



Adequacy of Prenatal Care
Utilization Index
Kansas, 2012

**Research
Summary**

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Our Vision – Healthy Kansans living in safe and sustainable environments

Our Mission – To protect and improve the health and environment of all Kansans

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Executive Summary

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 Index (APNCU) enables public health to identify inequities in the provision of care. Using birth certificate information, the Kansas Department of Health and Environment (KDHE) calculates APNCU using methods developed by Dr. Milton Kotelchuck. In 2012 prenatal care defined as inadequate decreased by 9.3 percent compared to 2011, 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 percent; inequities by population group and pay source continue.

Introduction

Maintaining and improving family health is an essential component of the public health mission of the Kansas Department of Health and Environment. Facilitating healthy pregnancies and positive birth outcomes pays dividends to Kansas society in the form of reduced maternal and infant mortality and children capable of learning and growing into productive members of society. It is in this role the department, through the Division of Public Health’s Bureau of Epidemiology and Public Health Informatics (BEPHI), provides this report in order that progress in the provision of adequate prenatal care can be monitored.

Organized prenatal care began with attempts to prevent fetal abnormalities. Later it was recognized it might also reduce maternal, fetal, and neonatal deaths. Prenatal care is health care one receives when pregnant. It includes maternal checkups and prenatal testing in order to spot health problems early. Early treatment can cure many problems and prevent others. A typical prenatal visit may include any or all of the following elements: weight measurement, blood pressure measurement, measurement of the

uterus to check for proper growth of the fetus, physical examination of the mother to detect problems or discomforts, urine tests to detect diabetes, preeclampsia or edema, fetal heart rate measurement, and various screening tests, such as blood tests to check for anemia. Prenatal care is important because potential problems that endanger the mother or her infant can be identified and treated before delivery or even prevented altogether [1, 2, 3].

Inadequate prenatal care has been associated with pre-term delivery low birth weight and small for gestation infants [4, 5]. It has also been linked with a higher overall net cost per pregnancy for mother and newborn care combined [6].

Adequate prenatal care is one of the national goals in the Healthy People 2020 program: “MICH-10: Increase the proportion of pregnant women who receive early and adequate prenatal care.” The target is that 77.6 percent of pregnant women receive early and adequate prenatal care by the year 2020 [7].

The purpose of this report is to inform policy makers, local health departments, program managers, and the public of the extent to which adequate prenatal care is provided to pregnant women in Kansas, and to indicate disparities in the provision of that care. The BEPHI has published the adequacy of prenatal care utilization index report since 1998.

Methods

KDHE, through the Office of Vital Statistics, receives reports of births that occur in Kansas. Reporting of Kansas vital events to KDHE is mandated by law (K.S.A. 65-102, K.S.A. 65-2422b, K.S.A. 65-445). The filing of birth and death records began in 1911. Births to Kansas residents that occurred in other states are received via Interstate Jurisdictional Exchange. All statistics reported are based on births to women who were Kansas residents.

KDHE collects birth certificate information consistent with the 2003 U.S. Standard Certificate. Data collected since 2005 is based on the standard certificate as modified for use in Kansas. BEPHI uses an 18 month reporting period when creating an analytical file. Thus all births that occur in a given year – reporting during that year or the first six months of the year following – are included in the analytical file. Data used in this report are for 2012 births. The analytical file is considered 99.99 percent complete.

All birth records undergo a two-step quality improvement process. In the Office of Vital Statistics, paper certificates are manually reviewed by staff for missing or illogical information. The Vital Statistics Data Analysis section performs computerized checks of the data on an ongoing basis and once prior to closing the analytical file. Corrections or imputation occurs to geographic information, sex of the child, and mother’s age. See the technical notes in the *2012 Kansas Annual Summary of Vital Statistics* for more information [8].

Statistical tabulations were created using SAS version 9.3 software. One of the tables contained in this report was also included in the *Kansas Annual Summary of Vital Statistics, 2012*. The repetition enhances the utility of this report to readers.

Accurate measurement of prenatal care depends upon the accuracy of the index used. Beginning with 1998 data, KDHE transitioned from a modified Kessner Index to the Adequacy of Prenatal Care Utilization (APNCU) Index, often referred to as the Kotelchuck Index [8]. This index characterizes prenatal care (PNC) utilization on two independent and distinctive dimensions: adequacy of initiation of PNC and adequacy of utilization of received services once PNC has begun. The index uses information readily available on the Kansas birth certificate (number of prenatal care visits, date of first prenatal visit, date of last menses, and gestational length of pregnancy). The APNCU index combines these data to characterize adequacy of pregnancy-related health services provided to a woman between conception and delivery. The APNCU Index categorizes care as inadequate, intermediate, adequate, or adequate plus (for more details see the Technical Notes).

The APNCU Index does not assess the quality of prenatal care that is delivered, only its utilization. Assessing the quality of the services provided would require more information than is provided on the Kansas standard birth certificate.

Results & Discussion

Only selected findings are discussed in this section. Other tables and figures are provided to meet evaluation requirements by county or other characteristics.

Adequacy of prenatal care utilization was calculated on 39,559 out of 40,304 or 98.1 percent of Kansas resident live births in 2012 (Figure 1). The number of births that contained the variables necessary to calculate the prenatal care utilization index increased by 2.9 percent from 2011 (37,773 out of 39,628 or 95.3 percent of live births).

Of the 39,559 Kansas resident births for which prenatal care utilization could be calculated in 2012, 81.9 percent received adequate or better prenatal care, including 31.3 percent with adequate-plus care. This level of adequate or better prenatal care meets the target established by Healthy People 2020 (77.6%). However, approximately eighteen percent (18.1%) received less than adequate prenatal care with 11.7 percent having inadequate care and 6.4 percent intermediate care (Table 1).

In 2012, reported inadequate prenatal care utilization index stayed the same compared to the percentage in 2011. The percentage of adequate care increased by 2.2 percent and adequate-plus care utilizations decreased by 3.1 percent (Table 1).

Among mothers whose prenatal care utilization was classified as inadequate (4,626), the vast majority (4,377 or 94.6%) were due to late initiation of care. Only a minority of women (249 or 5.4%) who initiated their care within the first four months of pregnancy received inadequate care (Figure 1).

Among mothers of infants with low birth weight, 82.8 percent received adequate or better care, while 12.2 percent experienced inadequate care (Table 2).

The proportion of mothers who received adequate or better prenatal care was highest among White non-Hispanics (86.0%), followed by Asian/Pacific Islander non-Hispanics (80.2%) and Other non-Hispanics (73.9%). The population group with the lowest percent was Hispanics with 68.5 percent receiving adequate or better prenatal care (Table 3).

The proportion of mothers reporting inadequate care was highest among Native Americans (21.5%), Hispanics (20.3%), and Black non-Hispanics (18.3%). These rates were more than twice that of White non-Hispanic women, who experienced inadequate care at a rate of 8.9 percent (Table 3).

The payor with the highest proportion of mothers who received adequate or adequate plus prenatal care was private insurance (90.8%) followed by Champus/TRICARE (82.5%). The payor with the highest proportion of mothers with inadequate prenatal care was self pay at 25.2 percent (Table 4). The proportion of mothers with inadequate prenatal care that were self pay decreased 17.6 percent from 2011 (30.6%) to 2012 (25.2%).

Among first births, the percent of mothers with adequate or adequate plus prenatal care (84.3%) was 4.7 percent greater than among second or higher live births (80.5%) (Table 5).

Among first births, the percent of mothers with inadequate prenatal care (9.9%) was 22.0 percent less than among second or higher live births (12.7%) (Table 5).

In age groups between the ages of 15 and 35 and above, the proportion of mothers with inadequate prenatal care among second and higher order live births was greater than among same age mothers of first births (Table 5).

Inadequate care was higher in younger mothers (14-24 years of age) than older mothers, i.e., 25 years and above (Table 6).

About 17.2 percent of infants weighing less than 2500 grams had less than adequate prenatal care including 12.2 percent having inadequate care (Figure 2).

Among selected population groups Hispanics had the highest percentage (19.8%) of mothers receiving inadequate prenatal care followed by Black non-Hispanics (17.9%). Both Hispanics and Black non-Hispanics had twice the percentage of inadequate prenatal care as White non-Hispanics (8.8%) (Figure 3).

Among mothers receiving inadequate prenatal care, 53.7 percent had Medicaid, 16 percent were self paying and 4.7 percent had private insurance (Figure 4).

References

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Detailed Tables, Figures, and Appendix

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1. Certificate of Live Birth

Table 1. Adequacy of Prenatal Care Utilization (APNCU) Index
by County of Residence
Kansas, 2012

County of Residence	Live Births*	APNCU Category †								n.s. ‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Kansas	40,304	12,384	31.3	20,009	50.6	2,540	6.4	4,626	11.7	745
Allen	154	59	38.8	66	43.4	12	7.9	15	9.9	2
Anderson	85	25	29.4	48	56.5	4	4.7	8	9.4	0
Atchison	204	45	22.4	100	49.8	22	10.9	34	16.9	3
Barber	66	18	27.3	36	54.5	1	1.5	11	16.7	0
Barton	401	139	36.3	169	44.1	26	6.8	49	12.8	18
Bourbon	203	103	51.5	60	30.0	4	2.0	33	16.5	3
Brown	136	26	20.5	62	48.8	23	18.1	16	12.6	9
Butler	801	209	26.4	478	60.4	25	3.2	80	10.1	9
Chase	26	11	42.3	8	30.8	3	11.5	4	15.4	0
Chautauqua	40	14	35.0	13	32.5	4	10.0	9	22.5	0
Cherokee	227	57	25.3	94	41.8	33	14.7	41	18.2	2
Cheyenne	26	10	38.5	13	50.0	1	3.8	2	7.7	0
Clark	30	7	24.1	16	55.2	3	10.3	3	10.3	1
Clay	97	40	41.2	40	41.2	6	6.2	11	11.3	0
Cloud	135	41	30.4	76	56.3	5	3.7	13	9.6	0
Coffey	82	20	25.6	45	57.7	4	5.1	9	11.5	4
Comanche	23	1	4.3	14	60.9	1	4.3	7	30.4	0
Cowley	456	171	38.3	187	41.9	8	1.8	80	17.9	10
Crawford	493	141	28.8	196	40.1	80	16.4	72	14.7	4
Decatur	37	13	35.1	15	40.5	8	21.6	1	2.7	0
Dickinson	205	62	30.7	107	53.0	12	5.9	21	10.4	3
Doniphan	85	33	38.8	34	40.0	4	4.7	14	16.5	0
Douglas	1,262	551	44.0	521	41.6	50	4.0	131	10.5	9
Edwards	39	12	32.4	15	40.5	2	5.4	8	21.6	2
Elk	27	10	37.0	13	48.1	1	3.7	3	11.1	0
Ellis	406	86	21.4	249	61.9	37	9.2	30	7.5	4
Ellsworth	67	19	28.8	36	54.5	7	10.6	4	6.1	1
Finney	703	162	23.2	178	25.5	124	17.8	233	33.4	6
Ford	673	228	34.7	246	37.4	67	10.2	116	17.7	16
Franklin	324	106	33.3	164	51.6	10	3.1	38	11.9	6
Geary	1,060	289	27.5	503	47.9	102	9.7	157	14.9	9
Gove	30	3	10.0	18	60.0	8	26.7	1	3.3	0
Graham	29	10	34.5	13	44.8	1	3.4	5	17.2	0
Grant	112	25	22.5	46	41.4	12	10.8	28	25.2	1
Gray	87	28	32.2	37	42.5	9	10.3	13	14.9	0
Greeley	19	3	16.7	3	16.7	4	22.2	8	44.4	1
Greenwood	59	15	25.9	33	56.9	2	3.4	8	13.8	1
Hamilton	41	9	22.5	11	27.5	7	17.5	13	32.5	1
Harper	66	10	15.4	45	69.2	2	3.1	8	12.3	1
Harvey	463	238	51.5	170	36.8	9	1.9	45	9.7	1
Haskell	58	11	19.3	23	40.4	12	21.1	11	19.3	1
Hodgeman	28	10	37.0	17	63.0	0	0.0	0	0.0	1
Jackson	176	51	29.7	87	50.6	8	4.7	26	15.1	4
Jefferson	196	88	45.6	87	45.1	7	3.6	11	5.7	3
Jewell	31	6	19.4	18	58.1	4	12.9	3	9.7	0
Johnson	7,437	2,616	35.9	3,830	52.6	515	7.1	326	4.5	150
Kearny	55	13	23.6	17	30.9	7	12.7	18	32.7	0
Kingman	80	20	25.6	51	65.4	0	0.0	7	9.0	2
Kiowa	32	5	16.7	21	70.0	0	0.0	4	13.3	2
Labette	297	133	45.9	105	36.2	13	4.5	39	13.4	7
Lane	22	9	40.9	9	40.9	2	9.1	2	9.1	0
Leavenworth	966	322	33.5	461	48.0	74	7.7	103	10.7	6
Lincoln	33	6	18.2	25	75.8	1	3.0	1	3.0	0
Linn	97	39	40.6	46	47.9	5	5.2	6	6.3	1
Logan	30	11	36.7	10	33.3	7	23.3	2	6.7	0

Table 1. Adequacy of Prenatal Care Utilization (APNCU) Index
by County of Residence
Kansas, 2012

County of Residence	Live Births*	APNCU Category †								n.s. ‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Lyon	421	187	48.2	115	29.6	16	4.1	70	18.0	33
McPherson	112	50	44.6	49	43.8	3	2.7	10	8.9	0
Marion	124	35	28.2	71	57.3	10	8.1	8	6.5	0
Marshall	366	148	40.4	179	48.9	14	3.8	25	6.8	0
Meade	45	13	29.5	18	40.9	2	4.5	11	25.0	1
Miami	364	123	33.9	204	56.2	23	6.3	13	3.6	1
Mitchell	74	15	20.3	46	62.2	5	6.8	8	10.8	0
Montgomery	502	191	38.6	197	39.8	24	4.8	83	16.8	7
Morris	73	22	30.1	44	60.3	2	2.7	5	6.8	0
Morton	52	11	21.6	30	58.8	2	3.9	8	15.7	1
Nemaha	126	28	23.0	80	65.6	3	2.5	11	9.0	4
Neosho	230	97	42.4	85	37.1	13	5.7	34	14.8	1
Ness	41	9	22.0	20	48.8	6	14.6	6	14.6	0
Norton	53	16	30.2	23	43.4	8	15.1	6	11.3	0
Osage	157	72	48.0	63	42.0	1	0.7	14	9.3	7
Osborne	37	10	27.0	21	56.8	5	13.5	1	2.7	0
Ottawa	68	15	22.1	43	63.2	5	7.4	5	7.4	0
Pawnee	68	24	35.3	32	47.1	4	5.9	8	11.8	0
Phillips	74	13	18.1	37	51.4	10	13.9	12	16.7	2
Pottawatomie	370	124	33.8	196	53.4	10	2.7	37	10.1	3
Pratt	149	30	20.1	86	57.7	5	3.4	28	18.8	0
Rawlins	33	14	42.4	16	48.5	2	6.1	1	3.0	0
Reno	742	263	35.8	332	45.2	37	5.0	102	13.9	8
Republic	48	10	21.3	32	68.1	3	6.4	2	4.3	1
Rice	119	36	30.8	62	53.0	4	3.4	15	12.8	2
Riley	1,177	345	29.5	613	52.3	56	4.8	157	13.4	6
Rooks	62	12	19.4	40	64.5	6	9.7	4	6.5	0
Rush	31	11	39.3	13	46.4	2	7.1	2	7.1	3
Russell	85	18	21.2	54	63.5	5	5.9	8	9.4	0
Saline	766	231	30.4	384	50.6	53	7.0	91	12.0	7
Scott	62	22	35.5	22	35.5	9	14.5	9	14.5	0
Sedgwick	7,889	1,701	21.9	5,022	64.6	192	2.5	858	11.0	116
Seward	462	104	22.6	204	44.3	34	7.4	118	25.7	2
Shawnee	2,431	1,013	44.2	900	39.3	87	3.8	290	12.7	141
Sheridan	26	4	15.4	16	61.5	4	15.4	2	7.7	0
Sherman	82	21	25.9	44	54.3	9	11.1	7	8.6	1
Smith	40	23	57.5	7	17.5	6	15.0	4	10.0	0
Stafford	40	13	32.5	20	50.0	3	7.5	4	10.0	0
Stanton	29	10	35.7	9	32.1	3	10.7	6	21.4	1
Stevens	89	23	26.4	40	46.0	7	8.0	17	19.5	2
Sumner	279	55	20.3	174	64.2	12	4.4	30	11.1	8
Thomas	118	45	38.1	46	39.0	9	7.6	18	15.3	0
Trego	24	4	16.7	12	50.0	3	12.5	5	20.8	0
Wabaunsee	107	35	34.0	48	46.6	7	6.8	13	12.6	4
Wallace	20	3	15.0	8	40.0	5	25.0	4	20.0	0
Washington	68	26	38.2	32	47.1	7	10.3	3	4.4	0
Wichita	31	5	16.1	14	45.2	3	9.7	9	29.0	0
Wilson	123	49	41.5	51	43.2	6	5.1	12	10.2	5
Woodson	28	8	28.6	15	53.6	2	7.1	3	10.7	0
Wyandotte	2,770	658	24.4	1,155	42.8	395	7.8	488	18.1	74
n.s.	0	0	n/a	0	n/a	0	n/a	0	n/a	0

* Total number of live births in 2012.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent (<20).

Source: Bureau of Epidemiology and Public Health Informatics

Kansas Department of Health and Environment

Table 2. Number and Percent of Live Births by Birth Weight by Adequacy of Prenatal Care Utilization (APNCU) Index Kansas, 2012

Birth Weight (Grams)	Live Births*	APNCU Category †								n.s.‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	40,304	12,384	31.3	20,009	50.6	2,540	6.4	4,626	11.7	745
Under 2,500 (Low)	2,888	1,604	58.6	662	24.2	136	5.0	333	12.2	153
2,500-4,499 (Normal)	36,943	10,656	29.3	19,085	52.5	2,370	6.5	4,245	11.7	587
4,500 and Over (High)	470	123	26.4	262	56.2	34	7.3	47	10.1	4
n.s.	3	1	n/a	0	n/a	0	n/a	1	n/a	1

* Total number of live births in 2012.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent (<20).

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 3. Number and Percent of Live Births by Population Groups by Adequacy of Prenatal Care Utilization (APNCU) Index Kansas, 2012

Population Groups	Live Births*	APNCU Category †									
		Adequate Plus		Adequate		Intermediate		Inadequate		n.s.‡	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent		
Total	40,304	12,384	31.3	20,009	50.6	2,540	6.4	4,626	11.7	745	
White Non-Hispanic	28,995	9,507	33.3	15,044	52.7	1,431	5.0	2,549	8.9	464	
Black Non-Hispanic	2,682	759	29.0	1,136	43.4	241	9.2	480	18.3	66	
Native American	0										
Non-Hispanic	196	53	27.7	79	41.4	18	9.4	41	21.5	5	
Asian/Pacific Islander	0										
Non-Hispanic	1,207	338	28.5	614	51.7	79	6.6	157	13.2	19	
Other Non-Hispanic§	916	233	26.5	416	47.4	81	9.2	148	16.9	38	
Hispanic Any Race	6,286	1,491	24.3	2,713	44.2	686	11.2	1,246	20.3	150	
n.s.	22	3	n/a	7	n/a	4	n/a	5	n/a	3	

* Total number of live births in 2012.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

§ Includes multiple races

n/a: Not applicable; the number is too small to calculate percent (<20).

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 4. Number and Percent of Live Births by Selected Payor Groups by Adequacy of Prenatal Care Utilization (APNCU) Index Kansas, 2012.

Pay Source	Live Births*	APNCU Category †										n.s. ‡
		Adequate Plus		Adequate		Intermediate		Inadequate				
		Number	Percent	Number	Percent	Number	Percent	Number	Percent			
Total	40,304	12,384	31.3	20,009	50.6	2,540	6.4	4,626	11.7	745		
Medicaid	13,249	3,895	30.0	5,675	43.7	938	7.2	2,483	19.1	258		
Private Insurance	21,012	7,255	35.1	11,518	55.7	914	4.4	991	4.8	334		
Self Pay	3,053	492	16.7	1,259	42.8	452	15.4	741	25.2	109		
Indian Health Service	25	6	24.0	13	52.0	2	8.0	4	16.0	0		
Champus/Tricare	2,319	591	25.7	1,304	56.8	157	6.8	244	10.6	23		
Other Government	288	74	26.3	121	43.1	27	9.6	59	21.0	7		
Other/Unknown	358	71	20.6	119	34.6	50	14.5	104	30.2	14		

* Total number of live births in 2012.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent (<20).

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 5. Number and Percent of Live Births by Birth Order by Age Group of the Mother by Adequacy of Prenatal Care Utilization (APNCU) Index Kansas, 2012

Birth Order	Live Births*	APNCU Category †												n.s. ‡			
		Adequate Plus			Adequate			Intermediate			Inadequate						
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent				
First Live Births																	
Total	14,959	4,777	32.5	7,614	51.8	844	5.7	1,461	30.6	263							
Age Groups																	
10-14	28	2	n/a	11	n/a	3	n/a	11	n/a	1							
15-19	2,715	720	27.0	1,229	46.1	161	13.1	556	20.9	49							
20-24	4,813	1,491	31.6	2,346	49.7	316	13.5	568	12.0	92							
25-29	4,472	1,503	34.1	2,472	56.1	227	9.2	207	4.7	63							
30-34	2,185	760	35.4	1,196	55.8	111	9.3	77	3.6	41							
35 and Over	746	301	41.3	360	49.4	26	7.2	42	5.8	17							
Second and Higher Order Live Births																	
Total	25,345	7,607	30.6	12,395	49.9	1,696	6.8	3,165	12.7	482							
Age Groups																	
15-19	588	132	23.4	199	35.2	58	10.3	176	31.2	23							
20-24	5,406	1,464	27.6	2,385	45.0	428	8.1	1,019	19.2	110							
25-29	8,259	2,402	29.6	4,200	51.8	523	6.4	990	12.2	144							
30-34	7,307	2,312	32.2	3,808	53.0	431	6.0	632	8.8	124							
35 and Over	3,785	1,297	35.0	1,803	48.7	256	6.9	348	9.4	81							

* Total number of live births in 2012.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent (<20).

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment.

Table 6. Number and Percent of Live Births by Age Group of the Mother by Adequacy of Prenatal Care Utilization (APNCU) Index Kansas, 2012

Age Group	Live Births*	APNCU Category †										n.s. ‡
		Adequate Plus		Adequate		Intermediate		Inadequate		Number	Percent	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent			
Total	40,304	12,384	31.3	20,009	50.6	2,540	6.4	4,626	11.7			745
Age Groups												
10-14	28	2	n/a	11	n/a	3	n/a	11	n/a			1
15-19	3,303	852	26.4	1,428	44.2	219	6.8	732	22.7			72
20-24	10,219	2,955	29.5	4,731	47.2	744	7.4	1,587	15.8			202
25-29	12,731	3,905	31.2	6,672	53.3	750	6.0	1,197	9.6			207
30-34	9,492	3,072	32.9	5,004	53.7	542	5.8	709	7.6			165
35 and Over	4,530	1,598	36.0	2,163	48.8	282	n/a	390	8.8			97
n.s.	2	0	0	0	0	0	0	0	0			1

* Total number of live births in 2012.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent (<20).

Source: Bureau of Epidemiology and Public Health Informatics

Kansas Department of Health and Environment.

Figure 1. Number of Live Births by Adequacy of Prenatal Care Utilization (APNCU) among Kansas Residents*, 2012

		Adequacy of Received Services				Total
		Under 50%	50 – 79%	80 – 109%	110+%	
Adequacy of Care Initiation	7 – 9 Month	1,562	0	0	0	1,562
	5 – 6 Month	2,815	0	0	0	2,815
	3 – 4 Month	157	1,358	10,967	8,279	20,761
	1 – 2 Month	92	1,182	9,042	4,105	14,421
Total		4,626	2,540	20,009	12,384	39,559

Summary Index
 Inadequate
 Intermediate
 Adequate
 Adequate Plus

* Includes 98.2 percent (39,559) of 40,304 total Kansas resident births for which the number of prenatal visits, date of first prenatal visit, and the date of last menses were reported on the birth certificate.

Figure 2. Percent of Adequacy of Prenatal Care Utilization (APNCU) by Birth Weight, Kansas, 2012

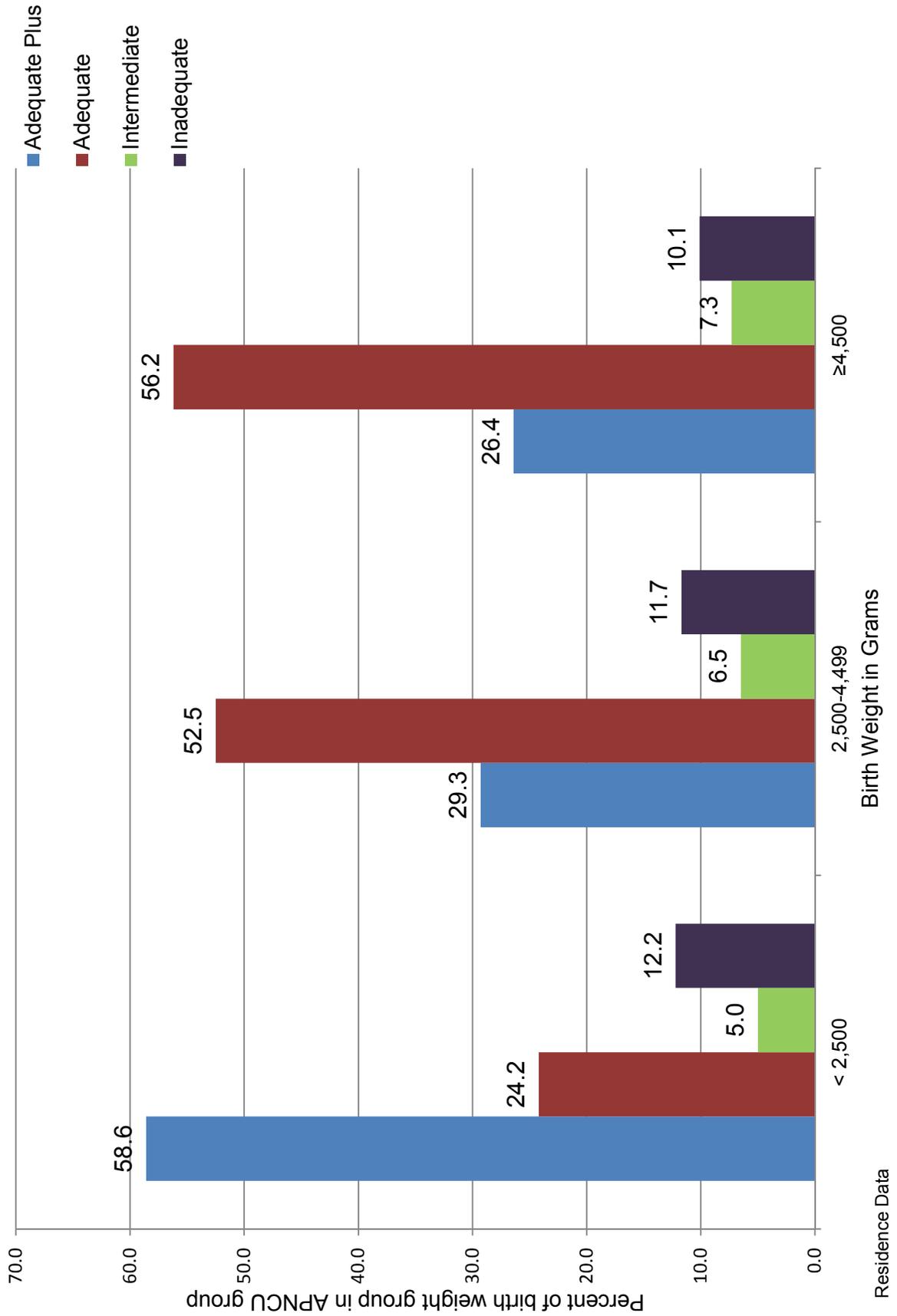


Figure 3. Percent of Adequacy of Prenatal Care Utilization (APNCU) by Population Group, Kansas, 2012

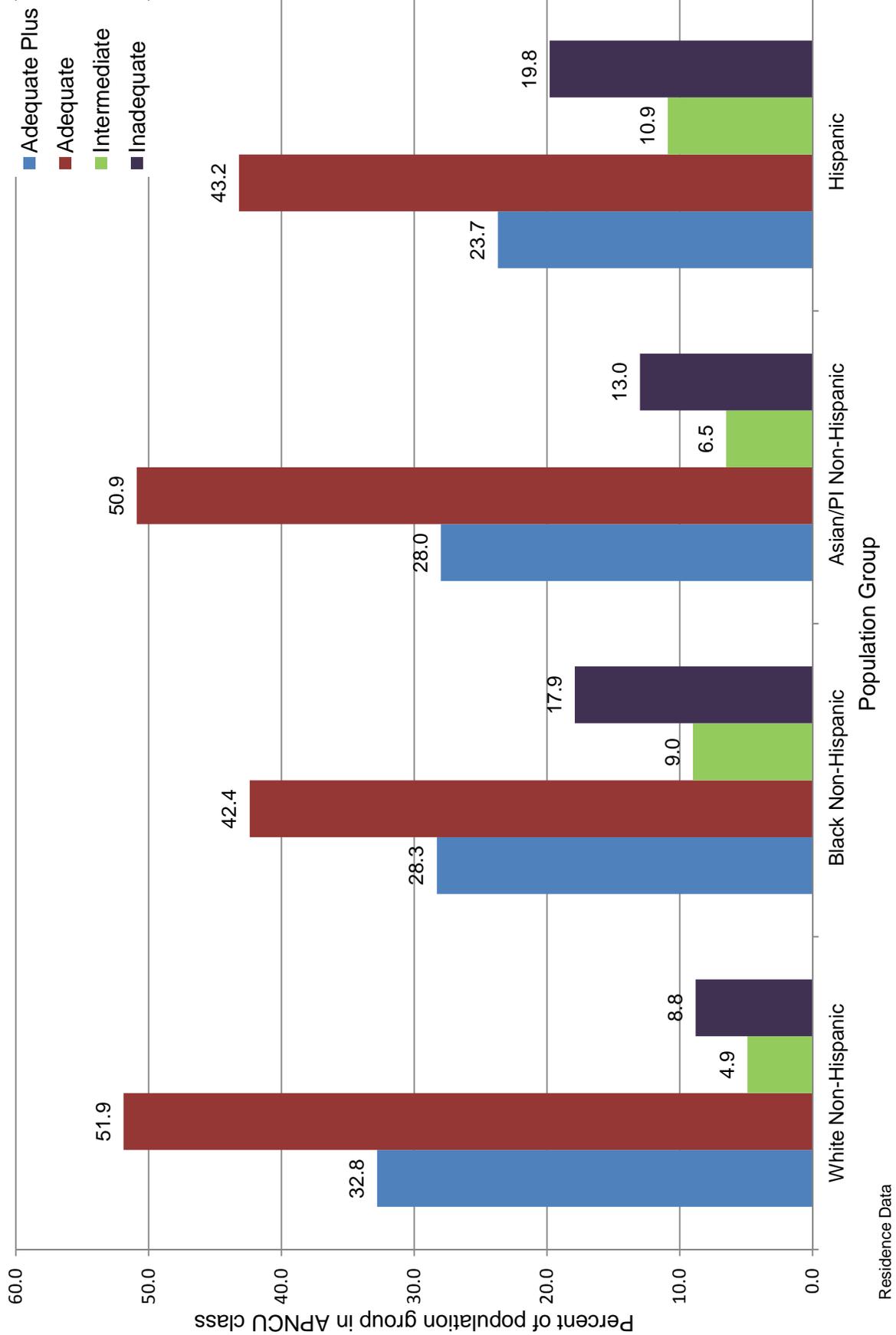
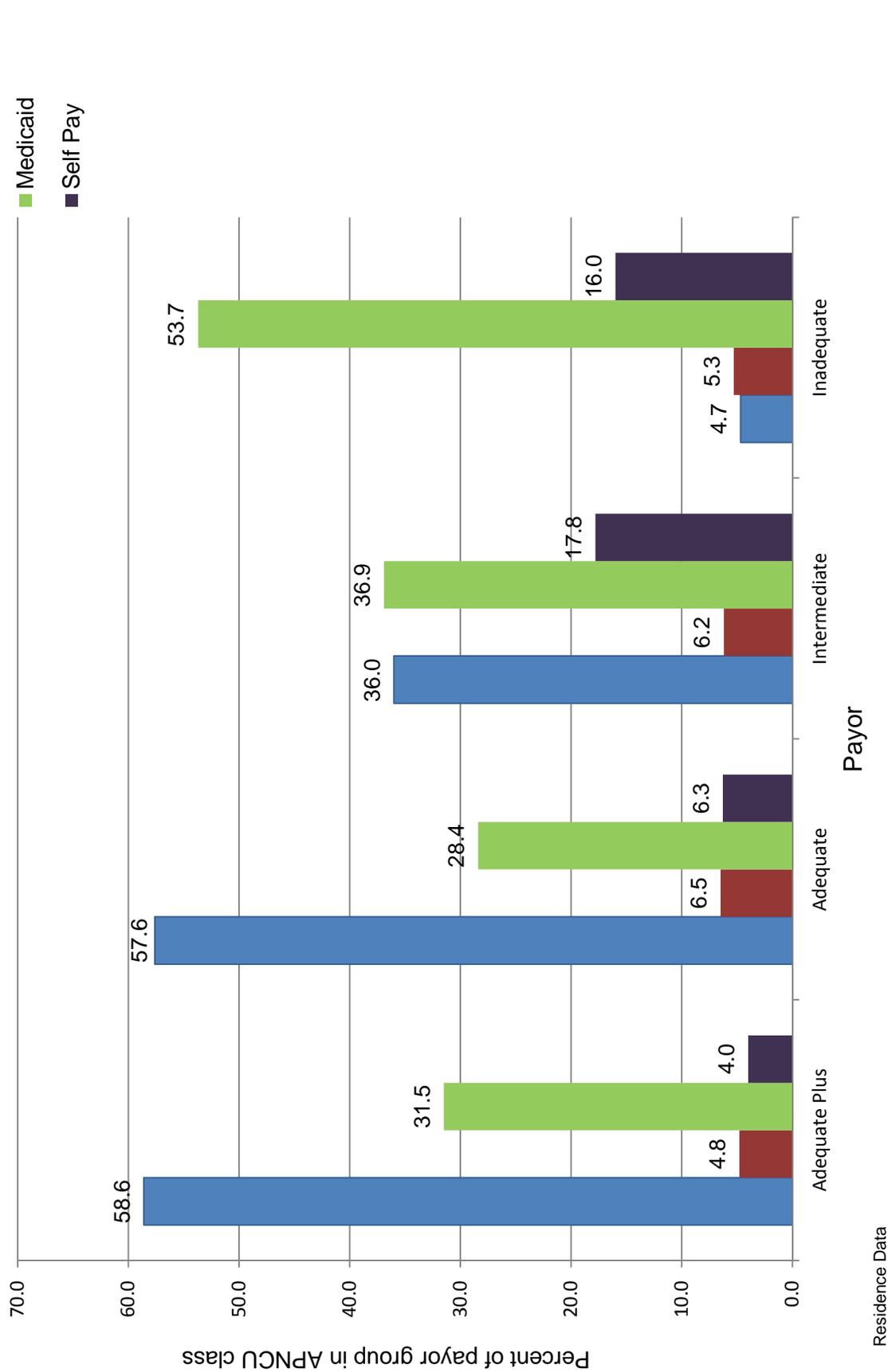


Figure 4. Percent of Adequacy of Prenatal Care Utilization (APNCU) by Selected Delivery Payor Groups, Kansas, 2012



Technical Notes

Preparation of the Adequacy of Prenatal Care Utilization Index requires the use of information from four items on the birth certificate and a calculated value for the month care began calculated from the difference of the date of first prenatal care visit and the date of last menses. If any of these values are unknown or can't be calculated, the Index value will be not stated. The data elements used for the calculation, database field names, and item numbers from the standard Kansas Birth Certificate are:

- Number of prenatal care visits– NPREV (Item 49)
- Month prenatal care visits began – Calculated from DOFP and DLMP (Items 47 & 50)
- Sex of infant – ISEX (Item 4)
- Gestational age – OWGEST (Item 51)
- Birth weight in grams – BWG (Item 5)

2005 Revisions to Certificates. Beginning with the reporting of 2005 data, Kansas implemented the latest revision of the U.S. standard live birth certificate.

Please note that not all states have implemented the use of the new certificate format. Therefore, items which were added or significantly revised will most likely not have information provided for Kansas residents who had births in another state. In such cases, the non-responses are shown as “not stated” (N.S.) in the tables and have been removed from totals when calculating percentages.

Certain data elements (see below) used in the Adequacy of Prenatal Care Utilization Index (APNCU) have changed considerably with the use of the revised birth certificate. These changes can affect comparability with previous years APNCU data.

Month prenatal care began. Prior to 2005, the mother or prenatal care provider reported the month of pregnancy when the mother began prenatal care. Beginning in 2005, this approach was replaced by one that subtracted the last normal menses date from the date of first prenatal care visit. Because exact dates are harder to get, month prenatal care began is missing more often. Records missing this information 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 percent of residents began care in the first trimester compared to 74.1 percent based on the 2009 data derived from the revised birth certificate. The APNCU showed an increase in the proportion of women receiving less than adequate care between 2004 (18.6 percent) and 2009 (21.0 percent). Much of the difference between 2004 and 2009 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.

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

Criteria for the Kansas Adequacy of Prenatal Care Utilization (APNCU) Index

I. Month prenatal care began

(Adequacy of Initiation of Prenatal Care)

Adequate Plus: 1st or 2nd month

Adequate: 3rd or 4th month

Intermediate: 5th or 6th month

Inadequate: 7th month or later,
or no prenatal care

II. Proportion of the number of visits

Recommended by the American College of Obstetricians and Gynecologists (ACOG) received from the time prenatal care began until delivery (Adequacy of Received Services)

Adequate Plus: 110% or more

Adequate: 80% - 109%

Intermediate: 50% - 79%

Inadequate: less than 50%

III. Summary Adequacy of Prenatal Care

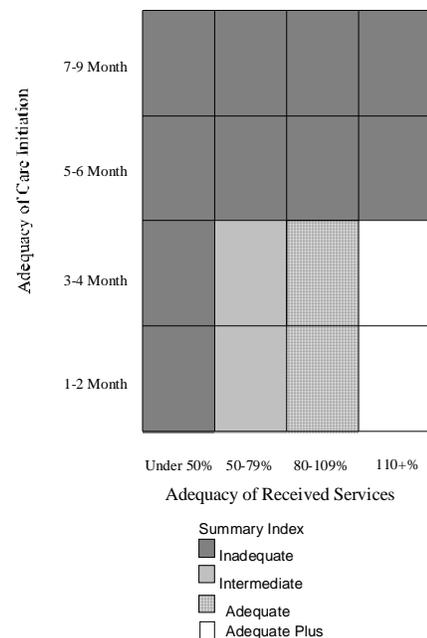
Utilization Index:

Adequate Plus: Prenatal care begun by the 4th month and 110% or more of recommended visits received.

Adequate: Prenatal care begun by the 4th month and 80% - 109% of recommended visits received.

Intermediate: Prenatal care begun by the 4th month and 50% - 79% of recommended visits received.

Adequacy of Prenatal Care Utilization Index Matrix



Inadequate: Prenatal care begun after the 4th month or less than 50% of recommended visits received

APNCU Reference: Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. *American Journal of Public Health*, 1994; 84:1414-1420.

Definitions

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.

Adequacy of Received Services: A measure of the adequacy of prenatal services received based on when care began in the pregnancy.

Adequacy of Care Initiation: A measure of the adequacy of prenatal care services based on the number of prenatal care visits during the pregnancy.

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

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

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

Population Group: A reporting matrix of race and Hispanic origin (ethnicity) information comprised of distinct categories.

CERTIFICATE OF LIVE BIRTH

115-

State File Number

1. CHILD'S NAME (First, Middle, Last, Suffix)		2. DATE OF BIRTH (Month, Day, Year)		3. TIME OF BIRTH M	
4. SEX	5. BIRTH WEIGHT (Grams)	6. CITY, TOWN, OR LOCATION OF BIRTH		7. COUNTY OF BIRTH	
8. PLACE OF BIRTH <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding Birthing Center <input type="checkbox"/> Home Birth <input type="checkbox"/> Clinic/Doctor's Office <input type="checkbox"/> Other (Specify) _____			9. FACILITY NAME (If not institution, give street and number)		
10. I CERTIFY THAT THE STATED INFORMATION CONCERNING THIS CHILD IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF. Certifier's Signature ➤ _____		11. DATE SIGNED (Month, Day, Year)	12. ATTENDANT'S NAME AND TITLE (Type) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____		
13. Certifier's Name and Title (Type) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Hosp Adm. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____		14. ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route, City, or Town, State, Zip Code)			
15. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			16. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE		
17. DATE OF BIRTH (Month, Day, Year)		18. BIRTHPLACE (State, Territory, or Foreign Country)		19. PRESENT RESIDENCE-STATE	
20. COUNTY		21. CITY, TOWN, OR LOCATION		22. STREET AND NUMBER OF PRESENT RESIDENCE	
23. ZIP CODE	24. INSIDE CITY LIMITS? <input type="checkbox"/> YES <input type="checkbox"/> NO	25. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)			
26. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)		27. DATE OF BIRTH (Month, Day, Year)		28. BIRTHPLACE (State, Territory, or Foreign Country)	
29. PARENTS REQUEST SOCIAL SECURITY NUMBER ISSUANCE? <input type="checkbox"/> YES <input type="checkbox"/> NO		30. IMMUNIZATION REGISTRY I wish to enroll my child in the Immunization Registry <input type="checkbox"/> YES <input type="checkbox"/> NO			
31. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➤ _____		32. DATE SIGNED (Month, Day, Year)		33. DATE FILED BY STATE REGISTRAR (Month, Day, Year) (Vital Statistics only)	

34. IF HOME BIRTH, WAS DELIVERY PLANNED AT HOME? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown					
35. MOTHER'S SOCIAL SECURITY NUMBER			36. FATHER'S SOCIAL SECURITY NUMBER		
37a. WAS MOTHER EVER MARRIED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		37b. MOTHER MARRIED? (At birth, conception or any time between) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
37c. IF NO, HAS PATERNITY ACKNOWLEDGMENT BEEN SIGNED? <input type="checkbox"/> Yes <input type="checkbox"/> No		37d. MOTHER REFUSES TO GIVE HUSBAND'S INFORMATION <input type="checkbox"/> Yes <input type="checkbox"/> No			
38. WHAT IS THE PRIMARY LANGUAGE SPOKEN IN THE HOME? <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Vietnamese <input type="checkbox"/> German <input type="checkbox"/> French <input type="checkbox"/> Russian <input type="checkbox"/> Ukrainian <input type="checkbox"/> Mandarin <input type="checkbox"/> Cantonese <input type="checkbox"/> Sign Language <input type="checkbox"/> 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.)		40. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)			
39a. MOTHER <input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican/Mexican American/Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____ <input type="checkbox"/> Unknown		39b. FATHER <input type="checkbox"/> No, not Spanish/Hispanic/Latino <input type="checkbox"/> Yes, Mexican/Mexican American/Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify) _____ <input type="checkbox"/> Unknown		40a. MOTHER <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Black or African American <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown	
		40b. FATHER <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Black or African American <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown			
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		43b. FATHER'S EDUCATION			
<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Unknown		<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)		<input type="checkbox"/> 9 th - 12 th grade; no diploma <input type="checkbox"/> Associate degree (e.g., AA,AS) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)	
				<input type="checkbox"/> High school graduate or GED <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)	
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? <input type="checkbox"/> Yes <input type="checkbox"/> No	
44a. Now living Number _____ <input type="checkbox"/> None	44b. Now dead Number _____ <input type="checkbox"/> None	45a. Before 20 weeks Number _____ <input type="checkbox"/> None	45b. 20 weeks & over Number _____ <input type="checkbox"/> None	47. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)	
44c. DATE OF LAST LIVE BIRTH (Month, Year)		45c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)		48. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)	
49. PRENATAL VISITS-Total Number (If none, enter "0")		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? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
				56. IS INFANT BEING BREAST-FED AT DISCHARGE? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
57. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked per day during each time period. If none, enter "0". Average number of cigarettes or packs of cigarettes smoked per day for each period: 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 <input type="checkbox"/> Medicaid <input type="checkbox"/> Private/Employer Ins. <input type="checkbox"/> Self-pay <input type="checkbox"/> Indian Health Service <input type="checkbox"/> CHAMPUS/TRICARE <input type="checkbox"/> Other government <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown	
				59. MOTHER'S MEDICAL RECORD NO.	60. NEWBORN'S MEDICAL RECORD NO.
61. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name) FACILITY TRANSFERRED FROM:				62. INFANT TRANSFERRED (Within 24 hours of delivery) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name) FACILITY TRANSFERRED TO:	

CHILD'S NAME _____

MOTHER'S NAME _____

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 _____	66. OBSTETRICAL PROCEDURES (Check all that apply.) 1. <input type="checkbox"/> Cervical cerclage 2. <input type="checkbox"/> Tocolysis 3. External cephalic version: <input type="checkbox"/> Successful <input type="checkbox"/> Failed 4. <input type="checkbox"/> None of the above	70. INFECTIONS PRESENT AND/OR TREATED (During this pregnancy, check all that apply.) 1. <input type="checkbox"/> Gonorrhea 2. <input type="checkbox"/> Syphilis 3. <input type="checkbox"/> Herpes Simplex Virus (HSV) 4. <input type="checkbox"/> Chlamydia 5. <input type="checkbox"/> Hepatitis B 6. <input type="checkbox"/> Hepatitis C 7. <input type="checkbox"/> AIDS or HIV antibody 8. <input type="checkbox"/> None of the above			
	64. MEDICAL RISK FACTORS (Check all that apply.) 1. <input type="checkbox"/> Diabetes, prepregnancy 2. <input type="checkbox"/> Diabetes, gestational 3. Hypertension <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia) <input type="checkbox"/> Eclampsia 4. <input type="checkbox"/> Previous preterm birth 5. <input type="checkbox"/> Other previous poor pregnancy outcome (SGA, perinatal death, etc.) 6. <input type="checkbox"/> Vaginal bleeding during this pregnancy prior to labor 7. <input type="checkbox"/> Pregnancy resulted from infertility treatment (If yes, check all that apply.) <input type="checkbox"/> Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination <input type="checkbox"/> Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT)) 8. <input type="checkbox"/> Mother had a previous cesarean delivery, if yes, how many? Number: _____ 9. <input type="checkbox"/> Alcohol use No. of drinks per week: _____ 10. <input type="checkbox"/> None of the above	67. ONSET OF LABOR (Check all that apply.) 1. <input type="checkbox"/> Premature Rupture of the Membranes (prolonged, ≥ 12 hours) 2. <input type="checkbox"/> Precipitous Labor (< 3 hrs) 3. <input type="checkbox"/> Prolonged Labor (≥ 20 hrs) 4. <input type="checkbox"/> None of the above	71. ABNORMAL CONDITIONS OF NEWBORN (Check all that apply) 1. <input type="checkbox"/> Assisted ventilation required immediately following delivery 2. <input type="checkbox"/> Assisted ventilation required for more than six hours 3. <input type="checkbox"/> NICU admission 4. <input type="checkbox"/> Newborn given surfactant replacement therapy 5. <input type="checkbox"/> Antibiotics received by the newborn for suspected neonatal sepsis 6. <input type="checkbox"/> Seizure or serious neurologic dysfunction 7. <input type="checkbox"/> Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention) 8. <input type="checkbox"/> 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 <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other 4. Final route and method of delivery (check one) <input type="checkbox"/> Vaginal/spontaneous <input type="checkbox"/> Vaginal/forceps <input type="checkbox"/> Vaginal/vacuum <input type="checkbox"/> Cesarean, if cesarean was a trial of labor attempted? Yes _____ No _____	68. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply.) 1. <input type="checkbox"/> Induction of labor 2. <input type="checkbox"/> Augmentation of labor 3. <input type="checkbox"/> Non-vertex presentation 4. <input type="checkbox"/> Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery 5. <input type="checkbox"/> Antibiotics received by the mother during labor 6. <input type="checkbox"/> Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥ 38 C (100.4 F) 7. <input type="checkbox"/> Moderate/heavy meconium staining of the amniotic fluid 8. <input type="checkbox"/> Fetal intolerance of labor: (examples: in-utero resuscitative measures, further fetal assessment, or operative delivery) 9. <input type="checkbox"/> Epidural or spinal anesthesia during labor 10. <input type="checkbox"/> None of the above	72. VACCINES ADMINISTERED TO NEWBORN 1. <input type="checkbox"/> Hepatitis B Date Given: _____ 2. <input type="checkbox"/> Other* Specify: _____ Date Given: _____			
	69. MATERNAL MORBIDITY (Check all that apply.) (These are complications associated with labor and delivery.) 1. <input type="checkbox"/> Maternal transfusion 2. <input type="checkbox"/> Third or fourth degree perineal laceration 3. <input type="checkbox"/> Ruptured uterus 4. <input type="checkbox"/> Unplanned hysterectomy 5. <input type="checkbox"/> Admission to intensive care unit 6. <input type="checkbox"/> Unplanned operating room procedure following delivery 7. <input type="checkbox"/> None of the above	73. APGAR SCORE <table border="1"> <tr> <td>1 min</td> <td>5 min</td> <td>10 min</td> </tr> </table>		1 min	5 min
1 min	5 min	10 min			
		74. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.) 1. <input type="checkbox"/> Anencephaly 2. <input type="checkbox"/> Meningomyelocele/Spina bifida 3. <input type="checkbox"/> Cyanotic congenital heart disease 4. <input type="checkbox"/> Congenital diaphragmatic hernia 5. <input type="checkbox"/> Omphalocele 6. <input type="checkbox"/> Gastroschisis 7. <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes) 8. <input type="checkbox"/> Cleft Lip with or without Cleft Palate 9. <input type="checkbox"/> Cleft Palate alone 10. <input type="checkbox"/> Down Syndrome <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending 11. <input type="checkbox"/> Suspected chromosomal disorder <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending 12. <input type="checkbox"/> Hypospadias 13. <input type="checkbox"/> Fetal alcohol syndrome 14. <input type="checkbox"/> Other congenital anomalies (Specify) _____ 15. <input type="checkbox"/> None of the above			

Parent's Telephone Number: _____

CHILD'S NAME _____

MOTHER'S NAME _____

<p>Test required by K.S.A. 65-153f 153G Serological Test Made:</p> <p>_____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed</p> <p>If no test made, state reason:</p>	<p>Test required by K.S.A. 65-180 Infant Neonatal Screening specimen taken:</p> <p>_____ Yes _____ No</p> <p>Kit Number _____</p> <p>If no test made, state reason:</p>	<p>Test required by K.S.A. 65-1157A Newborn Hearing Screening Accomplished:</p> <p>_____ Yes _____ No</p>
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Infant's patient number: _____

Infant's Primary Care Physician

First	Middle	Last	Title (MD, DO, etc.)
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<p>If screening accomplished, Date hearing screened _____</p> <p>Month / Day / Year</p>	<p>The results of the hearing screening ✓:</p> <p>Right ear: _____ Pass _____ Refer for further testing Left ear: _____ Pass _____ Refer for further testing</p>
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Physiologic equipment used ✓: _____ OAE _____ AABR _____ ABR

If screening not accomplished, ✓ one reason:

_____ b – missed appointment	_____ o – other
_____ c – could not test	_____ r – did not consent
_____ d – deceased	_____ s – scheduled but not completed
_____ i – Incomplete test	_____ t – transferred to another hospital
_____ m – Infant discharged before screening	_____ u – no information
_____ n – transferred to NICU	_____ x – invalid results