

# FETAL & INFANT DEATHS



## FETAL DEATHS

A fetal death is defined as the death of a fetus after the eighth week of gestation and before delivery. Alaska Statute 18.50.240 requires the filing of a fetal death certificate for each fetal death that occurs in the state when the pregnancy has lasted at least 20 weeks. The filing of certificates for fetal deaths which occur prior to the twentieth week of pregnancy is optional. This report includes information only for fetal deaths in which either the estimated gestation or the calculated gestation (last menstrual date subtracted from the date of delivery) is at least twenty weeks.

TABLE 2.1A FETAL DEATHS BY CENSUS AREA OF MOTHER'S RESIDENCE, ALASKA, 1997

CENSUS AREA OF MOTHER'S RESIDENCE	DEATHS
ANCHORAGE BOROUGH	13
BETHEL	2
FAIRBANKS NORTH STAR BOROUGH	5
JUNEAU BOROUGH	5
KENAI PENINSULA BOROUGH	3
KODIAK ISLAND BOROUGH	1
MATANUSKA-SUSITNA BOROUGH	2
NOME	1
NORTH SLOPE BOROUGH	1
NORTHWEST ARCTIC BOROUGH	1
PRINCE OF WALES-OUTER KETCHIKAN	2
YUKON-KOYUKUK	1
TOTAL	37

**FETAL AND INFANT DEATHS (continued) Alaska Bureau of Vital Statistics**

TABLE 2.1B FETAL DEATHS BY NATIVE REGIONAL CORPORATION OF MOTHER'S RESIDENCE, ALASKA, 1997

NATIVE REGIONAL CORPORATION OF MOTHER'S RESIDENCE	DEATHS
ARCTIC SLOPE CORP	1
BERING STRAITS CORP.	1
CALISTA CORP.	2
COOK INLET REG CORP.	18
DOYON LTD.	6
KONIAG INC.	1
NANA REGIONAL CORP.	1
SEALASKA CORP.	7
TOTAL	37

TABLE 2.1C FETAL DEATHS AND FETAL DEATH RATE BY MOTHER'S RACE, ALASKA, 1993-1997

MOTHER'S RACE	FETAL DEATHS						TOTAL BIRTHS	1993-1997 RATE
	1993	1994	1995	1996	1997	TOTAL		
WHITE	33	30	25	25	25	138	34,922	4.0
NATIVE	10	9	12	15	8	54	11,913	4.5
BLACK	2	4	5	5	3	19	2,416	7.9
ASIAN/PI	2	1		1	1	5	2,474	2.0
UNKNOWN							270	
TOTAL	47	44	42	46	37	216	51,995	4.2

TABLE 2.2 FETAL DEATHS BY AGE AND RACE OF MOTHER, ALASKA, 1997

MOTHER'S AGE	MOTHER'S RACE				TOTAL
	WHITE	NATIVE	BLACK	ASIAN/PI	
15-17		2	1		3
18-19			1		1
20-24	4	2			6
25-29	9	1	1		11
30-34	6	1			7
35-39	4	2		1	7
40-44	2				2
TOTAL	25	8	3	1	37

TABLE 2.3 FETAL DEATHS BY LENGTH OF GESTATION AND WEIGHT, ALASKA, 1997

GESTATION	WEIGHT IN GRAMS							TOTAL
	<500	500-999	1000-1499	1500-1999	2000-2499	2500-4000	UNK	
20-24 WEEKS	8	3	1				2	14
25-28 WEEKS	2	3						5
29-32 WEEKS		2						2
33-36 WEEKS				1	1	4	1	7
37-41 WEEKS			1		2	6		9
TOTAL	10	8	2	1	3	10	3	37

## INFANT DEATHS

Infant deaths are defined as deaths which occur before an individual’s first birthday. Infant mortality may be calculated by either of two methods: *birth cohort* or *death cohort*. The *birth cohort* method is calculated based on a comparison of the number of infants born in a calendar year with the number of those infants who die before reaching their first birthday. The *death cohort* method is calculated by dividing the number of infants who die in a calendar year by the number of infants born in that same year.

The birth cohort method is more relevant for calculating infant mortality rates because it calculates a rate for a specific group of infants, whereas the death cohort method calculates a rate based on comparing deaths in one year against births in that same year. The death cohort calculation includes infants who died in the report year (1997) but were born in the previous year, and excludes infants who were born in the report year but die in the next year. In this report, the birth cohort method is calculated on births from calendar year 1996. Birth cohort calculations are not included for 1997 in this report because not all 1998 death records were complete at the time this report was compiled.

The death cohort method is used in this report for calendar year 1997. This method compares the number of deaths of infants who died during 1997 prior to their first birthday with the number of infants who were born in 1997.

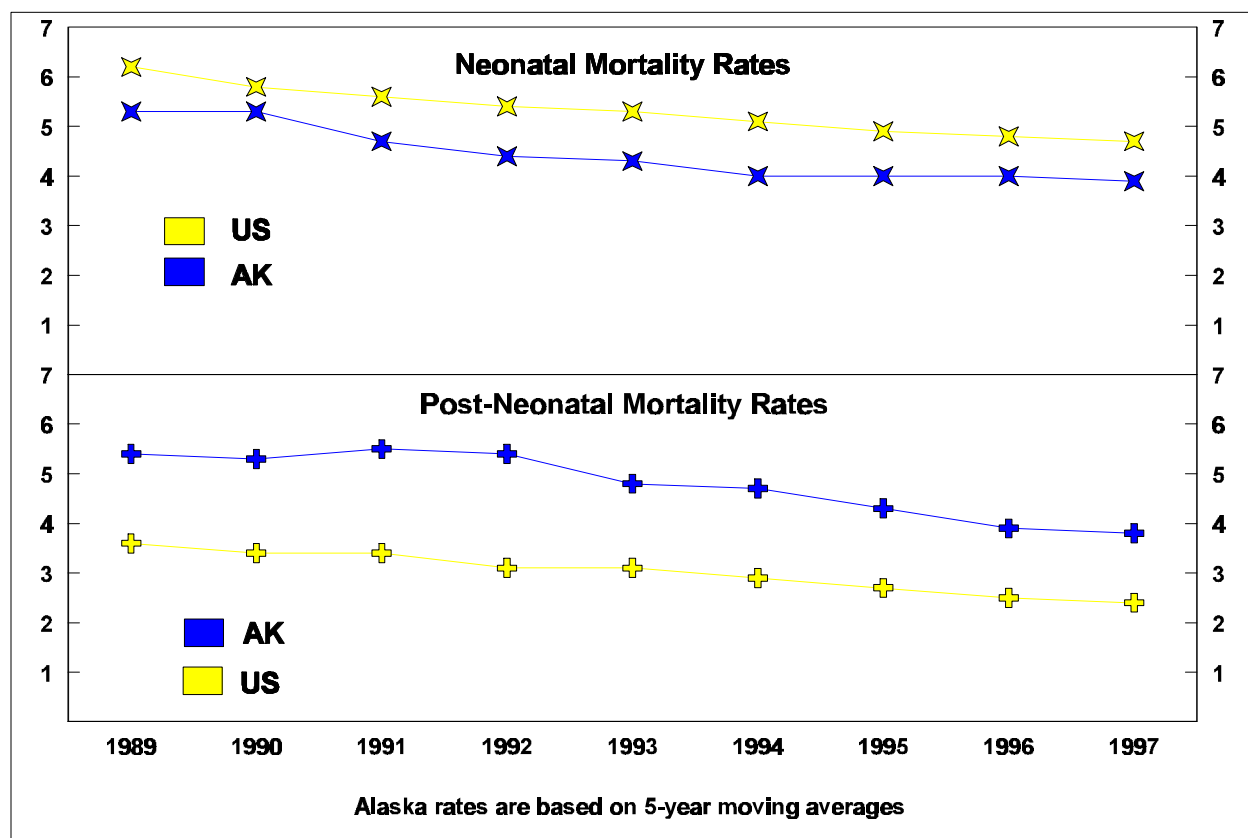
## Infant Mortality Rates

Using the death cohort, the total number of infant deaths during 1997 was 76. This is a 5.6 percent increase from 72 infant deaths during 1996.<sup>1</sup> Since relatively small changes in infant deaths can cause large fluctuations in the infant mortality rate (IMR) from one year to the next, Alaska’s annual IMR is calculated on a five-year moving average. The 1993-1997 five-year average infant mortality rate was 7.7 deaths per 1,000 live births, down from 7.9 deaths per 1,000 live births for 1992-1996. The U.S. infant mortality rate of 7.1 deaths per 1,000 live births in 1997 reflects a 2.7% decrease from 7.3 infant deaths per 1,000 live births in 1996.<sup>2</sup> Both the U.S. and Alaska infant mortality rates have been steadily decreasing in recent years, and both are now at the lowest rates ever recorded.

In discussing infant mortality, a distinction is made between neonatal mortality (deaths prior to the 28th day of life) and postneonatal mortality (deaths from the 28th day up to one year). Neonatal deaths are frequently associated with circumstances related to pregnancy and delivery while postneonatal deaths are often associated with living conditions. Alaska’s neonatal mortality rate has generally been lower than the neonatal mortality rate for the United States, while its postneonatal mortality rate has been higher. Chart 2.1 provides a graphic comparison of the neonatal and postneonatal rates for Alaska and the United States.

1 Crondahl, J., Mitchell, P., and Walden, S. Department of Health and Social Services, Division of Public Health, *Alaska Bureau of Vital Statistics 1996 Annual Report*, Juneau, Alaska. June 1998, p.59.  
 2 National Center for Health Statistics, U.S. Department of Health and Human Services, “Births and Deaths: Preliminary Data for 1997,” *National Vital Statistics Report*, Vol. 47, No. 4, October 7, 1998, p. 6.

CHART 2.1 NEONATAL AND POSTNEONATAL MORTALITY RATES PER 1,000 LIVE BIRTHS, ALASKA AND THE UNITED STATES, 1989-1997 (DEATH COHORT METHOD)



United States rates are single year rates and are provided by the National Center for Health Statistics.<sup>3</sup> Alaska infant mortality rates are calculated using five-year moving averages per 1,000 live births and are based on the death-cohort method.

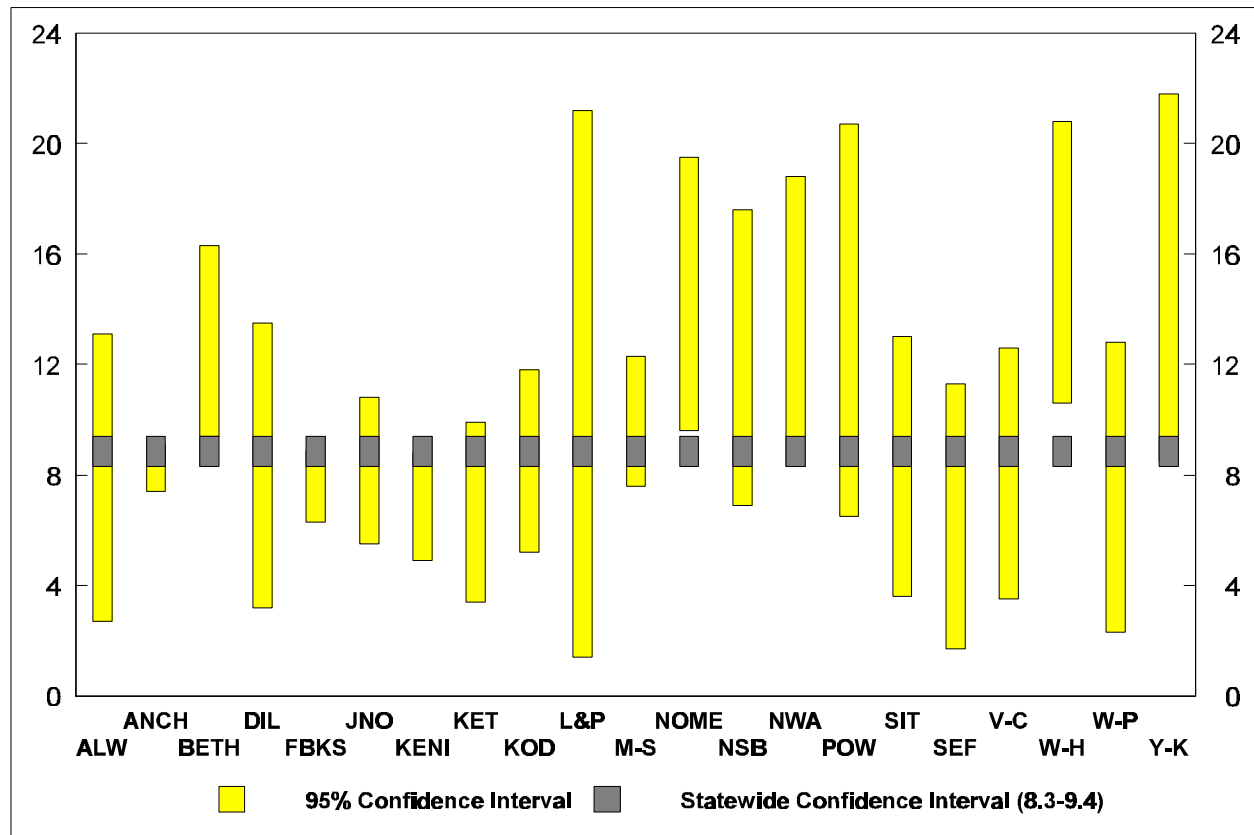
Chart 2.2 compares confidence intervals for infant mortality in individual census areas against the statewide average. When smaller populations, such as individual census areas, are analyzed, ten-year averages and 95 percent confidence intervals are used. The calculated infant mortality rate occurs at the midpoint of the confidence interval. The smaller the population, the larger the confidence interval. (For a detailed discussion of confidence intervals and statistical significance, refer to Appendix B.)

Several census areas (Aleutians East, Angoon-Hoonah-Skagway, Bristol Bay, Denali, Haines Borough, and Yakutat) have been omitted from Chart 2.2 because occurrences of infant mortality are too few for rates to be meaningful. Those census areas which have infant mortality rates significantly above the statewide 95% confidence interval of 8.3 to 9.4 deaths per 1,000 live births are Nome and Wade Hampton. No areas had rates below the statewide 95% confidence interval; the confidence intervals for all other areas fell at least partly within the range of the statewide average and are therefore statistically indistinguishable from the statewide average.

<sup>3</sup> Ibid., Table 14, p. 28.

# Alaska Bureau of Vital Statistics (continued) FETAL AND INFANT DEATHS

CHART 2.2 95% CONFIDENCE INTERVALS FOR INFANT MORTALITY BY CENSUS AREA, ALASKA, 1988-1997 (DEATH COHORT)



Key for Chart 2.2

ALW Aleutians West  
 ANCH Anchorage  
 BETH Bethel  
 DIL Dillingham  
 FBKS Fairbanks  
 JNO Juneau  
 KENI Kenai

KET Ketchikan  
 KOD Kodiak  
 L&P Lake & Peninsula  
 M-S Matanuska-Susitna  
 NOME Nome  
 NSB North Slope Borough  
 NWA Northwest Arctic

POW Prince of Wales/Outer Ketchikan  
 SIT Sitka  
 SEF Southeast Fairbanks  
 V-C Valdez/Cordova  
 W-H Wade Hampton  
 W-P Wrangell/Petersburg  
 Y-K Yukon Koyukuk

**FETAL AND INFANT DEATHS (continued) Alaska Bureau of Vital Statistics**

**Infant Deaths by Age**

TABLE 2.4A INFANT DEATHS BY CENSUS AREA OF DECEDENT'S RESIDENCE AND AGE, ALASKA, 1997 (DEATH COHORT METHOD)

CENSUS AREA OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST-NEONATAL	
ANCHORAGE BOROUGH	13	17	30
BETHEL	3	3	6
FAIRBANKS NORTH STAR BOROUGH	6	4	10
JUNEAU BOROUGH	1	1	2
KENAI PENINSULA BOROUGH	2	1	3
KETCHIKAN GATEWAY BOROUGH		3	3
KODIAK ISLAND BOROUGH	1		1
MATANUSKA-SUSITNA BOROUGH	3	5	8
NOME	2	4	6
PRINCE OF WALES-OUTER KETCHIKAN	1	1	2
SOUTHEAST FAIRBANKS	1		1
WADE HAMPTON	1	2	3
WRANGELL-PETERSBURG	1		1
TOTAL	35	41	76

TABLE 2.4B INFANT DEATHS BY NATIVE REGIONAL CORPORATION OF DECEDENT'S RESIDENCE AND AGE, ALASKA, 1997 (DEATH COHORT METHOD)

N R C OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST-NEONATAL	
BERING STRAITS CORP.	2	4	6
CALISTA CORP.	4	5	9
COOK INLET REG CORP.	18	23	41
DOYON LTD.	7	4	11
KONIAG INC.	1		1
SEALASKA CORP.	3	5	8
TOTAL	35	41	76

**Alaska Bureau of Vital Statistics (continued) FETAL AND INFANT DEATHS**

**TABLE 2.4C INFANT DEATHS BY RACE, SEX, AND AGE OF DECEDENT, ALASKA, 1997 (DEATH COHORT METHOD)**

DECEDENT'S RACE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST-NEONATAL	
WHITE	20	22	42
NATIVE	10	16	26
BLACK	3	1	4
ASIAN/PI	2	2	4
TOTAL	35	41	76
SEX	NEONATAL	POST-NEONATAL	TOTAL
FEMALE	11	16	27
MALE	24	25	49
TOTAL	35	41	76

**TABLE 2.5A INFANT DEATHS BY CENSUS AREA OF DECEDENT'S RESIDENCE AND AGE, ALASKA, BIRTH YEAR 1996 (BIRTH COHORT METHOD)**

CENSUS AREA OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST-NEONATAL	
ALEUTIANS WEST		1	1
ANCHORAGE BOROUGH	12	18	30
ANGOON-HOONAH-SKAGWAY		1	1
BETHEL	1		1
DILLINGHAM	1		1
FAIRBANKS NORTH STAR BOROUGH	5	3	8
JUNEAU BOROUGH	1		1
KENAI PENINSULA BOROUGH	3	1	4
KETCHIKAN GATEWAY BOROUGH	2	2	4
KODIAK ISLAND BOROUGH	3		3
MATANUSKA-SUSITNA BOROUGH	2	2	4
NOME		3	3
NORTH SLOPE BOROUGH		1	1
NORTHWEST ARCTIC BOROUGH	2	1	3
PRINCE OF WALES-OUTER KETCHIKAN		1	1
SOUTHEAST FAIRBANKS		1	1
WADE HAMPTON		2	2
WRANGELL-PETERSBURG		1	1
YUKON-KOYUKUK	2		2
TOTAL	34	38	72

**FETAL AND INFANT DEATHS (continued) Alaska Bureau of Vital Statistics**

**TABLE 2.5B INFANT DEATHS BY NATIVE REGIONAL CORPORATION OF DECEDENT'S RESIDENCE AND AGE, ALASKA, BIRTH YEAR 1996 (BIRTH COHORT METHOD)**

N R C OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST-NEONATAL	
ALEUT CORP.		1	1
ARCTIC SLOPE CORP.		1	1
BERING STRAITS CORP		3	3
BRISTOL BAY CORP.	1		1
CALISTA CORP.	1	2	3
COOK INLET REG CORP	17	21	38
DOYON LTD	7	4	11
KONIAG INC.	3		3
NANA REGIONAL CORP.	2	1	3
SEALASKA CORP.	3	5	8
TOTAL	34	38	72

**TABLE 2.5C INFANT DEATHS BY RACE, SEX, AND AGE OF DECEDENT, ALASKA, BIRTH YEAR 1996 (BIRTH COHORT METHOD)**

DECEDENT'S RACE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST-NEONATAL	
WHITE	20	20	40
NATIVE	10	13	23
BLACK	4	1	5
ASIAN/PI		4	4
TOTAL	34	38	72
SEX	NEONATAL	POST-NEONATAL	TOTAL
FEMALE	8	15	23
MALE	26	23	49
TOTAL	34	38	72

**Infant Mortality Rates by Race**

Table 2.6A shows 5-year moving average infant mortality rates by race for the years 1993 through 1997. To ensure consistent reporting and calculation of rates by race, all death certificates for decedents who were born in Alaska in 1989 or later are matched with the birth certificate and the child's race at birth is used for calculating deaths and death rates by race.



# Alaska Bureau of Vital Statistics (continued) FETAL AND INFANT DEATHS

TABLE 2.6A BIRTHS AND INFANT DEATHS (DEATH COHORT METHOD) BY DEATH YEAR AND FIVE-YEAR MOVING AVERAGE INFANT MORTALITY RATES BY RACE, ALASKA, 1993-1997

RACE	1993			1994			1995			1996			1997		
	BTHS	DTHS	5-YR RATE	BTHS	DTHS	5-YR RATE	BTHS	DTHS	5-YR RATE	BTHS	DTHS	5-YR RATE	BTHS	DTHS	5-YR RATE
			1989-1993			1990-1994			1991-1995			1992-1996			1993-1997
WHITE	7,512	46	7.2	7,294	51	7.2	6,971	44	6.9	6,695	39	6.5	6,450	45	6.4
NATIVE	2,461	29	14.2	2,346	27	13.0	2,303	22	11.7	2,406	24	11.0	2,397	24	10.6
BLACK	584	11	14.4	494	2	13.1	448	11	14.7	435	7	15.2	455	4	14.5
ASIAN/PI	517	4	6.1	468	2	6.9	485	4	6.0	493	2	6.0	509	3	6.1
UNKNN	15			80			15	1	7.1	17		6.8	143		3.7
TOTAL	11,089	90	9.1	10,682	82	8.8	10,222	82	8.3	10,046	72	7.9	9,956	76	7.7

TABLE 2.6B INFANT DEATHS (DEATH COHORT METHOD) BY DEATH YEAR, BIRTH WEIGHT, AND AGE AT DEATH (NEONATAL OR POST-NEONATAL), AND INFANTS SURVIVING FIRST YEAR OF LIFE BY BIRTH YEAR AND BIRTH WEIGHT, 1988-1997

YEAR	BIRTH WEIGHT IN GRAMS																				TOTAL	
	<500			500-999			1000-1499			1500-2499			2500-3999			4000+			UNKNOWN			
	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE			
NN*	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR		
1988	14		1	18	8	22	6	6	47	4	6	425	13	43	8,929		8	1,725	4	3	5	11,287
1989	7			14	2	25	9	4	40	6	7	459	12	38	9,179		5	1,827	3	2	21	11,660
1990	5			17	1	38	8	1	43	9	9	444	20	48	9,393		3	1,856	1	3	1	11,900
1991	13		2	9	2	22	3		44	7	8	432	8	41	9,227	1	9	1,853	1	4	2	11,688
1992	3			13	1	28	6	2	57	5	6	453	18	38	9,207		5	1,871	1	2	11	11,727
1993	5			15	1	21	3	3	52	7	5	435	12	29	8,729	4	1	1,744	4	1	18	11,089
1994	5		2	9	2	28	4	1	57	2	5	473	9	36	8,303		4	1,705	5		32	10,682
1995	7		2	14		17	6	3	46	6	4	436	13	22	8,057	2		1,553	2	3	29	10,222
1996	8		1	10	1	30	1	1	46	5	3	444	8	24	7,899	2	6	1,541	1	2	13	10,046
1997	5		5	10	6	33	1	1	58	4	6	453	9	23	7,811	2	4	1,491	4	1	29	9,956

\* NN = Neonatal death; PNN = Post-neonatal death; SUR = survived first year of life.

## Infant Deaths by Cause of Death

Although the same coding system (ICD9) is used in reporting causes of death for infants and the general population, the codes are grouped differently since causes of death for infants up to one year of age differ from those in the general population. For specific causes of death for infant mortality refer to Appendix C, Table C.3.

Certain causes of death are associated with factors such as age and birth weight. For instance, Sudden Infant Death Syndrome (SIDS) almost always occurs in the postneonatal period. Respiratory Distress Syndrome generally occurs in low birth weight infants. The single greatest cause of infant death in Alaska is Sudden Infant Death Syndrome. In the five-year period from 1993 through 1997, 96 infants were reported to have died of SIDS, a rate of 1.8 per thousand live births. This is a decrease of 18 percent from 1992-1995 when the rate was 2.2 deaths per thousand live births. This compares with a rate of 0.8 and 0.7 per thousand live births for the United States in 1996 and 1997, respectively.<sup>4</sup> The United States rate for SIDS deaths dropped 36.4% since 1994 when the rate was 1.1 deaths per thousand live births.

4 Ibid., Table 15, p.29.

## FETAL AND INFANT DEATHS (continued) Alaska Bureau of Vital Statistics

Because of its mysterious nature, Sudden Infant Death Syndrome can never be positively determined; rather, it is a diagnosis which occurs after other causes of death have been ruled out. What we can say about SIDS is that it affects normally healthy, sleeping infants under one year of age. One potential risk factor for SIDS is putting infants to sleep on their stomachs (the prone position).<sup>5</sup>

**TABLE 2.7            INFANT DEATHS BY SELECTED CAUSES OF DEATH AND AGE, ALASKA, 1997 (DEATH COHORT METHOD)**

CAUSE OF DEATH	AGE AT DEATH		
	NEONATAL	POST-NEONATAL	TOTAL
SEPTICEMIA		1	1
CANCER		1	1
BENIGN NEOPLASMS		1	1
BRONCHITIS AND BRONCHIOLITIS		2	2
PNEUMONIA & INFLUENZA		3	3
CONGENITAL ANOMALIES	8	8	16
MATERNAL CONDITIONS (UNRELATED TO PRESENT PREGNANCY)	2		2
MATERNAL COMPLICATIONS OF PREGNANCY	2		2
PLACENTA, CORD, AND MEMBRANE COMPLICATIONS	3		3
LABOR & DELIVERY: OTHER COMPLICATIONS	1		1
SHORT GESTATION & LOW BIRTHWEIGHT RELATED DISORDERS	5	1	6
RESPIRATORY DISTRESS SYNDROME	3		3
PERINATAL PERIOD INFECTIONS	3		3
SIDS	1	8	9
ACCIDENTS & ADVERSE EFFECTS		3	3
HOMICIDE		5	5
ALL OTHER CAUSES	7	8	15
<b>TOTAL</b>	<b>35</b>	<b>41</b>	<b>76</b>

5 Willinger, Marian, Ph.D., Hoffman, H., M.A., and Hartford, R., Ph.D., "Infant Sleep Position and Risk for Sudden Infant Death Syndrome: Report of Meeting Held January 13 and 14, 1994, National Institutes of Health, Bethesda, MD," Pediatrics, Vol. 93, No. 5, May 1994, p. 814.

**Alaska Bureau of Vital Statistics (continued) FETAL AND INFANT DEATHS**

**TABLE 2.8 INFANT DEATHS BY SELECTED CAUSES OF DEATH AND RACE, ALASKA, 1997 (DEATH COHORT METHOD)**

CAUSE OF DEATH	RACE				TOTAL
	WHITE	NATIVE	BLACK	AS/PI	
SEPTICEMIA	1				1
CANCER		1			1
BENIGN NEOPLASMS	1				1
BRONCHITIS AND BRONCHIOLITIS		1	1		2
PNEUMONIA & INFLUENZA	1	2			3
CONGENITAL ANOMALIES	11	5			16
MATERNAL COMPLICATIONS (UNRELATED TO PRESENT PREGNANCY)	2				2
MATERNAL COMPLICATIONS OF PREGNANCY	2				2
PLACENTA, CORD, AND MEMBRANE COMPLICATIONS	2	1			3
LABOR & DELIVERY: OTHER COMPLICATIONS	1				1
SHORT GESTATION & LOW BIRTHWEIGHT RELATED DISORDERS	2	4			6
RESPIRATORY DISTRESS SYNDROME	2	1			3
PERINATAL PERIOD INFECTIONS	2		1		3
SIDS	3	5		1	9
ACCIDENTS & ADVERSE EFFECTS	2	1			3
HOMICIDE	2	3			5
ALL OTHER CAUSES	8	2	2	3	15
TOTAL	42	26	4	4	76