

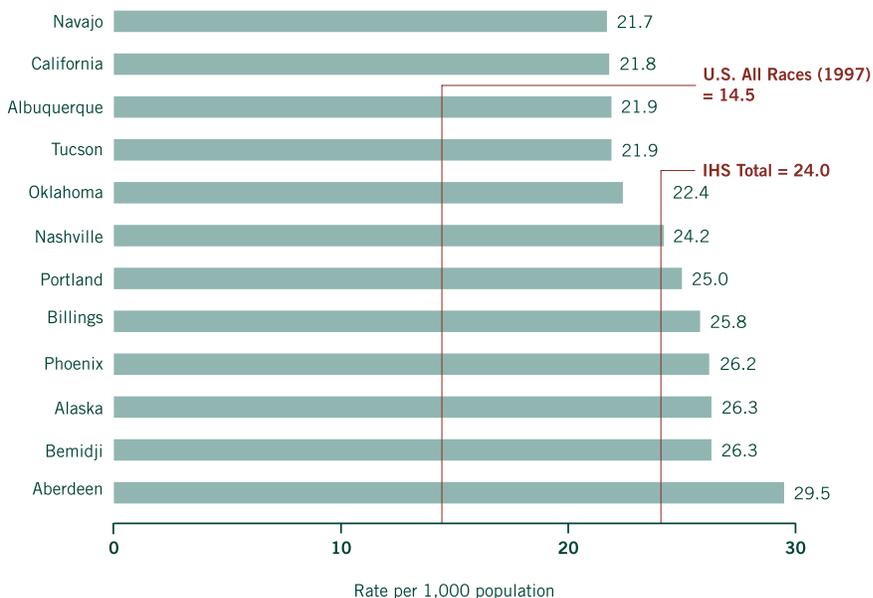
## Part 3 Natality & Infant/Maternal Mortality Statistics

The birth rate for the IHS service area population in 1996-98 was 1.7 times the rate for the U.S. all-races population in 1997, (24.0 percent and 14.5 percent, respectively). Even the IHS Area with the lowest birth rate (Navajo, 21.7) had a rate considerably greater than the U.S. all-races rate (fifty percent greater).

**Chart 3.1**

**Birth Rates**

Calendar Years 1996-1998



**Table 3.1**

**Number and Rate of Live Births**

Calendar Years 1996-1998

	Number	Rate <sup>1</sup>
U.S. All Races (1997)	3,880,894	14.5
All IHS Areas	103,202	24.0
Aberdeen	8,389	29.5
Alaska	8,058	26.3
Albuquerque	5,102	21.9
Bemidji	6,495	26.3
Billings	4,243	25.8
California	8,075	21.8
Nashville	5,298	24.2
Navajo	13,739	21.7
Oklahoma	19,972	22.4
Phoenix	10,978	26.2
Portland	11,046	25.0
Tucson	1,807	21.9

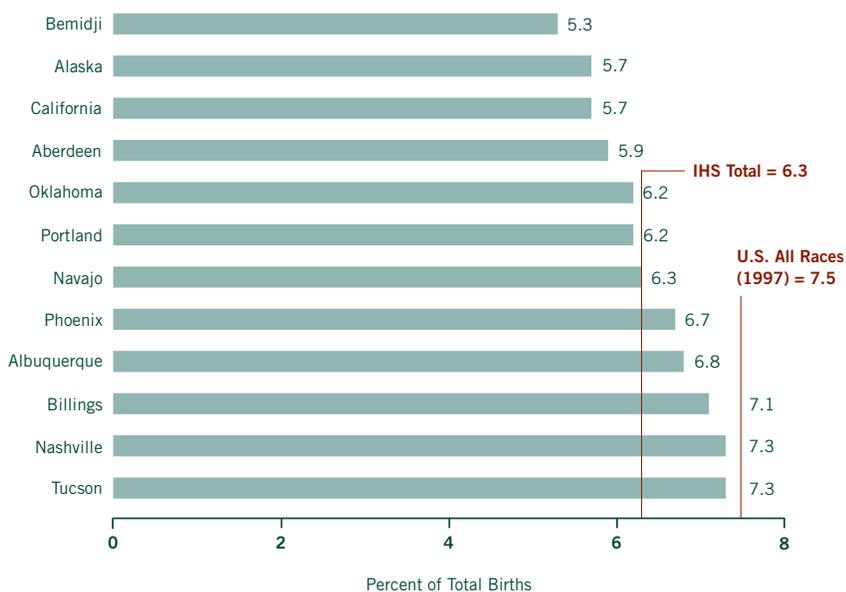
<sup>1</sup> Rate per 1,000 population.

For 1996-98, 6.3 percent of all AI/AN births in the IHS service area were considered low birthweight (less than 2,500 grams). This was better than the figure for the U.S. all-races population (7.5 percent in 1997). All IHS Areas had lower proportions of low birthweight births than the general population.

**Chart 3.2**

**Low Birthweight**

*Calendar Years 1996-1998*



**Table 3.2**

**Low Birthweight as a Percent of Total Live Births**

*Calendar Years 1996-1998*

	Total Live Births <sup>1</sup>	Number Low Birthweight <sup>2</sup>	Percent Low Birthweight <sup>3</sup>
<i>U.S. All Races (1997)</i>	3,880,894	291,154	7.5
<i>All IHS Areas</i>	103,202	6,442	6.3
Aberdeen	8,389	498	5.9
Alaska	8,058	457	5.7
Albuquerque	5,102	342	6.8
Bemidji	6,495	345	5.3
Billings	4,243	300	7.1
California	8,075	461	5.7
Nashville	5,298	384	7.3
Navajo	13,739	860	6.3
Oklahoma	19,972	1,238	6.2
Phoenix	10,978	740	6.7
Portland	11,046	685	6.2
Tucson	1,807	132	7.3

<sup>1</sup> Includes 4,028 U.S. All Races live births and 256 American Indian/Alaska Native live births with birthweight not stated.

<sup>2</sup> Births of less than 2,500 grams.

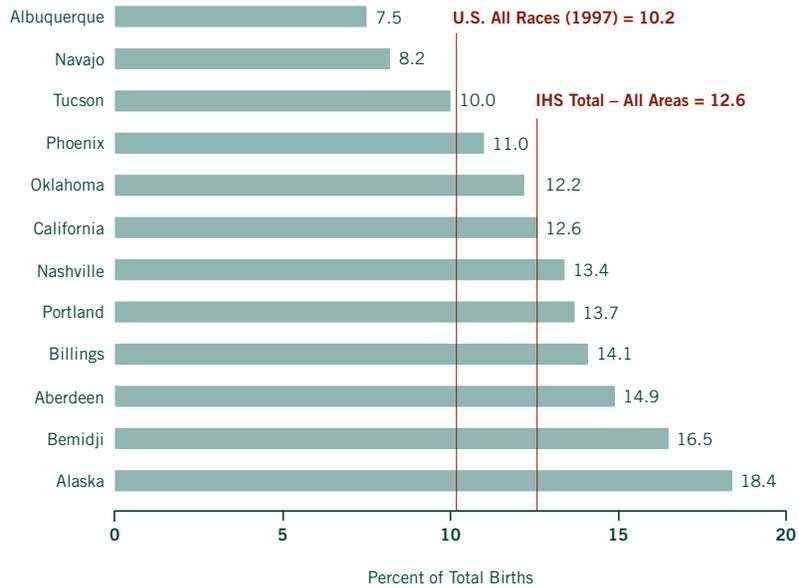
<sup>3</sup> Percent low weight based on live births with a birthweight reported.

The AI/AN population experiences more high birthweights than the U.S. all-races population. High birthweight may be a complication of diabetic pregnancies. In 1996-98, 12.6 percent of all births in the IHS service area were high birthweight (4,000 grams or more). In contrast, the U.S. all-races percentage was 2.4 percentage points lower (10.2 percent) in 1997. The rates varied considerably by Area ranging from 7.5 percent in Albuquerque to 18.4 percent in Alaska.

**Chart 3.3**

**High Birthweight**

*Calendar Years 1996-1998*



**Table 3.3**

**High Birthweight as a Percent of Total Live Births**

*Calendar Years 1996-1998*

	Total Live Births <sup>1</sup>	Number High Birthweight <sup>2</sup>	Percent High Birthweight <sup>3</sup>
<i>U.S. All Races (1997)</i>	3,880,894	394,799	10.2
<i>All IHS Areas</i>	103,202	12,953	12.6
Aberdeen	8,389	1,249	14.9
Alaska	8,058	1,479	18.4
Albuquerque	5,102	381	7.5
Bemidji	6,495	1,071	16.5
Billings	4,243	598	14.1
California	8,075	1,021	12.6
Nashville	5,298	709	13.4
Navajo	13,739	1,125	8.2
Oklahoma	19,972	2,423	12.2
Phoenix	10,978	1,203	11.0
Portland	11,046	1,513	13.7
Tucson	1,807	181	10.0

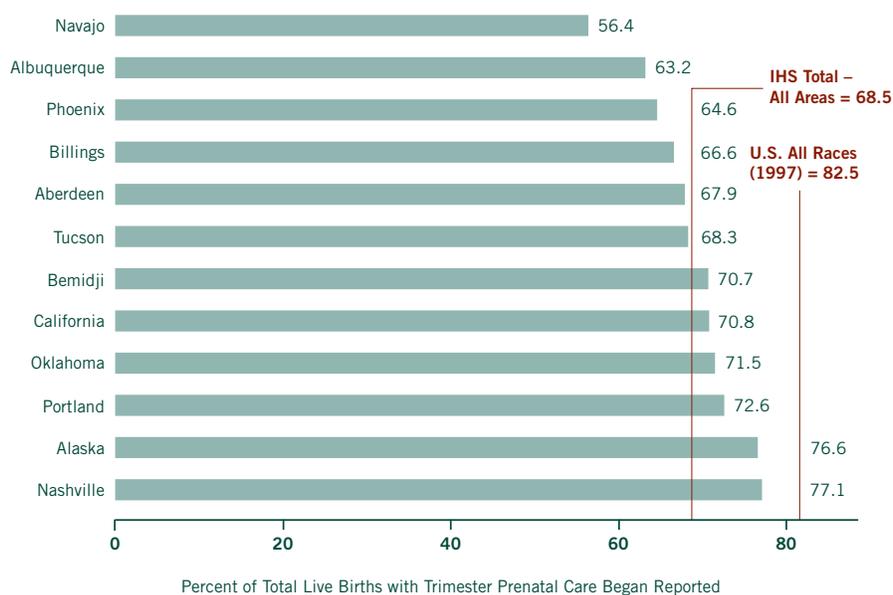
<sup>1</sup> Includes 4,028 U.S. All Races live births and 256 American Indian/Alaska Native live births with birthweight not stated.

<sup>2</sup> Births of 4,000 grams.

<sup>3</sup> Percent high weight based on live births with a birthweight reported.

During 1996–98, prenatal care began in the first trimester for 68.5 percent of AI/AN live births among the IHS service area population, which is over fourteen percent lower than the number of births with prenatal care among the U.S. all-races population (82.5 percent) in 1997. The percentages varied widely among IHS Areas, ranging from 56.4 for Navajo to 77.1 for Nashville.

**Chart 3.4 Prenatal Care in First Trimester** *Calendar Years 1996-1998*



**Table 3.4 Prenatal Care in First Trimester** *Calendar Years 1996-1998*

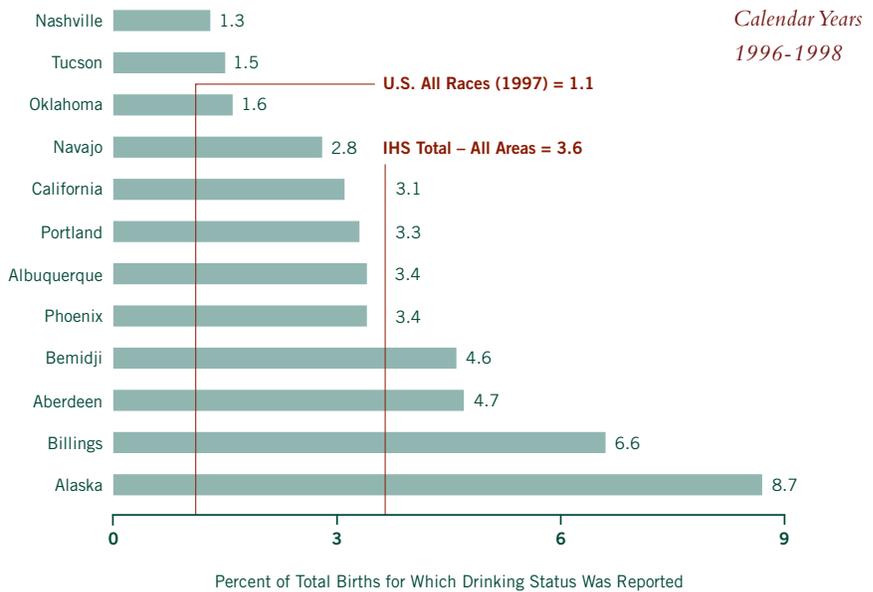
	Total Live Births <sup>1</sup>	Live Births with Trimester Prenatal Care Began Reported	Live Births with Prenatal Care in the First Trimester <sup>2</sup>	
			Number	Percent
<i>U.S. All Races (1997)</i>	3,880,894	3,780,202	3,119,693	82.5
<i>All IHS Areas</i>	103,202	99,729	68,287	68.5
Aberdeen	8,389	8,260	5,610	67.9
Alaska	8,058	7,929	6,074	76.6
Albuquerque	5,102	4,761	3,007	63.2
Bemidji	6,495	6,390	4,518	70.7
Billings	4,243	4,203	2,798	66.6
California	8,075	7,957	5,634	70.8
Nashville	5,298	5,247	4,047	77.1
Navajo	13,739	13,471	7,601	56.4
Oklahoma	19,972	18,729	13,393	71.5
Phoenix	10,978	10,731	6,937	64.6
Portland	11,046	10,266	7,448	72.6
Tucson	1,807	1,785	1,220	68.3

<sup>1</sup> Includes 100,692 U.S. All Races live births and 3,473 American Indian/Alaska Native live births for which trimester of pregnancy that prenatal care began was not reported on the state birth certificate.

<sup>2</sup> Percent based on live births with this information reported.

During 1996-98, 3.6 percent of mothers of AI/AN newborns drank alcohol during pregnancy (as reported on the birth certificate), more than three times the rate for mothers in the general population (1.1 percent) in 1997. The Alaska Area (8.7 percent) was 2.4 times the all IHS Area rate. The rate of alcohol use increased with age, with the exception of AI/AN mothers under-eighteen years who had a higher proportion of drinking during pregnancy than eighteen- to nineteen-year-old AI/AN mothers.

**Chart 3.5 Mothers Who Drank Alcohol During Pregnancy**



**Table 3.5 Percent of Mothers Who Drank Alcohol During Pregnancy<sup>1</sup> by Age of Mother**

Calendar Years 1996-1998

(Mothers who drank alcohol during pregnancy include those who drank even less than one drink per week during pregnancy.)

	All Ages	Under 18 Years	18-19 Years	20-24 Years	25-29 Years	30-34 Years	35-54 Years
U.S. All Races (1997)	1.1	0.7	0.8	0.9	1.0	1.4	2.0
All IHS Areas	3.6	3.5	2.8	3.5	4.2	5.4	5.8
Aberdeen	4.7	5.7	5.8	3.8	6.5	6.8	9.3
Alaska	8.7	9.1	6.9	8.5	8.3	13.4	12.2
Albuquerque	3.4	4.6	4.9	2.4	3.1	3.6	5.2
Bemidji	4.6	3.8	3.4	3.8	5.3	6.3	10.6
Billings	6.6	3.1	5.7	7.3	9.4	7.8	7.8
California	3.1	—	—	—	—	33.3*	—
Nashville	1.3	—	0.5	1.2	1.8	0.8	1.9
Navajo	2.8	4.4	2.2	3.0	3.9	3.3	3.2
Oklahoma	1.6	1.4	0.6	1.8	1.4	2.7	3.7
Phoenix	3.4	3.7	3.4	2.8	4.7	5.7	5.2
Portland	3.3	3.0	2.3	4.4	4.3	5.3	6.2
Tucson	1.5	1.5	1.4	0.5	0.8	3.7	4.4

—Represents zero. \*Percent based on less than twenty births in the age group specified.

<sup>1</sup>Based on the number of live births with drinking status of the mother reported.

NOTE: The states of California and South Dakota do not include a question on drinking history of the mother during pregnancy on state birth certificates. Persons usually residing in one of these two states responding to this question reported their drinking history on a form from another state, since the delivery was performed out of their usual state of residence.

During 1996-98, 20.2 percent of women who gave birth to AI/AN newborns smoked tobacco during pregnancy. Women in the U.S. all-races population smoked at a lower rate during pregnancy (13.2 percent) in 1997. There is an established relationship between smoking during pregnancy and low-birthweight births.<sup>13,14</sup> Of all AI/AN low birthweights, 28.3 percent were to women who reported smoking during pregnancy. There were considerable variations among the IHS Areas and age groups in terms of these two types of rates.

**Chart 3.6** Mothers Who Smoked During Pregnancy *Calendar Years 1996-1998*

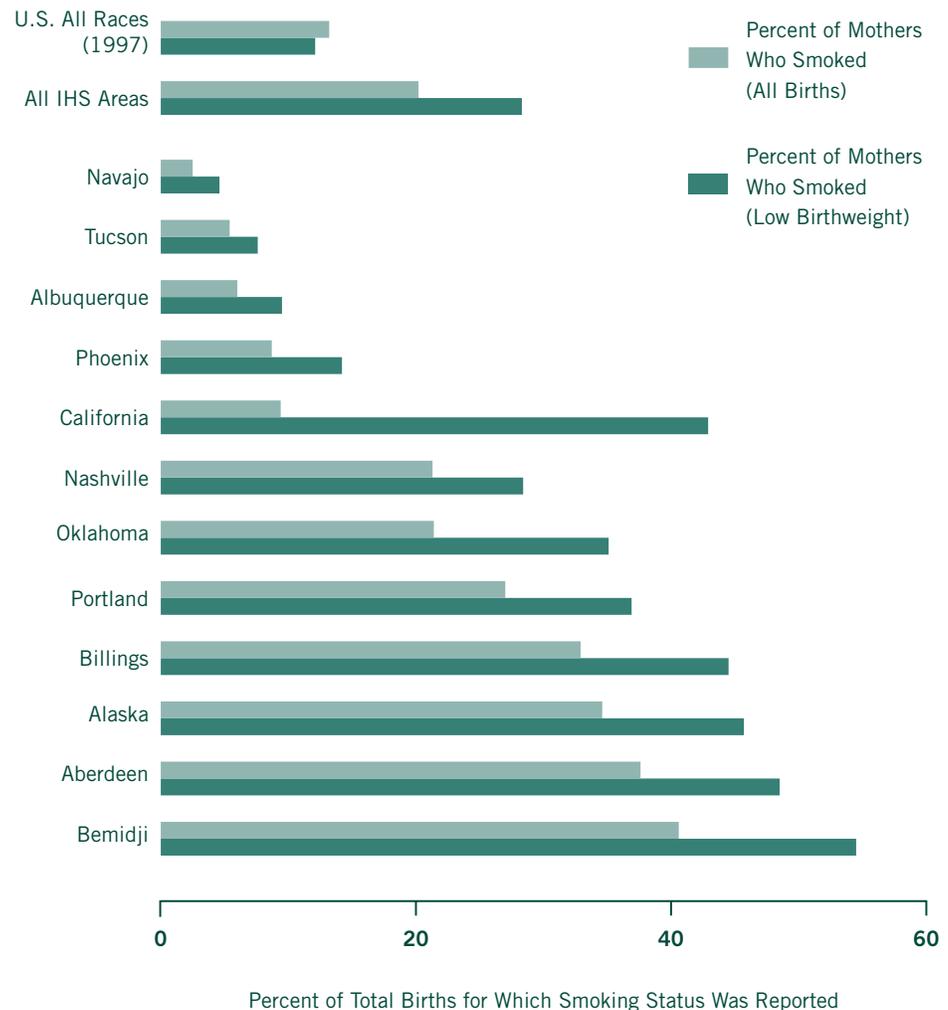


Table 3.6

**Percent of Mothers Who Smoked  
During Pregnancy for All Births and  
Low Birthweight by Age of Mother**

Calendar Years 1996-1998

(Low birthweight is defined as weight less than 2,500 grams (5 lb., 8 oz.))

	Percent of Live Births <sup>1</sup> for Which the Mother Reported Smoking				
	All Ages	Under 15 Years	15-19 Years	20-34 Years	35-54 Years
<i>U.S. All Races (1997)</i>	13.2	8.1	17.6	12.7	11.0
<i>All IHS Areas</i>	20.2	14.4	21.8	20.0	18.6
Aberdeen	37.6	25.0	34.2	38.9	36.8
Alaska	34.6	34.5	39.3	34.1	30.6
Albuquerque	6.0	8.0	6.4	5.7	6.8
Bemidji	40.6	16.7	41.7	40.5	40.6
Billings	32.9	45.0	32.5	32.8	34.7
California	9.4	—*	—*	11.1	—*
Nashville	21.3	5.6*	22.2	20.9	23.7
Navajo	2.5	11.6	4.1	2.3	1.2
Oklahoma	21.4	9.0	22.1	20.7	28.4
Phoenix	8.7	4.8	9.5	8.5	8.4
Portland	27.0	17.3	29.2	26.5	25.8
Tucson	5.4	—*	6.0	4.9	8.6

	Percent of Low Birthweight <sup>1</sup> for Which the Mother Reported Smoking				
	All Ages	Under 15 Years	15-19 Years	20-34 Years	35-54 Years
<i>U.S. All Races (1997)</i>	12.1	15.7	11.4	12.7	12.0
<i>All IHS Areas</i>	28.3	14.3	28.7	28.4	27.9
Aberdeen	48.5	—*	41.3	50.3	52.0*
Alaska	45.7	50.0*	38.2	46.8	47.8
Albuquerque	9.5	—*	5.5	7.9	22.2
Bemidji	54.5	—*	50.0	55.0	59.3
Billings	44.5	100.0*	39.2	47.5	36.4
California	42.9*	—*	—*	42.9*	—*
Nashville	28.4	—*	32.2	28.3	23.1
Navajo	4.6	—*	7.7	4.1	3.8
Oklahoma	35.1	—*	36.0	34.6	39.5
Phoenix	14.2	33.3*	14.0	13.7	16.7
Portland	36.9	—*	37.3	37.1	37.9
Tucson	7.6	—*	6.3	4.8	26.7*

— Represents zero.

\* Percent based on less than twenty births with smoking status reported in the age group specified.

<sup>1</sup>Based on the number of live births with smoking status of the mother reported.

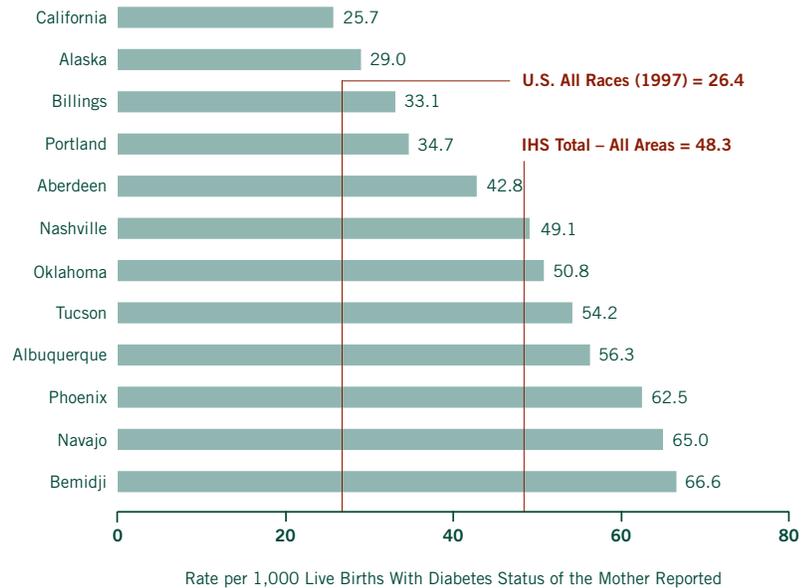
NOTE: The states of California, Indiana, New York (except New York City) and South Dakota do not include a question on smoking history of the mother during pregnancy. Persons usually residing in one of these four states responding to this question reported their smoking history on a form from another state, since the delivery was performed out of their usual state of residence.

During 1996-98 mothers of AI/AN newborns were more likely to have diabetes than their counterparts in the U.S. all-races population in 1997. The 1996-98 rate for AI/AN people was 1.8 times larger than the U.S. all-races rate (26.4 births to mothers with diabetes per 1,000 live births). For the AI/AN population, there were 48.3 births to mothers with diabetes per 1,000 of all live births (a six-percent increase from the 1994-96 rate of 45.4.) The Area proportions ranged from 25.7 per 1,000 live births in California to 66.6 in Bemidji.

**Chart 3.7**

**Birth Rates among Mothers with Diabetes**

*Calendar Years 1996-1998*



**Table 3.7**

**Rate of Live Births<sup>1</sup> among Mothers with Diabetes by Age of Mother**

*Calendar Years 1996-1998*

	All Ages	Under 20 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-54 Years
<i>U.S. All Races (1997)</i>	26.4	8.2	16.3	25.5	35.0	47.8	64.9
<i>All IHS Areas</i>	48.3	15.0	29.4	52.5	84.5	119.8	168.7
Aberdeen	42.8	13.1	22.4	54.0	95.9	126.5	93.8
Alaska	29.0	8.3	17.8	36.4	38.7	54.9	84.6
Albuquerque	56.3	9.3	28.9	61.5	94.0	131.6	252.6
Bemidji	66.6	36.3	44.2	60.1	123.4	187.1	174.6
Billings	33.1	7.8	18.4	45.7	73.0	57.0	145.2
California	25.7	7.7	20.0	25.9	36.1	62.8	84.5
Nashville	49.1	13.3	31.6	56.9	81.1	121.7	137.9
Navajo	65.0	16.0	31.0	62.9	96.1	162.3	244.8
Oklahoma	50.8	18.7	36.6	60.6	101.9	121.7	167.7
Phoenix	62.5	18.8	35.7	66.0	111.0	160.6	201.2
Portland	34.7	9.3	23.5	35.5	61.3	93.4	116.6
Tucson	54.2	16.9	31.7	53.4	135.0	102.9	185.2

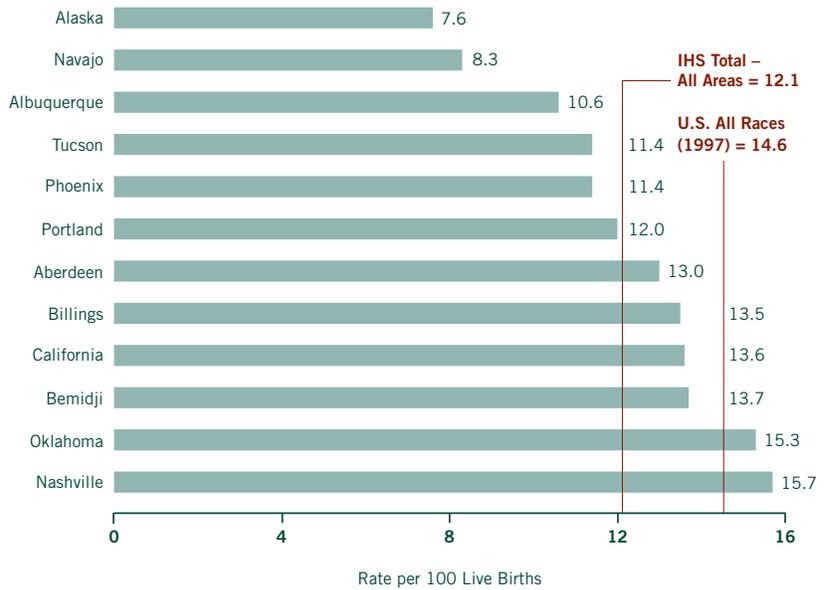
<sup>1</sup>Number of live births among mothers with diabetes per 1,000 live births with diabetes status reported in age group specified.

Mothers of AI/AN newborns have a seventeen percent lower rate of cesarean deliveries than do women in the U.S. all-races population. The AI/AN rate of primary cesarean deliveries was 12.1 per 100 live births in 1996-98, while the 1997 U.S. all-races rate was 14.6. Only two IHS Areas exceeded the U.S. all-races rate, Nashville (15.7) and Oklahoma (15.3). The lowest rate occurred in Alaska (7.6).

**Chart 3.8**

**First Cesarean Delivery**

*Calendar Years 1996-1998*

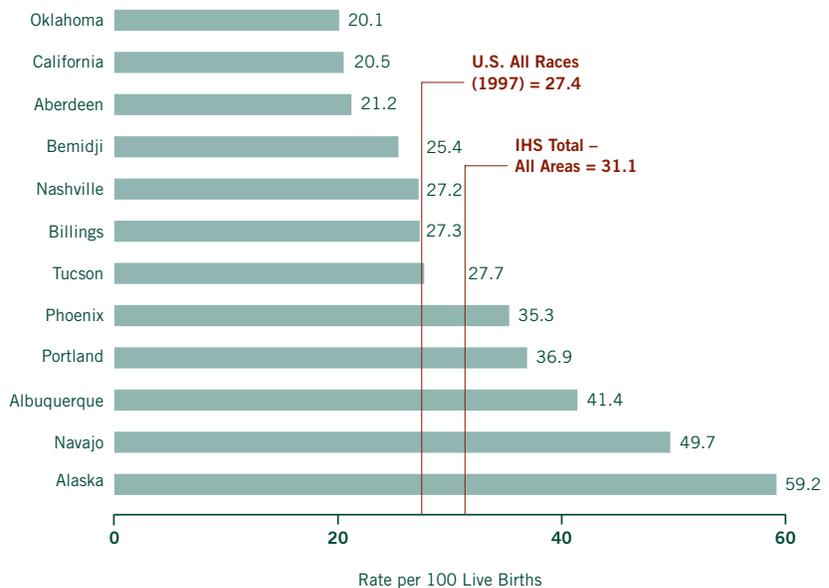


Mothers of AI/AN newborns who had a cesarean delivery were fourteen percent more likely to have a subsequent vaginal delivery (VBAC) than women in the U.S. all-races population. The AI/AN rate is 31.1 vaginal births per 100 live births to women with a prior cesarean delivery in 1996-98 compared to a U.S. all-races rate of 27.4 in 1997. The rate ranged among IHS Areas from 20.1 in Oklahoma to 59.2 in Alaska.

**Chart 3.9**

**Vaginal Births After Previous Cesarean Delivery (VBAC)**

*Calendar Years 1996-1998*



**Table 3.8**

**Rates of First Cesarean Delivery and Vaginal Birth after Previous Cesarean Delivery by age of Mother**

*Calendar Years 1996-1998*

*(Rates per 100 live births)*

	Rate of First Cesarean Delivery				Rate of Vaginal Births after Previous Cesarean (VBAC) Delivery			
	All Ages	Under 25 Years	25-34 Years	35-54 Years	All Ages	Under 25 Years	25-34 Years	35-54 Years
<i>U.S. All Races (1997)</i>	14.6	13.0	14.9	18.8	27.4	30.3	27.8	23.6
<i>All IHS Areas</i>	12.1	11.8	11.9	15.2	31.1	31.9	31.1	29.5
Aberdeen	13.0	12.4	13.8	15.6	21.2	23.7	19.4	19.2
Alaska	7.6	6.8	8.0	10.2	59.2	57.9	61.1	55.3
Albuquerque	10.6	9.2	11.6	14.8	41.4	45.9	39.5	41.4
Bemidji	13.7	13.8	12.8	17.9	25.4	29.7	24.4	18.7
Billings	13.5	13.8	11.8	19.0	27.3	32.5	26.1	17.2
California	13.6	12.8	13.7	18.5	20.5	25.2	17.9	20.5
Nashville	15.7	16.1	14.4	20.7	27.2	28.2	28.7	15.7
Navajo	8.3	7.9	7.9	11.9	49.7	51.1	52.3	40.9
Oklahoma	15.3	15.2	14.9	19.6	20.1	20.9	20.1	17.3
Phoenix	11.4	10.8	12.0	13.2	35.3	39.7	33.5	31.5
Portland	12.0	11.0	12.8	16.0	36.9	40.7	36.2	32.2
Tucson	11.4	10.3	11.5	18.7	27.7	30.3	22.5	34.5

NOTE: Rate of first cesarean delivery is computed by dividing the total number of such deliveries by the number of all women who have never had a cesarean delivery. The denominator for this rate includes all births less those with method of delivery classified as repeat cesarean, vaginal birth after previous cesarean, or method not stated.

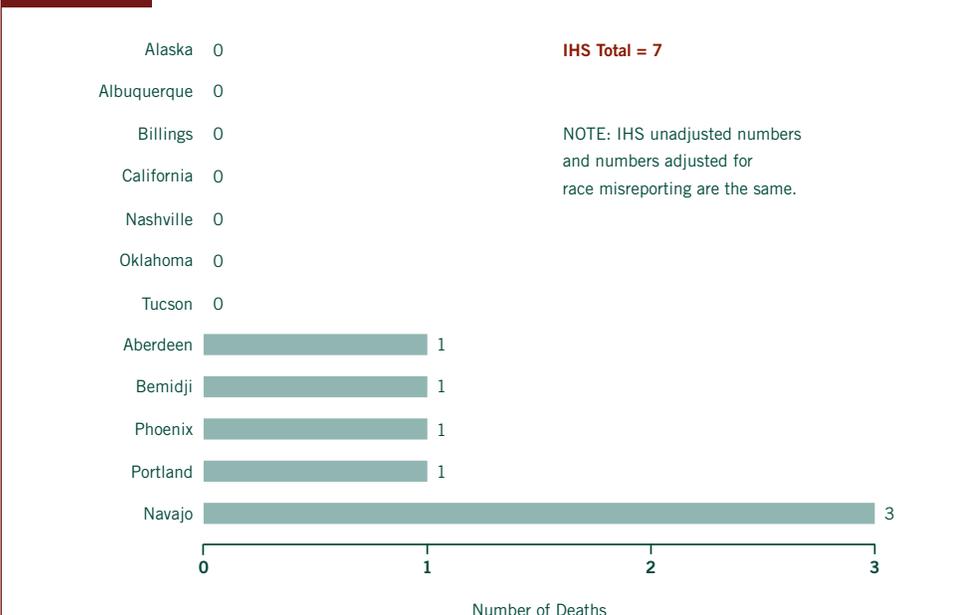
Rate of vaginal births after previous cesarean delivery is computed by dividing the number of such deliveries by the sum of these deliveries plus repeat cesarean deliveries, that is, to women with a previous cesarean section.

There were seven maternal deaths in the IHS service area population in 1996-98 (five maternal deaths in 1995, two in 1997 and zero in 1998). Only one IHS Area had more than one maternal death in 1996-98 — the Navajo Area (three deaths).

**Chart 3.10**

**Maternal Deaths**

*Calendar Years 1996-1998*

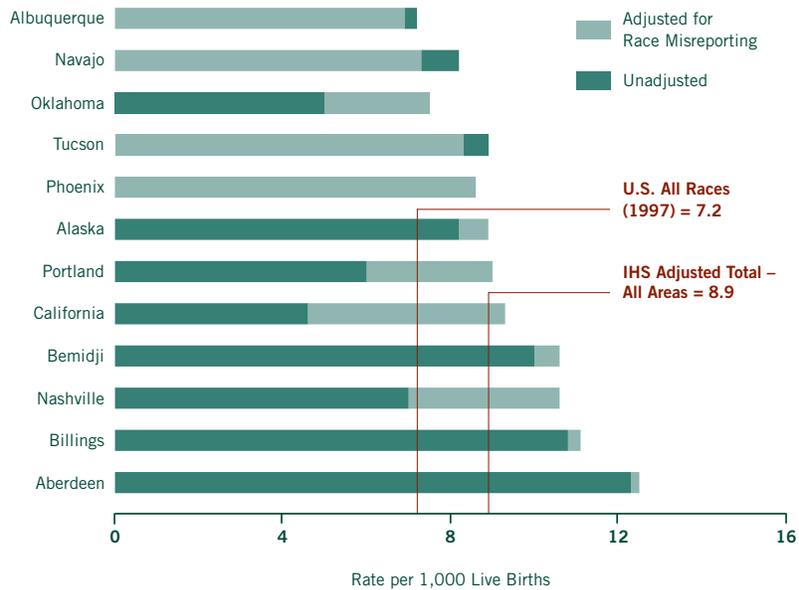


The infant mortality rate for the IHS service area population in 1996-98 was 8.9 deaths per 1,000 live births. The rate is adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 24-percent higher than the U.S. all-races (7.2 deaths per 1,000 live births for 1997). Two IHS Areas (Aberdeen and Billings) had rates exceeding the U.S. all-races rate by over fifty percent.

**Chart 3.11**

**Infant Mortality Rates**

Calendar Years 1996-1998



**Table 3.11**

**Infant Mortality Rates**

Calendar Years 1996-1998

(Under One Year)

	Live Births	Infant Deaths		Rate <sup>1</sup>	
		Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
U.S. All Races (1997)	3,880,894	28,045		7.2	
All IHS Areas	103,202	780	916	7.6	8.9
Aberdeen	8,389	103	105	12.3	12.5
Alaska	8,058	66	72	8.2	8.9
Albuquerque	5,102	36 <sup>3</sup>	35 <sup>3</sup>	7.1 <sup>3</sup>	6.9 <sup>3</sup>
Bemidji	6,495	65	69	10.0	10.6
Billings	4,243	46	47	10.8	11.1
California	8,075	37	75	4.6	9.3
Nashville	5,298	37	56	7.0	10.6
Navajo	13,739	112 <sup>3</sup>	100 <sup>3</sup>	8.2 <sup>3</sup>	7.3 <sup>3</sup>
Oklahoma	19,972	100	149	5.0	7.5
Phoenix	10,978	96 <sup>3</sup>	94 <sup>3</sup>	8.7 <sup>3</sup>	8.6 <sup>3</sup>
Portland	11,046	66	99	6.0	9.0
Tucson	1,807	16 <sup>3</sup>	15 <sup>3</sup>	8.9 <sup>3</sup>	8.3 <sup>3</sup>

<sup>1</sup>Rate per 1,000 live births.

<sup>2</sup>Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

<sup>3</sup>For the Albuquerque, Navajo, Phoenix and Tucson Areas there were more American Indian and Alaska Native Infant deaths identified through use of the state death certificate records (36, 112, 96 and 16 infant deaths-unadjusted data) than through use of a match between state birth and death certificate records (35, 100, 94 and 15 infant deaths-adjusted data).

The neonatal mortality rate for the IHS service area population in 1996-98 was 4.4 deaths per 1,000 live births. The rate is adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is eight percent lower than the U.S. all-races rate of 4.8 deaths per 1,000 live births in 1997. Six IHS Areas (Nashville, Aberdeen, Bemidji, Billings, California, and Portland) had rates that exceeded the U.S. all-races rate.

**Chart 3.12 Neonatal Mortality Rates** *Calendar Years 1996-1998*



**Table 3.12 Neonatal Mortality Rates** *Calendar Years 1996-1998*

(Under 28 Days)

	Live Births	Infant Deaths		Rate <sup>1</sup>	
		Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
<i>U.S. All Races (1997)</i>	3,880,894	18,524		4.8	
<i>All IHS Areas</i>	103,202	376	458	3.6	4.4
Aberdeen	8,389	44	47	5.2	5.6
Alaska	8,058	28	29	3.5	3.6
Albuquerque	5,102	16 <sup>3</sup>	13 <sup>3</sup>	3.1 <sup>3</sup>	2.5 <sup>3</sup>
Bemidji	6,495	34	36	5.2	5.5
Billings	4,243	23	23	5.4	5.4
California	8,075	17	43	2.1	5.3
Nashville	5,298	21	33	4.0	6.2
Navajo	13,739	52 <sup>3</sup>	49 <sup>3</sup>	3.8 <sup>3</sup>	3.6 <sup>3</sup>
Oklahoma	19,972	52	78	2.6	3.9
Phoenix	10,978	52 <sup>3</sup>	50 <sup>3</sup>	4.7 <sup>3</sup>	4.6 <sup>3</sup>
Portland	11,046	35	55	3.2	5.0
Tucson	1,807	2	2	1.1	1.1

<sup>1</sup>Rate per 1,000 live births.

<sup>2</sup>Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

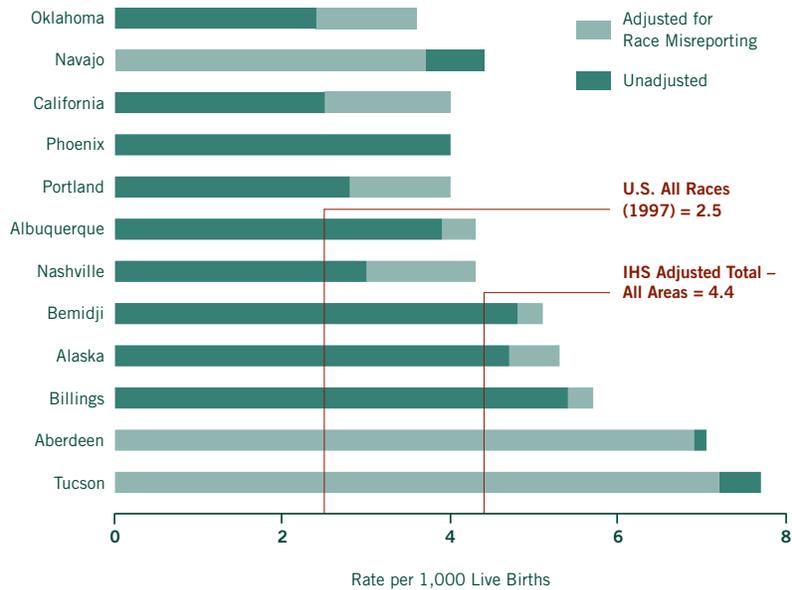
<sup>3</sup>The adjusted numbers and rates for neonatal deaths for Albuquerque, Navajo and Phoenix Areas are lower than the unadjusted numbers and rates because the linked birth/infant death file (used to obtain the adjusted counts for neonatal deaths) had three, three, and two less deaths, respectively, than did the unadjusted mortality file for each Area (1996-1998 data).

The postneonatal mortality rate for the IHS service area population in 1996-98 was 4.4 deaths per 1,000 live births. The rate is adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 1.8 times higher than the U.S. all-races rate of 2.5 deaths per 1,000 live births for 1997. The Tucson Area had the highest rate (7.2 deaths per 1,000 live births) among the IHS Areas followed by Aberdeen (6.9 deaths per 1,000 live births).

**Chart 3.13**

**Postneonatal Mortality Rates**

Calendar Years 1996-1998



**Table 3.13**

**Postneonatal Mortality Rates**

Calendar Years 1996-1998

(28 Days to Under One Year)

	Live Births	Infant Deaths		Rate <sup>1</sup>	
		Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
U.S. All Races (1997)	3,880,894	9,521		2.5	
All IHS Areas	103,202	404	458	3.9	4.4
Aberdeen	8,389	59 <sup>3</sup>	58 <sup>3</sup>	7.0 <sup>3</sup>	6.9 <sup>3</sup>
Alaska	8,058	38	43	4.7	5.3
Albuquerque	5,102	20	22	3.9	4.3
Bemidji	6,495	31	33	4.8	5.1
Billings	4,243	23	24	5.4	5.7
California	8,075	20	32	2.5	4.0
Nashville	5,298	16	23	3.0	4.3
Navajo	13,739	60 <sup>3</sup>	51 <sup>3</sup>	4.4 <sup>3</sup>	3.7 <sup>3</sup>
Oklahoma	19,972	48	71	2.4	3.6
Phoenix	10,978	44	44	4.0	4.0
Portland	11,046	31	44	2.8	4.0
Tucson	1,807	14 <sup>3</sup>	13 <sup>3</sup>	7.7 <sup>3</sup>	7.2 <sup>3</sup>

<sup>1</sup>Rate per 1,000 live births.

<sup>2</sup>Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

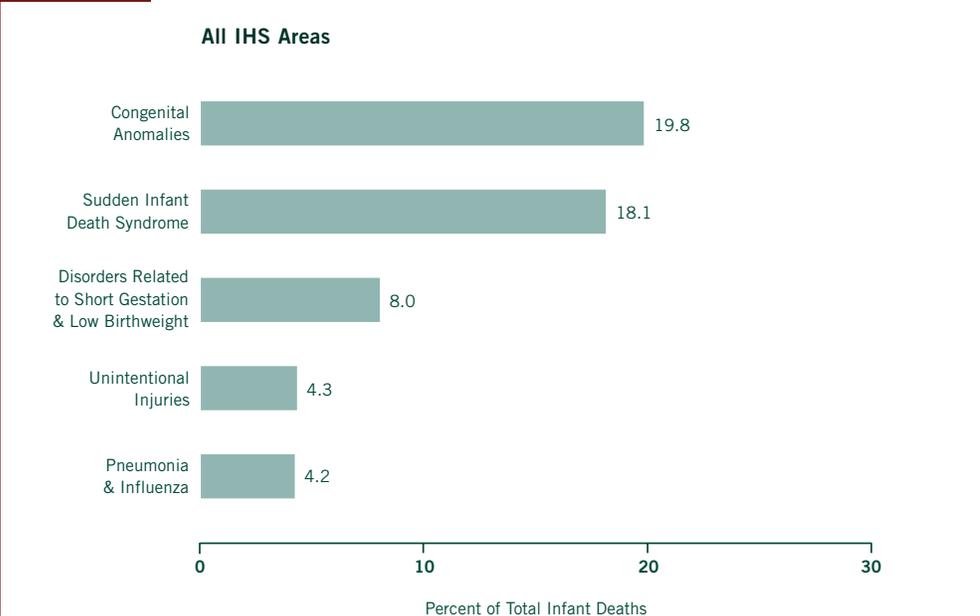
<sup>3</sup>The adjusted numbers and rates for postneonatal deaths for Aberdeen, Navajo and Tucson Areas are lower than the unadjusted numbers and rates because the linked birth/infant death file (used to obtain the adjusted counts for postneonatal deaths) had one, nine and one less deaths than, respectively, did the unadjusted mortality file for each Area (1996-1998 data).

In 1996-98, 19.8 percent of all infant deaths in the IHS service area were caused by congenital anomalies. This was followed by sudden infant death syndrome (18.1 percent), disorders related to short gestation and low birthweight (8.0 percent), unintentional injuries and adverse effects (4.3 percent), and pneumonia and influenza (4.2 percent).

**Chart 3.14**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

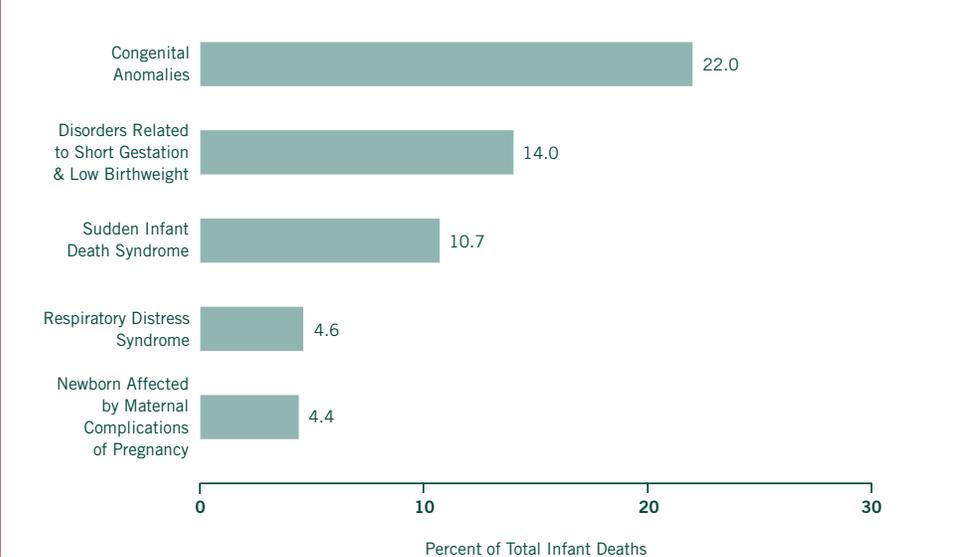


In 1997, 22.0 percent of all infant deaths in the U.S. were caused by congenital anomalies, followed by disorders related to short gestation and low birthweight at 14.0 percent.

**Chart 3.15**

**Leading Causes of Infant Deaths**

**U.S. All Races, 1997**

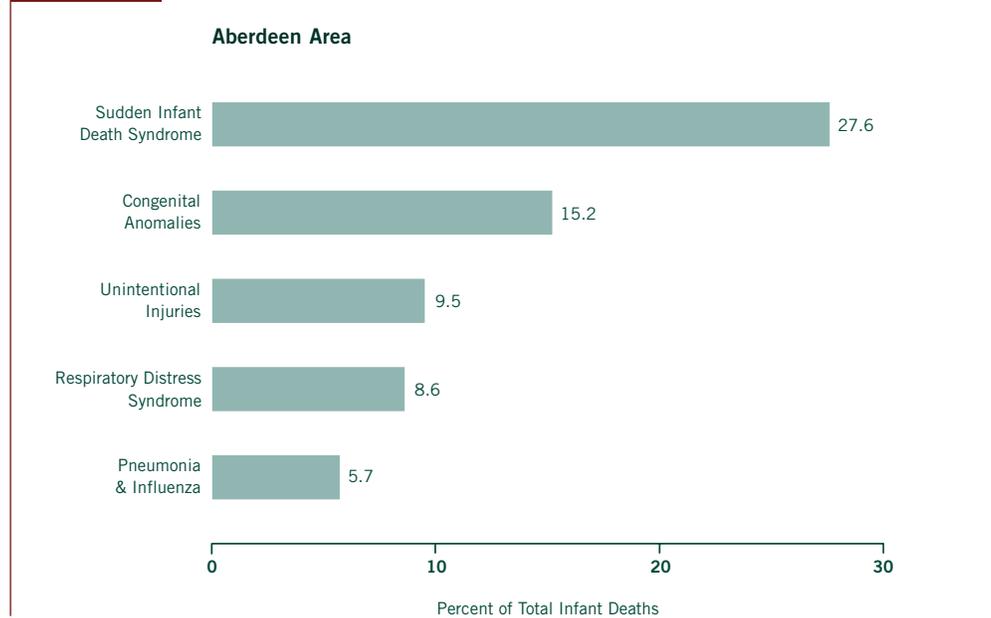


In 1996-98, 27.6 percent of all infant deaths in the Aberdeen Area were caused by sudden infant death syndrome, followed by congenital anomalies at 15.2 percent.

**Chart 3.16**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

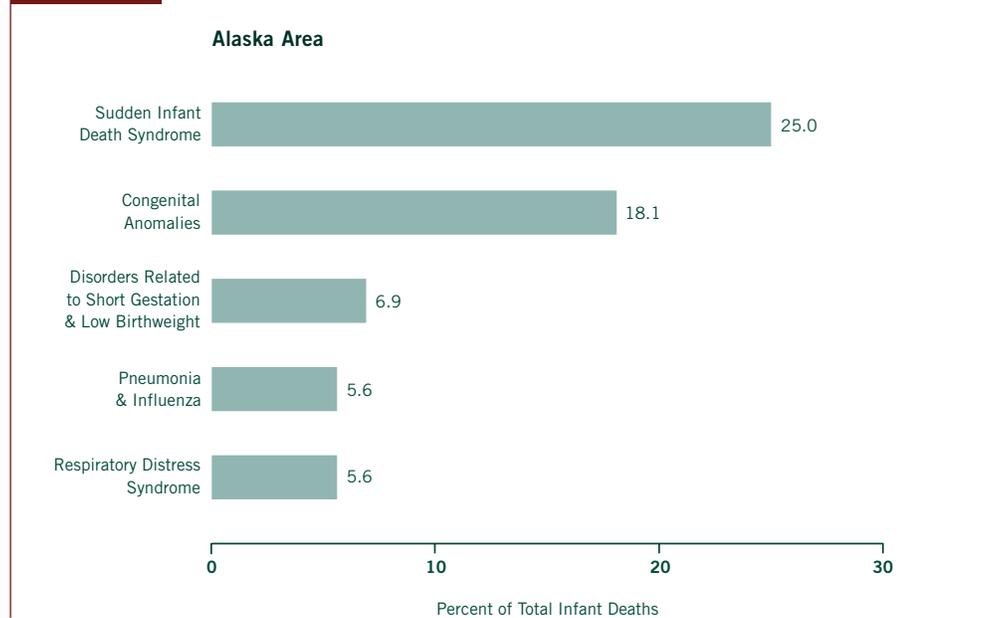


In 1996-98, 25.0 percent of all infant deaths in the Alaska Area were caused by sudden infant death syndrome, followed by congenital anomalies at 18.1 percent.

**Chart 3.17**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

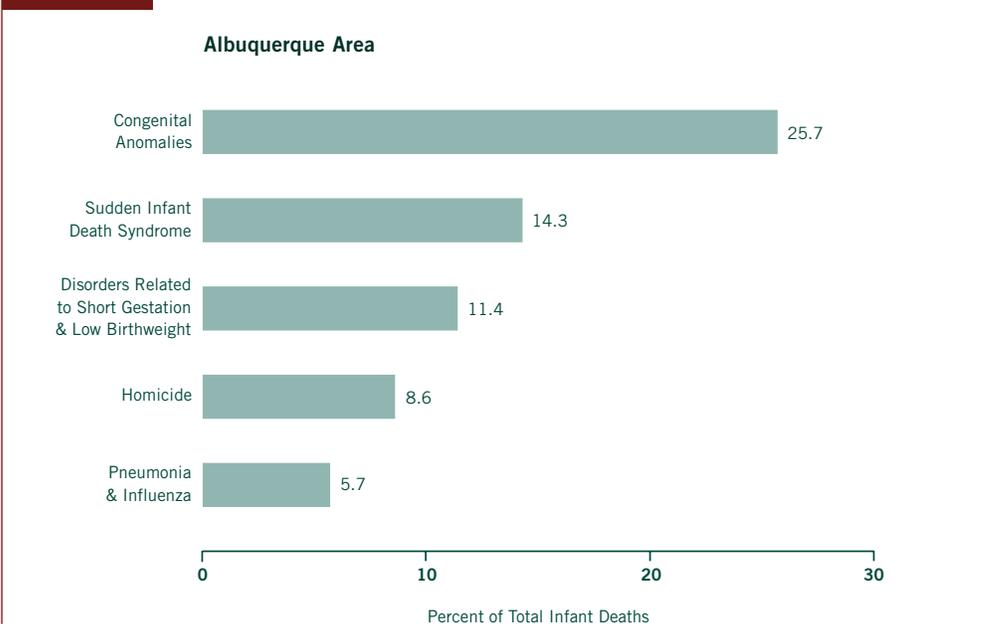


In 1996-98, 25.7 percent of all infant deaths in the Albuquerque Area were caused by congenital anomalies, followed by sudden infant death syndrome at 14.3 percent.

**Chart 3.18**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

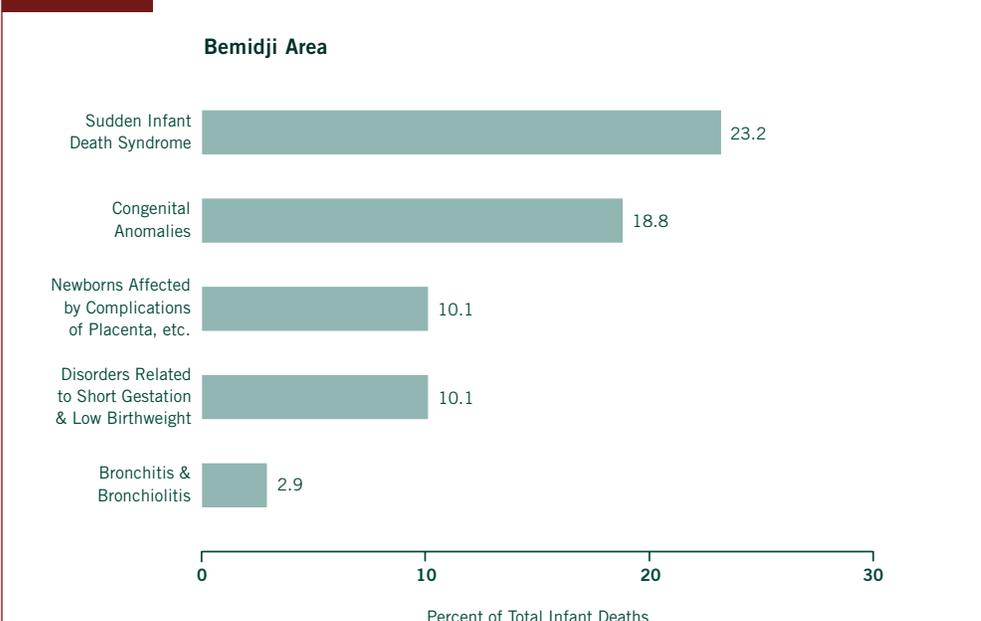


In 1996-98, 23.2 percent of all infant deaths in the Bemidji Area were caused by sudden infant death syndrome, followed by congenital anomalies at 18.8 percent.

**Chart 3.19**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

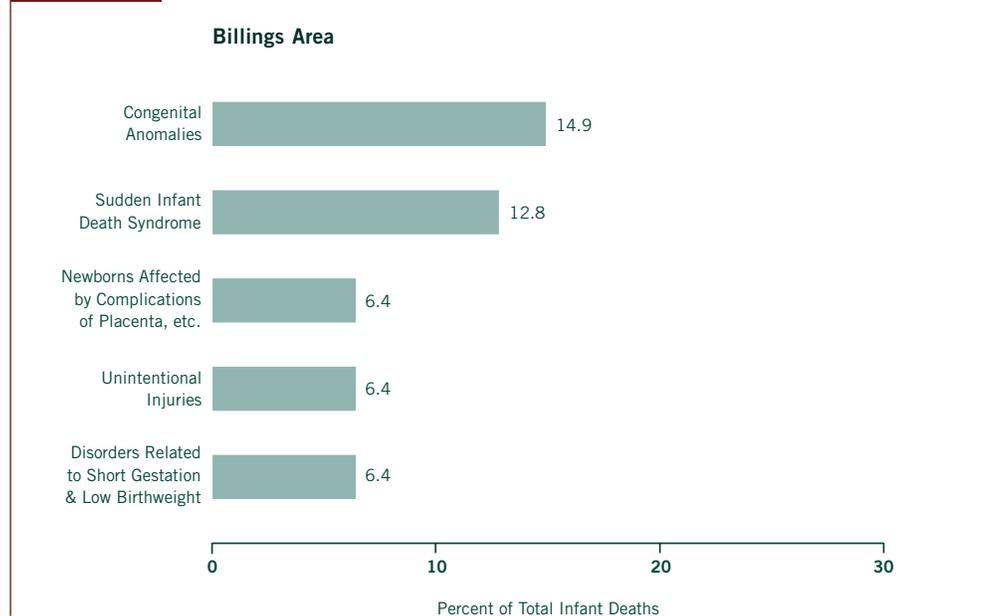


In 1996-98, 14.9 percent of all infant deaths in the Billings Area were caused by congenital anomalies, followed by sudden infant death syndrome at 12.8 percent.

**Chart 3.20**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*



In 1996-98, 21.3 percent of all infant deaths in the California Area were caused by congenital anomalies, followed by sudden infant death syndrome at 16.0 percent.

**Chart 3.21**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

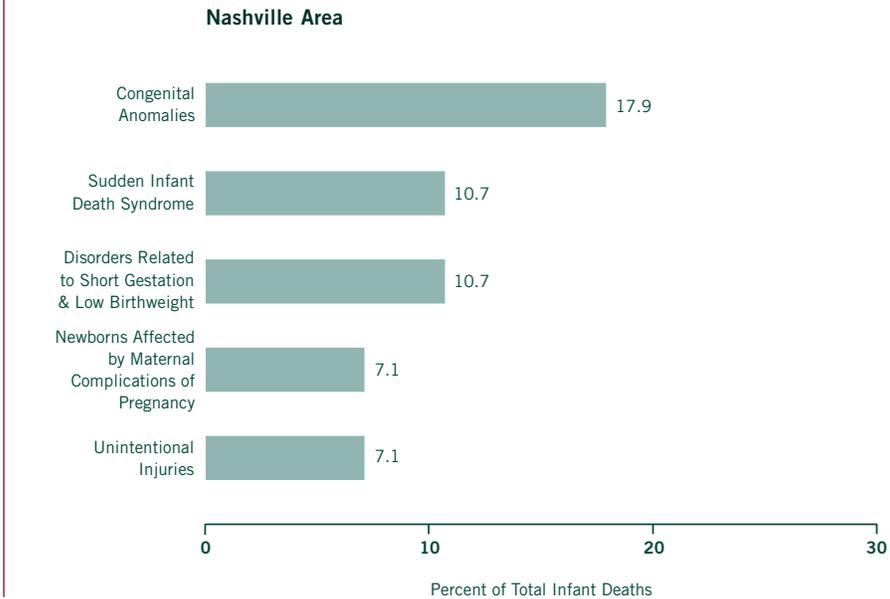


In 1996-98, 17.9 percent of all infant deaths in the Nashville Area were caused by congenital anomalies, followed by sudden infant death syndrome and disorders related to short gestation and low birthweight both at 10.7 percent.

**Chart 3.22**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

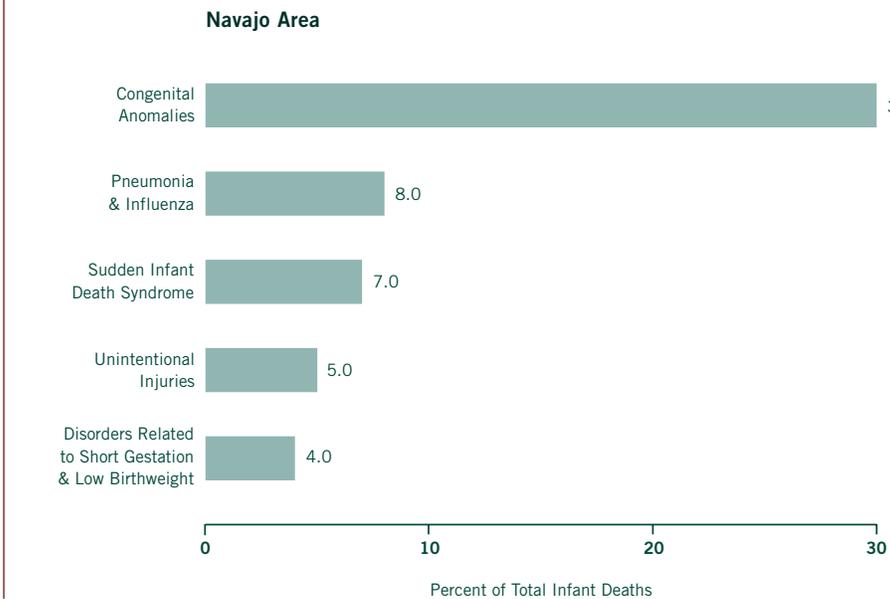


In 1996-98, 30.0 percent of all infant deaths in the Navajo Area were caused by congenital anomalies, followed by pneumonia and influenza at 8.0 percent.

**Chart 3.23**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

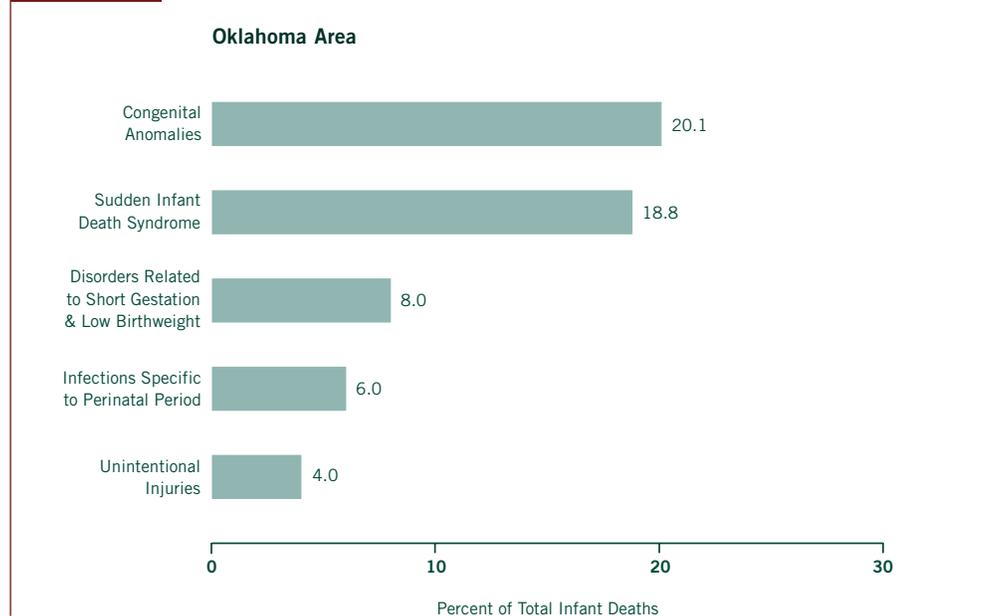


In 1996-98, 20.1 percent of all infant deaths in the Oklahoma Area were caused by congenital anomalies, followed by sudden infant death syndrome at 18.8 percent.

**Chart 3.24**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

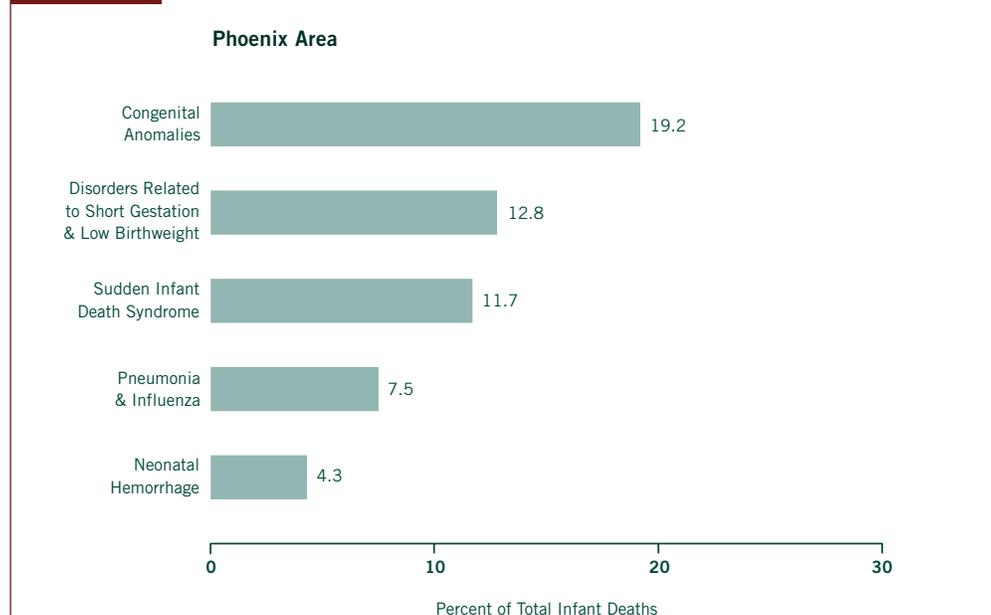


In 1996-98, 19.2 percent of all infant deaths in the Phoenix Area were caused by congenital anomalies, followed by disorders related to short gestation and low birthweight at 12.8 percent.

**Chart 3.25**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

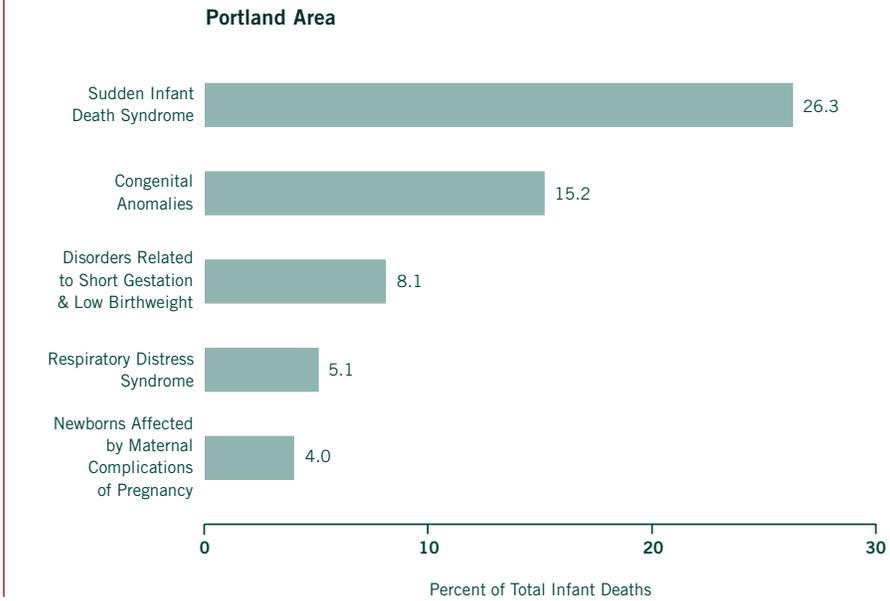


In 1996-98, 26.3 percent of all infant deaths in the Portland Area were caused by sudden infant death syndrome, followed by congenital anomalies at 15.2 percent.

**Chart 3.26**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

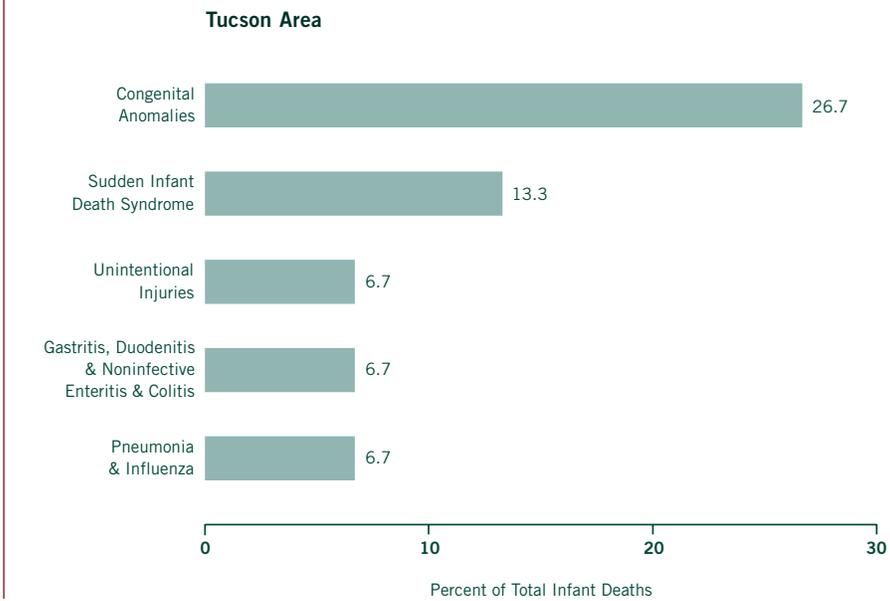


In 1996-98, 26.7 percent of all infant deaths in the Tucson Area were caused by congenital anomalies, followed by sudden infant death syndrome at 13.3 percent.

**Chart 3.27**

**Leading Causes of Infant Deaths**

*Calendar Years 1996-1998*

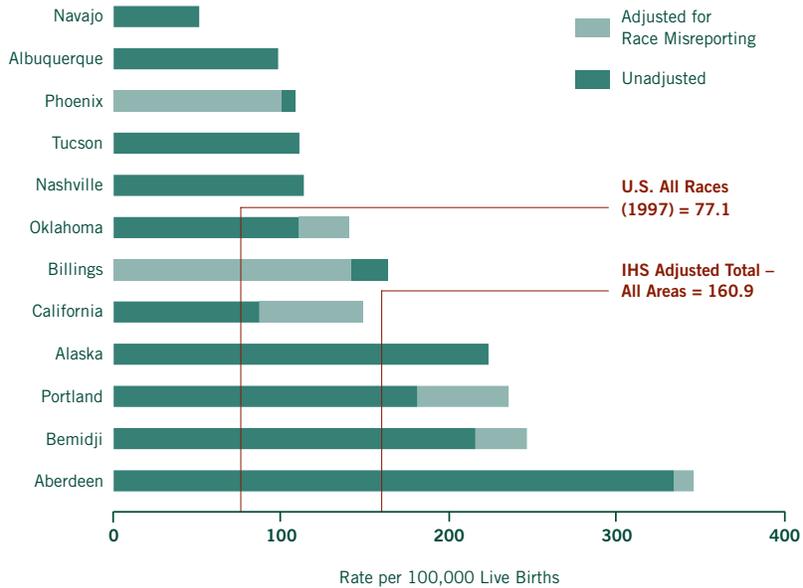


In 1996-98, the mortality rate for sudden infant death syndrome (SIDS) for the IHS service area population was 2.1 times the rate for the U.S. all-races population in 1997 (160.9 and 77.1, respectively). The rate is adjusted for misreporting of AI/AN race on the death certificate.

**Chart 3.28**

**Sudden Infant Death Syndrome (SIDS) Rates**

Calendar Years 1996-1998



**Table 3.28**

**Sudden Infant Death Syndrome (SIDS) Rates**

Calendar Years 1996-1998

	Live Births	Infant Deaths		Rate <sup>1</sup>	
		Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
<i>U.S. All Races (1997)</i>	3,880,894	2,991		77.1	
<i>All IHS Areas</i>	103,202	148	166	143.4	160.9
Aberdeen	8,389	28	29	333.8	345.7
Alaska	8,058	18	18	223.4	223.4
Albuquerque	5,102	5	5	98.0	98.0
Bemidji	6,495	14	16	215.6	246.3
Billings	4,243	7 <sup>3</sup>	6 <sup>3</sup>	165.0 <sup>3</sup>	141.4 <sup>3</sup>
California	8,075	7	12	86.7	148.6
Nashville	5,298	6	6	113.3	113.3
Navajo	13,739	7	7	51.0	51.0
Oklahoma	19,972	22	28	110.2	140.2
Phoenix	10,978	12 <sup>3</sup>	11 <sup>3</sup>	109.3 <sup>3</sup>	100.2 <sup>3</sup>
Portland	11,046	20	26	181.0	235.4
Tucson	1,807	2	2	110.7	110.7

<sup>1</sup>Rate per 100,000 live births.

<sup>2</sup>Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

<sup>3</sup>The adjusted numbers and rates (Billings and Phoenix Areas) are lower than the unadjusted numbers and rates because the linked birth/infant death file (used to obtain the adjusted counts for infant deaths) had one less death for this cause than did the unadjusted mortality file for each IHS area (1996-1998 data).