

INCIDENCE AND REPORTED CAUSES OF STILLBIRTHS

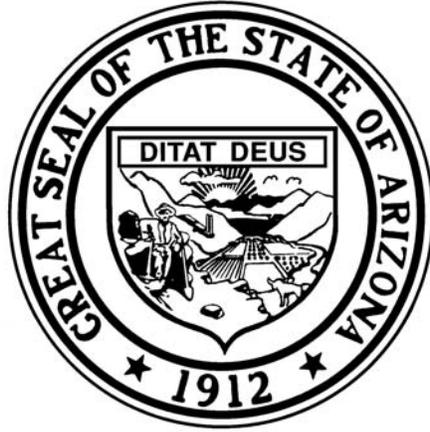
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Arizona Department of Health Services
Public Health Prevention Services
Office of Women's and Children's Health
Assessment and Evaluation Section



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INCIDENCE AND REPORTED CAUSES OF STILLBIRTHS ANNUAL REPORT 2003

ARS 36-2291 established the Unexplained Infant Death Council to assist the Department of Health Services in developing unexplained infant death educational programs, to inform the governor and the legislature of the need for specific programs regarding unexplained infant deaths, to approve and periodically review the infant death investigation checklist, and to consider issues relating to stillborn infants. The Council consists of eleven appointed members representing various professions and community organizations with expertise in unexpected infant deaths, and is staffed by the Child Fatality Review Program within the Department of Health Services.

ARS 36-2291 requires that the Department of Health Services submit an annual report of the incidences of stillborn infants and the reported causes of death for the previous year to the Governor, the President of the Senate and the Speaker of the House of Representatives. It further requires that the department shall provide a copy of the report to the Unexplained Infant Death Advisory Council, the Secretary of State and the Director of the Arizona State Library, Archives and Public Records.

BACKGROUND

Dr. Joseph F. Smith's Medical Library defines stillbirth as "the death of a fetus at any time after the 20th week of pregnancy."¹ The library also defines the difference between stillbirths and other terms describing the unintentional end of a pregnancy:

A pregnancy that ends before the 20th week is called a miscarriage rather than a stillbirth, even though the death of the fetus is a common cause of miscarriage. After the 20th week, the unintended end of a pregnancy is called a stillbirth if the infant is dead at birth and premature delivery if it is born alive.

A variety of disorders can cause stillbirth. However, the cause of death remains unknown in over a third of cases. In a recent study by Lim and Tan, the cause of death was identified in 62% of stillbirths. Lim and Tan found the most common causes were lethal malformations, uncontrolled diabetes mellitus, and cord accident, prolapse, or other abnormality.²

The most common symptom of stillbirth is that the fetus stops moving. In other cases, the first symptom is premature labor. Usually the mother will go into labor within two weeks of the fetus's death. Good prenatal care can reduce the risk of stillbirth, as can

¹ [Http://chclibrary.org/micromed/00066330.html](http://chclibrary.org/micromed/00066330.html).

² T. L. W. Lim, Kh. H. Tan, C S Tee, G. S H. Yeo, Investigating stillbirths using a simplified obstetric events-based protocol, Singapore Medical Journal 2005; 46(2):63.

avoiding cigarette smoke, alcohol abuse, drug consumption, and exposure to infectious diseases.³

METHODOLOGY

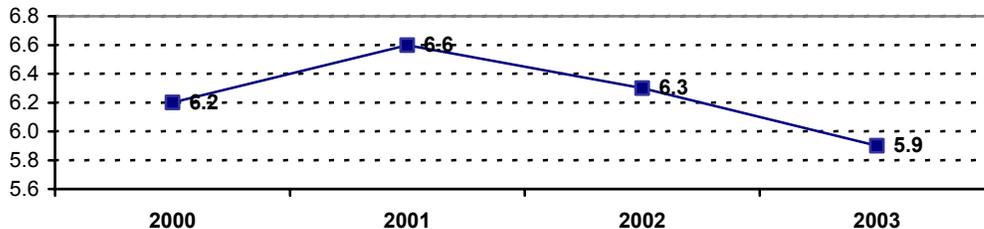
Arizona electronic fetal death certificate data for deaths that occurred at or after 20 weeks gestation are summarized in this report. Both the number of deaths (incidence) and death rates are included. Death rates are useful when looking at trends over time, comparing one population to another or comparing subgroups within a population. Stillbirth death rates are expressed as the number of deaths per 1,000 live births and fetal deaths. This denominator is a proxy estimate of pregnancies (excluding induced abortions) that are at risk for a fetal loss. Stillbirth death rates are presented in this paper by race/ethnicity, maternal age, and education level. Statistics are not presented on level of prenatal care because of a high proportion of missing data.

Data from this report were presented to the Unexplained Infant Death Council on April 14, 2005. The Council's recommendations are summarized at the end of this report.

ARIZONA 2003

In 2003 in Arizona, 539 infants were stillborn, representing a rate of 5.9 per 1,000 pregnancies. The rate has remained relatively stable over the last few years, and does not substantially differ from the national rate. During the last decade of the 20th century, the US fetal death rate declined from 7.5 in 1990 to 6.6 per 1,000 in 2000.⁴ Figure 1 shows the stillborn death rates in Arizona since the year 2000.

Figure 1. Stillborn Death Rate 2000-2003



Appendix A at the back of this report is a breakdown of selected characteristics of reportable spontaneous fetal losses by year in Arizona from 2000 through 2003.

RACE/ETHNICITY

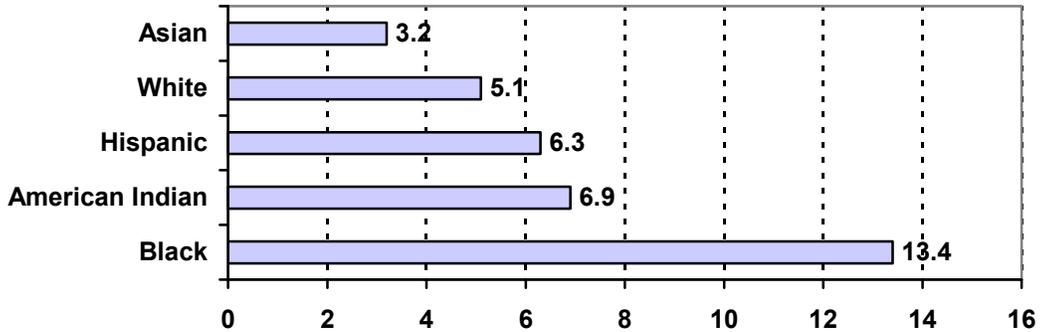
Figure 2 below shows the stillborn death rate by racial/ethnic group for Arizona during 2003. Death rates by race/ethnicity ranged from a low of 3.2 for Asian women to a high

³ [Http://chclibrary.org/micromed/00066330.html](http://chclibrary.org/micromed/00066330.html).

⁴ [Http://www.cdc.gov/mmwr/pdf/wk/mm5324.pdf](http://www.cdc.gov/mmwr/pdf/wk/mm5324.pdf).

of 13.4 per 1,000 pregnancies for Black women in Arizona during 2003. Black women were more than twice as likely to have a stillbirth than other women.

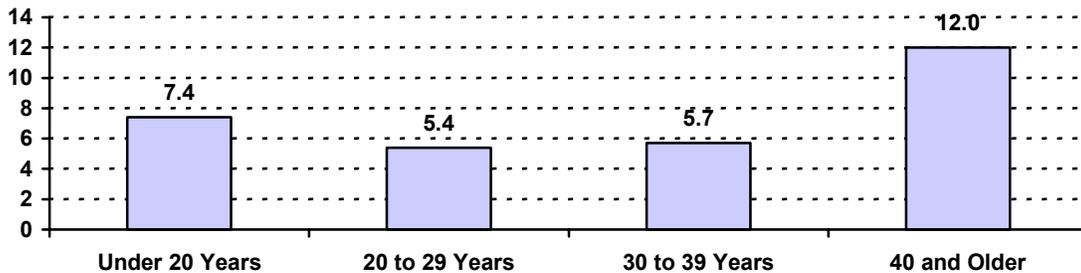
Figure 2. Stillborn Death Rates by Race/Ethnicity



MATERNAL AGE

The risk of experiencing a stillbirth is higher for women over age forty (12.0 per 1,000) and for teens (7.4 per 1,000). For women over the age of forty, the risk is twice as high as for other women. Women between the ages of 20 and 29 experienced the lowest fetal death rates (5.4 per 1,000). Figure 3 shows the stillborn death rates for four age groupings.

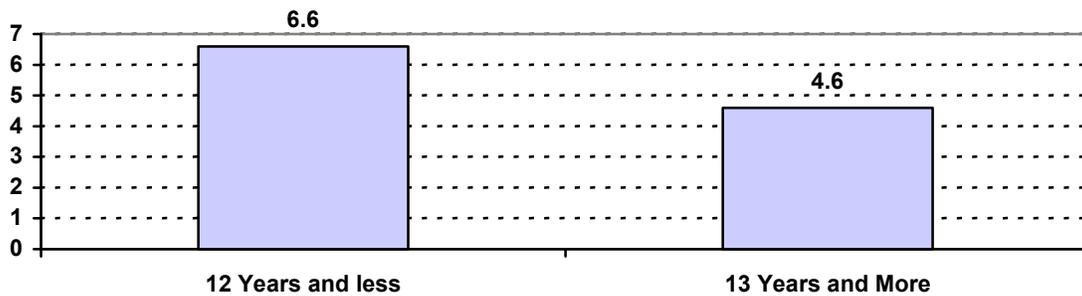
Figure 3. Stillborn Death Rate by Maternal Age



EDUCATIONAL LEVEL

Women who have not received any education beyond high school are at greater risk of delivering a stillbirth than women with more education. The stillborn death rate for women with 12 years of education or less is 6.6 per 1,000 pregnancies, while women with 13 years or more years of education had a fetal death rate of 4.6 per 1,000 in 2003 (see Figure 4).

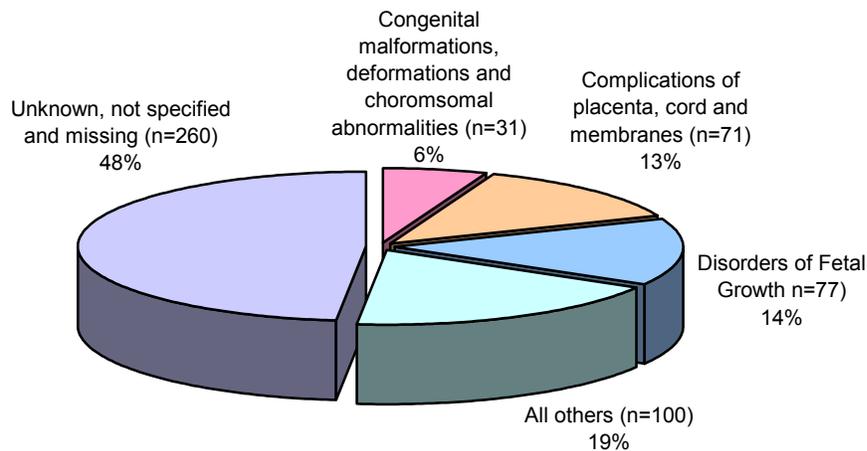
Figure 4. Stillborn Death Rates by Level of Education



CAUSES OF STILLBIRTHS

In 2003, the cause of death was listed on the death certificate as either unknown, not specified or missing for nearly half of reported stillbirths (48%, n=260). Disorders of fetal growth was listed as the cause on 14% (n=77) of fetal death certificates, complications of the placenta, cord and membranes on 13% (n=71), and congenital malformations, and deformations and chromosomal abnormalities on 6% (n=31). Figure 5 shows the causes of stillborn deaths in Arizona in 2003.

Figure 5. Causes of Stillborn Deaths, Arizona 2003



SUMMARY

Stillborn deaths occur in Arizona at about the same rate as they do nationally, although some groups of women in Arizona appear to be at greater risk of delivering a stillborn than others. Women with less education, women of advanced maternal age, teens, and Black, Native American and Hispanic women are at higher risk levels than other women. The cause of death is often not listed on the fetal death certificate. When it is listed, the

most commonly noted causes of fetal death were disorders of fetal growth and complications of the placenta, cord and membranes.

RECOMMENDATIONS OF THE UNEXPLAINED INFANT DEATH COUNCIL

The Office of Women's and Children's Health presented the findings included in this report to the Unexplained Infant Death Council on April 14, 2005. As noted earlier in this report, the available fetal death certificate data is limited due to incomplete death certificates. The council was concerned that one year of available data was insufficient and requested an expanded study to include the past five years of fetal death certificate data. The council agreed upon the following recommendations:

1. The Office of Women's and Children's Health conduct further analysis of vital records related to stillborn infants to include:
 - a. An expansion of the records reviewed to include the years 2000 through 2004;
 - b. A comparison of fetal death records to determine if there is a correlation between completeness of a record and the source of the fetal death record;
 - c. An assessment of the number of prenatal visits and gestational age prenatal care began;
 - d. Determination of the type of health insurance during pregnancy, private, public, or none;
 - e. Percentage of autopsies performed on stillbirth infants per geographic area; and
 - f. Identification of fetal death record fields least likely to be completed.
2. The Office of Women's and Children's Health present the additional information described above to the Council in August 2005. This information is to be utilized in the development of recommendations for the Second Annual Report of Incidence and Causes of Stillbirths.

APPENDIX*
TABLE 1C-4

SELECTED CHARACTERISTICS OF REPORTABLE SPONTANEOUS¹ FETAL LOSSES BY YEAR, ARIZONA, 2000-2003

Characteristic:		Year			
		2000	2001	2002	2003
Total reportable spontaneous fetal losses		532	566	556	539
Gender	Male	280	275	299	296
	Female	244	267	253	240
	Unknown	8	24	4	2
Mother's race/ethnicity	White non-Hispanic	223	234	212	199
	Hispanic or Latino	231	228	256	246
	Black or African American	28	33	35	41
	American Indian or Alaska Native	29	53	37	41
	Asian or Pacific Islander	9	14	12	8
	Unknown	12	4	4	4
Mother's age group	<15	2	6	2	1
	15-17	42	28	24	31
	18-19	47	51	40	55
	20-24	125	125	146	134
	25-29	126	137	129	140
	30-34	92	115	111	93
	35-39	64	71	69	62
	40-44	25	20	27	17
	45+	2	1	4	1
	Unknown	7	12	4	5
Gestational age²	20-27 weeks	271	290	277	285
	28+ weeks	260	274	278	252
	Unknown	1	2	1	2
Weight in grams	<350 grams	82	74	98	90
	350-499	91	94	78	95
	500-2,499	236	214	221	243
	2,501-3,999	91	101	115	86
	4,000+	7	16	15	12
	Unknown	25	67	29	13

¹ Include spontaneous terminations of pregnancy at 20 or more weeks of gestation (or if gestational age is unknown, the deaths of fetuses of at least 350 grams in weight), exclude induced terminations of pregnancy.

²For statistical purposes, fetal deaths are classified according to gestational age. A death that occurs at 20 or more weeks of gestation constitutes a fetal death, and after 28 weeks it is considered a late fetal death.

* Reprinted from Christopher K. Mrela, Arizona Department of Health Services, Bureau of Public Health Statistics, Health Status and Vital Statistics Section, Arizona Health Status and Vital Statistics: 2003, page 81.

