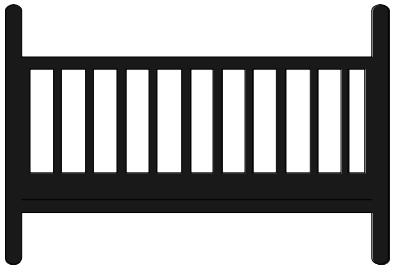
FETAL AND INFANT DEATHS



46 FETAL DEATHS
72 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 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, 1996

CENSUS AREA OF MOTHER'S RESIDENCE	DEATHS
ANCHORAGE BOROUGH	20
BETHEL	1
DILLINGHAM	1
FAIRBANKS NORTH STAR BOROUGH	8
KENAI PENINSULA BOROUGH	2
KETCHIKAN GATEWAY BOROUGH	1
KODIAK ISLAND BOROUGH	1
MATANUSKA-SUSITNA BOROUGH	2
NOME	2
NORTHWEST ARCTIC BOROUGH	1
SITKA BOROUGH	1
SOUTHEAST FAIRBANKS	1
VALDEZ-CORDOVA	2
WADE HAMPTON	2
WRANGELL-PETERSBURG	1
TOTAL	46

TABLE 2.1B FETAL DEATHS BY NATIVE REGIONAL CORPORATION OF MOTHER'S RESIDENCE, ALASKA, 1996

NATIVE REGIONAL CORPORATION OF MOTHER'S RESIDENCE	DEATHS
AHTNA INC.	1
BERING STRAITS CORP.	2
BRISTOL BAY CORP.	1
CALISTA CORP.	3
CHUGACH NATIVES INC.	1
COOK INLET REG CORP.	24
DOYON LTD.	9
KONIAG INC.	1
NANA REGIONAL CORP.	1
SEALASKA CORP.	3
TOTAL	46

TABLE 2.1C FETAL DEATHS AND FETAL DEATH RATE BY MOTHER'S RACE, ALASKA, 1992-1996

MOTHER'S RACE	FETAL DEATHS						TOTAL BIRTHS	1992-1996 RATE
	1992	1993	1994	1995	1996	TOTAL		
WHITE	40	33	30	25	25	153	36,386	4.2
NATIVE	12	10	9	12	15	58	12,213	4.7
BLACK	3	2	4	5	5	19	2,499	7.6
ASIAN/PI	4	2	1		1	8	2,514	3.2
UNKNOWN							149	
TOTAL	59	47	44	42	46	238	53,761	4.4

TABLE 2.2 FETAL DEATHS BY AGE AND RACE OF MOTHER, ALASKA, 1996

MOTHER'S AGE	MOTHER'S RACE				TOTAL
	WHITE	NATIVE	BLACK	ASIAN/PI	
15-17	1	1			2
18-19	1	1	1		3
20-24	8	5			13
25-29	7	3	2	1	13
30-34	5	2	1		8
35-39	3	2			5
40-44		1	1		2
TOTAL	25	15	5	1	46

TABLE 2.3 FETAL DEATHS BY LENGTH OF GESTATION AND WEIGHT, ALASKA, 1996

GESTATION	WEIGHT IN GRAMS <500	500–999	1000–1499	1500–1999	2000–2499	2500–4000	4000+	UNK	TOTAL
20-24 WEEKS	5	5		1				1	12
25-28 WEEKS	1	4	1					1	7
29-32 WEEKS				2	3				5
33-36 WEEKS				4	2	1			7
37-41 WEEKS				1	2	10	1		14
42+ WEEKS						1			1
TOTAL	6	9	1	8	7	12	1	2	46

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 reliable 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 but were born in the previous year, and 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 1995. Birth cohort calculations are not included for 1996 in this report because not all 1997 death records were complete at the time this report was compiled.

The death cohort method is used in this report for calendar year 1996. This method compares the number of deaths of infants who died during 1996 prior to their first birthday with the number of infants who were born in 1996.

Infant Mortality Rates

Using the death cohort, the total number of infant deaths during 1996 was 72. This is a ten percent decrease from 80 infant deaths during 1995.[1] 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 1992-1996 five-year average infant mortality rate was 7.9 deaths per 1,000 live births, down from 8.3 deaths per 1,000 live births for 1991-1995. The U.S. infant mortality rate of 7.2 deaths per 1,000 live births in 1996 reflects a 5.3% decrease from 7.6 infant deaths per 1,000 live births in 1995.[2] 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.

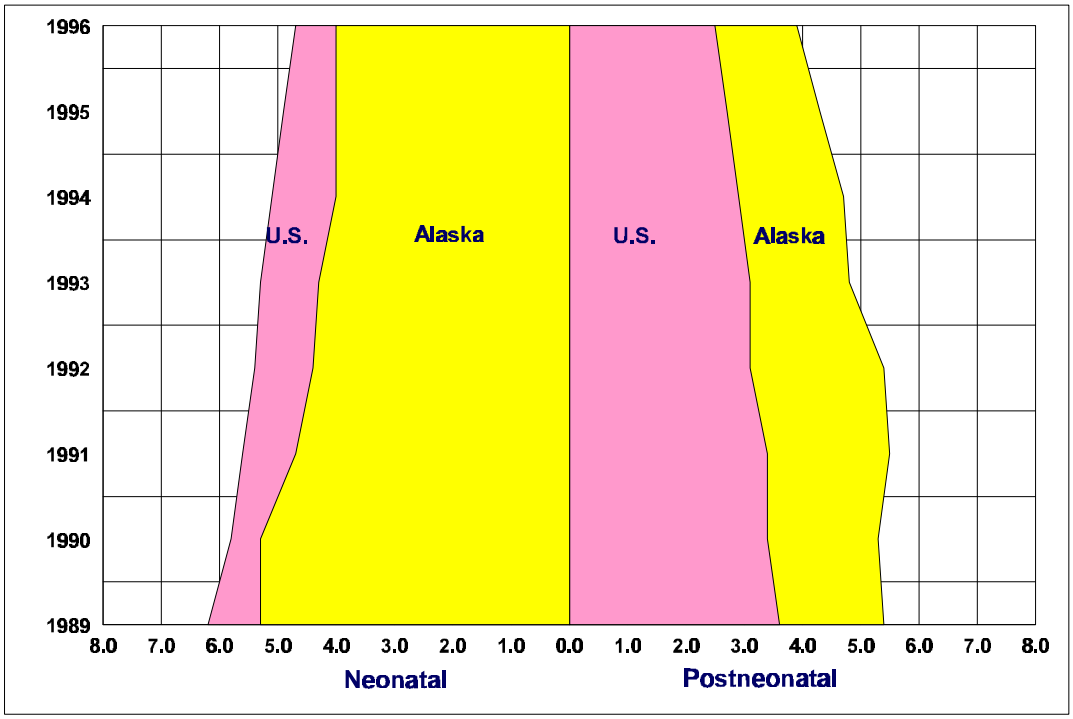
In discussing infant mortality, a distinction is made between neonatal mortality (deaths prior to the 28th day of life) and postneonatal mortality (deaths from the 28th day up to one year). Neonatal deaths are frequently associated with circumstances related to pregnancy and delivery while postneonatal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

1 Crondahl, J., Mitchell, P., Anderson, C., and Walden, S. Department of Health and Social Services, Division of Public Health, *Alaska Bureau of Vital Statistics 1995 Annual Report*, Juneau, Alaska. July 1997, p.51.

2 National Center for Health Statistics, U.S. Department of Health and Human Services, "Births and Deaths: United States, 1996," *Monthly Vital Statistics Report*, Vol. 46, No. 1(S2), September 11, 1997, Table 14, p. 28.

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.

CHART 2.1 NEONATAL AND POSTNEONATAL MORTALITY RATES PER 1,000 LIVE BIRTHS, ALASKA AND THE UNITED STATES, 1989-1996 (DEATH COHORT METHOD)



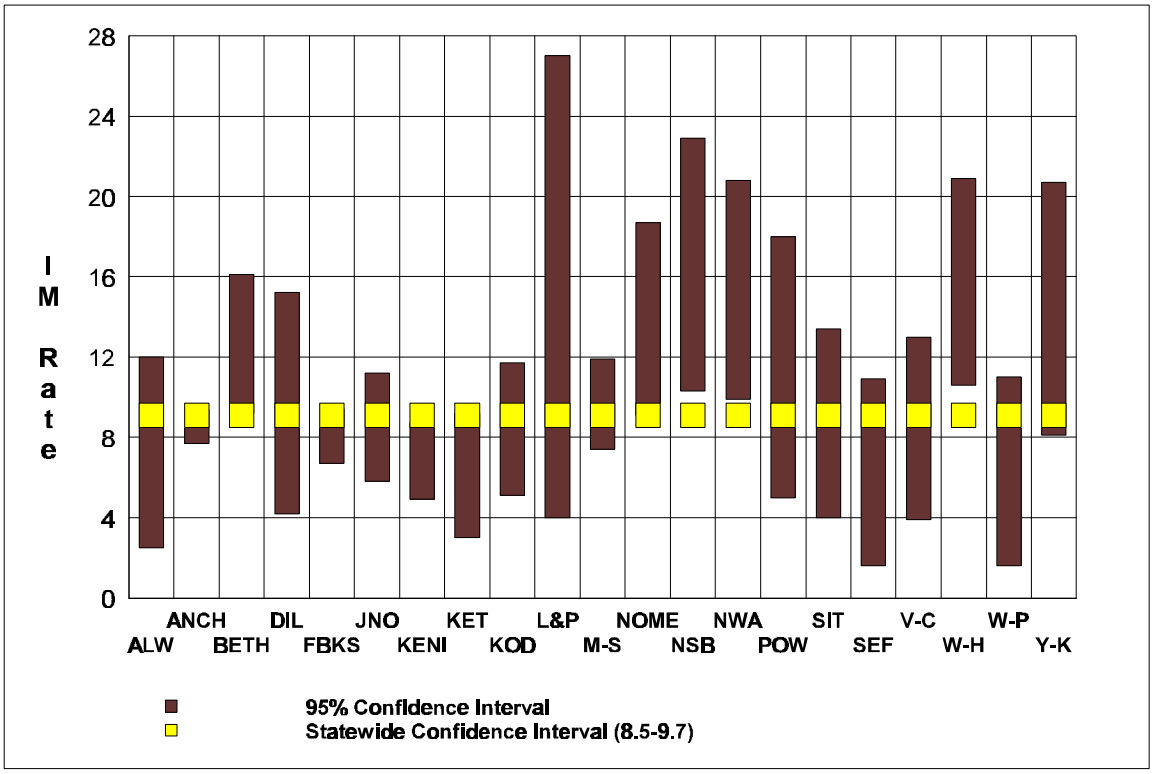
United States rates are single year rates and are provided by the National Center for Health Statistics.[3] Alaska infant mortality rates are calculated using five-year moving averages per 1,000 live births, based on the death-cohort method.

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 8.5 to 9.7 deaths per 1,000 live births are North Slope, Northwest Arctic, 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.

3 National Center for Health Statistics, U.S. Department of Health and Human Services, "Report of Final Mortality Statistics, 1995," *Monthly Vital Statistics Report*, Vol. 45, No. 11(S2), June 12, 1997, Table 25, pp. 66-67; and "Births and Deaths: United States, 1996," *Monthly Vital Statistics Report*, Vol. 46, No. 1(S2), September 11, 1997, Table 14, p. 28.

CHART 2.2 95% CONFIDENCE INTERVALS FOR INFANT MORTALITY BY CENSUS AREA, ALASKA, 1987-1996 (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

Infant Deaths by Age

TABLE 2.4A INFANT DEATHS BY CENSUS AREA OF DECEDENT'S RESIDENCE AND AGE, ALASKA, 1996 (DEATH COHORT METHOD)

CENSUS AREA OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST–NEONATAL	
ALEUTIANS WEST		1	1
ANCHORAGE BOROUGH	13	14	27
ANGOON-HOONAH-SKAGWAY		1	1
BETHEL	1	1	2
DILLINGHAM	1		1
FAIRBANKS NORTH STAR BOROUGH	5	4	9
JUNEAU BOROUGH	1		1
KENAI PENINSULA BOROUGH	3	2	5
KETCHIKAN GATEWAY BOROUGH	2	1	3
KODIAK ISLAND BOROUGH	3		3
MATANUSKA-SUSITNA BOROUGH	2	2	4
NORTH SLOPE BOROUGH		2	2
NORTHWEST ARCTIC BOROUGH	2	1	3
PRINCE OF WALES-OUTER KETCHIKAN		1	1
SITKA BOROUGH		1	1
SOUTHEAST FAIRBANKS		1	1
VALDEZ-CORDOVA		1	1
WADE HAMPTON		3	3
WRANGELL-PETERSBURG		1	1
YUKON-KOYUKUK	2		2
TOTAL	35	37	72

TABLE 2.4B INFANT DEATHS BY NATIVE REGIONAL CORPORATION OF DECEDENT'S RESIDENCE AND AGE, ALASKA, 1996 (DEATH COHORT METHOD)

N R C OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST–NEONATAL	
ALEUT CORP.		1	1
ARCTIC SLOPE CORP.		2	2
BRISTOL BAY CORP.	1		1
CALISTA CORP.	1	4	5
CHUGACH NATIVES INC.		1	1
COOK INLET REG CORP.	18	18	36
DOYON LTD.	7	5	12
KONIAG INC.	3		3
NANA REGIONAL CORP.	2	1	3
SEALASKA CORP.	3	5	8
TOTAL	35	37	72

TABLE 2.4C INFANT DEATHS BY RACE, SEX, AND AGE OF DECEDENT, ALASKA, 1996 (DEATH COHORT METHOD)

DECEDENT'S RACE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST–NEONATAL	
WHITE	20	19	39
NATIVE	11	14	25
BLACK	4	1	5
ASIAN/PI		3	3
TOTAL	35	37	72
SEX			
FEMALE	8	16	24
MALE	27	21	48
TOTAL	35	37	72

TABLE 2.5A INFANT DEATHS BY CENSUS AREA OF DECEDENT'S RESIDENCE AND AGE, ALASKA, BIRTH YEAR 1995 (BIRTH COHORT METHOD)

CENSUS AREA OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST–NEONATAL	
ANCHORAGE BOROUGH	25	13	38
BETHEL	4	1	5
DILLINGHAM	2		2
FAIRBANKS NORTH STAR BOROUGH	8	7	15
JUNEAU BOROUGH	2		2
KENAI PENINSULA BOROUGH	1	1	2
KETCHIKAN GATEWAY BOROUGH		1	1
KODIAK ISLAND BOROUGH	1		1
MATANUSKA-SUSITNA BOROUGH	3	3	6
NORTH SLOPE BOROUGH		2	2
PRINCE OF WALES-OUTER KETCHIKAN	1		1
SITKA BOROUGH		1	1
VALDEZ-CORDOVA	2	1	3
WADE HAMPTON		1	1
WRANGELL-PETERSBURG		1	1
YUKON-KOYUKUK	1	1	2
TOTAL	50	33	83

TABLE 2.5B INFANT DEATHS BY NATIVE REGIONAL CORPORATION OF DECEDENT'S RESIDENCE AND AGE, ALASKA, BIRTH YEAR 1995 (BIRTH COHORT METHOD)

N R C OF DECEDENT'S RESIDENCE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST–NEONATAL	
AHTNA INC	1		1
ARCTIC SLOPE CORP.		2	2
BRISTOL BAY CORP.	2		2
CALISTA CORP.	4	2	6
CHUGACH NATIVES INC	1	1	2
COOK INLET REG CORP	29	17	46
DOYON LTD	9	8	17
KONIAG INC.	1		1
SEALASKA CORP.	3	3	6
TOTAL	50	33	83

TABLE 2.5C INFANT DEATHS BY RACE, SEX, AND AGE OF DECEDENT, ALASKA, BIRTH YEAR 1995 (BIRTH COHORT METHOD)

DECEDENT'S RACE	DECEDENT'S AGE		TOTAL
	NEONATAL	POST–NEONATAL	
WHITE	26	18	44
NATIVE	16	9	25
BLACK	3	4	7
ASIAN/PI	5	2	7
TOTAL	50	33	83
SEX			
FEMALE	21	10	31
MALE	29	23	52
TOTAL	50	33	83

Infant Mortality Rates by Race

Table 2.6 shows 5-year moving average infant mortality rates by race for the years 1992 through 1996. 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.

TABLE 2.6A BIRTHS AND INFANT DEATHS (DEATH COHORT METHOD) BY DEATH YEAR AND FIVE-YEAR MOVING AVERAGE INFANT MORTALITY RATES BY RACE, ALASKA, 1992-1996

	1992			1993			1994			1995			1996		
RACE	BTHS	DTHS	5-YR RATE 1988-1992	BTHS	DTHS	5-YR RATE 1989-1993	BTHS	DTHS	5-YR RATE 1990-1994	BTHS	DTHS	5-YR RATE 1991-1995	BTHS	DTHS	5-YR RATE 1992-1996
WHITE	7,920	58	7.9	7,511	46	7.2	7,293	51	7.2	6,970	44	6.9	6,692	39	6.5
NATIVE	2,697	32	15.0	2,461	29	14.2	2,346	27	13.0	2,303	22	11.7	2,406	24	11.0
BLACK	538	7	15.7	584	11	14.4	494	2	13.1	448	11	14.7	435	7	15.2
ASIAN/PI	553	3	5.9	517	4	6.1	468	2	6.9	485	4	6.0	491	2	6.0
UNKN	19			16			81			16	1	6.9	17		6.7
TOTAL	11,727	100	9.8	11,089	90	9.1	10,682	82	8.8	10,222	82	8.3	10,041	72	7.9

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, 1987-1996

	BIRTH WEIGHT IN GRAMS																					
	<500			500-999			1000-1499			1500-2499			2500-3999			4000+			UNKNOWN			
	AGE			AGE			AGE			AGE			AGE			AGE			AGE			
YEAR	NN*	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	NN	PNN	SUR	TOTAL
1987	6			18	1	25	9		46	10	2	444	14	49	9,260	2	6	1,775	2	1	12	11,682
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	9,178		5	1,827	3	2	21	11,659
1990	5			17	1	38	8	1	43	9	9	444	20	48	9,394		3	1,856	1	3	1	11,901
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	4		1	14	1	22	3	3	52	7	5	435	12	29	8,729	3	1	1,745	7	1	15	11,089
1994	5		2	9	2	28	4	1	57	2	5	473	8	37	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	7,895	2	6	1,541	1	2	12	10,041

***** 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 generally 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 occurrs in the postneonatal period. Respiratory Distress Syndrome generally occurs only 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 1992 through 1996, 107 infants were reported to have died of SIDS, a rate of 2.0 per thousand live births. This compares with a rate of 0.7 per thousand live births for the United States in 1996.[4] The United States rate for SIDS deaths dropped 32.5% since 1994 when the rate was 1.1 deaths per thousand live births.

4 National Center for Health Statistics, U.S. Department of Health and Human Services, "Births and Deaths: United States, 1996," *Monthly Vital Statistics Report*, Vol. 46, No. 1(S2), September 11, 1997, Table 15, p.29.

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).[5]

TABLE 2.7 INFANT DEATHS BY SELECTED CAUSES OF DEATH AND AGE, ALASKA, 1996 (DEATH COHORT METHOD)

CAUSE OF DEATH	AGE AT DEATH		
	NEONATAL	POST–NEONATAL	TOTAL
SEPTICEMIA		1	1
MENINGITIS		1	1
PNEUMONIA & INFLUENZA	2	1	3
CONGENITAL ANOMALIES	11	5	16
MATERNAL CONDITIONS (UNRELATED TO PRESENT PREGNANCY)	1	1	2
MATERNAL COMPLICATIONS OF PREGNANCY	5		5
PLACENTA,CORD,AND MEMBRANE COMPLICATIONS	2		2
SHORT GESTATION & LOW BIRTHWEIGHT RELATED DISORDERS	3		3
INTRAUTERINE HYPOXIA & BIRTH ASPHYXIA	2		2
RESPIRATORY DISTRESS SYNDROME	1		1
HEMORRHAGIC DISEASE OF NEWBORN	1		1
SIDS	1	15	16
ACCIDENTS & ADVERSE EFFECTS		7	7
ALL OTHER CAUSES	6	6	12
TOTAL	35	37	72

TABLE 2.8 INFANT DEATHS BY SELECTED CAUSES OF DEATH AND RACE, ALASKA, 1996 (DEATH COHORT METHOD)

CAUSE OF DEATH	RACE				TOTAL
	WHITE	NATIVE	BLACK	AS/PI	
SEPTICEMIA		1			1
MENINGITIS		1			1
PNEUMONIA & INFLUENZA	1	2			3
CONGENITAL ANOMALIES	10	5	1		16
MATERNAL CONDITIONS (UNRELATED TO PRESENT PREGNANCY)	2				2
MATERNAL COMPLICATIONS OF PREGNANCY	2		3		5
PLACENTA,CORD,AND MEMBRANE COMPLICATIONS	1	1			2
SHORT GESTATION & LOW BIRTHWEIGHT RELATED DISORDERS	2	1			3
INTRAUTERINE HYPOXIA & BIRTH ASPHYXIA	1	1			2
RESPIRATORY DISTRESS SYNDROME	1				1
HEMORRHAGIC DISEASE OF NEWBORN	1				1
SIDS	9	5		2	16
ACCIDENTS & ADVERSE EFFECTS	5	2			7
ALL OTHER CAUSES	4	6	1	1	12
TOTAL	39	25	5	3	72

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.