no prenatal care, Medicaid was the principal pay source for delivery in 48.0% of the births (Table 18). Private insurance was the principal pay source for 16.7% of the births in which the mother started prenatal care in the third trimester or received no prenatal care; self-pay, 15.9%; and “other”, 12.0%.

Discussion

This report on the data exclusive to the revised Kansas birth certificate shows the potential for improved analyses of natality among Kansas women. This report begins to scratch the surface on the findings that are now possible. More detailed race and Hispanic origin categories create the potential for more robust comparisons on health disparity. At the same time the responses to these new categories posed a challenge in the reporting of these data. This has resulted in the creation of a race/ethnicity reporting method that avoids recoding data entries while combining race and Hispanic origin categories into a single “population group” category.[4]

Health Disparities

The Department, through the KDHE Center for Health Disparities, has as one of it's missions to promote and improve the health status of racial/ethnic populations in Kansas by advocating for and coordinating access to primary and preventive health services that are effective, efficient and culturally competent.[5] Research has documented the lack of available data regarding disease specific health disparities for racial/ethnic and special needs populations.[6] Limited English proficiency is an emerging area of concern. The U.S. government defines people with limited English proficiency as those who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English. Someone who has limited English proficiency may be highly educated and speak several languages other than English. Federal law requires equal access to all patients in a health care facility, including persons with limited English proficiency.[7] The 2005 birth certificate is the first major data collection tool to seek information on primary language spoken by mothers of newborn infants. It identified over 50 primary languages or dialects spoken among the 40,567 births that occurred in Kansas in 2005. The fact that over 10 percent of the women who gave birth had limited English proficiency warrants further study to identify adverse outcomes that might result from language barriers.

Readers should use caution when comparing race stratifications. Contrary to the bridging approach followed by the National Center for Health Statistics, KDHE does not recode the race of persons who selected "other." The selection of two or more races was not possible for race prior to 2004. These differences make comparison of data from prior to 2005 and from 2005 forward problematic.

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.[8]

Education

One of the changes of the new certificate involved creating new categories to describe the education of the mother and father. The new categories were designed to reduce the bias of the old method of reporting education. The new approach avoids the problem wherein someone received 12 years of elementary or four years of college education but failed to obtain a high school diploma or college degree. While a crude crosswalk between the two approaches was possible, it was deemed impractical because it continued the bias of the old method. Education levels can't be compared between the new and old certificates.

Education has been used as a proxy for socio-economic status (SES). The addition of questions on the birth certificate related to principal pay source for the delivery and whether the mother obtained WIC services for herself will provide additional SES insight. The department has previously linked birth and Medicaid data to compare outcomes. However, principal pay source information will enable a better comparison of outcomes among women with private insurance, Medicaid coverage, and self-pay.

Pay Source

Pay source information based on the birth certificate differs from that reported through the Kansas Hospital Discharge dataset. In 2005 hospital discharge data, Medicaid was the primary pay source for 30.4% of Kansas resident normal newborn deliveries.[9] This compared to 2005 birth certificate data listing Medicaid as the principal pay source for 27.3% of the 40,567 occurrence births. The difference may be due to incomplete pay source information being available to birth clerks who must submit the certificates to the state within five days. Principal pay source may also change as the hospital processes the charges, often after the certificate has been filed.

Impact of Data Collection Changes

In some instances the methodology of collecting or analyzing the data has changed resulting in findings that can't be compared with pre-2005 results. Three data elements addressed in this report are: month care began, adequacy of prenatal care utilization index (APNCU) and smoking.

A new method of computation calls for the month care began to be calculated from the date of last menses (LMP) to the date of first prenatal care visit. Formerly, the department used a "month care began" value entered into the birth record by staff completing the certificate. The NCHS methodology allows for imputing the day if the month and year of last menses is known. While the use of the two dates enables a more precise calculation for month care began, it is impacted by missing or incomplete dates. Without imputation of the day value in the date, the percentage of records with incomplete LMP dates approaches 25%. Efforts are underway to educate hospitals, physicians, and other health care providers on the need for complete dates.

This change had a modest impact on the trimester care began calculation and a larger impact on the APNCU calculation. In 2004, 1.1% of the 39,553 Kansas resident births had unknown APNCU values. Of the 40,567 Kansas occurrence births the rate of unknown APNCU values was 6.4%.

Traditional reporting for APNCU excludes the unknowns from the denominator. Using that method the inadequate APNCU rate for 2005 Kansas resident births was 13.7%.[10] This compared to an inadequate rate of 8.7% for 2004 using the old methodology.[11] The impact of the missing APNCU values on the rates is unknown. Readers are therefore cautioned against using comparisons of month care began, trimester care began, and APNCU rates between 2004 and 2005. Further study is needed to determine whether a reliable comparability ratio can be created to bridge the results between 2004 and 2005.

Data Limitations

Changes to collection or calculation methods, addition of new data, combined with the introduction of VSIIS in Kansas may be partially responsible for the level of "unknown" or not stated responses in the first year of results. It is important to note that 2005 was the first year for implementation of the new certificate and electronic collection process. It is not surprising that data quality may suffer initially as hospitals and health care professionals become familiar with new data items and collection processes. The department has implemented a number of data quality efforts to detect, prevent, and correct inappropriate or incomplete responses. It is also providing training to birth clerks and information to physician's groups to improve data quality and completeness of reporting.

Readers should exercise caution when interpreting results of data on infertility therapies. The completeness of reporting of births resulting from the use of these therapies is difficult to estimate.[12]

Some states have not yet adopted the 2003 standard certificates. Thus, many of the new fields are blank for Kansas women who give birth in other states. Some birth data items for Kansas resident births will likely continue to have a number of unknown

responses until neighboring states where Kansas women give birth adopt the U.S. standard certificate. For Kansas, Missouri's delay in adopting the new certificate is particularly problematic.

Further study is required to adequately determine whether the reliability and validity of birth certificate data have been enhanced. More evaluations are necessary to review other indicators of perinatal activity, such as vaginal births after caesarean section deliveries. This report, however, shows the new certificate has enriched the content of this key public health data source. As birth clerks become more familiar with the new procedures and information required, it is anticipated data quality and completeness will improve.

References

[1] National Center for Health Statistics. Report of the Panel to Evaluate the U.S. Standard Certificates and Reports. National Center for Health Statistics. 2000. Available from: http://www.cdc.gov/nchs/data/dvs/panelsreport_acc.pdf.
[2] 2003 Revisions of the U.S. Standard Certificates of Live Birth and Death and the Fetal Death Report, National Center for Health Statistics. http://origin.cdc.gov/nchs/vital_certs_rev.htm
[3] http://www.cdc.gov/nccdphp/dnpa/obesity/defining.htm
[4] Sommer K, Stanley L. Annual Summary of Vital Statistics, 2006, Topeka, KS: Kansas Department of Health and Environment
[5] Strategic Plan - Building the Infrastructure of the Kansas Center for Health Disparities. Working Draft. 2007. Topeka, KS. Center for Health Disparities, Kansas Department of Health and Environment
[6] Racial and Ethnic Minority Health Disparities in Kansas, A Data and Chart book. Kansas Health Institute. Topeka, KS. 2005. Available at: http://www.khi.org.
[7] The Exchange. Center for Cross Cultural Health. Minnesota. http://www.health-exchange.net/index.html.
[8] CDC. Smoking During Pregnancy United States, 1990--2002 MMWR 53(39);911-915. 2004.
[9] Hospital Discharge Statistics for the State of Kansas, by Diagnosis. Kansas Hospital Association 2005. Accessed through Kansas Information for Communities, http://kic.kdhe.state.ks.us.
[10] Sommer K, Stanley L. Annual Summary of Vital Statistics, 2005, Topeka, KS: Kansas Department of Health and Environment
[11] Sommer K, Stanley L. Annual Summary of Vital Statistics, 2004, Topeka, KS: Kansas Department of Health and Environment
[12] Martin JA, Menacker F. Expanded Health Data from the New Birth Certificate, 2004. National Vital Statiastics Reports; vol 55 no 12. Hyattsville, MD: National Center for Health Statistics, 2007.

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Table 1. Occurrence Births by Mother's Race and Hispanic Origin, 2005, Kansas

TOTAL	40,567
One race	39,892
White	33,025
Black	2,887
AIAN	343
Asian	1,082
NHOPI	48
Other	2,507
Two or more races	570
Unknown	105
NOT HISPANIC OR LATINO	34,267
One race	33,803
White	29,400
Black	2,813
AIAN	307
Asian	1,049
NHOPI	32
Other	202
Two or more races	452
Unknown	12
HISPANIC OR LATINO	6,128
One race	5,943
White	3,522
Black	43
AIAN	31
Asian	27
NHOPI	16
Other	2,304
Two or more races	115
Unknown	70
ORIGIN UNKNOWN	172

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 2. Occurrence Births by Mother's Primary Language Spoken, 2005, Kansas

PRIMARY LANGUAGE	N
English	36,382
Spanish	3,472
Vietnamese	123
German	83
French	16
Russian	11
Ukrainian	1
Mandarin	40
Cantonese	2
Sign Language	5
Other	431
Unknown	1

Table 3. Occurrence Births by Completeness of Prenatal Care Visit Dates, 2005, Kansas[13]

Births With Prenatal Care		40,223
Date Of First Prenatal Care Visit		
Date complete	38,510	
Missing month only	0	
Missing day only	0	
Missing year only	0	
Missing two parts of date	409	
Missing three parts of date	1,304	
Date Of Last Prenatal Care Visit		
Date complete	35,735	
Missing month only	0	
Missing day only	3,569	
Missing year only	0	
Missing two parts of date	58	
Missing three parts of date	861	
No Prenatal Care		344
Total Occurrence Births		40,567

[13] There were 2 records for which PNC= 'N' but a legitimate date was entered in DOFP (date of first prenatal care visit). Those two records have been counted only once, in the NO PRENATAL CARE line.

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 4. Occurrence Births by Fertility Treatment Characteristics, 2005, Kansas

Pregnancy resulted from infertility treatment	
Yes	498
No	40,069
Unknown	0
Fertility-enhancing drugs, AI or IUI	
Yes	194
No	304
Unknown	0
Assisted reproductive technology	
Yes	290
No	208
Unknown	0

Table 5. Occurrence Births by Whether Mother Smoked Before or During Pregnancy, 2005, Kansas

Smoked Three Months Before Pregnancy	
Yes	7,960
No	32,384
Unknown	223
Smoked First Three Months Of Pregnancy	
Yes	6,531
No	33,813
Unknown	223
Smoked Second Three Months Of Pregnancy	
Yes	5,908
No	34,436
Unknown	223
Smoked Third Trimester Of Pregnancy	
Yes	5,733
No	34,611
Unknown	223

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 6. Occurrence Births by Infections Present or Treated during Pregnancy, 2005, Kansas

Gonorrhea	
Yes	157
No	40,410
Unknown	0
Syphilis	
Yes	10
No	40,557
Unknown	0
Chlamydia	
Yes	615
No	39,952
Unknown	0
Hepatitis B	
Yes	86
No	40,481
Unknown	0
Hepatitis C	
Yes	47
No	40,520
Unknown	0
None of the above	
Yes	39,102
No	1,465
Unknown	0

Table 7. Occurrence Births by Mother's Prepregnancy Body Mass Index (BMI), 2005, Kansas [§]

BMI Range	N
<18.5	1,783
18.5-24.9	19,771
25.0-29.9	9,734
30+	8,508
Unknown	771

§ One record with height 1ft. 3 in. and prepregnancy weight 190 lb. was classified as BMI=unknown. Several records for which HFT (height in feet) was 5 and HIN (height in inches) was 99 (meaning unknown or not stated) were recoded at 5 ft. 0 in.

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 8. Occurrence Births by Selected Maternal Morbidity Characteristics, 2005, Kansas

Maternal transfusion	
Yes	114
No	40,453
Unknown	0
Third or fourth degree perineal laceration	
Yes	626
No	39,941
Unknown	0
Ruptured uterus	
Yes	19
No	40,548
Unknown	0
Unplanned hysterectomy	
Yes	16
No	40,551
Unknown	0
Admission to intensive care unit	
Yes	51
No	40,516
Unknown	0
Unplanned operating room procedure following delivery	
Yes	99
No	40,468
Unknown	0
None of the above	
Yes	39,709
No	858
Unknown	0

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 9. Occurrence Births by Method of Delivery Characteristics, 2005, Kansas

Was delivery with forceps attempted but unsuccessful?	
Yes	121
No	40,446
Unknown	0
Was delivery with vacuum extraction attempted but unsuccessful?	
Yes	250
No	40,217
Unknown	0
Fetal presentation at birth	
Cephalic	38,443
Breech	1,456
Other	668
Unknown	0
Final route and method of delivery	
Vaginal/Spontaneous	26,578
Vaginal/Forceps	830
Vaginal/Vacuum	1,395
Cesarean	11,764
If cesarean, was a trial of labor attempted?	
Yes	4,088
No	7,676
Unknown	0

Table 10. Occurrence Births by Mother's Education, 2005, Kansas

Education Level	N
8th grade or less	1,673
9th-12th grade, no diploma	5,806
High school graduate or GED completed	9,967
Some college credit but no degree	8,934
Associate degree	2,705
Bachelor's degree	8,099
Master's degree	2,593
Doctor's degree	583
Unknown	207

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 11. Occurrence Births by Mother's WIC Food Use and Principal Source of Payment for Delivery, 2005, Kansas

WIC Client	Private Insurance	Medicaid	Self-pay	Other	Unknown	Total
Yes	2,347	7,113	1,069	1,794	546	12,869
No	18,936	3,144	952	1,903	400	25,335
Unknown	737	813	381	217	215	2,363
Total	22,020	11,070	2,402	3,914	1,161	40,567

Table 12. Occurrence Births by Mother's WIC Food Use and Infant's Birthweight, 2005, Kansas

WIC Client	Birth Weight Low	Birth Weight Not Low	Birth Weight Unknown	Total
Yes	1,039	11,829	1	12,869
No	1,690	23,645	0	25,335
Unknown	174	2,189	0	2,363
Total	2,903	38,293	1	40,567

Table 13. Occurrence Births by Mother's WIC Food Use and Whether Infant Breastfed at Discharge, 2005, Kansas

WIC Client	Breastfed Yes	Breastfed No	Unknown	Total
Yes	8,038	4,062	769	12,869
No	19,549	4,636	1,150	25,335
Unknown	1,393	583	387	2,363
Total	28,980	9,281	2,306	40,567

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 14. Occurrence Births by Mothers WIC Food Use and Month Prenatal Care Began, 2005, Kansas

Month Care Began	Not WIC Client	WIC Client	WIC Status Unknown	Total
No Care	197	99	48	344
1	2,609	838	124	3,571
2	10,260	3,292	583	14,135
3	7,502	3,786	668	11,956
4	2,086	1,780	306	4,172
5	848	998	187	2,033
6	428	567	95	1,090
7	247	368	67	682
8	167	200	41	408
9	119	77	25	221
Unknown	872	864	219	1,955
Total	25,335	12,869	2,363	40,567

Table 15. Occurrence Births by Mother's WIC Food Use and Adequacy of Prenatal Care Utilization Index, 2005, Kansas *

WIC Client	PNC Adequate +	PNC Adequate	PNC Intermediate	PNC Inadequate	PNC Unknown	Total
Yes	3,463	4,868	989	2,397	1,152	12,869
No	8,694	11,883	1,507	2,118	1,133	25,335
Unknown	575	832	179	466	311	2,363
Total	12,732	17,583	2,675	4,981	2,596	40,567

* There were 2 records for which PNC= 'N' but a legitimate date was entered in DOFP (date of first prenatal care visit). Those two records have been counted only once, in the NO PRENATAL CARE line.

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Table 16. Occurrence Births by Principal Source of Payment for Delivery and Infant's Birthweight, 2005, Kansas

Pay Source	Birth Weight Low	Birth Weight Not Low	Birth Weight Unknown	Total
Priv. Ins.	1,341	20,679	0	22,020
Medicaid	1,031	10,039	0	11,070
Self-pay	144	2,257	1	2,402
Other	270	3,644	0	3,914
Unknown	117	1,044	0	1,161
Total	2,903	37,663	1	40,567

Table 17. Occurrence Births by Principal Source of Payment for Delivery and Adequacy Of Prenatal Care Utilization Index, 2005, Kansas

Pay Source	PNC Adequate +	PNC Adequate	PNC Intermediate	PNC Inadequate	PNC Unknown	Total
Priv. Ins.	8,039	10,871	1,184	1,153	773	22,020
Medicaid	3,257	3,726	879	2,339	869	11,070
Self-pay	386	961	206	673	176	2,402
Other	898	1,803	338	576	299	3,914
Unknown	152	222	68	240	479	1,161
Total	12,732	17,583	2,675	4,981	2,596	40,567

Table 18. Occurrence Births by Principal Source of Payment for Delivery and Month Prenatal Care Began, 2005, Kansas

Month Care Began	Priv. Ins.	Medicaid	Self-pay	Other	Unknown	Total
No Care	40	125	73	38	68	344
1	2,421	655	116	327	52	3,571
2	9,608	2,735	441	1,183	168	14,135
3	6,740	3,187	726	1,136	167	11,956
4	1,623	1,605	359	476	109	4,172
5	554	921	235	252	71	2,033
6	262	540	134	115	39	1,090
7	120	351	98	82	31	682
8	69	217	55	54	13	408
9	48	102	37	24	10	221
Unknown	535	632	128	227	433	1,955
Total	22,020	11,070	2,402	3,914	1,161	40,567

Source: Kansas Department of Health and Environment
Division of Health
Center for Health and Environmental Statistics

Technical Notes/Appendices

Appendix 1. Revised or new sections (shaded) addressed in this report.

38. WHAT IS THE PRIMARY LANGUAGE SPOKEN IN THE HOME? ☐ English ☐ Spanish ☐ Vietnamese ☐ German ☐ French ☐ Russian ☐ Ukrainian ☐ Mandarin ☐ Cantonese ☐ Sign Language ☐ Other *(Specify)* _____

39. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "No" box if the parent is not Spanish, Hispanic, or Latino.)

39a. MOTHER	39b. FATHER
☐ No, not Spanish/ Hispanic/Latina	☐ No, not Spanish/ Hispanic/Latino
☐ Yes, Mexican/Mexican American/Chicana	☐ Yes, Mexican/Mexican American/Chicano
☐ Yes, Puerto Rican	☐ Yes, Puerto Rican
☐ Yes, Cuban	☐ Yes, Cuban
☐ Yes, Central American	☐ Yes, Central American
☐ Yes, South American	☐ Yes, South American
☐ Yes, other Spanish/ Hispanic/Latina	☐ Yes, other Spanish/ Hispanic/Latino
(Specify)_____	(Specify)_____
☐ Unknown	☐ Unknown

40. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)

40a. MOTHER		40b. FATHER	
☐ White	☐ Native Hawaiian	☐ White	☐ Native Hawaiian
☐ Black or African American	☐ Guamanian or Chamorro	☐ Black or African American	☐ Guamanian or Chamorro
☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____	☐ Samoan	☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____	☐ Samoan
	☐ Other Pacific Islander (Specify) _____		☐ Other Pacific Islander (Specify) _____
☐ Asian Indian	☐ Other (Specify) _____	☐ Asian Indian	☐ Other (Specify) _____
☐ Chinese		☐ Chinese	
☐ Filipino		☐ Filipino	
☐ Japanese	☐ Unknown	☐ Japanese	☐ Unknown
☐ Korean		☐ Korean	
☐ Vietnamese		☐ Vietnamese	
☐ Other Asian (Specify) _____		☐ Other Asian (Specify) _____	

41. ANCESTRY - What is the parents' ancestry or ethnic origin?- Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)	42. OCCUPATION AND BUSINESS/INDUSTRY	
	Occupation	Business/Industry (Do not give name of company.)
41a. MOTHER	42a. MOTHER (Most recent)	42c. MOTHER
41b. FATHER	42b. FATHER (Usual)	42d. FATHER

43. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)

43a. MOTHER'S EDUCATION ☐ Unknown
☐ 8th grade or less ☐ 9th - 12th grade; no diploma ☐ High school graduate or GED
☐ Some College credit, but no degree ☐ Associate degree (e.g., AA,AS) ☐ Bachelor's degree (e.g., BA, AB, BS)
☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

43b. FATHER'S EDUCATION ☐ Unknown
☐ 8th grade or less ☐ 9th - 12th grade; no diploma ☐ High school graduate or GED
☐ Some College credit, but no degree ☐ Associate degree (e.g., AA,AS) ☐ Bachelor's degree (e.g., BA, AB, BS)
☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

44. PREVIOUS LIVE BIRTHS (Do not include this child.)		45. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)		46. PRENATAL CARE? ☐ Yes ☐ No	47. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)
44a. Now living Number _____ ☐ None	44b. Now dead Number _____ ☐ None	45a. Before 20 weeks Number _____ ☐ None	45b. 20 weeks & over Number _____ ☐ None	48. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)	49. PRENATAL VISITS-Total Number (If none, enter "0")
44c. DATE OF LAST LIVE BIRTH (Month, Year)		45c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)		50. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)	51. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)

52. PLURALITY-Single, Twin, Triplet, etc. (Specify)	53. IF NOT A SINGLE BIRTH – Born First, Second, Third, etc. (Specify)	54. TOTAL LIVE BIRTHS AT THIS DELIVERY	55. IS INFANT ALIVE AT THE TIME OF THIS REPORT? ☐ Yes ☐ No ☐ Unknown	56. IS INFANT BEING BREAST-FED AT DISCHARGE? ☐ Yes ☐ No ☐ Unknown

57. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? ☐Yes ☐ No ☐ Unknown

For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked. If none, enter "0".

Average number of cigarettes or packs of cigarettes smoked per day:

	No.	No.
Three months before pregnancy:	_____ cigarettes or	_____ packs
First three months of pregnancy:	_____ cigarettes or	_____ packs
Second three months of pregnancy:	_____ cigarettes or	_____ packs
Third Trimester of pregnancy:	_____ cigarettes or	_____ packs

58. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY
☐ Medicaid ☐ Private/Employer Ins. ☐ Self-pay
☐ Indian Health Service ☐ CHAMPUS/TRICARE ☐ Other government
☐ Other (Specify) _____ ☐ Unknown

59. MOTHER'S MEDICAL RECORD NO.	60. NEWBORN'S MEDICAL RECORD NO.

PRENATAL (Birth)	LABOR-DELIVERY/NEWBORN	

63. NUTRITION OF MOTHER

1. Height _____
2. Prepregnancy Weight _____
3. Weight at delivery _____
4. Did mother get WIC food for herself?
   Yes _____ No _____
   Unknown _____

64. MEDICAL RISK FACTORS (Check all that apply.)

1. ☐ Diabetes, prepregnancy
2. ☐ Diabetes, gestational
3. Hypertension
   - ☐ Prepregnancy (Chronic)
   - ☐ Gestational (PIH, preeclampsia)
   - ☐ Eclampsia
4. ☐ Previous preterm birth
5. ☐ Other previous poor pregnancy outcome (SGA, perinatal death, etc.)
6. ☐ Vaginal bleeding during this pregnancy prior to labor
7. ☐ Pregnancy resulted from infertility treatment (If yes, check all that apply.)
   - ☐ Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination
   - ☐ Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))
8. ☐ Mother had a previous cesarean delivery, if yes, how many? Number: _____
9. ☐ Alcohol use
   No. of drinks per week: _____
10. ☐ None of the above

65. METHOD OF DELIVERY

1. Forceps attempted? Yes ____ No____
   Successful Yes _____ No_____
2. Vacuum extraction attempted?
   Yes _____ No_____
   Successful Yes _____ No _____
3. Fetal presentation at delivery
   - ☐ Cephalic
   - ☐ Breech
   - ☐ Other
4. Final route and method of delivery (check one)
   - ☐ Vaginal/spontaneous
   - ☐ Vaginal/forceps
   - ☐ Vaginal/vacuum
   - ☐ Cesarean, if cesarean was a trial of labor attempted?
     Yes _____ No_____

66. OBSTETRICAL PROCEDURES (Check all that apply.)

1. ☐ Cervical cerclage
2. ☐ Tocolysis
3. External cephalic version:
   - ☐ Successful
   - ☐ Failed
4. ☐ None of the above

67. ONSET OF LABOR (Check all that apply.)

1. ☐ Premature Rupture of the Membranes (prolonged, ≥ 12 hours)
2. ☐ Precipitous Labor (< 3 hrs)
3. ☐ Prolonged Labor (≥ 20 hrs)
4. ☐ None of the above

68. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply.)

1. ☐ Induction of labor
2. ☐ Augmentation of labor
3. ☐ Non-vertex presentation
4. ☐ Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery
5. ☐ Antibiotics received by the mother during labor
6. ☐ Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥ 38 C (100.4 F)
7. ☐ Moderate/heavy meconium staining of the amniotic fluid
8. ☐ Fetal intolerance of labor: (examples: in-utero resuscitative measures, further fetal assessment, or operative delivery)
9. ☐ Epidural or spinal anesthesia during labor
10. ☐ None of the above

69. MATERNAL MORBIDITY
(Check all that apply.)
(These are complications associated with labor and delivery.)

1. ☐ Maternal transfusion
2. ☐ Third or fourth degree perineal laceration
3. ☐ Ruptured uterus
4. ☐ Unplanned hysterectomy
5. ☐ Admission to intensive care unit
6. ☐ Unplanned operating room procedure following delivery
7. ☐ None of the above

70. INFECTIONS PRESENT AND/OR TREATED
(During this pregnancy, check all that apply.)

1. ☐ Gonorrhea
2. ☐ Syphilis
3. ☐ Herpes Simplex Virus (HSV)
4. ☐ Chlamydia
5. ☐ Hepatitis B
6. ☐ Hepatitis C
7. ☐ AIDS or HIV antibody
8. ☐ None of the above

71. ABNORMAL CONDITIONS OF NEWBORN (Check all that apply)

1. ☐ Assisted ventilation required immediately following delivery
2. ☐ Assisted ventilation required for more than six hours
3. ☐ NICU admission
4. ☐ Newborn given surfactant replacement therapy
5. ☐ Antibiotics received by the newborn for suspected neonatal sepsis
6. ☐ Seizure or serious neurologic dysfunction
7. ☐ Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention
8. ☐ None of the above

72. VACCINES ADMINISTERED TO NEWBORN

1. ☐ Hepatitis B Date Given: _____
2. ☐ Other* Specify: _____
   Date Given: _____

73. APGAR SCORE

1 min	5 min	10 min

74. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.)

1. ☐ Anencephaly
2. ☐ Meningomyelocele/Spina bifida
3. ☐ Cyanotic congenital heart disease
4. ☐ Congenital diaphragmatic hernia
5. ☐ Omphalocele
6. ☐ Gastroschisis
7. ☐ Limb reduction defect (excluding congenital amputation and dwarfing syndromes)
8. ☐ Cleft Lip with or without Cleft Palate
9. ☐ Cleft Palate alone
10. ☐ Down Syndrome
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
11. ☐ Suspected chromosomal disorder
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
12. ☐ Hypospadias
13. ☐ Fetal alcohol syndrome
14. ☐ Other congenital anomalies *(Specify)* _____
15. ☐ None of the above