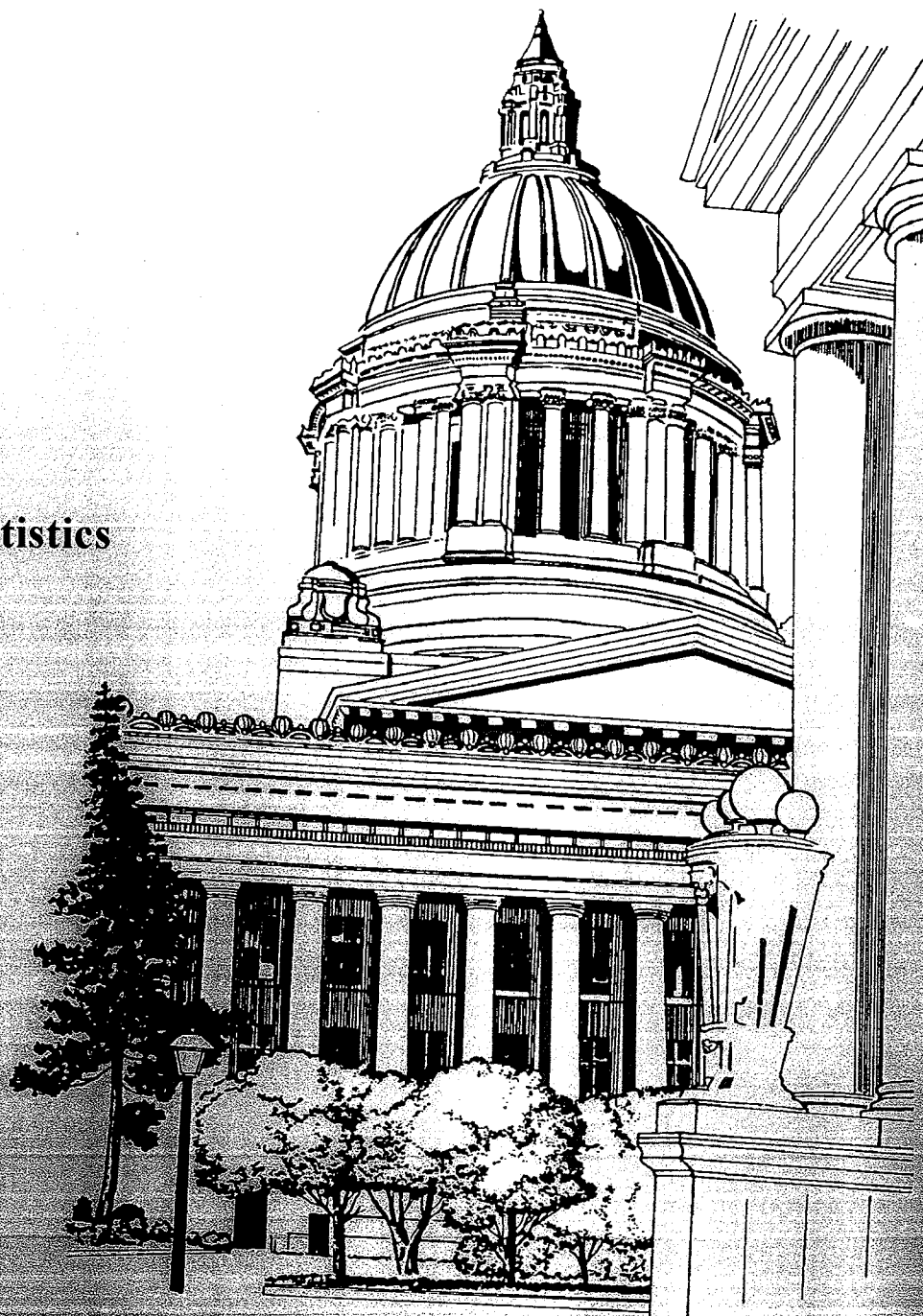


*Washington State*  
**Annual Summary of  
Vital Statistics 1991**

**Department of Health  
Health Information  
Center For Health Statistics**





# **Washington State Annual Summary of Vital Statistics 1991**

October 1992

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STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
CENTER FOR HEALTH STATISTICS  
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October, 1992

Dear Colleagues:

The Annual Summary again reflects the continuing efforts of the Center for Health Statistics [CHS] to meet the needs of our ever-growing constituency. The Summary has been expanded to incorporate a report drawn from the Centers for Disease Control [CDC], National Center for Chronic Disease Prevention and Health Promotion [NCDPHP] Behavioral Risk Factor Surveillance System's national telephone survey using Washington State data. The complete Annual Summary, including marriages and divorces, will also be available on the CHS electronic Bulletin Board making the data even more accessible.

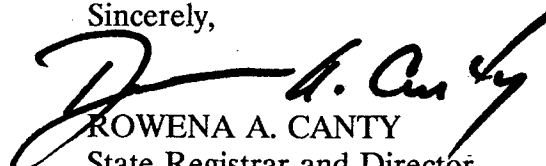
Other accomplishments this year include the implementation of the Electronic Birth System [EBC]. To date, there are 15 hospitals transmitting birth data directly to CHS. The Electronic Death Registration System [EDRS] is now in the active development stage with implementation scheduled for January, 1994. Complete development will include latest state-of-the-art Black Box Technology made possible through a public/private partnership effort.

In May of this year, CHS began electronically transmitting data directly to NCHS, eliminating the cumbersome tape delivery method. This has resulted in increased efficiency and improved data quality.

In our continuing objective to expand the use of data, the first Washington State Health Data Report on People of Color will be available at the November Minority Health Conference. This important work, prepared by Doctor Patricia Starzyk, is a major contribution to understanding the many aspects of cultural diversity. The Second Annual Fall Data Users Conference will focus on Total Quality Management through Better Systems. A disk/data swap shop and technical papers session are among the new additions.

It has been a most productive year. Many thanks to the hard work of the entire CHS staff. We are confident you will enjoy this rendition. Keep the cards and letters coming! We look forward to hearing from you!

Sincerely,



ROWENA A. CANTY  
State Registrar and Director



## Preface

*Washington State Annual Summary of Vital Statistics 1991* is published by the Center for Health Statistics, Washington State Department of Health. This annual report is mandated by an important mission of the Department, to help Washingtonians live healthier lives by enabling them to make informed health choices and insuring their access to quality prevention and illness care. Timely and wide-ranging health information, such as that presented in the *Annual Summary*, is crucial to accomplishing this mission. This report is often the first resource used to identify problems related to prenatal care, maternal and infant health, family planning, and general mortality.

Data used to prepare this report come from Certificates of Live Birth, Certificates of Fetal Death, and Certificates of Death. The forms for these certificates are provided by the Washington State Department of Health. The following table describes how birth and death certificates are completed and filed.

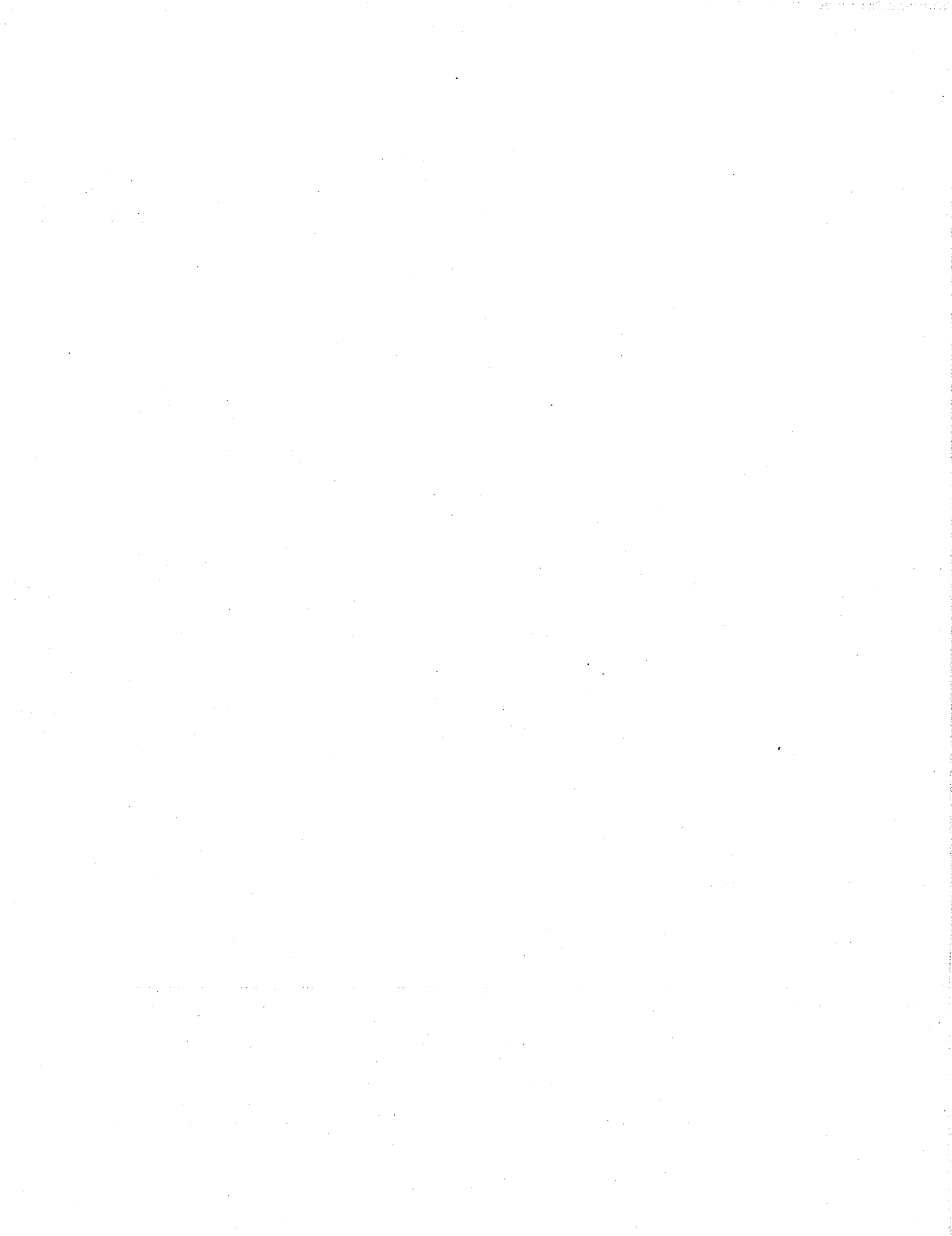
### Filing of Washington State Vital Statistics

<b>Certificate</b>	<b>Completed By</b>	<b>Initially Filed With</b>
Live Birth	Delivery Attendant/Facility	County Health Department
Fetal Death	Delivery Attendant/Facility	County Health Department
Death	Funeral Director, Physician	County Health Department

In 1991, county health departments sent all completed birth and death records monthly to the Department of Health, where they were coded and the data were entered into a computer. (With the introduction of an electronic birth certificate system and new legislation, the process for birth certificate information changed in 1992.) After the data were entered into computer, statistical data files were created and used to perform the analyses and prepare the tables presented in this annual report.

Users of this report are cautioned to beware of basing decisions on small numbers. When the number of events is small, the rates can fluctuate widely from year to year because one event more or less causes a large change in the rate. In this case, users should combine several years of data to provide larger numbers. Comparing groups of years will then serve to identify significant trends.

With a little care in their use, vital statistics can be very important tools. No other data base has such a wide variety of health status indicators which provide a simple overview of the health of a population.





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# Overview

Table 1: Summary of Live Births, Deaths, Infant Deaths, Maternal Deaths, and Fetal Deaths, 1920-1991

Year	Population <sup>1</sup>	Live Births		Deaths		Infant Deaths		Maternal Deaths		Fetal Deaths	
		Number	Rate <sup>2</sup>	Number	Rate <sup>2</sup>	Number	Rate <sup>3</sup>	Number <sup>4</sup>	Rate <sup>5</sup>	Number	Ratio <sup>3</sup>
1920	1,367,000	27,072	19.8	15,164	11.1	1,797	66.4	249	92.0	888	32.8
1921	1,385,700	27,267	19.7	13,254	9.6	1,512	55.5	192	70.4	852	31.2
1922	1,407,100	25,378	18.0	14,249	10.1	1,566	61.7	190	74.9	731	28.8
1923	1,427,300	25,259	17.7	13,856	9.7	1,428	56.5	159	62.9	680	26.9
1924	1,447,200	25,378	17.5	14,580	10.1	1,426	56.2	167	65.8	711	28.0
1925	1,467,600	24,741	16.9	15,280	10.4	1,395	56.4	140	56.6	667	27.0
1926	1,487,600	23,989	16.1	15,670	10.5	1,352	56.4	174	72.5	719	30.0
1927	1,507,800	23,315	15.5	15,950	10.6	1,162	49.8	151	64.8	650	27.9
1928	1,528,200	23,161	15.2	16,723	10.9	1,115	48.1	175	75.6	641	27.7
1929	1,548,400	22,685	14.7	16,413	10.6	1,110	48.9	150	66.1	572	25.2
1930	1,568,000	23,019	14.7	16,678	10.6	1,122	48.7	148	64.3	601	26.1
1931	1,585,000	22,028	13.9	16,524	10.4	1,064	48.3	141	64.0	591	26.8
1932	1,602,500	21,379	13.3	16,581	10.3	967	45.2	139	65.0	530	24.8
1933	1,619,700	20,882	12.9	16,705	10.3	811	38.8	140	67.0	446	21.4
1934	1,636,900	22,484	13.7	17,456	10.7	968	43.1	105	46.7	520	23.1
1935	1,654,000	22,378	13.5	18,046	10.9	998	44.6	120	53.6	469	21.0
1936	1,671,400	23,354	14.0	19,057	11.4	1,064	45.6	115	49.2	468	20.0
1937	1,689,100	24,882	14.7	18,771	11.1	978	39.3	118	47.4	495	19.9
1938	1,706,000	26,702	15.7	18,514	10.9	1,035	38.8	94	35.2	440	16.5
1939	1,723,400	26,471	15.4	18,528	10.8	977	36.9	97	36.6	450	17.0
1940	1,752,400	27,952	16.0	19,837	11.3	969	34.7	89	31.8	459	16.4
1941	1,816,700	30,916	17.0	19,359	10.7	1,065	34.4	66	21.3	445	14.4
1942	1,880,700	38,744	20.6	20,190	10.7	1,278	33.0	78	20.1	606	15.6
1943	1,945,000	44,258	22.8	22,017	11.3	1,534	34.7	72	16.3	575	13.0
1944	2,009,600	44,246	22.0	21,144	10.5	1,493	33.7	72	16.3	607	13.7
1945	2,073,600	44,296	21.4	21,292	10.3	1,523	34.4	79	17.8	672	15.2
1946	2,137,600	51,941	24.3	21,620	10.1	1,723	33.2	65	12.5	869	16.7
1947	2,202,400	58,230	26.4	21,763	9.9	1,630	28.0	59	10.1	907	15.6
1948	2,266,400	55,460	24.5	21,925	9.7	1,525	27.5	36	6.5	776	14.0
1949	2,331,000	56,433	24.2	22,420	9.6	1,526	27.0	36	6.4	850	15.1
1950	2,378,963	55,755	23.4	22,450	9.4	1,526	27.4	28	5.0	799	14.3
1951	2,444,000	57,994	23.7	23,300	9.5	1,412	24.3	23	4.0	852	14.7
1952	2,496,100	61,436	24.6	22,874	9.2	1,522	24.8	15	2.4	857	13.9
1953	2,528,200	61,571	24.4	23,279	9.2	1,556	25.3	18	2.9	834	13.5
1954	2,566,000	62,703	24.4	23,238	9.1	1,514	24.1	29	4.6	829	13.2
1955	2,586,100	62,290	24.1	24,410	9.4	1,520	24.4	16	2.6	806	12.9

Washington State 1991

Table 1: (Continued)

Year	Population <sup>1</sup>	Live Births		Deaths		Infant Deaths		Maternal Deaths		Fetal Deaths	
		Number	Rate <sup>2</sup>	Number	Rate <sup>2</sup>	Number	Rate <sup>3</sup>	Number <sup>4</sup>	Rate <sup>5</sup>	Number	Ratio <sup>3</sup>
1956	2,651,900	64,999	24.5	24,207	9.1	1,524	23.4	13	2.0	777	12.0
1957	2,712,700	65,982	24.3	25,140	9.3	1,596	24.2	20	3.0	793	12.0
1958	2,767,900	65,574	23.7	25,429	9.2	1,707	26.0	11	1.7	764	11.7
1959	2,819,000	65,729	23.3	26,229	9.3	1,570	23.9	9	1.4	749	11.4
1960	2,853,214	65,251	22.9	26,505	9.3	1,528	23.4	17	2.6	738	11.3
1961	2,897,000	65,013	22.4	26,353	9.1	1,467	22.6	19	2.9	756	11.6
1962	2,948,000	64,812	22.0	27,343	9.3	1,476	22.8	6	0.9	704	10.9
1963	2,972,000	61,013	20.5	27,550	9.3	1,339	21.9	10	1.6	657	10.8
1964	3,008,000	57,148	19.0	28,106	9.3	1,277	22.3	7	1.2	637	11.1
1965	3,065,000	52,806	17.2	27,379	8.9	1,130	21.4	15	2.8	639	12.1
1966	3,125,000	51,777	16.6	29,035	9.3	1,084	20.9	13	2.5	554	10.7
1967	3,229,000	54,875	17.1	29,302	9.1	1,050	19.1	12	2.2	573	10.4
1968	3,329,000	57,206	17.2	30,360	9.1	1,120	19.6	8	1.4	620	10.8
1969	3,365,000	59,354	17.6	30,504	9.1	1,118	18.8	12	2.0	651	11.0
1970	3,409,169	60,499	17.7	29,901	8.8	1,135	18.8	9	1.5	640	10.6
1971	3,433,000	55,304	16.1	30,318	8.8	1,008	18.2	5	0.9	574	10.4
1972	3,418,800	48,250	14.1	29,747	8.7	805	17.0	6	1.2	428	8.8
1973	3,424,300	47,636	13.9	30,751	9.0	781	16.4	3	0.6	430	9.0
1974	3,448,100	50,096	14.5	29,773	8.6	763	15.2	4	0.8	450	9.0
1975	3,494,124	50,821	14.5	29,778	8.5	798	15.7	5	1.0	421	8.3
1976	3,571,600	53,004	14.8	30,275	8.5	765	14.4	3	0.6	439	8.3
1977	3,661,975	57,256	15.6	29,789	8.1	696	12.2	5	0.9	426	7.4
1978	3,774,294	58,725	15.6	30,469	8.1	737	12.6	4	0.7	465	7.9
1979	3,911,200	64,377	16.5	30,418	7.8	737	11.4	8	1.2	466	7.2
1980	4,130,163	67,857	16.4	32,012	7.8	798	11.8	10	1.5	533	7.9
1981	4,250,123	69,756	16.4	32,022	7.5	731	10.5	7	1.0	489	7.0
1982	4,264,000	69,529	16.3	32,309	7.6	744	10.7	8	1.2	501	7.2
1983	4,285,100	68,705	16.0	32,631	7.6	653	9.5	6	0.9	474	6.9
1984	4,328,100	68,947	15.9	33,788	7.8	704	10.2	7	1.0	444	6.4
1985	4,384,100	70,226	16.0	34,475	7.9	747	10.6	5	0.7	403	5.7
1986	4,419,700	69,431	15.7	34,166	7.7	675	9.7	2	0.3	445	6.4
1987	4,481,100	70,329	15.7	34,967	7.8	681	9.7	3	0.4	411	5.8
1988	4,565,000	72,471	15.9	36,299	8.0	652	9.0	3	0.4	381	5.3
1989	4,660,700	75,321	16.2	36,049	7.7	686	9.1	2	0.3	387	5.1
1990	4,866,692	79,187	16.3	36,899	7.6	620	7.8	3	0.4	462	5.8
1991	5,000,400	79,667	15.9	36,947	7.4	600	7.5	3	0.4	426	5.3

<sup>1</sup> 1961-1969 population figures are revised estimates provided by the Office of Financial Management.

<sup>2</sup> Rate per 1,000 population.

<sup>3</sup> Per 1,000 live births.

<sup>4</sup> 1979-1982 maternal death figures are revised totals based on studies conducted by the Center for Health Statistics.

<sup>5</sup> Rate per 10,000 live births.

Summary





# Natality

## Natality: Changes in Race/Ethnicity Data from the Birth Certificate

Race and ethnicity items on birth and death certificates are essential for assessing the health of people of color. The Center's recent *Washington State Health Data Report on People of Color* (available November 1992) made extensive use of these items. In addition, newspapers regularly publish articles using race/ethnicity data, especially as related to infant mortality. It is important to recognize that this published information comes from the data reported on birth and death certificates.

It is also important to recognize that race and ethnicity are dynamic items. Over the years there have been several changes in what data are collected and how the data are coded and displayed. These changes make the data more relevant for current concerns and more comparable to population bases for calculation of rates. However, users need to be aware of the changes so that they can avoid misinterpretations when data from two different time periods are compared.

This section presents a chronology of the changes in Washington's race and ethnicity data from the birth certificate and analyzes the effect of some of these changes on the data.

### Chronology of Birth Certificate Race/Ethnicity Changes

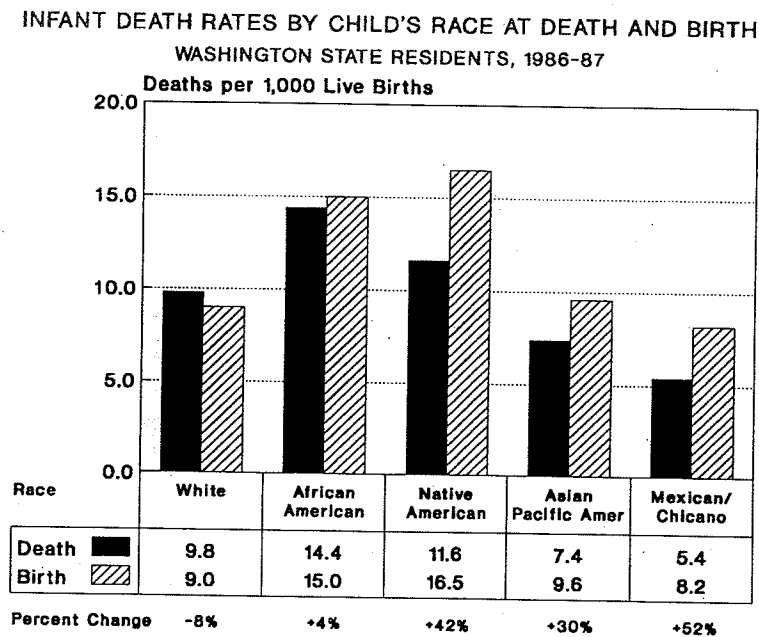
Year	Change
1968	Computerized birth medical and health data, including race information. Race categories used: White, Black, Indian, Chinese, Japanese, Other Non-White, Refused, and Unknown
1969	Added separate race code for 'Filipino'
1978	Added separate race codes for 'Hawaiian' and 'Other Asian or Pacific Islander'
1980	Added separate race code for 'Mexican/Chicano'
1987*	Published infant death data by child's race at birth rather than child's race at death
1988	Expanded 'Mexican/Chicano' race code to include all Hispanics (change occurred in mid-1988)
1988*	Added separate item for Hispanic origin (ethnicity rather than race)
1989*	Added 'Asian or Pacific Islander' prompt to the race item
1989	Added items for Parental Identification of Child's Race and Ethnicity
1989*	Published birth and infant death data by race of mother as well as race of child
1990*	For multiple race entries, coded to first race listed rather than first non-White race
1992	Added 'Specify subgroup' to race prompt for Asian/Pacific Islanders and coded Asian Pacific American subgroups separately (Korean, Asian Indian, Samoan, Vietnamese, Guamanian)

\*Effect of change assessed in this section

### Effect of Selected Changes on the Data

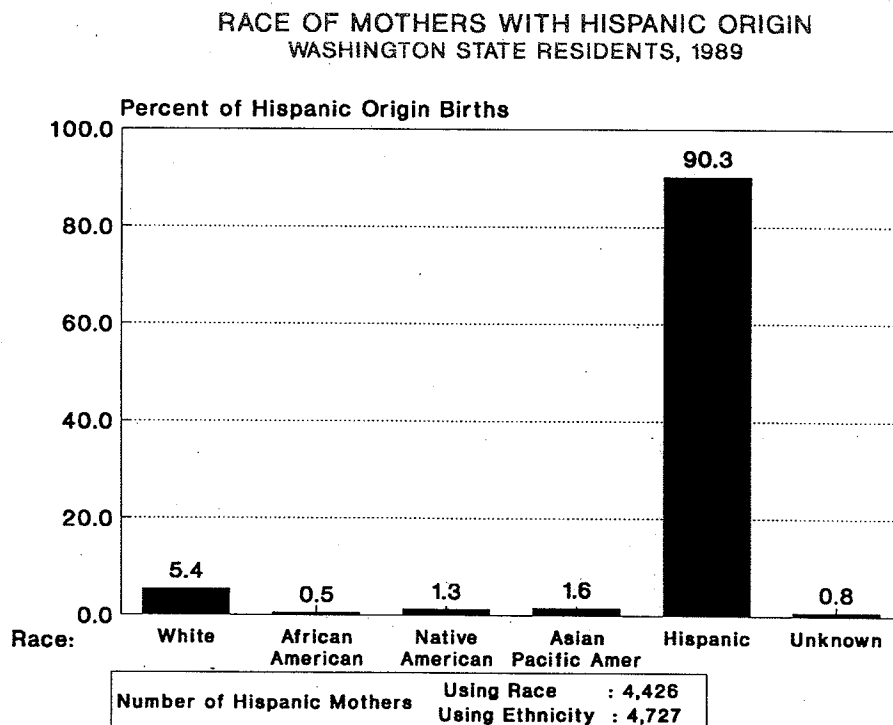
*Infant deaths by race at birth:* Starting in 1987, infant deaths were tabulated in the Center's annual reports by child's race at birth rather than at death, because death certificates are known to underestimate mortality for certain racial groups. The results of this change can be seen in Figure 1, which compares infant mortality rates using child's race at birth and child's race at death. As the figure shows, when child's race at birth is used, the infant mortality rates for Native Americans, Asian Pacific Americans, and Mexican/Chicanos increase substantially. It appears that, particularly for these three race groups, a number of infants coded as persons of color at birth on the birth certificate later are coded as White on the death certificate. Infant mortality statistics that rely on child's race at death thus tend to underestimate infant mortality for people of color groups and overestimate infant mortality for Whites.

Figure 1



*Hispanic ethnicity:* This item was added to Washington's birth certificate in 1988, in recognition that federal agencies such as the U.S. Census Bureau and the National Center for Health Statistics (NCHS) now define Hispanic status as an ethnic category rather than a racial category, and that people of Hispanic origin can thus be of any race. Still, as Figure 2 shows, nearly all of the mothers of Hispanic origin also gave 'Hispanic' as their race. While this shows consistency in the data, it also shows the overlap and ambiguity of the distinctions between race and ethnicity. For, instead of giving a different racial group, mothers of Hispanic origin usually give their Hispanic status again on the race item. It is still useful to collect information on Hispanic origin, however, for as Figure 2 also shows for 1989, using race alone would underestimate the number of Hispanic mothers by 301 births (about 7%).

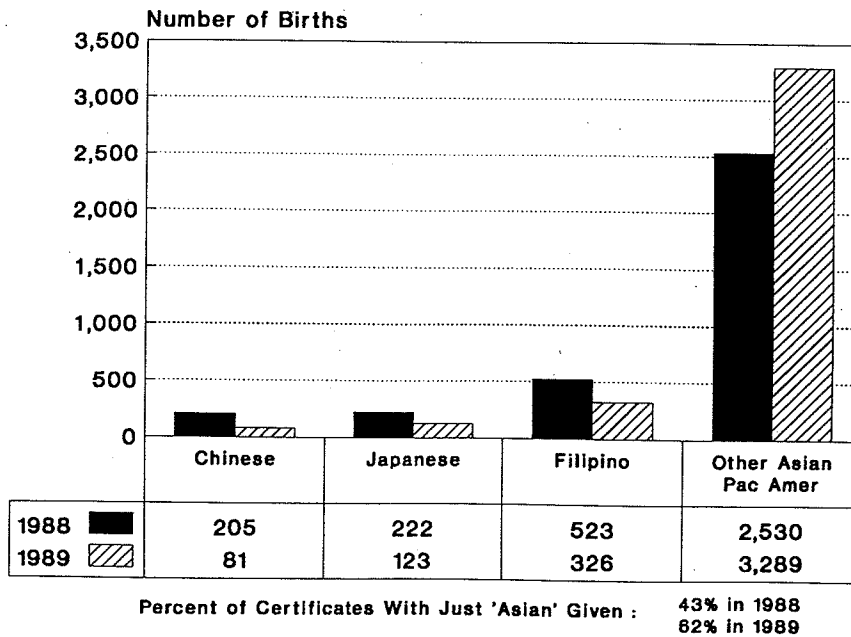
Figure 2



*'Asian/Pacific Islander' prompts:* A prompt for 'Asian or Pacific Islander' was added to the race item in 1989, so that all major racial groups would be included as possible examples. Figure 3 compares the number of births in several Asian Pacific American subgroups before and after this change. The data show that a loss in specificity was probably one effect of the change. Reading the race question, mothers were prompted to put just 'Asian or Pacific Islander' rather than give more specific information. As a result, the number of certificates with a distinct subgroup entry decreased. Currently, more than half of the birth certificates for Asian Pacific American mothers note only 'Asian' as their race, making it difficult to compile subgroup data, as the numbers do not truly reflect Asian Pacific American subgroups. In 1992, the words 'Specify subgroup' were added to the Asian/Pacific Islander prompt to help correct this problem. Next year's data will be used to assess the effect of this addition.

Figure 3

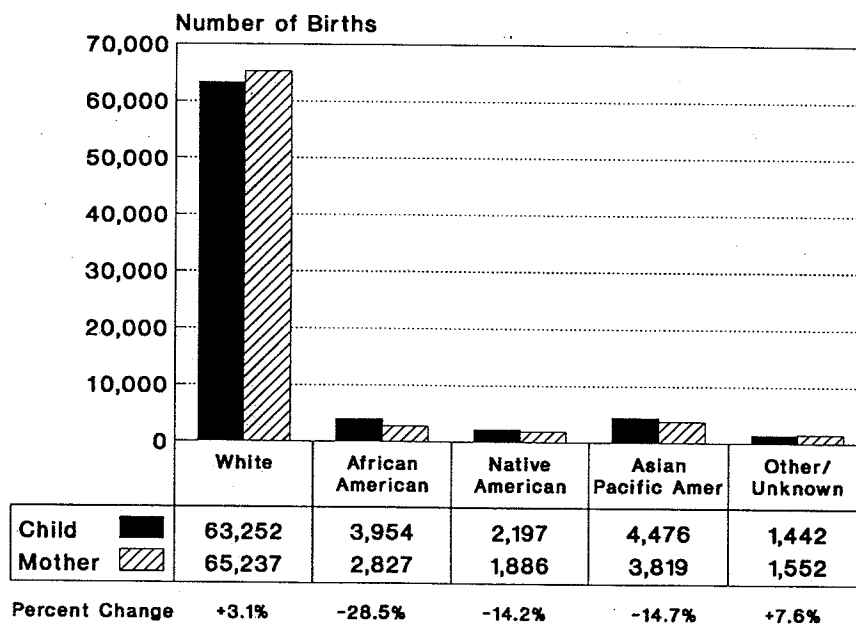
CHANGE IN MOTHER'S RACE AFTER ADDITION OF 'ASIAN' PROMPT  
WASHINGTON STATE RESIDENTS, 1988-89



*Race of mother:* Birth data are now published by race of mother (as well as by race of child), to be consistent with Census data and because much of the risk factor data (such as prenatal care) pertain to the mother. The differences between these two ways of arraying the data were examined in 1990 after this addition was first made, and are shown in Figure 4 below (earlier published in the 1989 Annual Summary). As Figure 4 shows, using mother's race rather than child's race increases the number of White births and decreases the number of births classified to other races, particularly African, Native and Asian Pacific Americans. Because the denominator in the infant mortality rate is based on the number of births, using mother's race to calculate infant mortality rates (rather than child's race) also decreases the White infant mortality rate and increases rates for other races.

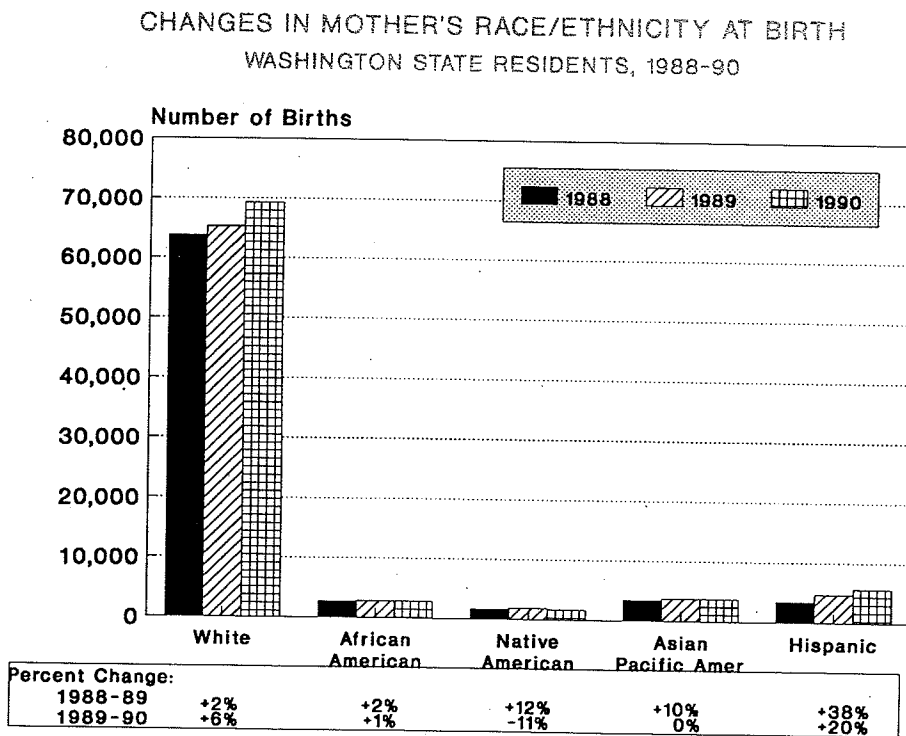
Figure 4

BIRTHS BY RACE OF CHILD AND RACE OF MOTHER  
WASHINGTON STATE RESIDENTS, 1989



*Multiple Race Entries:* As of 1990, when more than one race is given on the birth certificate, the first race listed is assigned as the person's race. In earlier years, the person was assigned the first non-White race. This change was made for consistency with Census data. Figure 5 shows that the number of White mothers increased 6% after this change, as compared with the smaller increase of 2% in the year before the change. In fact, between 1989 and 1990, White mothers had the largest increase of any group except Hispanics. This increase is inconsistent with population data, which show larger growth rates and higher birth rates for people of color, as compared with Whites. Thus, the increase in White births is most likely related to the change in coding.

Figure 5



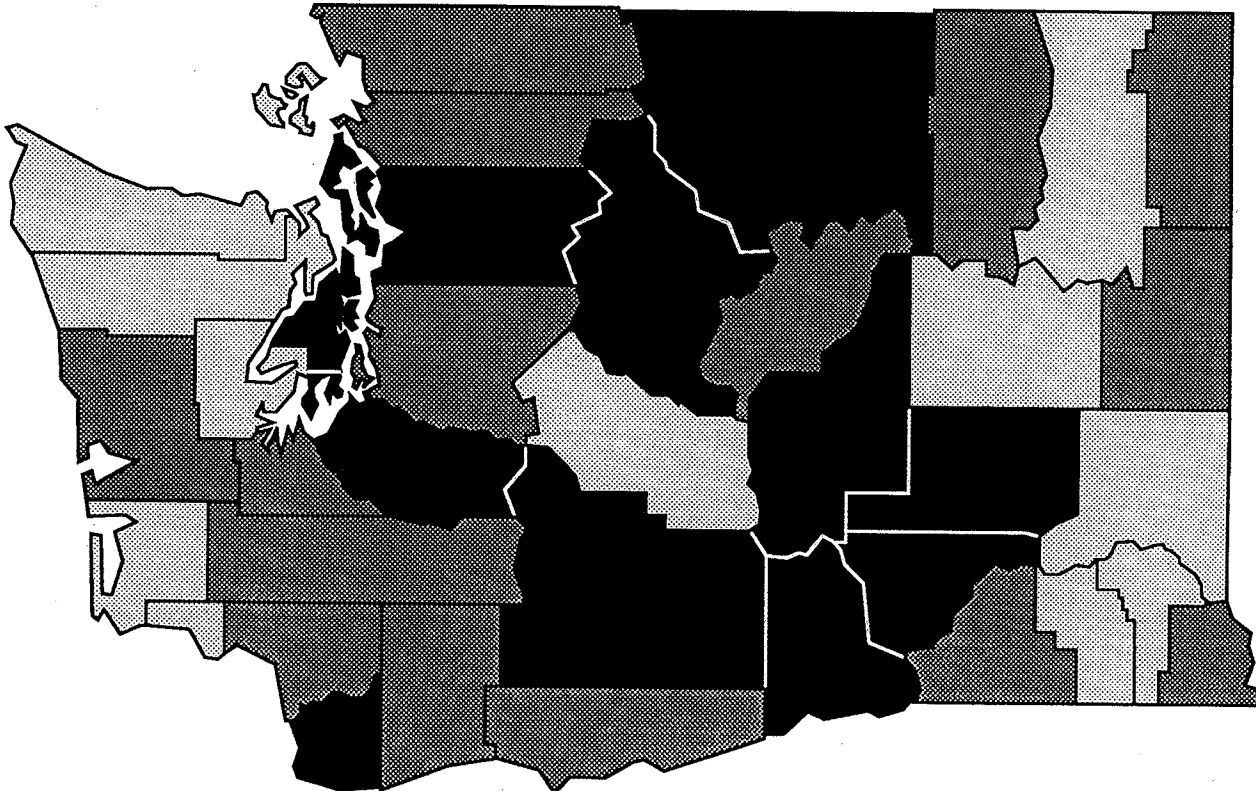
These data point to the problems in determining a single race for a person in today's multicultural and multiracial environment and raise the issue of the appropriateness of assigning a single race or ethnicity to a person. The good news for data users is that in many cases the raw data are available for reaggregation or recombination according to the user's needs.

## **Birth Rates: Differences Among Counties**

Birth rates are often combined over several years to remove the effect of small numbers and to provide stability to trends. The map on the opposite page shows three levels of birth rates for Washington counties for the combined three year period 1989-1991. Counties in the high category (16.2 or more) are counties whose rates in the 1989-1991 period were above the state average of 16.1. Besides fertility differences among women in different counties, differences in birth rates can be due to counties having smaller or larger proportions of women of childbearing age in their population.



# Birth Rates



## Washington State 1989-91

(State Rate 16.1; U.S. 1989 Rate 16.3)

Live Births / 1,000 Population

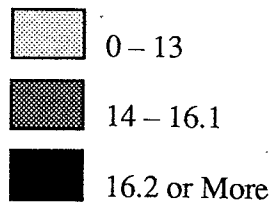




Table 2: Births by Selected Topics

A. Residence, Mother's Race by Sex

	Total	Male	Female
Total	79,667	40,770	38,897
White	69,171	35,457	33,714
African American	2,986	1,480	1,506
Native American	1,667	832	835
Japanese	109	63	46
Chinese	132	71	61
Filipino	342	152	190
Other Asian	3,526	1,816	1,710
Other	6	2	4
Unknown	1,728	897	831
Hispanic <sup>1</sup>	6,497	3,257	3,240

B. Residence, Child's Race by Sex

	Total	Male	Female
Total	79,667	40,770	38,897
White	69,296	35,510	33,786
African American	2,999	1,486	1,513
Native American	1,694	850	844
Japanese	113	65	48
Chinese	131	70	61
Filipino	349	156	193
Other Asian	3,596	1,851	1,745
Other	7	3	4
Unknown	1,482	779	703
Hispanic <sup>1</sup>	8,588	4,286	4,302

C. Residence, Mother's Age Group by Sex

	Total	Male	Female
Total	79,667	40,770	38,897
Under 15	156	77	79
15 - 17	2,904	1,469	1,435
18 - 19	5,576	2,839	2,737
20 - 24	20,705	10,560	10,145
25 - 29	23,788	12,211	11,577
30 - 34	17,994	9,221	8,773
35 - 39	7,293	3,764	3,529
40 - 44	1,157	582	575
45 and over	45	22	23
Unknown	49	25	24

D. Residence, Order of Birth to Mother

	Number	Percent
Total	79,667	100.0% <sup>2</sup>
1st Child	32,874	41.3
2nd Child	25,692	32.2
3rd Child	12,772	16.0
4th Child	4,896	6.1
5th Child	1,848	2.3
6th Child	802	1.0
7th Child	352	.4
8th Child	146	.2
9th Child	97	.1
10th or more	86	.1
Unknown	102	.1

E. Residence, Maternal Smoking

	Number	Percent
Total	79,667	100.0% <sup>2</sup>
Yes	13,782	17.3
No	57,049	71.6
Unknown	8,836	11.1

F. Residence, Multiple Live Births

	Number
Sets of Twins	841
Sets of Triplets	14
Sets of Quadruplets	1

<sup>1</sup> Hispanic numbers are not included in the total sum.

<sup>2</sup> Detail may not add to 100% due to rounding.

## G. Residence and Occurrence, Birth Weight in Grams by Sex

Gram Weight	Residence			Occurrence		
	Total	Male	Female	Total	Male	Female
Total	79,667	40,770	38,897	78,346	40,082	38,264
1,000 and under	309	145	164	302	141	161
1,001 - 1,500	343	184	159	339	182	157
1,501 - 2,000	741	385	356	735	380	355
2,001 - 2,500	2,669	1,207	1,462	2,639	1,196	1,443
2,501 - 3,000	10,265	4,444	5,821	10,121	4,389	5,732
3,001 - 3,500	28,118	13,210	14,908	27,676	13,010	14,666
3,501 - 4,000	26,057	14,124	11,933	25,604	13,881	11,723
4,001 - 4,500	9,141	5,706	3,435	8,945	5,565	3,380
4,501 and over	1,885	1,294	591	1,855	1,271	584
Unknown	139	71	68	130	67	63

## H. Residence and Occurrence, Live Births and Fetal Deaths by Month

Month	Live Births		Fetal Deaths	
	Residence	Occurrence	Residence	Occurrence
Total	79,667	78,346	426	436
January	6,248	6,164	38	38
February	5,759	5,675	19	20
March	6,769	6,674	44	45
April	6,564	6,483	39	40
May	7,238	7,076	45	45
June	6,851	6,701	38	40
July	7,278	7,147	42	41
August	6,992	6,893	33	34
September	6,947	6,832	33	34
October	6,675	6,551	31	33
November	5,998	5,914	32	32
December	6,348	6,236	32	34

Table 2 (continued)

I. Occurrence, Primary Method of Birth Delivery by Obstetric Procedures

Method of Delivery	Total	None	Electronic				Tocolysis	Ultrasound	Other	Unknown
			Amnio- centesis	Fetal Monitoring	Induction of Labor	Stimulation of Labor				
Total	78,346	6,942	3,875	53,006	11,002	10,011	1,836	45,211	3,111	7,754
Vaginal Delivery	51,468	5,001	2,156	38,735	7,755	7,051	1,181	31,256	2,273	737
Vaginal Delivery After Prev. C-Section	2,217	141	134	1,816	411	410	45	1,551	104	26
Primary C-Section	8,450	553	756	6,378	1,733	1,510	363	6,054	442	166
Repeat C-Section Without Trial Labor	3,884	452	522	2,032	30	30	102	2,864	80	122
Repeat C-Section With Trial Labor	1,234	91	77	927	251	172	32	882	52	19
Outlet Forceps	1,414	146	93	1,087	276	356	46	937	33	15
Vacuum Extraction	2,609	503	112	1,771	486	431	53	1,447	87	19
Other	79	2	3	38	8	6	4	40	29	4
Unknown	6,991	53	22	222	52	45	10	180	11	6,646

J. Occurrence, Type of Place

	Number	Percent
Total	78,346	100.0% <sup>1</sup>
General Hospital	72,972	93.1
Federal Facility	3,798	4.8
Home	1,219	1.6
Birth Center	114	.1
Born on Arrival	48	.1
Other and Unknown	195	.2

K. Residence, Attendant at Birth

	Number	Percent
Total	79,667	100.0% <sup>1</sup>
MD	72,054	90.4
Osteopath	1,979	2.5
Licensed Midwife	968	1.2
Certified Midwife	3,647	4.6
Other Midwife	26	
Nurse	245	0.3
Father/Mother	60	0.1
Other	309	0.4
Unknown	379	0.5

S02490A-HBI

<sup>1</sup> Detail may not add to 100% due to rounding.

Table 3: Resident Live Births by Birth Weight in Grams by Mother's Race

Birth Weight in Grams	Total	African		Native		Other					
		White	American	American	Japanese	Chinese	Filipino	Asian	Other	Unknown	Hispanic <sup>1</sup>
State Total	79,667	69,171	2,986	1,667	109	132	342	3,526	6	1,728	6,497 <sup>2</sup>
1,000 and under	309	239	40	6	1		3	7		13	25
1,001 - 1,500	343	277	41	3		1	2	17		2	24
1,501 - 2,000	741	615	63	23			2	24		14	45
2,001 - 2,500	2,669	2,173	193	55	3	3	11	165		66	215
2,501 - 3,000	10,265	8,371	640	208	17	26	79	673		251	920
3,001 - 3,500	28,118	24,039	1,150	575	48	65	132	1,489	4	616	2,617
3,501 - 4,000	26,057	23,310	642	542	28	30	88	869	1	547	1,978
4,001 - 4,500	9,141	8,336	170	199	10	7	22	229	1	167	560
4,501 and over	1,885	1,721	30	53	2		2	45		32	98
Not Stated	139	90	17	3			1	8		20	15

S0310E-HBI

Table 4: Resident Live Births by Birth Weight in Grams by Child's Race

Birth Weight in Grams	Total	African		Native		Other					
		White	American	American	Japanese	Chinese	Filipino	Asian	Other	Unknown	Hispanic <sup>1</sup>
State Total	79,667	69,296	2,999	1,694	113	131	349	3,596	7	1,482	8,588 <sup>3</sup>
1,000 and under	309	239	40	6	1		3	7		13	35
1,001 - 1,500	343	278	41	3		1	2	17		1	33
1,501 - 2,000	741	615	64	23	1		2	24		12	59
2,001 - 2,500	2,669	2,180	194	58	3	3	12	165	1	53	294
2,501 - 3,000	10,265	8,387	641	208	18	26	80	687		218	1,252
3,001 - 3,500	28,118	24,087	1,155	587	51	64	135	1,513	4	522	3,362
3,501 - 4,000	26,057	23,351	645	547	27	30	89	892	1	475	2,647
4,001 - 4,500	9,141	8,346	171	206	10	7	23	238	1	139	760
4,501 and over	1,885	1,722	31	53	2		2	45		30	130
Not Stated	139	91	17	3			1	8		19	16

S00310D-HBI

Table 5: Resident Live Births by Birth Weight in Grams by Mother's Age

Birth Weight in Grams	Total	Under								45 &	Age
		15	15-17	18-19	20-24	25-29	30-34	35-39	40-44	Over	Unknown
State Total	79,667	156	2,904	5,576	20,705	23,788	17,994	7,293	1,157	45	49
1,000 and under	309	3	18	32	73	71	68	37	6		1
1,001 - 1,500	343	1	17	37	87	84	63	42	11	1	
1,501 - 2,000	741	2	37	62	212	179	140	95	14		
2,001 - 2,500	2,669	10	147	216	709	698	552	286	48	2	1
2,501 - 3,000	10,265	42	487	883	2,868	2,789	2,185	828	170	7	6
3,001 - 3,500	28,118	60	1,118	2,229	7,562	8,399	5,934	2,401	376	15	24
3,501 - 4,000	26,057	26	824	1,620	6,670	8,003	6,145	2,400	342	14	13
4,001 - 4,500	9,141	10	219	412	2,098	2,902	2,369	977	149	3	2
4,501 and over	1,885	2	29	72	391	630	504	216	39	2	2
Not Stated	139		8	13	35	33	34	11	2	1	2

S00310C-HBI

<sup>1</sup> Hispanic numbers are not included in total sum.<sup>2</sup> Total number of Hispanic origin not stated is 2,147.<sup>3</sup> Total number of Hispanic origin not stated is 6,239.

Table 6: Resident Live Births by Month Prenatal Care Began by Mother's Age

Month Care Began	All Ages	Under								45 & Over	
		15	15-17	18-19	20-24	25-29	30-34	35-39	40-44	Unknown	
State Total	79,667	156	2,904	5,576	20,705	23,788	17,994	7,293	1,157	45	49
First	14,217	6	249	543	3,031	4,710	3,838	1,595	235	3	7
Second	28,892	19	629	1,409	6,818	9,334	7,356	2,865	436	15	11
Third	16,742	31	656	1,327	4,480	4,951	3,576	1,462	242	12	5
Fourth	6,852	36	440	816	2,202	1,675	1,098	488	85	5	7
Fifth	3,892	21	332	527	1,356	859	550	213	30	1	3
Sixth	2,116	12	179	298	790	441	250	124	19	2	1
Seventh	1,500	10	146	200	521	339	181	88	13	1	1
Eighth	829	4	62	100	288	196	129	41	9		
Ninth	378	2	24	35	138	82	64	24	9		
No Care	360	4	43	46	100	78	56	23	9	1	
Unknown	3,889	11	144	275	981	1,123	896	370	70	5	14

S02680A-HBI

Table 7: Resident Live Births by Number of Prenatal Visits by Month Care Began

Number of Prenatal Visits	Month Care Began					
	Total	1-3	4-6	7-9	No Care	Unknown
Total	79,667	59,851	12,860	2,707	360	3,889
9 or more	60,392	52,627	7,133	338		294
5 - 8	10,801	4,895	4,650	1,156		100
1 - 4	2,537	465	832	1,155		85
No Visits	557	30	4	16	344	163
Unknown	5,380	1,834	241	42	16	3,247

S02690A-HBI

Table 8: Live Births Intercounty Travel Patterns,

Washington State 1991

Occurrence →																			
Residence ↓	Adams	Asotin	Benton	Chelan	Clallam	Clark	Columbia	Cowlitz	Douglas	Ferry	Franklin	Garfield	Grant	Grays Harbor	Island	Jefferson	King	Kitsap	Kittitas
Adams	210		7								4		44				1		
Asotin																			
Benton			1,708								168						3		1
Chelan				902							2						11		1
Clallam					694	1								2	1	2	27	2	
Clark			2			2,465		11									7		
Columbia							1	5											
Cowlitz						32		1,204										2	
Douglas				325					7				1				9		
Ferry										19							1		
Franklin	51		490	2							408		3					1	
Garfield																			
Grant	137		11	104							1		732		1		6		6
Grays Harbor					1	1								694			17		
Island					1										748		50	1	1
Jefferson						26								5		174	12	23	
King			1			1		4					2				21,817	9	1
Kitsap				1	1	1										1	291	2,769	
Kittitas	1		1	4									1				12		281
Klickitat			3					1											
Lewis						2		52									10		
Lincoln	1			1									5						
Mason								1							1		8	94	
Okanogan				9						1			2				1		
Pacific						2		2						35			2		
Pend Oreille																			
Pierce				1	1	4								2	1		1,086	40	1
San Juan																	12		
Skagit					1								1		16		41		
Skamania						35		1											
Snohomish				1	2			1			1		1	1	6		2,723	4	2
Spokane				2		1											5		
Stevens										2							1		
Thurston								1						1			34	3	
Wahkiakum								33											
Walla Walla				32							11						2		1
Whatcom															3	1	43		1
Whitman				1													1		
Yakima				317		1					2						20		3
Out-of-State			42	1	3	51		204			5				1	1	78	8	4
Occurrence Total	408		2,615	1,353	730	2,597	1	1,520	7	22	602		791	740	778	179	26,333	2,954	303



Residence and Occurrence

Klickitat	Lewis	Lincoln	Mason	Okanogan	Pacific	Pend Oreille	Pierce	San Juan	Skagit	Skamania	Snohomish	Spokane	Stevens	Thurston	Wahkiakum	Walla Walla	Whatcom	Whitman	Yakima	Out-of-State	Residence Total	
		1										34						1	2	1	313	
												8						4			245	257
							1					6				4	1			47	9	1,948
				14							1	3										934
							4														2	735
							5							1						2	1,534	4,027
																44						50
	5				1		3					1		1		1					59	1,309
				54							1	6										403
				4							1	20	49									94
							2					7	1			1			2	1		969
												2				1		2		21		26
		1		10			1				3	65				1				21	3	1,103
	20		3		28		13				3	1		207							2	990
							16	126			77							1		1	6	1,028
	1						4							1								246
	1			1	1		677	7		220	5			6			7		2	37	22,799	
							389				8										19	3,480
											2								28	1		331
151	1																		11	65		232
	674		1				31				2		124					3	5			904
		20		2								63						1		2		95
	1		181				27				1			171						1		486
			515									48		1					1	1		579
	8			58			1							8						89		205
					30							71	17							11		129
	6		1			9,094		1		3	4		35			1	2		1	24		10,308
							7	79			4						7					109
							4	1,153			27						21				3	1,267
41									1												46	124
							7	121		5,322		1		2			4		1		9	8,208
		1		1		2	2					5,774	3					1	1	31		5,824
		2										157	222							3		387
	80		3				338		1			1		1,966						3		2,431
					1																4	38
												3				653	1		2	3		708
								49		6	1					1,630				9		1,943
							1					54						324	1	41		423
	1						3		1			5									11	4,225
24	4		1	2		9	31		1		8	259		4		192	6	34	7			980
216	802	25	190	603	89	41	10,654	7	1,539	1	5,689	6,599	292	2,527		898	1,880	367	3,994	2,301	79,687	

S02500A-HDE

Washington State 1991

Table 9: Live Births With Rates<sup>1</sup> by Place of Residence by Sex and by Place of Occurrence

County and City	Residence				Occurrence	
	Number	Rate	Male	Female	Number	Rate
State Totals	79,667	15.9	40,770	38,897	78,346	15.7
Adams	313	22.7	169	144	408	29.6
Asotin	257	14.4	126	131		
Benton	1,948	17.0	1,014	934	2,615	22.8
Kennewick	935	21.9	511	424	1,136	26.6
Richland	463	14.1	233	230	1,028	31.4
Chelan	934	17.6	488	446	1,353	25.4
Wenatchee	414	18.8	212	202	1,268	57.4
Clallam	735	12.6	394	341	730	12.5
Port Angeles	257	14.4	142	115	626	35.0
Clark	4,027	16.1	2,093	1,934	2,597	10.4
Vancouver	1,902	40.3	1,000	902	2,575	54.6
Columbia	50	12.5	24	26	1	.3
Cowlitz	1,309	15.7	671	638	1,520	18.2
Longview	553	17.4	276	277	1,510	47.6
Douglas	403	14.7	208	195	7	.3
Ferry	94	14.5	44	50	22	3.4
Franklin	969	25.1	491	478	602	15.6
Pasco	695	33.6	361	334	601	29.1
Garfield	26	11.3	14	12		
Grant	1,103	19.6	562	541	791	14.0
Grays Harbor	990	15.2	493	497	740	11.4
Aberdeen	330	19.8	156	174	732	43.9
Island	1,028	16.4	537	491	778	12.4
Oak Harbor	465	26.0	254	211	8	.4
Jefferson	246	11.4	116	130	179	8.3
King	22,799	14.8	11,664	11,135	26,333	17.1
Auburn	685	20.6	346	339	762	22.9
Bellevue	1,056	12.0	548	508	2,497	28.4
Des Moines	227	13.0	123	104	3	.2
Federal Way	1,168	16.5	595	573	1,516	21.5
Kent	816	20.6	427	389	28	.7
Kirkland	625	15.4	322	303	2,396	59.0
Mercer Island	163	7.7	92	71	2	.1
Redmond	538	14.4	257	281	1,294	34.5
Renton	711	16.5	379	332	3,191	74.2
Sea Tac	58	2.5	34	24	2	.1
Seattle	7,252	14.0	3,681	3,571	14,086	27.2
Kitsap	3,480	17.7	1,766	1,714	2,954	15.0
Bremerton	1,160	31.3	571	589	2,230	60.2
Winslow	13	.8	4	9	1	.1
Kittitas	331	12.1	173	158	303	11.1
Klickitat	232	13.8	117	115	216	12.9
Lewis	904	14.9	464	440	802	13.3
Lincoln	95	10.7	48	47	25	2.8
Mason	486	12.2	240	246	190	4.8
Okanogan	579	17.0	283	296	603	17.7
Pacific	205	10.7	101	104	89	4.6
Pend Oreille	129	14.0	69	60	41	4.5
Pierce	10,308	17.1	5,294	5,014	10,654	17.6
Puyallup	439	18.0	236	203	1,348	55.1
Tacoma	3,357	18.9	1,768	1,589	7,054	39.7
San Juan	109	10.2	47	62	7	.7
Skagit	1,267	15.3	633	634	1,539	18.6
Mount Vernon	380	20.3	183	197	987	52.7
Skamania	124	14.6	66	58	1	.1
Snohomish	8,208	17.0	4,234	3,974	5,689	11.8
Edmonds	454	14.7	227	227	1,687	54.7
Everett	1,971	27.2	1,012	959	3,238	44.7
Lynnwood	757	26.1	391	366	33	1.1
Mountlake Terrace	350	17.8	188	162	5	.3
Spokane	5,824	15.9	2,983	2,841	6,599	18.0
Spokane (city)	3,801	21.3	1,955	1,846	6,174	34.6
Stevens	387	12.3	211	176	292	9.3
Thurston	2,431	14.5	1,234	1,197	2,527	15.0
Lacey	283	14.0	147	136	5	.2
Olympia	772	22.2	384	388	2,502	71.8
Wahkiakum	38	11.5	17	21		
Walla Walla	708	14.4	350	358	898	18.2
Walla Walla (city)	452	16.7	224	228	896	33.2
Whatcom	1,943	14.7	979	964	1,880	14.2
Bellingham	750	14.1	394	356	1,866	35.1
Whitman	423	11.0	213	210	367	9.5
Pullman	192	8.3	101	91	319	13.8
Yakima	4,225	22.2	2,140	2,085	3,994	21.0
Yakima (city)	1,384	24.0	679	705	2,872	49.8

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

Washington State 1991

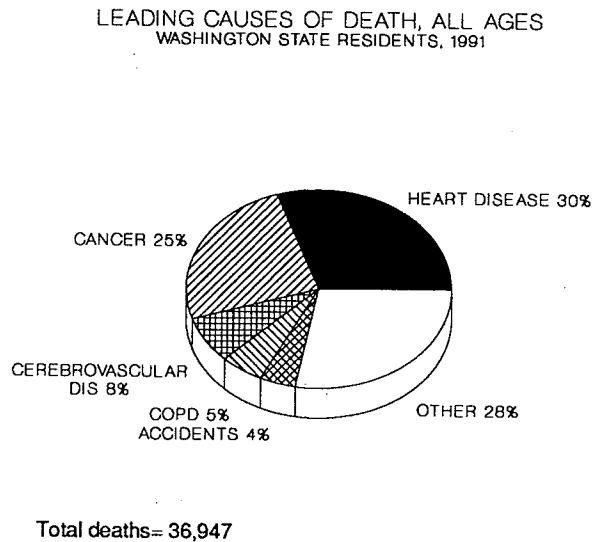
# Mortality

## Mortality: Leading Causes by Age Groups Examined

Statistics based on the underlying cause of death help prevention programs target interventions. The underlying cause is the single event or condition that, in the best estimation of the certifier (usually a physician, coroner, or medical examiner), initiated the events resulting in death. Figure 1 shows the five leading causes of death for Washington State residents in 1991.

As Figure 1 shows, heart disease and cancer are the two major causes of death in Washington State, accounting for more than half of 1991 resident deaths. Causes of death vary considerably with the age of the decedent, however, as the following sections show.

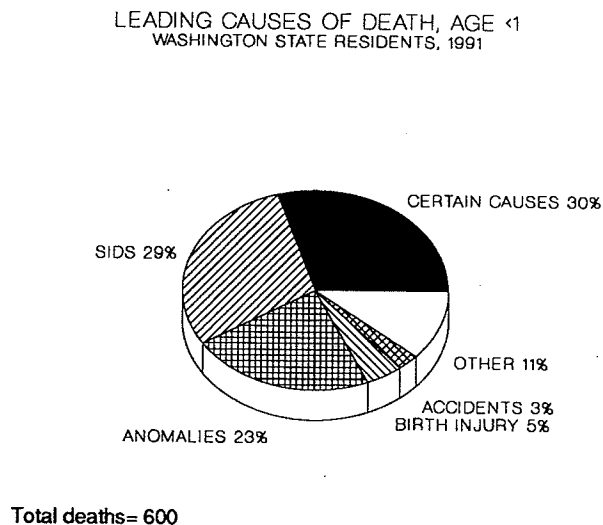
Figure 1



The perinatal period is especially critical for infants (Figure 2).

The leading cause of infant death is 'certain causes of mortality in early infancy,' which are conditions arising in the perinatal period (before, during, and shortly after delivery) excluding birth injuries and anomalies. An important focus of prevention is thus the period around delivery, as infants can die at this time from conditions such as prematurity, premature rupture of membranes (PROM), respiratory distress, and infections.

Figure 2



**Accidents are the leading cause of death for persons 1-34 years of age (Figures 3-7).**

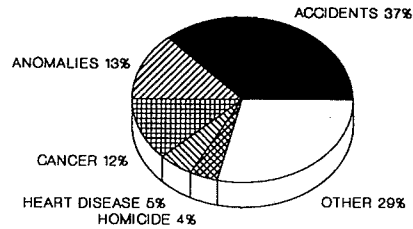
Motor vehicle traffic accidents involving collision with another motor vehicle or loss of control of the car are the most common type of fatal accident in the 1-34 age group. Use of seat belts, reduced speed limits, and tighter regulation of drunk driving should help reduce such accidents.

Besides accidents, notable among young persons aged 15-34 are the high proportion of suicides and homicides. The intentional nature of these deaths may pose special challenges for prevention programs.

For children ages 1-4, drowning is the major cause of accidental death. Children can drown in bathtubs, swimming pools, or other bodies of water such as lakes and ponds, suggesting the need for close supervision of young children when they are in or near water.

Figure 3

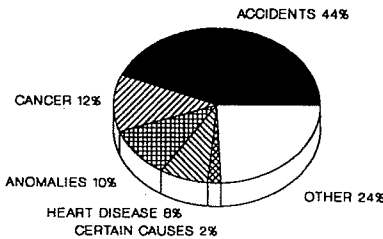
LEADING CAUSES OF DEATH, AGE 1-4  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 98

Figure 4

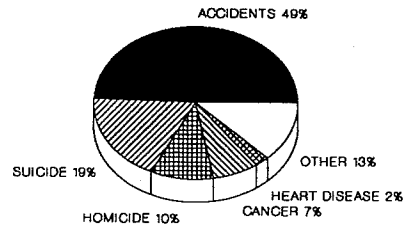
LEADING CAUSES OF DEATH, AGE 5-14  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 144

Figure 5

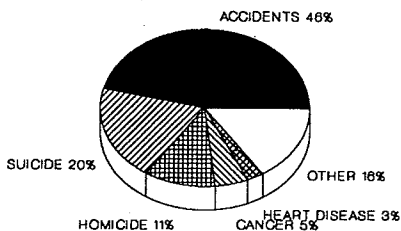
LEADING CAUSES OF DEATH, AGE 15-19  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 262

Figure 6

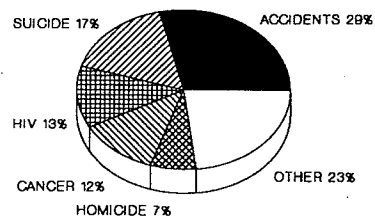
LEADING CAUSES OF DEATH, AGE 20-24  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 352

Figure 7

LEADING CAUSES OF DEATH, AGE 25-34  
WASHINGTON STATE RESIDENTS, 1991

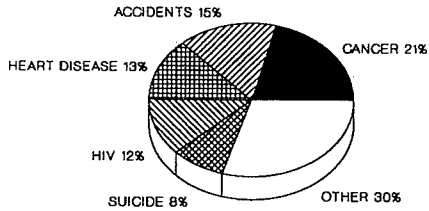


Total deaths= 858

Cancer is the leading cause of death for persons 35-74 years of age (Figures 8-11).

Figure 8

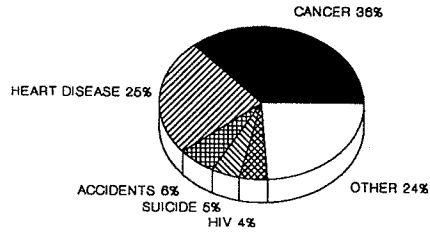
LEADING CAUSES OF DEATH, AGE 35-44  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 1,472

Figure 9

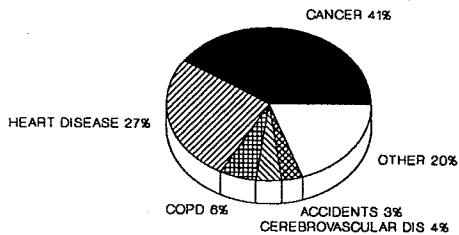
LEADING CAUSE OF DEATH, AGE 45-54  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 1,918

Figure 10

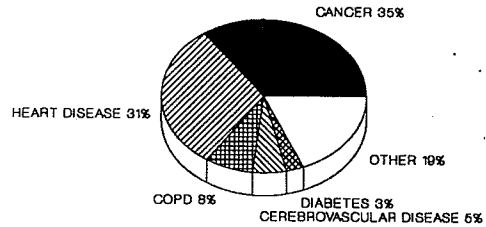
LEADING CAUSES OF DEATH, AGE 55-64  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 3,906

Figure 11

LEADING CAUSES OF DEATH, AGE 65-74  
WASHINGTON STATE RESIDENTS, 1991



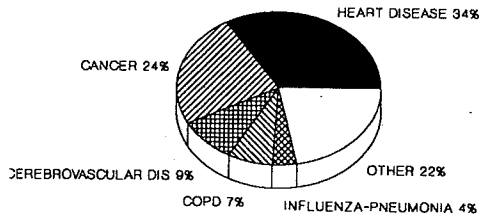
Total deaths= 8,168

Major types of cancer in this age group are lung, breast, pancreas, and colon cancer. Many of these cancer deaths could be prevented by early detection through routine screening procedures such as mammography, by smoking cessation measures, and possibly by dietary changes.

Heart disease is the leading cause of death for persons 75 years of age and over (Figures 12-13).

Figure 12

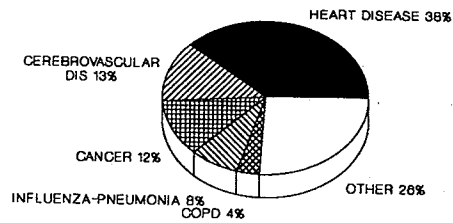
LEADING CAUSES OF DEATH, AGE 75-84  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 10,414

Figure 13

LEADING CAUSES OF DEATH, AGE 85+  
WASHINGTON STATE RESIDENTS, 1991



Total deaths= 8,750

Major types of heart disease are acute myocardial infarction and chronic ischemic heart disease (such as atherosclerosis). Reducing death rates in this age group thus requires programs aimed at reducing the incidence and severity of heart disease, such as through diet, exercise, and control of hypertension.

It is important to note that cancer and heart disease appear as leading causes of death for nearly all age groups.

## **Death Rates and Ratios: Differences Among Counties**

### **Age Adjusted Death Rates**

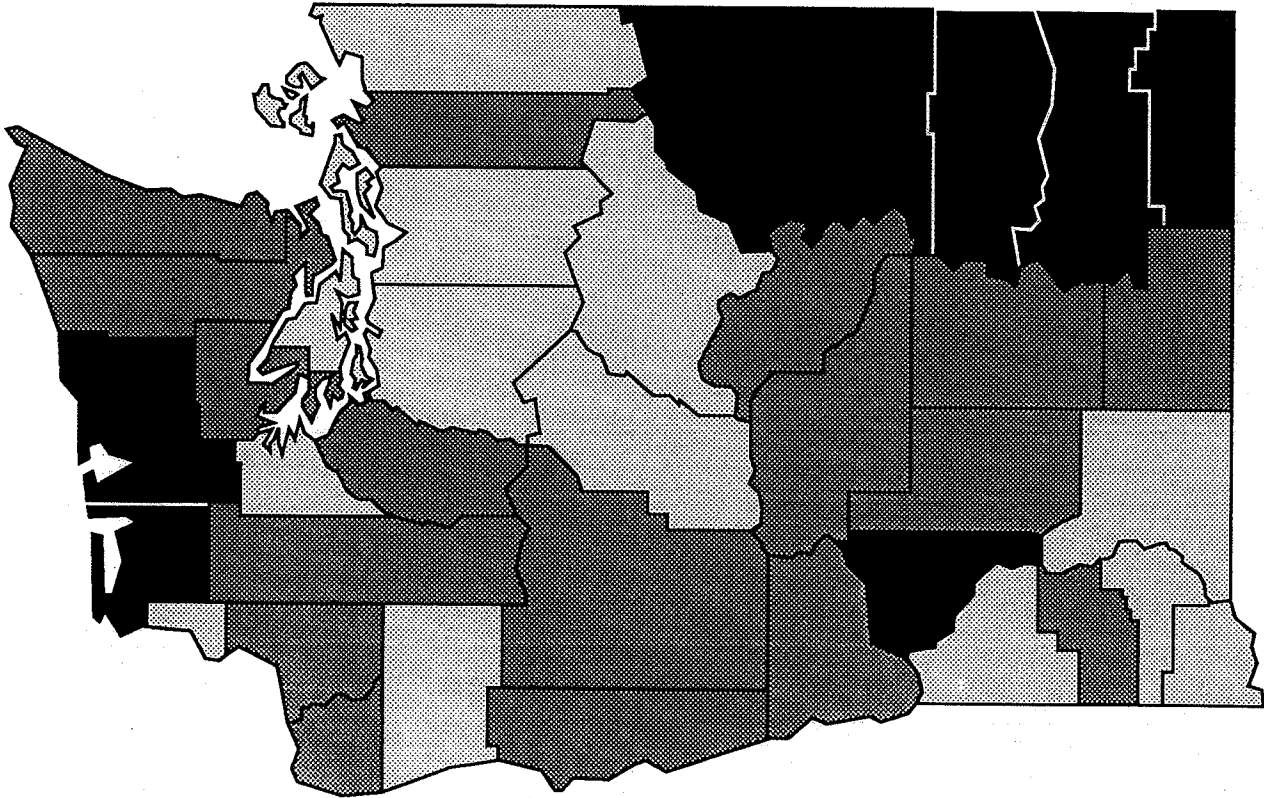
Age adjusted death rates allow for comparisons between counties and with the nation and the state. The map on the opposite page shows three levels of rates. The lowest level (385-492) is for counties falling below the state's age adjusted rate of 492.6 (for the combined 1980-1989 period). The highest level (536-610) is for counties whose rates for this time period are above the national 1988 age adjusted death rate of 535.5.

### **Infant Mortality Rates and Fetal Death Ratios**

Because of the small number of events in some counties in a single year, infant mortality rates and fetal death ratios should be averaged over several years when looking at trends or making comparisons between counties. Maps showing the general pattern of the infant death rate and fetal death ratio for the combined three year time period 1989-1991 follow on pages 34 and 35. Counties are grouped into three levels in each map, the highest group representing those counties whose rate or ratio is above the state average for the three year period 1989-1991. These rates/ratios, even when averaged, may be based on very small numbers. Thus, users are cautioned to look beyond these rates or ratios to the actual number of events involved.



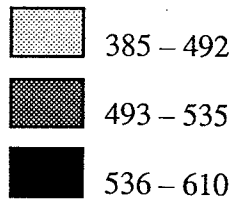
# Age-Adjusted Death Rates



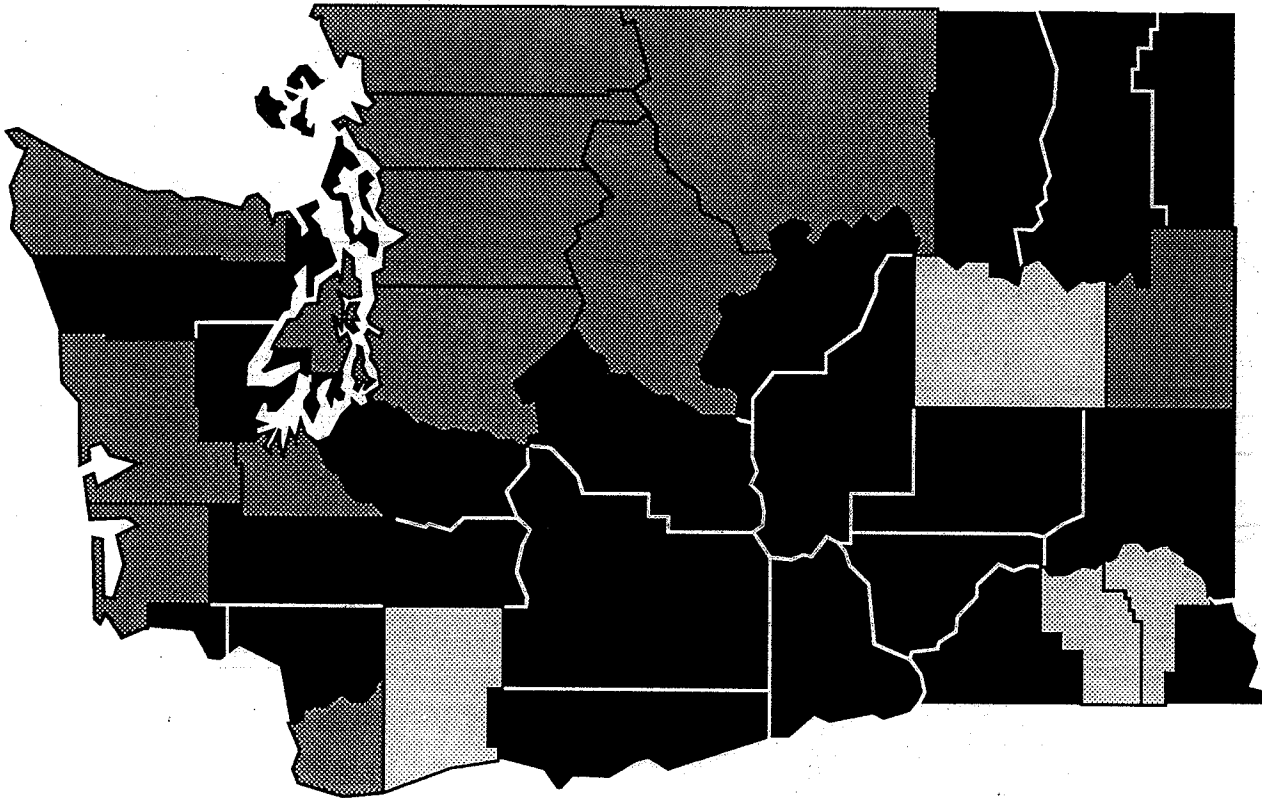
## Washington State 1980-89

(State Rate 492.6; U.S. 1988 Rate 535.5)

Deaths / 100,000 Population



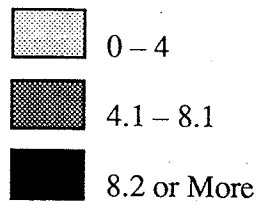
# Infant Death Rates



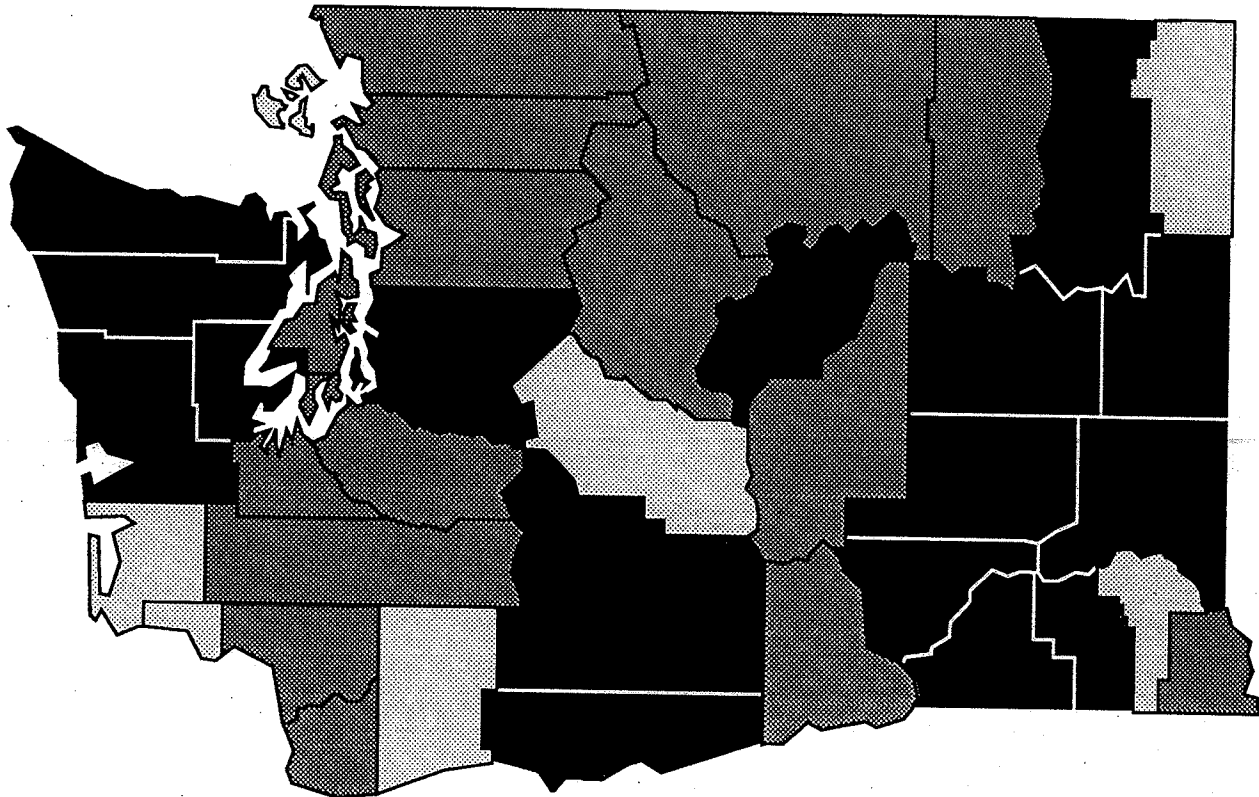
## Washington State 1989-91

(State Rate 8.1)

Infant Deaths / 1,000 Births



# Fetal Death Ratios



## Washington State 1989-91

(State Rate 5.4)

Fetal Deaths / 1,000 Births

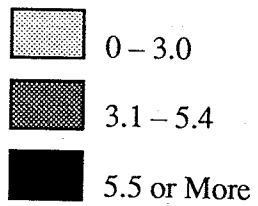


Table 10: Deaths by Selected Topics

## A. Residence, Race by Sex

	Total	Male	Female
Total	36,947	19,089	17,858
White	34,981	17,943	17,038
African American	837	498	339
Native American	403	208	195
Japanese	140	78	62
Chinese	89	53	36
Filipino	135	99	36
Other Asian	320	181	139
Other	1	1	
Unknown	41	28	13
Hispanic <sup>1</sup>	568	354	214

## B. Residence, Infant Deaths by Race

	Number
Total	600
White	510
African American	44
Native American	20
Japanese	
Chinese	2
Filipino	3
Other Asian	17
Other	
Unknown	4
Hispanic <sup>1</sup>	86

## C. Residence, Age Group by Sex

	Total	Male	Female
Total	36,947	19,089	17,858
Under 1	600	316	284
1 - 4	98	56	42
5 - 14	144	84	60
15 - 19	262	193	69
20 - 24	352	271	81
25 - 34	858	622	236
35 - 44	1,472	1,023	449
45 - 54	1,918	1,160	758
55 - 64	3,906	2,302	1,604
65 - 74	8,168	4,822	3,346
75 - 84	10,414	5,289	5,125
85 - 94	7,283	2,632	4,651
95 and Over	1,467	316	1,151
Unknown	5	3	2

D. Residence, Life Expectancy<sup>2</sup> by Age Group

Age Group	Life Expectancy	Standard Deviation
0-1	77.3	.069
1-5	76.8	.065
5-10	72.9	.064
10-15	68.0	.064
15-20	63.1	.064
20-25	58.3	.062
25-30	53.6	.060
30-35	48.8	.060
35-40	44.1	.059
40-45	39.4	.058
45-50	34.8	.057
50-55	30.2	.056
55-60	25.9	.053
60-65	21.8	.049
65-70	18.1	.046
70-75	14.6	.042
75-80	11.6	.038
80-85	8.9	.032
85+	6.6	

<sup>1</sup> Hispanic numbers are not included in total sum.<sup>2</sup> Life expectancy is computed for the age at the beginning of each age interval.

Table 10 (continued)

## E. Residence, Leading Causes of Death

Rank	Causes of Death with International List Numbers	Number	Percent
	All Causes	36,947	100.0% <sup>1</sup>
1	Diseases of the Heart 391-392.0,393-398,402,404,410-417,420-429	11,141	30.2
2	Malignant Neoplasms 140-208,230-234	9,178	24.8
3	Cerebrovascular Disease 430-438	2,800	7.6
4	Chronic Obstructive Pulmonary Diseases 490-496	1,963	5.3
5	All Accidents E800-E949	1,617	4.4
6	Influenza and Pneumonia 480-487	1,348	3.6
7	Diabetes Mellitus 250	769	2.1
8	Suicide E950-E959	684	1.9
9	Diseases of the Arteries Except Arteriosclerosis 441-444, 446-448	488	1.3
10	Arteriosclerosis 440	434	1.2
	All Other Causes	6,525	17.7

## F. Residence and Occurrence, Month of Death

Month	Residence	Occurrence
Total	36,947	37,137
January	3,218	3,223
February	2,879	2,877
March	3,416	3,412
April	3,187	3,215
May	3,121	3,142
June	2,929	2,942
July	2,991	3,020
August	2,952	2,971
September	2,821	2,853
October	3,098	3,109
November	3,141	3,154
December	3,194	3,219

## G. Residence, Marital Status by Sex

	Total	Male	Female
Total	36,947	19,089	17,858
Single	3,810	2,549	1,261
Married	15,864	10,935	4,929
Divorced	4,124	2,336	1,788
Widowed	13,057	3,197	9,860
Unknown	92	72	20

## H. Occurrence, Type of Place

	Number
Total	37,137
General Hospital	15,227
Nursing Home	10,216
Home	8,951
Federal Facility	813
Psychiatric Hospital	30
Dead On Arrival	31
State Facility	1
Other and Unknown	1,868

<sup>1</sup> Detail may not add to 100% due to rounding.

Table 11: Resident Deaths with Rates<sup>1</sup> and Percents<sup>2</sup> by Leading Causes and Age Group by Sex

Age Group with Causes	International List Number	Total			Male			Female		
		Number	Rate	Percent <sup>3</sup>	Number	Rate	Percent <sup>3</sup>	Number	Rate	Percent <sup>3</sup>
<b>All Ages</b>										
All Causes		36,947	738.9	100.0	19,089	769.8	100.0	17,858	708.5	100.0
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	11,141	222.8	30.2	5,828	235.0	30.5	5,313	210.8	29.8
Malignant Neoplasms	140-208,230-234	9,178	183.5	24.8	4,788	193.1	25.1	4,390	174.2	24.6
Cerebrovascular Disease	430-438	2,800	56.0	7.6	1,087	43.8	5.7	1,713	68.0	9.6
Chronic Obstructive Pulmonary Diseases	490-496	1,963	39.3	5.3	1,039	41.9	5.4	924	36.7	5.2
All Accidents	E800-E949	1,617	32.3	4.4	1,098	44.3	5.8	519	20.6	2.9
Influenza and Pneumonia	480-487	1,348	27.0	3.6	589	23.8	3.1	759	30.1	4.3
Diabetes Mellitus	250	769	15.4	2.1	345	13.9	1.8	424	16.8	2.4
Suicide	E950-E959	684	13.7	1.9	542	21.9	2.8	142	5.6	.8
Diseases of the Arteries Except Arteriosclerosis	441-444,446-448	488	9.8	1.3	296	11.9	1.6	192	7.6	1.1
Arteriosclerosis	440	434	8.7	1.2	165	6.7	.9	269	10.7	1.5
All Other Causes		6,525	130.5	17.7	3,312	133.6	17.4	3,213	127.5	18.0
<b>Under 1</b>										
All Causes		600	757.7	100.0	316	779.5	100.0	284	734.9	100.0
Certain Causes Mortality in Early Infancy	760-762,764-766, 770-779	178	224.8	29.7	85	209.7	26.9	93	240.6	32.7
Sudden Infant Death Syndrome	798.0	176	222.3	29.3	108	266.4	34.2	68	176.0	23.9
Congenital Anomalies	740-759	135	170.5	22.5	63	155.4	19.9	72	186.3	25.4
Birth Injury, etc.	763,767-769	27	34.1	4.5	20	49.3	6.3	7	18.1	2.5
All Accidents	E800-E949	16	20.2	2.7	7	17.3	2.2	9	23.3	3.2
All Other Causes		68	85.9	11.3	33	81.4	10.4	35	90.6	12.3
<b>1 - 4</b>										
All Causes		98	31.9	100.0	56	35.5	100.0	42	28.0	100.0
All Accidents	E800-E949	36	11.7	36.7	22	14.0	39.3	14	9.3	33.3
Congenital Anomalies	740-759	13	4.2	13.3	6	3.8	10.7	7	4.7	16.7
Malignant Neoplasms	140-208,230-234	12	3.9	12.2	8	5.1	14.3	4	2.7	9.5
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	5	1.6	5.1	2	1.3	3.6	3	2.0	7.1
Homicide	E960-E969	4	1.3	4.1	2	1.3	3.6	2	1.3	4.8
All Other Causes		28	9.1	28.6	16	10.2	28.6	12	8.0	28.6
<b>5 - 14</b>										
All Causes		144	19.6	100.0	84	22.3	100.0	60	16.7	100.0
All Accidents	E800-E949	63	8.6	43.8	47	12.5	56.0	16	4.5	26.7
Malignant Neoplasms	140-208,230-234	17	2.3	11.8	6	1.6	7.1	11	3.1	18.3
Congenital Anomalies	740-759	15	2.0	10.4	7	1.9	8.3	8	2.2	13.3
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	11	1.5	7.6	2	.5	2.4	9	2.5	15.0
Certain Causes Mortality in Early Infancy	760-762,764-766, 770-779	3	.4	2.1	3	.8	3.6			
All Other Causes		35	4.8	24.3	19	5.0	22.6	16	4.5	26.7
<b>15 - 19</b>										
All Causes		262	81.9	100.0	193	117.1	100.0	69	44.5	100.0
All Accidents	E800-E949	129	40.3	49.2	100	60.7	51.8	29	18.7	42.0
Suicide	E950-E959	49	15.3	18.7	38	23.1	19.7	11	7.1	15.9
Homicide	E960-E969	26	8.1	9.9	19	11.5	9.8	7	4.5	10.1
Malignant Neoplasms	140-208,230-234	19	5.9	7.3	14	8.5	7.3	5	3.2	7.2
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	6	1.9	2.3	3	1.8	1.6	3	1.9	4.3
All Other Causes		33	10.3	12.6	19	11.5	9.8	14	9.0	20.3
<b>20 - 24</b>										
All Causes		352	97.0	100.0	271	144.6	100.0	81	46.1	100.0
All Accidents	E800-E949	162	44.6	46.0	129	68.8	47.6	33	18.8	40.7
Suicide	E950-E959	69	19.0	19.6	62	33.1	22.9	7	4.0	8.6
Homicide	E960-E969	39	10.7	11.1	31	16.5	11.4	8	4.6	9.9
Malignant Neoplasms	140-208,230-234	18	5.0	5.1	9	4.8	3.3	9	5.1	11.1
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	9	2.5	2.6	6	3.2	2.2	3	1.7	3.7
All Other Causes		55	15.2	15.6	34	18.1	12.5	21	12.0	25.9
<b>25 - 34</b>										
All Causes		858	99.7	100.0	622	143.8	100.0	236	55.2	100.0
All Accidents	E800-E949	247	28.7	28.8	193	44.6	31.0	54	12.6	22.9
Suicide	E950-E959	142	16.5	16.6	118	27.3	19.0	24	5.6	10.2
Human Immunodeficiency Virus	042-044	109	12.7	12.7	104	24.0	16.7	5	1.2	2.1
Malignant Neoplasms	140-208,230-234	103	12.0	12.0	46	10.6	7.4	57	13.3	24.2
Homicide	E960-E969	59	6.9	6.9	42	9.7	6.8	17	4.0	7.2
All Other Causes		198	23.0	23.1	119	27.5	19.1	79	18.5	33.5

Table 11 (continued)

Age Group with Causes	International List Number	Total			Male			Female		
		Number	Rate	Percent <sup>3</sup>	Number	Rate	Percent <sup>3</sup>	Number	Rate	Percent <sup>3</sup>
<b>35 - 44</b>										
All Causes		1,472	174.6	100.0	1,023	242.0	100.0	449	106.9	100.0
Malignant Neoplasms	140-208,230-234	313	37.1	21.3	142	33.6	13.9	171	40.7	38.1
All Accidents	E800-E949	228	27.1	15.5	177	41.9	17.3	51	12.1	11.4
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	193	22.9	13.1	148	35.0	14.5	45	10.7	10.0
Human Immunodeficiency Virus	042-044	178	21.1	12.1	178	42.1	17.4			
Suicide	E950-E959	125	14.8	8.5	90	21.3	8.8	35	8.3	7.8
All Other Causes		435	51.6	29.6	288	68.1	28.2	147	35.0	32.7
<b>45 - 54</b>										
All Causes		1,918	366.5	100.0	1,160	438.9	100.0	758	292.5	100.0
Malignant Neoplasms	140-208,230-234	700	133.7	36.5	330	124.9	28.4	370	142.8	48.8
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	470	89.8	24.5	348	131.7	30.0	122	47.1	16.1
All Accidents	E800-E949	115	22.0	6.0	76	28.8	6.6	39	15.1	5.1
Suicide	E950-E959	87	16.6	4.5	59	22.3	5.1	28	10.8	3.7
Human Immunodeficiency Virus	042-044	86	16.4	4.5	81	30.7	7.0	5	1.9	.7
All Other Causes		460	87.9	24.0	266	100.7	22.9	194	74.9	25.6
<b>55 - 64</b>										
All Causes		3,906	1019.7	100.0	2,302	1233.6	100.0	1,604	816.4	100.0
Malignant Neoplasms	140-208,230-234	1,587	414.3	40.6	821	440.0	35.7	766	389.9	47.8
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	1,039	271.2	26.6	746	399.8	32.4	293	149.1	18.3
Chronic Obstructive Pulmonary Diseases	490-496	225	58.8	5.8	123	66.0	5.3	102	51.9	6.4
Cerebrovascular Disease	430-438	159	41.5	4.1	86	46.1	3.7	73	37.2	4.6
All Accidents	E800-E949	130	33.9	3.3	87	46.6	3.8	43	21.9	2.7
All Other Causes		766	200.0	19.6	439	235.3	19.1	327	166.4	20.4
<b>65 - 74</b>										
All Causes		8,168	2400.0	100.0	4,822	3120.5	100.0	3,346	1800.8	100.0
Malignant Neoplasms	140-208,230-234	2,861	840.6	35.0	1,604	1038.0	33.3	1,257	676.5	37.6
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	2,501	734.9	30.6	1,656	1071.7	34.3	845	454.8	25.3
Chronic Obstructive Pulmonary Diseases	490-496	623	183.1	7.6	334	216.2	6.9	289	155.5	8.6
Cerebrovascular Disease	430-438	440	129.3	5.4	236	152.7	4.9	204	109.8	6.1
Diabetes Mellitus	250	224	65.8	2.7	99	64.1	2.1	125	67.3	3.7
All Other Causes		1,519	446.3	18.6	893	577.9	18.5	626	336.9	18.7
<b>75 - 84</b>										
All Causes		10,414	5558.9	100.0	5,289	7063.9	100.0	5,125	4557.0	100.0
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	3,508	1872.6	33.7	1,802	2406.7	34.1	1,706	1516.9	33.3
Malignant Neoplasms	140-208,230-234	2,506	1337.7	24.1	1,332	1779.0	25.2	1,174	1043.9	22.9
Cerebrovascular Disease	430-438	964	514.6	9.3	422	563.6	8.0	542	481.9	10.6
Chronic Obstructive Pulmonary Diseases	490-496	742	396.0	7.1	391	522.2	7.4	351	312.1	6.8
Influenza and Pneumonia	480-487	403	215.1	3.9	205	273.8	3.9	198	176.1	3.9
All Other Causes		2,291	1222.9	22.0	1,137	1518.6	21.5	1,154	1026.1	22.5
<b>85 and Over</b>										
All Causes		8,750	15066.7	100.0	2,948	17611.6	100.0	5,802	14036.2	100.0
Diseases of the Heart	391-2.0,393-8,402, 404,410-7,420-9	3,339	5749.5	38.2	1,082	6463.9	36.7	2,257	5460.1	38.9
Cerebrovascular Disease	430-438	1,122	1932.0	12.8	283	1690.7	9.6	839	2029.7	14.5
Malignant Neoplasms	140-208,230-234	1,042	1794.2	11.9	476	2843.7	16.1	566	1369.3	9.8
Influenza and Pneumonia	480-487	671	1155.4	7.7	219	1308.3	7.4	452	1093.5	7.8
Chronic Obstructive Pulmonary Diseases	490-496	311	535.5	3.6	160	955.8	5.4	151	365.3	2.6
All Other Causes		2,265	3900.1	25.9	728	4349.1	24.7	1,537	3718.3	26.5
<b>Age Unknown</b>										
All Causes		5		100.0	3		100.0	2		100.0
All Accidents	E800-E949	3		60.0	2		66.7	1		50.0
Homicide	E960-E969	1		20.0	1		33.3			
Cerebrovascular Disease	430-438	1		20.0				1		50.0

<sup>1</sup> Rate per 100,000 population in each age-sex group.<sup>2</sup> Percent of total deaths in each age - sex group.<sup>3</sup> Detail may not add up to 100 percent due to rounding.

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Table 12: Resident Deaths with Rates<sup>1</sup> by Selected Causes by Sex

Cause with International List Number	Total		Male		Female	
	Number	Rate	Number	Rate	Number	Rate
<b>Total All Causes</b>	[36,947] <sup>2</sup>	[738.9]	[19,089]	[769.8]	[17,858]	[708.5]
<b>Infectious and Parasitic Diseases</b>	[805]	[16.1]	[595]	[24.0]	[210]	[8.3]
Tuberculosis (010-018, 137)	21	.4	9	.4	12	.5
Septicemia (038)	222	4.4	98	4.0	124	4.9
Human Immunodeficiency Virus (042-044)	411	8.2	395	15.9	16	.6
Other (000-139)	151	3.0	93	3.8	58	2.3
<b>Neoplasms</b>	[9,264]	[185.3]	[4,824]	[194.5]	[4,440]	[176.2]
Malignant Neoplasms (140-208,230-234)	9,178	183.5	4,788	193.1	4,390	174.2
Benign and Unspecified Neoplasms (210-229,235-239)	86	1.7	36	1.5	50	2.0
<b>Endocrine, Nutritional, Metabolic Diseases and Immunity Disorders</b>	[1,054]	[21.1]	[470]	[19.0]	[584]	[23.2]
Diabetes Mellitus (250)	769	15.4	345	13.9	424	16.8
Nutritional Deficiencies (260-269)	63	1.3	15	.6	48	1.9
Other (240-279)	222	4.4	110	4.4	112	4.4
<b>Diseases of Blood and Blood-Forming Organs</b>	[134]	[2.7]	[66]	[2.7]	[68]	[2.7]
Anemia (280-285)	50	1.0	25	1.0	25	1.0
Other (286-289)	84	1.7	41	1.7	43	1.7
<b>Mental Disorders</b>	[649]	[13.0]	[251]	[10.1]	[398]	[15.8]
Alcohol-Related (291,303,305)	120	2.4	82	3.3	38	1.5
Other (290-319)	529	10.6	169	6.8	360	14.3
<b>Diseases of the Nervous System and Sense Organs</b>	[1,016]	[20.3]	[451]	[18.2]	[565]	[22.4]
Parkinson's Disease (332)	206	4.1	123	5.0	83	3.3
Amyotrophic Lateral Sclerosis (335.2)	92	1.8	44	1.8	48	1.9
Other Hereditary and Degenerative Diseases of the Central Nervous System (330-337)	496	9.9	180	7.3	316	12.5
Multiple Sclerosis (340)	62	1.2	19	.8	43	1.7
Other (320-326,340-389)	160	3.2	85	3.4	75	3.0
<b>Diseases of the Circulatory System</b>	[15,075]	[301.5]	[7,470]	[301.2]	[7,605]	[301.7]
Diseases of the Heart (391-392.0,393-398,402,404, 410-417,420-429)	[11,141]	[222.8]	[5,828]	[235.0]	[5,313]	[210.8]
Chronic Rheumatic Heart Disease (391-392.0,393-398)	140	2.8	38	1.5	102	4.0
Hypertensive Heart Disease (402)	260	5.2	108	4.4	152	6.0
Hypertensive Heart and Renal Disease (404)	29	.6	14	.6	15	.6
Acute Ischemic Heart Disease (410,411)	3,250	65.0	1,834	74.0	1,416	56.2
Chronic Ischemic Heart Disease (412-414)	3,736	74.7	1,975	79.6	1,761	69.9
Other Heart Disease (415-417,420-429)	3,726	74.5	1,859	75.0	1,867	74.1
Hypertensive Disease (401-403)	154	3.1	73	2.9	81	3.2
Cerebrovascular Disease (430-438)	2,800	56.0	1,087	43.8	1,713	68.0
Arteriosclerosis (440)	434	8.7	165	6.7	269	10.7
Other (390-459)	546	10.9	317	12.8	229	9.1
<b>Diseases of the Respiratory System</b>	[3,719]	[74.4]	[1,844]	[74.4]	[1,875]	[74.4]
Chronic and Unqualified Bronchitis (490-491)	66	1.3	33	1.3	33	1.3
Emphysema (492)	290	5.8	167	6.7	123	4.9
Asthma (493)	109	2.2	42	1.7	67	2.7
Other Chronic Obstructive Pulmonary Diseases (494-496)	1,498	30.0	797	32.1	701	27.8
Pneumonia (480-486)	1,320	26.4	581	23.4	739	29.3
Influenza (487)	28	.6	8	.3	20	.8
Other (460-478,500-519)	408	8.2	216	8.7	192	7.6



Table 12 (continued)

Cause with International List Number	Total		Male		Female	
	Number	Rate	Number	Rate	Number	Rate
<b>Diseases of the Digestive System</b>	[1,261]	[25.2]	[612]	[24.7]	[649]	[25.7]
Ulcer of Stomach and Duodenum (531-533)	122	2.4	53	2.1	69	2.7
Hernia and Intestinal Obstruction (550-553,560)	127	2.5	46	1.9	81	3.2
Cirrhosis of the Liver (571)	402	8.0	266	10.7	136	5.4
Cholelithiasis, Cholecystitis, and Cholangitis (574-576)	55	1.1	25	1.0	30	1.2
Other (520-579)	555	11.1	222	9.0	333	13.2
<b>Diseases of the Genitourinary System</b>	[397]	[7.9]	[180]	[7.3]	[217]	[8.6]
Nephritis, Nephrotic Syndrome, and Nephrosis (580-589)	188	3.8	91	3.7	97	3.8
Other (590-629)	209	4.2	89	3.6	120	4.8
<b>Complications of Pregnancy, Childbirth, and the Puerperium (630-676)</b>	[3]	[.1]			[3]	[.1]
<b>Diseases of the Skin and Subcutaneous Tissue (680-709)</b>	[42]	[.8]	[21]	[.8]	[21]	[.8]
<b>Diseases of the Musculoskeletal System and Connective Tissue (710-739)</b>	[131]	[2.6]	[33]	[1.3]	[98]	[3.9]
<b>Congenital Anomalies (740-759)</b>	[251]	[5.0]	[124]	[5.0]	[127]	[5.0]
<b>Birth Injuries, Difficult Labor, and Other Anoxic and Hypoxic Conditions (763,767-769)</b>	[29]	[.6]	[21]	[.8]	[8]	[.3]
<b>Other Causes of Mortality in Early Infancy (760-762,764-766,770-779)</b>	[182]	[3.6]	[88]	[3.5]	[94]	[3.7]
<b>Symptoms, Signs, and Other Ill-Defined Conditions</b>	[309]	[6.2]	[168]	[6.8]	[141]	[5.6]
Sudden Infant Death Syndrome (798.0)	176	3.5	108	4.4	68	2.7
Other (780-799)	133	2.7	60	2.4	73	2.9
<b>Accidents</b>	[1,617]	[32.3]	[1,098]	[44.3]	[519]	[20.6]
Motor Vehicle (E810-E825,E929.0)	766	15.3	537	21.7	229	9.1
Water Transport (E830-E838)	26	.5	26	1.0		
Air and Space Transport (E840-E845)	30	.6	27	1.1	3	.1
Accidental Poisoning (E850-E869,E929.2)	99	2.0	77	3.1	22	.9
Falls (E880-E888,E929.3)	280	5.6	142	5.7	138	5.5
Fire (E890-E899,E929.4)	45	.9	28	1.1	17	.7
Accidental Drowning (E910)	83	1.7	61	2.5	22	.9
Other (E800-E949)	288	5.8	200	8.1	88	3.5
<b>Suicide (E950-E959)</b>	[684]	[13.7]	[542]	[21.9]	[142]	[5.6]
Firearms and Explosives (E955)	395	7.9	338	13.6	57	2.3
Other (E950-E954,E956-E959)	289	5.8	204	8.2	85	3.4
<b>Homicide (E960-E969)</b>	[233]	[4.7]	[164]	[6.6]	[69]	[2.7]
Firearms and Explosives (E965)	123	2.5	98	4.0	25	1.0
Other (E960-E964,E966-E969)	110	2.2	66	2.7	44	1.7
<b>Legal Intervention (E970-E978)</b>	[4]	[.1]	[4]	[.2]		
<b>Undetermined External Injuries (E980-E989)</b>	[88]	[1.8]	[63]	[2.5]	[25]	[1.0]
<b>Injury Resulting From Operations of War (E990-E999)</b>						

<sup>1</sup> Rates per 100,000 population.<sup>2</sup> Group totals are shown in brackets.

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Table 13: Resident Deaths with Rates<sup>1</sup> Due to Malignant Neoplasm by Primary Site by Sex

Cause with International List Number	Total		Male		Female	
	Number	Rate	Number	Rate	Number	Rate
<b>Total All Causes</b>	[9,178] <sup>2</sup>	[183.5]	[4,788]	[193.1]	[4,390]	[174.2]
<b>Lip, Oral Cavity, and Pharynx (140-149,230.0)</b>	[148]	[3.0]	[88]	[3.5]	[60]	[2.4]
<b>Digestive Organs and Peritoneum (150-159,230.1-230.9)</b>	[2,083]	[41.7]	[1,097]	[44.2]	[986]	[39.1]
Esophagus (150,230.1)	202	4.0	142	5.7	60	2.4
Stomach (151,230.2)	240	4.8	150	6.0	90	3.6
Small Intestine, Including Duodenum (152)	19	.4	12	.5	7	.3
Colon (153,230.3)	728	14.6	351	14.2	377	15.0
Rectum (154,230.4-230.6)	158	3.2	76	3.1	82	3.3
Liver and Intrahepatic Ducts (155,230.8)	162	3.2	111	4.5	51	2.0
Gallbladder and Extrahepatic Bile Ducts (156)	66	1.3	27	1.1	39	1.5
Pancreas (157)	464	9.3	208	8.4	256	10.2
Retroperitoneum and Peritoneum (158)	15	.3	8	.3	7	.3
Other and Ill-Defined Sites (159,230.7,230.9)	29	.6	12	.5	17	.7
<b>Respiratory and Intrathoracic Organs (160-165,231)</b>	[2,720]	[54.4]	[1,664]	[67.1]	[1,056]	[41.9]
Lung (162,231.1,231.2)	2,611	52.2	1,574	63.5	1,037	41.1
Other and Ill-Defined Sites (160-161,163-165,231.0,231.8,231.9)	109	2.2	90	3.6	19	.8
<b>Bone, Connective Tissue, Skin and Breast (170-175,232,233.0)</b>	[1,039]	[20.8]	[157]	[6.3]	[882]	[35.0]
Bone and Articular Cartilage (170)	18	.4	12	.5	6	.2
Connective Tissue and Other Soft Tissue (171)	68	1.4	29	1.2	39	1.5
Skin (172-173,232)	174	3.5	112	4.5	62	2.5
Breast (174,175,233.0)	779	15.6	4	.2	775	30.7
<b>Genital Organs (179-187,233.1-233.6)</b>	[1,142]	[22.8]	[678]	[27.3]	[464]	[18.4]
<b>Urinary Organs (188-189,233.7-233.9)</b>	[365]	[7.3]	[238]	[9.6]	[127]	[5.0]
<b>Brain (191)</b>	[275]	[5.5]	[139]	[5.6]	[136]	[5.4]
<b>Other and Ill-Defined Sites (190,192-199,234)</b>	[487]	[9.7]	[233]	[9.4]	[254]	[10.1]
<b>Lymphatic and Hematopoietic Tissue (200-208)</b>	[919]	[18.4]	[494]	[19.9]	[425]	[16.9]
Lymphosarcoma (200)	51	1.0	25	1.0	26	1.0
Hodgkins Disease (201)	30	.6	13	.5	17	.7
Lymphoid and Histiocytic Tissue (202)	312	6.2	162	6.5	150	6.0
Multiple Myeloma and Immunoproliferative Tissue (203)	166	3.3	92	3.7	74	2.9
Lymphoid Leukemia (204)	140	2.8	81	3.3	59	2.3
Myeloid Leukemia (205)	186	3.7	104	4.2	82	3.3
Monocytic Leukemia (206)	8	.2	3	.1	5	.2
Other and Unspecified Leukemia (207-208)	26	.5	14	.6	12	.5

<sup>1</sup> Rates per 100,000 population

<sup>2</sup> Group totals are shown in brackets.

Table 14: Resident Deaths by Non-Transport Causes by Place of Accident

Cause of Death	Total	Home	Nursing			Public	Unknown
			Home	Agriculture	Industry		
<b>State Total</b>	773	281	22	20	26	255	169
<b>Poisoning by Drugs, Medicaments and Biologicals (E850-E858)</b>	84	54	1			12	17
<b>Poisoning by Other Solid and Liquid Substances, Gases and Vapors (E860-E869)</b>	15	6				7	2
<b>Misadventures and Abnormal Reactions Due to Surgical and Medical Care (E870-E879)</b>	42					34	8
<b>Falls (E880-E888)</b>	[279]	[102]	[20]	[2]	[3]	[87]	[65]
Falls on/ from Stairs or Ladders (E880-E881)	24	18			2	3	1
Falls from One Level to Another (E882-E884)	54	12	4	2	1	33	2
Falls on Same Level (E885-E886)	24	10	1			6	7
Other and Unspecified Fall (E887-E888)	177	62	15			45	55
<b>Fire (E890-E899)</b>	45	41				4	
<b>Natural and Environmental Factors (E900-E909)</b>	12	3				6	3
<b>Drowning, Excluding Submersion Following Boating Accidents (E910)</b>	83	21	1	1		59	1
<b>Inhalation and Ingestion of Food or Other Object Causing Suffocation and Obstruction (E911-E912)</b>	55	7				6	42
<b>Mechanical Suffocation (E913)</b>	22	17				5	
<b>Foreign Body Entering Other Orifice (E914-E915)</b>							
<b>Struck by, Against or Between Objects (E916-E918)</b>	32	4		7	6	15	
<b>Machinery (E919-E920)</b>	24	2		10	7	5	
<b>Explosion and Explosive Material (E921, E923)</b>	4	1			2	1	
<b>Firearms (E922)</b>	19	11				6	2
<b>Hot Substance, Corrosive Liquid and Steam (E924)</b>	1	1					
<b>Electricity (E925)</b>	10	3			4	3	
<b>Other and Unspecified Non-Transport Accidents (E926-E949)</b>	46	8			4	5	29

\* Group totals for falls are shown in brackets.

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Table 15: Deaths with Rates<sup>1</sup> by Place of Residence and Occurrence

County and City	Residence		Occurrence	
	Total	Rate	Total	Rate
State Total	36,947	7.4	37,137	7.4
Adams	101	7.3	93	6.7
Asotin	207	11.6	156	8.8
Benton	753	6.6	698	6.1
Kennewick	282	6.6	307	7.2
Richland	259	7.9	296	9.0
Chelan	533	10.0	637	12.0
Wenatchee	263	11.9	463	21.0
Clallam	631	10.8	584	10.0
Port Angeles	211	11.8	341	19.1
Clark	1,669	6.7	1,442	5.8
Vancouver	595	12.6	1,148	24.3
Columbia	45	11.3	28	7.0
Cowlitz	779	9.3	824	9.9
Longview	346	10.9	686	21.6
Douglas	161	5.9	71	2.6
Ferry	56	8.6	36	5.5
Franklin	282	7.3	262	6.8
Pasco	193	9.3	240	11.6
Garfield	26	11.3	26	11.3
Grant	412	7.3	331	5.9
Grays Harbor	751	11.5	616	9.5
Aberdeen	234	14.0	360	21.6
Island	424	6.8	320	5.1
Oak Harbor	104	5.8	86	4.8
Jefferson	191	8.8	161	7.5
King	10,560	6.8	11,610	7.5
Auburn	281	8.4	384	11.5
Bellevue	567	6.5	609	6.9
Des Moines	179	10.2	252	14.4
Federal Way	279	3.9	297	4.2
Kent	177	4.5	129	3.3
Kirkland	240	5.9	494	12.2
Mercer Island	138	6.5	76	3.6
Redmond	144	3.8	275	7.3
Renton	322	7.5	682	15.9
Sea Tac	39	1.7	22	1.0
Seattle	5,107	9.9	7,799	15.1
Kitsap	1,349	6.9	1,268	6.5
Bremerton	371	10.0	779	21.0
Winslow	43	2.6	50	3.1
Kititas	213	7.8	216	7.9
Klickitat	145	8.6	120	7.1
Lewis	606	10.0	559	9.2
Lincoln	102	11.5	74	8.3
Mason	388	9.7	265	6.6
Okanogan	307	9.0	269	7.9
Pacific	279	14.5	219	11.4
Pend Oreille	78	8.5	69	7.5
Pierce	4,257	7.1	4,335	7.2
Puyallup	237	9.7	689	28.2
Tacoma	1,788	10.1	2,976	16.8
San Juan	85	7.9	66	6.2
Skagit	719	8.7	741	8.9
Mount Vernon	165	8.8	259	13.8
Skamania	55	6.5	28	3.3
Snohomish	2,871	5.9	2,571	5.3
Edmonds	310	10.0	472	15.3
Everett	674	9.3	1,027	14.2
Lynnwood	224	7.7	183	6.3
Mountlake Terrace	96	4.9	27	1.4
Spokane	3,177	8.7	3,636	9.9
Spokane (city)	2,006	11.2	3,383	19.0
Stevens	251	8.0	195	6.2
Thurston	1,161	6.9	1,216	7.2
Lacey	195	9.6	158	7.8
Olympia	397	11.4	955	27.4
Wahkiakum	41	12.4	28	8.5
Walla Walla	466	9.5	587	11.9
Walla Walla (city)	301	11.1	524	19.4
Whatcom	1,024	7.7	1,033	7.8
Bellingham	533	10.0	810	15.3
Whitman	186	4.8	155	4.0
Pullman	41	1.8	56	2.4
Yakima	1,606	8.4	1,592	8.4
Yakima (city)	698	12.1	1,123	19.5

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

Table 16: Age-Adjusted Death Rates<sup>1</sup> from All Causes, 1980-1989

County	Females			Males			Total		
	Death Rate	Std.Err.	Number of Deaths	Death Rate	Std.Err.	Number of Deaths	Death Rate	Std.Err.	Number of Deaths
<b>State Total</b>	<b>374.5</b>	<b>1.1</b>	<b>159,451</b>	<b>635.5</b>	<b>1.4</b>	<b>179,194</b>	<b>492.6</b>	<b>0.9</b>	<b>338,645</b>
Adams	405.5	20.0	465	640.4	25.7	531	511.6	16.2	996
Asotin	373.4	16.0	809	627.3	22.6	872	489.0	13.7	1,681
Benton	410.4	7.6	2,770	674.5	10.0	3,362	530.0	6.2	6,132
Chelan	364.6	9.5	2,291	630.9	13.1	2,551	487.5	8.0	4,842
Clallam	390.8	9.2	2,359	666.3	12.5	2,926	520.4	7.7	5,285
Clark	392.7	5.2	6,648	673.8	7.1	7,825	520.1	4.3	14,473
Columbia	389.9	30.1	259	642.6	44.2	271	504.4	26.6	530
Cowlitz	406.3	8.0	3,114	675.2	10.8	3,562	529.4	6.7	6,676
Douglas	369.8	13.9	742	631.4	19.0	975	495.3	11.7	1,717
Ferry	438.6	35.4	162	742.1	43.5	265	589.8	28.2	427
Franklin	400.9	12.8	1,030	697.5	17.3	1,314	537.6	10.7	2,344
Garfield	365.3	37.4	143	521.0	48.5	138	431.4	30.7	281
Grant	396.7	10.2	1,541	655.1	13.1	2,191	522.7	8.3	3,732
Grays Harbor	456.4	9.3	3,059	746.8	12.0	3,643	591.1	7.6	6,702
Island	375.8	9.5	1,613	592.6	12.8	1,970	481.6	8.0	3,583
Jefferson	359.9	15.5	724	633.0	21.2	999	493.1	13.1	1,723
King	360.7	1.9	49,241	619.8	2.6	51,593	474.1	1.6	100,834
Kitsap	365.2	5.5	5,376	572.8	7.1	5,967	460.8	4.4	11,343
Kittitas	355.5	13.6	948	622.5	18.5	1,140	479.0	11.4	2,088
Klickitat	399.9	18.3	616	663.2	23.6	803	524.7	15.0	1,419
Lewis	380.4	8.9	2,611	672.3	12.5	3,017	515.2	7.6	5,628
Lincoln	419.4	24.4	506	588.0	27.3	604	499.3	18.3	1,110
Mason	391.6	11.6	1,301	623.9	14.9	1,722	507.1	9.5	3,023
Okanogan	411.5	13.0	1,324	736.3	17.8	1,761	567.8	11.0	3,085
Pacific	461.0	16.8	1,042	773.6	22.7	1,299	606.9	14.1	2,341
Pend Oreille	438.3	25.0	360	731.6	33.4	501	582.4	20.8	861
Pierce	395.7	3.2	18,102	675.0	4.4	20,707	521.5	2.7	38,809
San Juan	295.8	19.4	327	493.3	26.7	414	389.4	16.3	741
Skagit	388.0	8.1	3,133	668.0	11.3	3,551	518.0	6.9	6,684
Skamania	303.3	22.8	175	567.5	31.1	284	428.8	19.3	459
Snohomish	378.8	3.7	11,686	620.8	5.0	13,300	488.8	3.1	24,986
Spokane	370.6	3.6	14,337	655.1	5.1	15,659	495.8	3.1	29,996
Stevens	396.8	13.9	1,035	700.4	18.8	1,355	542.8	11.6	2,390
Thurston	369.1	5.9	4,847	616.4	8.0	5,253	478.6	4.9	10,100
Wahkiakum	339.0	31.5	158	651.4	46.8	197	481.6	28.2	355
Walla Walla	359.0	9.4	2,328	608.3	12.8	2,425	474.7	7.9	4,753
Whatcom	329.4	6.1	4,150	557.5	8.3	4,415	432.5	5.1	8,565
Whitman	323.4	12.0	1,013	505.0	14.9	1,164	407.0	9.5	2,177
Yakima	381.6	5.2	7,106	668.0	7.2	8,668	515.4	4.4	15,774

<sup>1</sup> Rates per 100,000 population.

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Table 17: Resident Infant Mortality by Cause by Age and Sex

Cause and International List Number	Total		1 Day		7 Days		28 Days		3 Months		6 Months		9 Months			
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
															Under	Under
<b>Total All Causes</b>	316	284	91	85	36	40	31	31	73	60	55	49	23	12	7	7
<b>All Infective and Parasitic Diseases (000-139)</b>	4	5					1	2	2	4	1			1		
<b>Malignant Neoplasms (140-208,230-234)</b>																
<b>Meningitis (320,322)</b>	1	2			1	1		1		1			1			
<b>Diseases of the Circulatory System (390-459)</b>	7	8		1	1	1	1	2	1	1	2		2			3
<b>Pneumonia and Influenza (480-487)</b>	3	4					1	2	1	2	1	1	1			
<b>Other Diseases of Respiratory System (510-519)</b>	2	3						1	2	2						
<b>Hernia and Intestinal Obstruction (550-553,560)</b>	1	1					1	1	1	1						
<b>Congenital Anomalies (740-759)</b>	[63] <sup>1</sup>	[72]	[26]	[18]	[14]	[15]	[7]	[13]	[4]	[11]	[6]	[10]	[3]	[3]	[3]	[2]
Anencephalus (740)	4			3		1										
Spina Bifida and Meningocele (741)																
Other Anomalies of the Central Nervous System (742)	3	6	1	1	1	1	1	1	2	1	2	1	1	1	1	1
Anomalies of the Heart (745-746)	24	29	4	4	7	5	5	8	4	7	2	4	2			1
Other Anomalies of Circulatory System (747)	3	8	1	1	1	3	1	1				3				
Anomalies of the Respiratory System (748)	9	4	5	2	3	1					1			1		
Anomalies of the Digestive System (749-751)	3															2
Anomalies of the Genitourinary System (752-753)	5	1	4	1							1					
Anomalies of the Musculoskeletal System (754-756)	7	4	7				3			1						
Chromosomal Anomalies (758)	6	11	4	4	2	4				2	1	1				
Other Congenital Anomalies	3	5		2	1		1			1		1		1		1
<b>Certain Diseases of Early Infancy (760-779)</b>	[105]	[100]	[65]	[65]	[20]	[20]	[16]	[12]	[2]	[1]	[1]	[1]	[1]	[1]	[1]	
Maternal Diseases Affecting Child (760)	1	2	1	2												
Complications of Pregnancy Affecting Child (761-762)	25	24	25	21		3										
Birth Injuries (763,767-769)	20	7	10	4	5	2	5	1								
Other Diseases Peculiar to Early Infancy	59	67	29	38	15	15	11	11	2	1	1	1	1	1	1	1
<b>Sudden Infant Death Syndrome (798.0)</b>	108	68							55	35	38	29	9	1	1	1
<b>All Other Diseases (000-799)</b>	12	6			1	1	1		6	2	1	1	3	3		
<b>All Accidents (E800-E949)</b>	[7]	[9]						[1]	[1]	[1]	[2]	[3]	[2]	[2]	[2]	[2]
Motor Vehicle Accidents (E810-E825)	2	1								1	1		1			
Accidental Drowning and Submersion (E910)	1															1
Inhalation of Food or Other Object Causing																
Obstruction or Suffocation (E911-E912)	1	2									1	1	1	1	1	1
Mechanical Suffocation in Bed or Cradle and																
in Other and Unspecified Circumstances (E913)	3	2					1	1	1	1	1	1	1	1	1	2
All Other Accidents	4						1									
<b>Homicide (E963-E968)</b>	3	5		1	1	1		1	1	1	2	2	1	1	1	1
<b>Injury Undetermined Whether Accidentally or Purposely Inflicted (E980-E988)</b>																
<b>Total</b>	316	284	91	85	36	40	31	31	73	60	55	49	23	12	7	7

<sup>1</sup>Group totals for sub-group causes are shown in brackets.

Table 18: Fetal Deaths, Perinatal, Neonatal and Infant Mortality with Rates by Place of Residence

County and City	Fetal Deaths		Perinatal Mortality <sup>2</sup>		Neonatal Mortality		Infant Mortality	
	Number	Ratio <sup>1</sup>	Number	Rate <sup>3</sup>	Number	Rate <sup>4</sup>	Number	Rate <sup>4</sup>
State Total	426	5.3	678	8.5	314	3.9	600	7.5
Adams	1	3.2	2	6.4	1	3.2	1	3.2
Asotin	1	3.9	1	3.9			1	3.9
Benton	12	6.2	18	9.2	8	4.1	13	6.7
Kennewick	6	6.4	8	8.5	4	4.3	8	8.6
Richland	4	8.6	4	8.6			1	2.2
Chelan	2	2.1	4	4.3	2	2.1	3	3.2
Wenatchee	1	2.4	2	4.8	1	2.4	2	4.8
Ciallam	7	9.5	7	9.4	2	2.7	4	5.4
Port Angeles	4	15.6	4	15.3				
Clark	14	3.5	25	6.2	12	3.0	24	6.0
Vancouver	5	2.6	6	3.1	2	1.1	7	3.7
Columbia								
Cowlitz	1	.8	5	3.8	6	4.6	13	9.9
Longview	1	1.8	4	7.2	3	5.4	6	10.8
Douglas	3	7.4	5	12.3	2	5.0	5	12.4
Ferry			1	10.6	2	21.3	3	31.9
Franklin	6	6.2	16	16.4	10	10.3	13	13.4
Pasco	4	5.8	13	18.6	9	12.9	11	15.8
Garfield								
Grant	5	4.5	7	6.3	2	1.8	7	6.3
Grays Harbor	5	5.1	6	6.0	2	2.0	4	4.0
Aberdeen	2	6.1	2	6.0				
Island	4	3.9	7	6.8	8	7.8	15	14.6
Oak Harbor	1	2.2	3	6.4	4	8.6	10	21.5
Jefferson	1	4.1	2	8.1	1	4.1	2	8.1
King	137	6.0	214	9.3	95	4.2	166	7.3
Auburn	5	7.3	7	10.1	2	2.9	4	5.8
Bellevue	2	1.9	3	2.8	1	.9	3	2.8
Des Moines	3	13.2	4	17.4	1	4.4	1	4.4
Kent	5	6.1	10	12.2	6	7.4	8	9.8
Kirkland	5	8.0	5	7.9	1	1.6	3	4.8
Mercer Island	2	12.3	2	12.1				
Redmond	7	13.0	8	14.7	1	1.9	3	5.6
Renton	6	8.4	10	13.9	4	5.6	7	9.8
Seattle	57	7.9	91	12.5	42	5.8	66	9.1
Kitsap	12	3.4	25	7.2	17	4.9	31	8.9
Bremerton	5	4.3	6	5.2	4	3.4	10	8.6
Kittitas			1	3.0	1	3.0	3	9.1
Klickitat	1	4.3	3	12.9	2	8.6	4	17.2
Lewis	1	1.1	7	7.7	7	7.7	11	12.2
Lincoln	1	10.5	1	10.4				
Mason	4	8.2	5	10.2	2	4.1	5	10.3
Okanogan	2	3.5	2	3.4	1	1.7	2	3.5
Pacific								
Pend Oreille			1	7.8	1	7.8	1	7.8
Pierce	50	4.9	81	7.8	38	3.7	90	8.7
Puyallup	2	4.6	3	6.8	1	2.3	2	4.6
Tacoma	21	6.3	32	9.5	15	4.5	42	12.5
San Juan					1	9.2	1	9.2
Skagit	7	5.5	7	5.5	1	.8	6	4.7
Mount Vernon	1	2.6	1	2.6	1	2.6	2	5.3
Skamania								
Snohomish	40	4.9	59	7.2	20	2.4	41	5.0
Edmonds	2	4.4	2	4.4	2	4.4	3	6.6
Everett	15	7.6	19	9.6	4	2.0	8	4.1
Lynnwood	6	7.9	10	13.1	4	5.3	8	10.6
Mountlake Terrace					1	2.9	1	2.9
Spokane	45	7.7	64	10.9	26	4.5	48	8.2
Spokane (city)	25	6.6	33	8.6	12	3.2	28	7.4
Stevens	6	15.5	8	20.4	3	7.8	3	7.8
Thurston	10	4.1	22	9.0	12	4.9	19	7.8
Lacey	1	3.5	3	10.6	2	7.1	3	10.6
Olympia	3	3.9	6	7.7	3	3.9	4	5.2
Wahkiakum								
Walla Walla	8	11.3	11	15.4	3	4.2	8	11.3
Walla Walla (city)	5	11.1	7	15.3	2	4.4	6	13.3
Whatcom	10	5.1	15	7.7	7	3.6	9	4.6
Bellingham	4	5.3	6	8.0	3	4.0	3	4.0
Whitman	4	9.5	5	11.7	1	2.4	2	4.7
Pullman	2	10.4	3	15.5	1	5.2	2	10.4
Yakima	26	6.2	41	9.6	18	4.3	42	9.9
Yakima (city)	9	6.5	11	7.9	3	2.2	10	7.2

<sup>1</sup> Ratio per 1,000 live births.  
<sup>2</sup> Fetal deaths plus liveborn infants dying at 6 days and under.  
<sup>3</sup> Rate per 1,000 live births plus fetal deaths.  
<sup>4</sup> Rate per 1,000 live births.

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Table 19: Resident Fetal Mortality by Cause

Cause with International List Number	Totals
<b>Total All Causes</b>	<b>426</b>
<b>Congenital Anomalies (740-759)</b>	<b>56</b>
Anencephalus (740)	4
Spina Bifida (741)	1
Other Anomalies of the Central Nervous System (742)	2
Anomalies of the Heart (745-746)	3
Other Anomalies of Circulatory System (747)	
Anomalies of Respiratory System (748)	3
Anomalies of Digestive System (749-751)	
Anomalies of the Genitourinary System (752-753)	5
Anomalies of Musculoskeletal System (754-756)	7
Chromosomal Anomalies (758)	17
Other and Unspecified Congenital Anomalies (743-744,757,759)	14
<b>Certain Causes of Perinatal Morbidity and Mortality (760-779)</b>	<b>366</b>
Maternal Conditions which may be Unrelated to Pregnancy (760)	[24] <sup>1</sup>
Chronic Hypertension (760.0)	8
Maternal Infections (760.2)	5
Maternal Injury (760.5)	8
Other Maternal Conditions (760.1,760.3-760.4,760.6-760.9)	3
Maternal Conditions Related to Pregnancy (761)	[45]
Incompetent Cervix (761.0)	13
Premature Rupture of Membranes (761.1)	23
Other Maternal Conditions (761.2-761.9)	9
Complications of Placenta, Cord, and Membranes (762)	[138]
Complications of Placenta (762.0-762.3)	72
Complications of Cord (762.4-762.6)	60
Complications of Membranes (762.7-762.9)	6
Complications of Labor (763)	4
Other Complications of Pregnancy and Childbirth (764-767)	20
Intrauterine Hypoxia (768)	12
Diseases of the Fetus and Ill-defined Causes (769-779)	[123]
Respiratory Conditions (769-770)	
Infections Specific to the Perinatal Period (771)	
Fetal Hemorrhage (772)	3
Haemolytic Disease and Other Perinatal Jaundice (773-774)	1
Endocrine and Metabolic Disturbances (775)	1
Haematological Disorders (776)	
Disorders of Digestive System (777)	
Conditions Involving the Integument and Temperature Regulation (778)	2
Other Conditions of Fetus (779)	116
<b>All Other Causes (001-739,780-799)</b>	<b>4</b>

<sup>1</sup> Sub-group totals are shown in brackets.

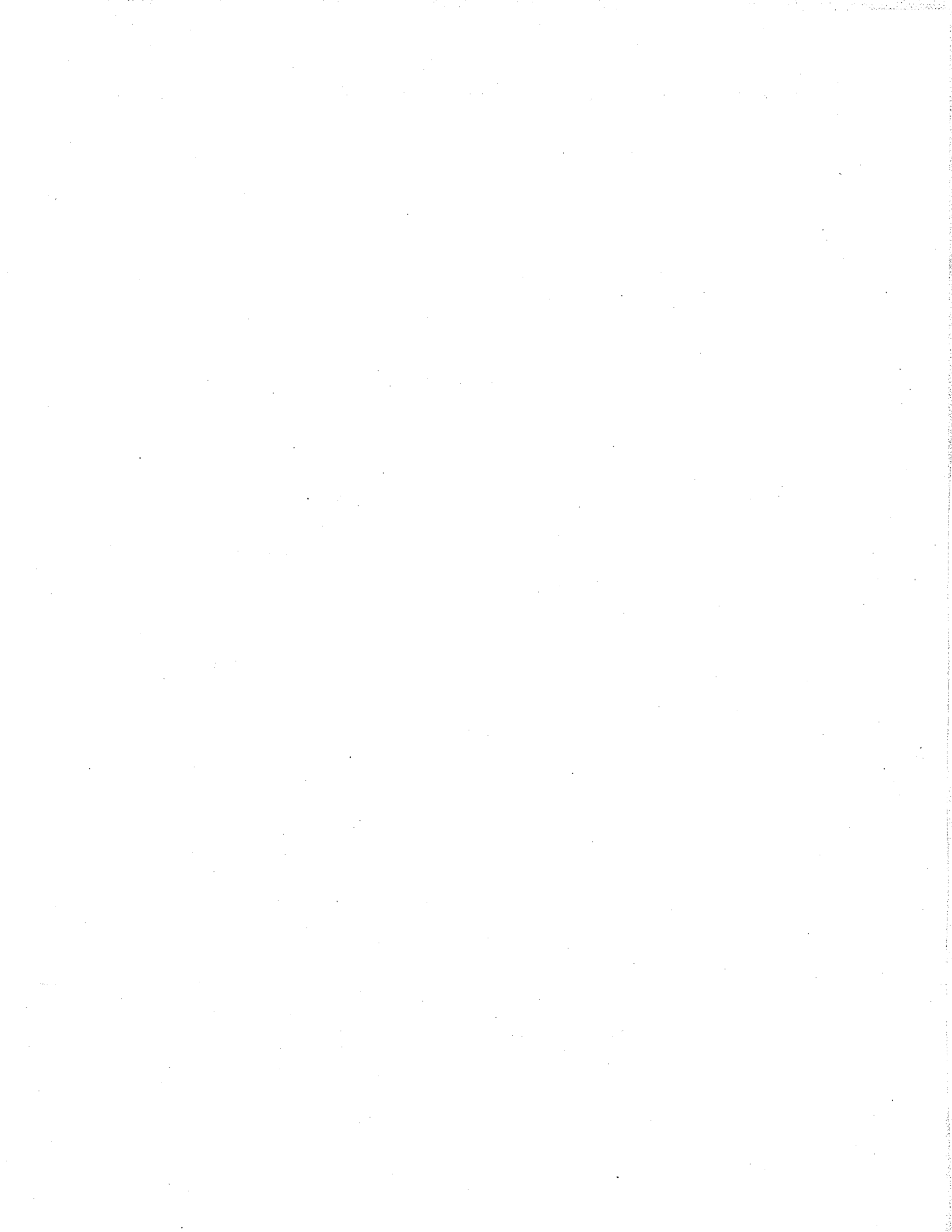
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Table 20: Resident Fetal Mortality by Weight in Grams by Sex

Gram Weight	Total	Male	Female	Unknown
State Total	426	221	202	3
1,000 Grams or less	150	79	70	1
1,001 - 1,500	50	25	25	
1,501 - 2,000	30	17	13	
2,001 - 2,500	40	17	23	
2,501 - 3,000	34	20	14	
3,001 - 3,500	28	20	8	
3,501 - 4,000	11	6	5	
4,001 - 4,500	7	5	2	
4,501 and over	6	5	1	
Not Stated	70	27	41	2

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# Special Analysis

## Natality: Will Washington State Meet Year 2000 Goals?<sup>1</sup>

	Washington State		
	Current <sup>2</sup>	Projected 2000	2000 Goal
<b>Family Planning</b>			
Teen Pregnancy Rate (per 1,000 young women 15-17)			
Ages 15-17	57.8	59	50
<b>Infant and Maternal Health</b>			
Percent Low Birth Weight (2,500 grams or less)			
All Births	5.1	6	5
African American	11.3	12	9
Percent Smoking During Pregnancy			
All Births	20.2	19	10
Percent Beginning Prenatal Care after 1st Trimester			
All Births	21.0	24	10
African American	35.2	38	10
Native American	38.7	39	10
Hispanic	41.2	40	10

<sup>1</sup>Methods and sources of data are described in the Technical Notes, Appendix A.

<sup>2</sup>Teen pregnancy rate is for 1990; Other data are for 1991.

### Areas of Concern

Washington State is far from reaching the goals in the following areas:

- Teenage pregnancy rates, which appear to be increasing slightly.
- Maternal smoking, where Washington State is far from reaching the goal.
- Timely prenatal care, where Washington State is very far from reaching the goal, especially for people of color.

## Mortality: Will Washington State Meet Year 2000 Goals?<sup>1</sup> (Revised 1/11/93)

	Washington State Death Rates <sup>2</sup>		
	Current <sup>3</sup>	Projected 2000	2000 Goal
<b>Unintentional Injuries</b>			
Motor Vehicle Accidents	17.1	16	17.0
Ages 1-4	4.5	5	5.5
Ages 15-24	32.2	37	33.0
Falls			
Ages 65-84	17.8	16	14.4
Ages 85+	198.0	170	105.0
Drowning			
Ages 1-4	4.2	4	2.3
Fires			
Ages 1-4	1.6	2	3.3
Ages 65+	2.4	3	3.3
<b>Mental Health</b>			
Suicide	11.9	11	10.5
Ages 15-19	15.3	17	8.2
<b>Alcohol Abuse</b>			
Cirrhosis of the Liver	7.7	7	6.0
Native American	37.8	37	13.0

<sup>1</sup>Methods and sources of data are described in the Technical Notes, Appendix A.

<sup>2</sup>Rates based on deaths/100,000 population in group.

<sup>3</sup>1991 data. Overall rates are age-adjusted.

### Areas of Concern

Washington State is far from reaching the goals in the following areas:

- Falls in the elderly (ages 85+)
- Childhood drowning
- Teenage Suicide
- Cirrhosis of the liver (especially Native Americans)

In other areas, Washington State is close to or below the goal, but yearly rate fluctuations make projections difficult and possibly unreliable.

## Infant and Fetal Mortality: Will Washington State Meet Year 2000 Goals?<sup>1</sup>

	Washington State Infant Death Rates <sup>2</sup>		
	Current <sup>3</sup>	Projected 2000	2000 Goal
All Infant Deaths	7.5	7	7.0
Neonatal (0-27 days)	3.9	3	4.5
Postneonatal (28 days - 1 year)	3.6	4	2.5
African American	13.0	15	11.0
Native American	15.3	18	8.5
All Fetal Deaths	Washington State Fetal Death Rates <sup>4</sup>		
	5.3	4	5

<sup>1</sup>Methods and sources of data are described in the Technical Notes, Appendix A.

<sup>2</sup>Infant deaths per 1,000 births.

<sup>3</sup>1991 data.

<sup>4</sup>Fetal deaths per 1,000 (live births + fetal deaths).

### Areas of Concern

Washington State will only meet the goals for total and neonatal mortality rates. Among people of color, Native Americans are particularly far from reaching the goal. The fetal death goal will apparently be met. However, yearly rate fluctuations make projections difficult, especially at a distance of nine years.

# Hypertension Related Mortality Can Be Reduced

## A Status Report

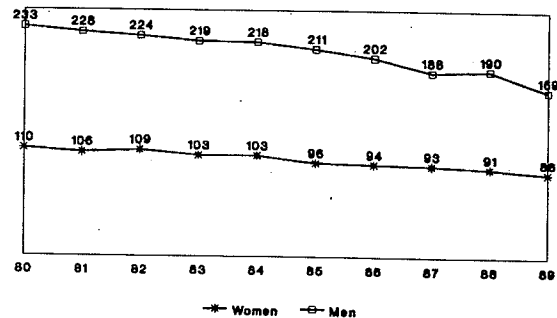
**INTRODUCTION:** Hypertension or high blood pressure is a serious health problem which can lead to heart disease and stroke. In 1991, these two diseases accounted for nearly 13,800 deaths, more than a third of the total mortality in Washington State. The risks associated with high blood pressure can be reduced through a variety of anti-hypertensive treatments. Anti-hypertensive drugs have been shown to be effective in lowering blood pressure. Weight reduction, salt restriction, reduced alcohol consumption and exercise may also work toward lowering blood pressure and increasing the effectiveness of medication. These lifestyle changes may also have an independent effect of lowering cardiovascular disease.

Dramatic changes have occurred in the reduction of mortality of hypertensive associated diseases since the early 1970s when a nationwide effort was begun across the country to screen people for high blood pressure and to educate the public about the risks.<sup>1</sup> Age-adjusted mortality for coronary heart disease in Washington State has dropped over 42 points since 1980. For men, the decline has been even more dramatic, cutting the age adjusted rate by more than a fourth. Age-adjusted rates are a statistical technique which takes into consideration the aging of the population. The change in deaths due to cerebrovascular diseases, for which the primary one is stroke, has been more moderate (9 points) and less steady. Change is less likely in stroke related mortality as the base starts at a much lower rate initially.

**BACKGROUND:** Since 1987, as part of an effort to assess and increase awareness of the importance of screening for hypertension, the Washington State Department of Health has conducted a telephone interview survey among adults 18 and older—part of a nationwide effort of the Behavioral Risk

Factor Surveillance Systems in 44 states and the District of Columbia. This report discusses the results of the survey in Washington State.

Coronary Heart Disease Deaths  
Age-Adjusted Rates (Deaths/100,000)  
Washington State 1980-1989



\*Adjusted to 1940 US population  
Center for Health Statistics  
Washington State Department of Health

In the four years, 1987-90, respondents were asked four questions concerning screening and medication for high blood pressure. (See box, next page.) From these four questions, two types of prevalences are determined: 1) The prevalence of those ever told their blood pressure was high and 2) The prevalence of those told more than once that they had high blood pressure or those taking medication. Those who answered "yes" to either of these last questions are considered "current hypertensives" as defined by the National Heart, Lung and Blood Institute.<sup>2</sup>

### WASHINGTON STATE'S TRENDS IN HYPERTENSIVES' REPORTING:

Among those answering yes to the first question, the survey results show little change in the four years. However, among those who were told their blood pressure was high or are currently taking medication, survey results show a steady decline though the differences between 1987 and 1990 are not yet statistically significant.

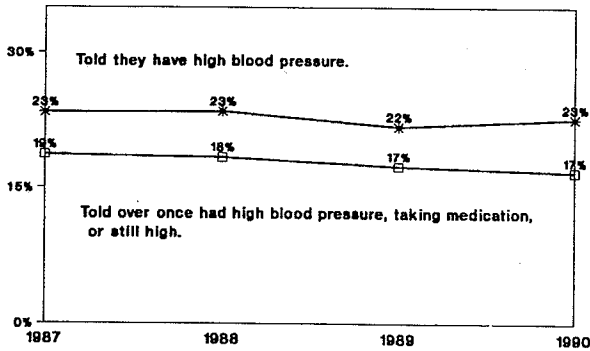
The differences between the prevalences for men and women provide interest because of the higher male mortality resulting from cardiovascular diseases. The BRFSS data show men to have consistently lower prevalences for hypertension than women. In 1990, the difference was nearly four percent in both categories of responses.

Part of the difference may be due to the difference between men and women in the amount of annual check-ups received. The pattern over time shows that consis-

Classification of Blood Pressure in Adults Aged 18 Years & Older	
Range, mmHg	Category
<b>Diastolic</b>	
85	Normal blood pressure
85-90	High normal blood pressure
105-114	Mild hypertension
115	Severe hypertension
<b>Systolic, when diastolic blood pressure is 90</b>	
140	Normal blood pressure
140-159	Borderline isolated systolic hypertension
160	Isolated systolic hypertension

tently, men receive fewer annual checkups than women. Men, therefore, may be less aware of their blood pressure status.

Prevalence Measures for Hypertension  
Washington State 1987-1990



BRFSS  
Center for Health Statistics  
Washington State Department of Health

In comparison to other states, Washington State ranks right at the middle. In 1990, 16.7% of the Washingtonians surveyed were current hypertensives (CI: 15.0,18.4). This was less than four-tenths of a percent from the median for the 45 surveillance systems.

**RECOMMENDATIONS:** While considerable encouragement can be taken from the drop in mortality in hypertensive related mortality, greater strides could be made by:

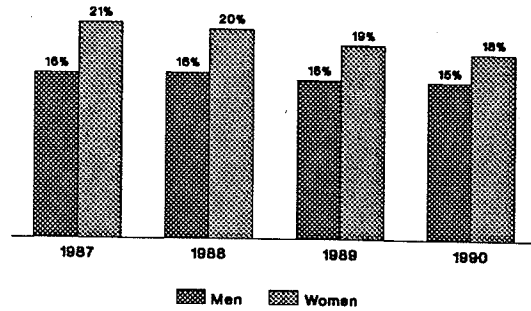
- Encouraging annual checkups
- Taking medicine, when prescribed
- Reducing barriers to health care access
- Promoting exercise and healthy diets

**Behavioral Risk Factor Surveillance System**

**Questions Concerning Hypertension**

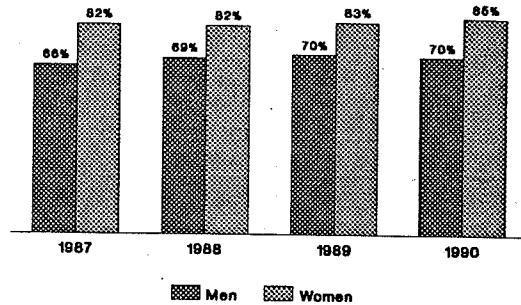
- These next questions are about hypertension or high blood pressure. Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?
- Have you been told on more than one occasion that your blood pressure was high, or have you been told this only once?
- Is any medicine currently prescribed for your high blood pressure?
- Are you currently taking medicine for your high blood pressure?

Told over once had high blood pressure, taking medication, or still high.



BRFSS  
Center for Health Statistics  
Washington State Department of Health

Had an annual checkup within the past two years



BRFSS  
Center for Health Statistics  
Washington State Department of Health

References

<sup>1</sup> Maylahn, Christopher, MPH, "Hypertension", *New York State Behavioral Risk Factor Surveillance System 1986 and 1987*, p. 31

<sup>2</sup> *Maine Behavioral Risk Factor Survey 1987-1988*, p. 23.

This analysis was first published in the *Washington State Trend Report 1987-1990: Behavioral Risk Factor Surveillance System*.

**SOCIODEMOGRAPHICS:** The two types of prevalence or categories of risk for hypertension are arrayed for the 1990 survey by selected demographic variables in the table on the following page. The survey was weighted for representativeness by age and sex according to 1989 estimates of the population provided by the Washington State Office of Financial Management. The percent at risk in the two categories are these weighted percents. The "Ns" are the actual unweighted frequency of response in the survey. The "Total" column gives the total frequencies of both "Those at Risk" and "Those Not at Risk." The percents in this column are a proportional distribution of these total Ns. (The shaded column



## Respondents Reporting Risk for Hypertension By Selected Sociodemographic Characteristics

	At Risk 1		At Risk 2		Total N	90 Census	
	N*	% At Risk**	N*	% At Risk**		N	%
<b>Total</b>	502	22.6	372	16.7	2101	100.0%	
<b>Sex</b>							
Male	187	20.8	138	15.3	861	41.0%	49.0%
Female	315	24.5	234	18.1	1240	59.0%	51.0%
<b>Age</b>							
18-24	19	8.5	7	3.5	194	9.2%	13.6%
25-34	53	10.8	24	5.0	455	21.7%	23.7%
35-44	88	16.5	51	8.9	534	25.4%	22.3%
45-54	72	27.3	54	20.7	299	14.2%	13.9%
55-64	94	38.8	85	35.1	233	11.1%	10.6%
65+	168	45.8	147	40.6	353	16.8%	16.0%
Unknown	8	22.5	4	9.4	33	1.6%	
<b>Education</b>							
< Ninth Grade	24	46.9	22	44.6	54	2.6%	5.1%
Some High School	49	28.0	37	22.0	154	7.3%	11.9%
HS Graduate	178	24.2	145	19.1	689	32.8%	28.3%
Some Technical School	9	35.9	6	20.7	24		
Technical School Grad	7	17.6	5	12.1	36	2.8%	7.7%
Some College	119	19.1	78	12.2	564	26.8%	26.3%
College Graduate	75	18.8	54	13.7	394	18.8%	14.6%
Post Graduate	40	22.6	25	14.4	181	8.6%	6.1%
Unk/Refused	1	10.1			5	0.2%	
<b>Marital Status</b>							
Married	275	23.7	203	17.6	1186	56.4%	55.7%
Divorced	67	23.9	46	17.1	294	14.0%	10.4%
Widowed	91	47.9	75	39.1	186	8.9%	6.1%
Separated	12	30.0	8	16.5	47	2.2%	1.8%
Never Married	50	11.4	35	7.5	325	15.5%	24.3%
Unmarried Couple	6	8.8	5	6.7	57	2.7%	
Refused	1	12.9			6	0.3%	
<b>Income</b>							
<\$10,000	79	30.4	64	25.5	237	11.3%	12.9%
\$10,000-14,999	60	28.3	48	21.9	210	10.0%	8.5%
\$15,000-19,999	44	20.6	32	13.8	204	9.7%	8.9%
\$20,000-24,999	52	27.2	41	21.9	195	9.3%	9.0%
\$25,000-34,999	73	17.6	55	13.3	371	17.7%	16.8%
\$35,000-50,000	66	19.7	42	13.3	347	16.5%	19.6%
>\$50,000	54	16.8	35	10.9	315	15.0%	24.3%
Refused	74	30.3	55	22.3	222	10.6%	

\*Unweighted Ns

\*\*Weighted Percents

percents do not represent the survey as weighted, therefore.) No adjustment was made for any of the sociodemographic variables other than age and sex. The 1990 census data is offered for comparison to show the amount of representativeness the survey holds for these other characteristics.

For the education variable, the 1990 Census has a category, "Associates Degree." The percents for "Some Technical

School" and "Technical School Grad" from the BRFSS were combined to make a similar category for comparison purposes.

The small Ns, particularly those less than 60, for some cells yield very large confidence intervals around any percent at risk. Caution should be used in interpreting these data. Comparison of results with other surveys may give users valuable information about the validity of these findings.



# Appendices

# Appendix A

## Technical Notes

### Reliability of the Data

In analyzing any data, the possibility of errors in the data must not be overlooked. There are several types of possible errors, including underreporting or under-registration, errors made by the informant, and errors in compilation and processing. The most potentially dangerous error, however, is probably that of improper interpretation.

Statistics are neither more true nor false than the interpretation given to them. It should be emphasized that most of the rates computed in this report are crude rates. For comparing geographic areas, crude rates are limited. They do not reflect differences in age, sex, race, and other population characteristics. In addition, it is important to recognize the possible distortion in these rates where the number of events or the population is small. Minor variations in the number of events may result in major changes in the rates. Special caution should also be exercised in analyzing trend data, because of changes throughout the years in medical diagnosis, coding definitions, and registration coverage.

### Methods and Sources of Data for "Will Washington State Meet Year 2000 Goals?"

Projected Year 2000 Washington State rates were determined by assuming that past trends continued to 2000. Because this is a rough approximation, projected data are given in whole numbers only, to reflect their uncertainty.

Year 2000 goals are given in the publication *Healthy People 2000: National Health Promotion and Disease Prevention Objectives, Conference Edition*. (U.S. Department of Health and Human Services, Public Health Service, September 1990.)

### Collection Year

Data for Washington State 1991 are compiled from items on birth, death, marriage, and divorce certificates received before April 15, 1992. (See Appendix F for samples.)

### Interstate Exchanges

Washington State is a member of the interstate exchange agreement and receives birth and death certificates of residents who have died in other states.

### Population

Population data in this report are an estimate of the population provided by the Washington State Office of Financial Management, April 1, 1992. These estimates are based on 1990 Census Summary tape files, and include adjustments to correct for age-misreporting.

### Race

The determination of race on birth and death certificates follows decision rules established by the National Center for Health Statistics (NCHS).

If more than one race is listed and one is Hawaiian, Hawaiian is selected. In cases of other races, the first race listed is selected.

To determine race of newborns on birth certificates, each parent's race is first established according to the previous rules. Rules to determine race of the child, then, fall along a similar pattern:

If either parent is Hawaiian, then the child's race is considered Hawaiian.

In cases where one parent is white and the other non-white, the non-white race is selected as the race of the child.

If both parents are non-white, the father's race is selected except where the mother's race is Hawaiian.

### Hispanic Status

Beginning with the 1988 birth and death certificates, Hispanic status was treated as an ethnic category and measured by a separate item (in addition to the race item). Prior to 1988, information on Hispanic status was obtained from the entries "Mexican/Chicano" or "Mexican American" on the race item. Thus, data based on Hispanic status from these years are not comparable with data collected after 1987 and should not be used for trend analysis or year-to-year comparisons.

### Low Birth Weight

Traditionally, low birth weight has been defined as 2,500 grams or less. However, the *International Classification of Diseases, Ninth Revision (ICD-9)* redefines low birth weight as less than 2,500 grams. Thus, 2,500 grams should now be included with the normal birth weight category. The impact of this change is minimal in the United States, where most weights are given in pounds and ounces. No weight of pounds and ounces converts exactly to 2,500 grams (5lb 8oz is 2,495g and 5lb 9oz is 2,523g). It is, therefore, unlikely that many weights of 2,500 grams are recorded. In fact, none were found in a study of 1984 Washington State births. In the interests of consistency with past data, Washington State has chosen to continue including 2,500 grams with the low birth weight category. Very low birth weight is defined as less than 1,500 grams.

### Maternal Smoking

The birth certificate item concerning maternal smoking was changed with the 1989 certificate. In 1989, new mothers were asked the number of cigarettes smoked in addition to answering the question: "Tobacco use during pregnancy?". Tables concerning maternal smoking in this summary continue to array maternal smoking as "Yes", "No", and "Unknown" irrespective of quantity.

### Cause of Death Classification

The causes of death presented in this report are classified in accordance with the *International Classification of Diseases, Ninth Revision* published by the World Health Organization. The State of Washington began using this revision January 1, 1979.

### Ranking of Leading Causes of Death

In the interest of comparability, this summary uses, in general, the cause of death groups established by the National Center for Health Statistics (NCHS).

### Life Expectancy

Life expectancy is based on 1991 crude mortality rates.

### Occurrence Data on Death Certificates

The validity of occurrence death data has some limitations. As the death certificate does not specify inside or outside of corporate limits for place of death, rural deaths may be incorrectly assigned to cities because the location of death was in close proximity to a city. Informants, moreover, often are unaware of city boundaries.

## Appendix B

### Definitions

**Birth Weight** - Weight of fetus or infant at time of delivery (normally recorded in pounds and ounces).

**Fetal Death** - Death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy. The death is indicated by the fact that after such expulsion or extraction the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Reporting of fetal deaths to the state is required only when the gestational period is twenty weeks or more.

**Infant Death** - Death of a child under one year of age.

**Live Birth** - The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such expulsion or extraction, breathes, or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

**Live Birth Order** - Total number of live births to a given mother, including current birth.

**Maternal Death** - Death attributed to complications of pregnancy, childbirth, or that occurs within six weeks of either live birth or abortive outcome (includes abortion-related death).

**Neonatal Death** - Death of an infant within the first 27 days of life.

**Nulliparous** - Having never given birth to a liveborn infant.

Data allocated by place where event occurred, regardless of the person's place of residence.

**Parity** - Previous live births; does not include current birth.

**Perinatal Death** - Fetal deaths plus deaths to infants within the first six days of life.

**Premature Birth** - A live birth weighing 2,500 grams (5-1/2 pounds) or less. If birth weight is not stated, length of gestation (under 37 weeks) is used.

**Residence Data** - Data allocated by place of residence of the decedent (deaths), or by place of residence of the child's mother (births, fetal deaths).

### Rates And Ratios

Rates and ratios are calculated by dividing the number of events of concern by the population at risk (or a related population) and multiplying by a standard constant (i.e. 1,000, 10,000, or 100,000). See below.

**Age Adjusted Death Rates** - Age adjusted death rates are computed by taking a county's death rates for each age group and applying them to a standard population (in this report the 1940 US population). This calculation then tells us what the county's mortality rate would be if it had the same age distribution as the US population did in 1940. The major use of age adjusted death rates

are to allow comparisons between different areas and over various periods of time. For more discussion of age adjusted death rates, see the Center's recent report, *Washington State Age-Adjusted Death Rates and Years of Life Lost Rates* (April 1992).

**Age-specific Rate** - Number in event of concern for a specific age group per some fixed constant of population in that age group. For instance, the age-specific death rate is the number of deaths in a specific age group per 100,000 population in that age group. See different rates, i.e. fertility, pregnancy, abortion, for most typically used fixed constant in each rate.

**Cause-specific Death Rate** - Number of deaths from a specific cause per 100,000 population.

**(crude) Birth Rate** - Number of live births per 1,000 population.

**(crude) Death Rate** - Number of deaths per 1,000 population.

**Fetal Death Ratio** - Number of fetal deaths per 1,000 live births.

**Infant Death Rate** - Number of infant deaths per 1,000 live births.

**Maternal Death Rate** - Number of maternal deaths per 10,000 live births.

**Neonatal Death Rate** - Number of neonatal deaths per 1,000 live births.

**Perinatal Death Rate** - Number of perinatal deaths per 1,000 live births plus fetal deaths.

## Appendix C

### Conversion of Birth Weight in Grams to Pounds and Ounces

Gramweight	Pounds and Ounces
1,000 grams and under	2 lbs. 3 oz. and less
1,001 - 1,500	2 lbs. 4 oz. - 3 lbs. 4 oz.
1,501 - 2,000	3 lbs. 5 oz. - 4 lbs. 6 oz.
2,001 - 2,500	4 lbs. 7 oz. - 5 lbs. 8 oz.
2,501 - 3,000	5 lbs. 9 oz. - 6 lbs. 9 oz.
3,001 - 3,500	6 lbs. 10 oz. - 7 lbs. 11 oz.
3,501 - 4,000	7 lbs. 12 oz. - 8 lbs. 13 oz.
4,001 - 4,500	8 lbs. 14 oz. - 9 lbs. 14 oz.
4,501 grams and over	9 lbs. 15 oz. and over

Appendix C

One pound = 453.59 grams



## Appendix D

Estimated Population, State of Washington, by Age Group by Sex, April 1, 1991

Age Group	Total	Male	Female
Total	5,000,400	2,479,895	2,520,505
Under 1 Year	79,187	40,540	38,647
1 - 4	307,472	157,570	149,902
5 - 14	735,608	377,325	358,283
15 - 19	319,821	164,847	154,974
20 - 24	363,003	187,461	175,542
25 - 34	860,237	432,455	427,782
35 - 44	842,861	422,687	420,174
45 - 54	523,400	264,271	259,129
55 - 64	383,066	186,601	196,465
65 - 74	340,332	154,525	185,807
75 - 84	187,338	74,874	112,464
85 and Over	58,075	16,739	41,336

S02520A

## Appendix E

Estimated Population, State of Washington, Counties and Cities of 15,000 Population and Over, April 1, 1991

City Total		County Total	City Total		County Total
Adams		13,800	Kittitas		27,400
Asotin		17,800	Klickitat		16,800
Benton		114,800	Lewis		60,500
Kennewick	42,780		Lincoln		8,900
Richland	32,740		Mason		39,900
Chelan		53,200	Okanogan		34,000
Wenatchee	22,080		Pacific		19,200
Clallam		58,500	Pend Oreille		9,200
Port Angeles	17,890		Pierce		603,800
Clark		250,300	Puyallup	24,450	
Vancouver	47,190		Tacoma	177,500	
Columbia		4,000	San Juan		10,700
Cowlitz		83,500	Skagit		82,800
Longview	31,730		Mount Vernon	18,720	
Douglas		27,500	Skamania		8,500
Ferry		6,500	Snohomish		484,000
Franklin		38,600	Edmonds	30,850	
Pasco	20,660		Everett	72,480	
Garfield		2,300	Lynnwood	29,010	
Grant		56,400	Mountlake Terrace	19,690	
Grays Harbor		65,100	Spokane		366,000
Aberdeen	16,660		Spokane (city)	178,500	
Island		62,700	Stevens		31,500
Oak Harbor	17,890		Thurston		168,000
Jefferson		21,600	Lacey	20,120	
King		1,542,300	Olympia	34,850	
Auburn	33,280		Wahkiakum		3,300
Bellevue	87,900		Walla Walla		49,300
Des Moines	17,480		Walla Walla (city)	27,020	
Federal Way	70,660		Whatcom		132,200
Kent	39,650		Bellingham	53,100	
Kirkland	40,590		Whitman		38,500
Mercer Island	21,190		Pullman	23,090	
Redmond	37,460		Yakima		190,500
Renton	43,000		Yakima (city)	57,660	
Sea Tac	22,830				
Seattle	518,000				
Kitsap		196,500			
Bremerton	37,040				
Winslow	16,390				
			<b>State Total</b>		<b>5,000,400</b>

# Appendix F

Data Documents 12-850780-01 NFWC 1

TYPE OR PRINT IN PERMANENT BLACK INK

FOR INSTRUCTIONS SEE HANDBOOK

OFFICE USE ONLY		STATE OF WASHINGTON DEPARTMENT OF HEALTH VITAL RECORDS													
		CERTIFICATE OF DEATH													
		LOCAL FILE NUMBER					STATE FILE NUMBER								
1 DISTRICT		1 NAME—FIRST, MIDDLE, LAST					2 SEX		3 DEATH DATE (Mo, Day, Yr.)			146			
2 COPIES		4 AGE LAST BIRTHDAY (Yrs)		5 UNDER 1 YEAR		6 UNDER 1 DAY		7 BIRTHDATE (Mo, Day, Yr.)		8 BIRTH STATE (if not in USA give country)		9 CITIZEN OF WHAT COUNTRY*		10 COUNTY OF DEATH	
3 HOSPITAL		11 CITY, TOWN OR LOCATION OF DEATH					12 PLACE OF DEATH — BOX FOR PLACE THEN GIVE ADDRESS OR INSTITUTION NAME 1 <input type="checkbox"/> HOME 2 <input type="checkbox"/> IN TRANSPORT 3 <input type="checkbox"/> EMERG. IN-OUT PTN 4 <input type="checkbox"/> HOSP 5 <input type="checkbox"/> NUR HOME 8 <input type="checkbox"/> OTHER PLACE					13 SMOKING IN LAST 15 YEARS* (Yes/No)			
4 OCCURRENCE		14 MARITAL STATUS — Married, Never Married, Widowed, Divorced, (Specify)		15 SURVIVING SPOUSE (if wife give maiden name)			16 WAS DECEDENT EVER IN U.S. ARMED FORCES? (Yes/No)		17 SOCIAL SECURITY NO		18 HIGH SCHOOL GRADUATE? (Yes/No)				
5 RESIDENCE		19 USUAL OCCUPATION (Give kind of work done or 43 months of work if applicable. DO NOT USE PREFIXES)			20 KIND OF BUSINESS OR INDUSTRY			21 Was Decedent of Hispanic Origin or descent? (Ancestry) (Specify Yes or No if Yes specify Cuban, Mexican, Puerto Rican, etc.) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No		22 RACE (White, Black, Asian or Pacific Islander, Am Ind, Hispanic, etc. (Specify))					
6 TRACT		23 RESIDENCE — NUMBER AND STREET		24 CITY/TOWN OR LOCATION		25 INSIDE CITY LIMITS? (Yes/No)		26 COUNTY		27 STATE		28 ZIP CODE			
7 OCCUPATION		29 FATHER'S NAME — FIRST, MIDDLE, LAST					30 MOTHER'S NAME — FIRST, MIDDLE, MAIDEN SURNAME								
8		31 INFORMANT — NAME		32 HOME ADDRESS		33 STREET OR RFD NO		34 CITY OR TOWN		35 STATE		36 ZIP			
9		33 BURIAL, CREMATION, REMOVAL, OTHER (Specify)		34 DATE (Mo, Day, Yr.)		35 CEMETERY, CREMATORY, HOME		36 LOCATION—CITY/TOWN, STATE							
10		37 FUNERAL DIRECTOR SIGNATURE		38 NAME OF FACILITY		39 ADDRESS OF FACILITY									
11		TO BE COMPLETED ONLY BY CERTIFYING PHYSICIAN										TO BE COMPLETED ONLY BY MEDICAL EXAMINER OR CORONER			
12		40 TO THE BEST OF MY KNOWLEDGE, DEATH OCCURRED AT THE TIME, DATE, AND PLACE AND DUE TO THE CAUSE(S) STATED					41 ON THE BASIS OF EXAMINATION AND OR INVESTIGATION IN MY OPINION DEATH OCCURRED AT THE TIME, DATE, AND PLACE AND DUE TO THE CAUSE(S) STATED								
13		SIGNATURE AND TITLE					SIGNATURE AND TITLE								
14		42 DATE SIGNED (Mo, Day, Yr.)					43 HOUR OF DEATH (24 Hrs.)		44 DATE SIGNED (Mo, Day, Yr.)		45 HOUR OF DEATH (24 Hrs.)				
15		46 NAME AND TITLE OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Privs)					47 PRONOUNCED DEAD (Mo, Day, Yr.)		48 HOUR PRONOUNCED DEAD (24 Hrs.)						
16		49 NAME AND ADDRESS OF CERTIFIER—PHYSICIAN, MEDICAL EXAMINER OR CORONER (Type or Privs)													
17		50 PART I: ENTER THE DISEASES, INJURIES, OR COMPLICATIONS WHICH CAUSED THE DEATH. DO NOT ENTER THE MODE OF DYING, SUCH AS CARDIAC, RESPIRATORY ARREST, SUFFOCATION, OR HANGING. LIST ONLY ONE CAUSE ON EACH LINE.													
18		IMMEDIATE CAUSE (Final disease or condition resulting in death). Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury which initiated events resulting in death) LAST		(A) DUE TO OR AS A CONSEQUENCE OF		(B) DUE TO, OR AS A CONSEQUENCE OF		(C) DUE TO, OR AS A CONSEQUENCE OF		INTERVAL BETWEEN ONSET AND DEATH					
19		51 OTHER SIGNIFICANT CONDITIONS—CONDITIONS CONTRIBUTING TO DEATH BUT NOT RESULTING IN THE UNDERLYING CAUSE GIVEN ABOVE										52 ALTOPICT? (Yes, No)			
20		54 ACC, SUICIDE, HD UNDET OR PENDING INVEST (Specify)		55 INJURY DATE (Mo, Day, Yr.)		56 HOUR OF INJURY (24 Hrs.)		57 DESCRIBE HOW INJURY OCCURRED							
21 ACC'ION		58 INJURY AT WORK? (Yes/No)		59 PLACE OF INJURY—AT HOME, FARM, STREET, FACTORY, OFFICE, BLDG, ETC (Specify)		60 LOCATION—STREET OR RFD NO, CITY/TOWN, STATE									
22 QUERIES		61 REGISTRAR SIGNATURE					62 DATE RECEIVED (Mo, Day, Yr.)								

DOH 110-008 (Rev. 8/89) (formerly DSHS 9-150)

CERTIFICATE OF LIVE BIRTH

LOCAL FILE NUMBER

STATE FILE NUMBER

1. CHILD'S NAME First Middle Last			2. SEX	3. DATE OF BIRTH Mo. Day Yr.		4. TIME OF BIRTH	
5. TYPE OF BIRTHPLACE (SPECIFY TYPE) <input type="checkbox"/> 1 HOSPITAL <input type="checkbox"/> 3 BIRTH CENTER <input type="checkbox"/> 2 ENROUTE <input type="checkbox"/> 4 CLINIC/DOCTOR'S OFF. <input type="checkbox"/> 5 HOME <input type="checkbox"/> 6 OTHER			8. NAME OF FACILITY/IF NOT A FACILITY ENTER NAME OF PLACE AND ADDRESS			7. CITY/TOWN/LOCATION	8. COUNTY OF BIRTH
9. I CERTIFY THAT THIS CHILD WAS BORN ALIVE AT THE PLACE AND TIME AND ON THE DATE STATED. Signature _____			10. DATE SIGNED Mo. Day Yr.		11. ATTENDANT'S NAME AND TITLE (if other than certifier) (Type or print)		
12. CERTIFIER NAME AND TITLE (Type or print)			13. ATTENDANT'S MAILING ADDRESS (street/box no., city, state, ZIP code)				
14. FATHER'S NAME First Middle Last			15. DATE OF BIRTH (mo, day, yr)		16. STATE OF BIRTH (if not USA give country)		
17A. MOTHER'S CURRENT LEGAL NAME First Middle Last			17B. MAIDEN SURNAME (birth name)		18. DATE OF BIRTH (mo, day, yr)		19. STATE OF BIRTH (if not USA give country)
20. RESIDENCE (number and street)		21. CITY/TOWN/LOCATION		22. INSIDE CITY LIMITS (yes/no)	23. COUNTY		24. STATE/ZIP CODE
25. HOW LONG AT CURRENT RESIDENCE Yrs. Mos.		26. MOTHER'S MAILING ADDRESS (if different than 13 above)					
27. NAME OF INFORMANT (Type or print)			28. RELATION TO CHILD				
29. REGISTRAR (signature)			30. DATE FILED BY LOCAL REGISTRAR				
31. RECORD AMENDMENT (state registrar use only) ITEM DOCUMENTARY EVIDENCE REVIEWED BY DATE			32. PARENT(S) REQUEST FOR SOCIAL SECURITY NUMBER ISSUANCE <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No				
33. FATHER'S SOCIAL SECURITY NUMBER			34. MOTHER'S SOCIAL SECURITY NUMBER				

**CONFIDENTIAL INFORMATION FOR MEDICAL AND HEALTH USE ONLY—DETACHED FROM CERTIFICATE BEFORE PERMANENT FILING**

FATHER	35. OF HISPANIC ORIGIN OR DESCENT? (Ancestry) (Specify yes or no) If yes, specify Cuban, Mexican, Puerto Rican, etc. <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No	36. RACE (White, Black, Asian or Pacific Islander, American Indian, Hispanic, etc.) (Specify)	37. OCCUPATION (Indicate most recent employment) (pressman, painter, computer programmer) (Specify)	38. TYPE OF BUSINESS OR INDUSTRY (Specify)	
	39. OF HISPANIC ORIGIN OR DESCENT? (Ancestry) (Specify yes or no) If yes, specify Cuban, Mexican, Puerto Rican, etc. <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No	40. RACE (White, Black, Asian or Pacific Islander, American Indian, Hispanic, etc.) (Specify)	41. OCCUPATION (Indicate most recent employment) (fruit packer, cashier, registered nurse) (Specify)	42. TYPE OF BUSINESS OR INDUSTRY (apple orchard, retail sales, hospital) (Specify)	
MOTHER	43. OF HISPANIC ORIGIN OR DESCENT? (Ancestry) (Specify yes or no) If yes, specify Cuban, Mexican, Puerto Rican, etc. <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No		44. RACE (White, Black, Asian or Pacific Islander, American Indian, Hispanic, etc.) (Specify)		
	45. PRIOR LIVE BIRTHS (Do not include this birth) <input type="checkbox"/> NONE NOW LIVING <input type="checkbox"/> NOW DEAD NUMBER DATE LAST LIVE BIRTH (MO, YR)		46. OTHER PREGNANCY OUTCOMES (Not live births) <input type="checkbox"/> NONE 20 WKS OR MORE LESS THAN 20 WKS DATE LAST SPONTANEOUS OUTCOME		
CHILD	50. MONTH OF PREGNANCY PRENATAL CARE BEGAN (1st, 2nd, 3rd, etc.)		51. TOTAL NUMBER OF PRENATAL VISITS (if none, enter 0)	52. CLINICAL ESTIMATE OF GESTATION (WEEKS)	53. MOTHER TRANSFERRED AFTER ATTEMPTED DELIVERY? <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No If yes, from Birth Ctr. Home Other
	54. PLURALITY—Single, Twin, Triplet, etc. (Specify)	55. IF NOT SINGLE BIRTH—born 1st, 2nd, 3rd, etc. (Specify)	56. BIRTH WEIGHT LBS. OZS. or GRAMS	57. APGAR SCORE 1 min. 5 min.	58. INFANT TRANSFERRED TO ANOTHER FACILITY? <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No <input type="checkbox"/> 3 Unk.

**CHECK ALL BOX(ES) IN EACH COLUMN THAT APPLY OR WRITE IN "OTHER" IF NO BOXES APPLY**

**59. MEDICAL RISK FACTORS FOR THIS PREGNANCY**

- 1. Anemia (Hct. <30/Hgb. <10)
- 2. Cardiac disease
- 3. Acute or chronic lung disease
- 4. Diabetes, Gest.  Estab.
- 5. Genital herpes—active  HX
- 6. Polyhydramnios
- 7. Oligohydramnios
- 8. Hemoglobinopathy
- 9. Hypertension, chronic
- 10. Hypertension, pregnancy-associated
- 11. Eclampsia
- 12. Incompetent cervix
- 13. Previous Infant 4000+ grams
- 14. Previous preterm or small-for-gestational age infant
- 15. Renal disease
- 16. Rh sensitization
- 17. 1st trimester bleeding
- 18. Epilepsy
- 19. Syphilis
- 20. Rubella—test positive
- 21. None
- 22. Other (specify) \_\_\_\_\_

**60. OTHER RISK FACTORS FOR THIS PREGNANCY**

- 1. Tobacco use during pregnancy?  
 Yes  No Av. No. cig. per day \_\_\_\_\_
- 2. Alcohol use during pregnancy?  
 Yes  No Av. No. drinks per wk \_\_\_\_\_
- 3. Weight gained during preg. \_\_\_\_\_ lbs.

**61. OBSTETRIC PROCEDURES**

- 1. Amniocentesis  
If yes, specify trimesters  1  2  3
- 2. Electronic fetal monitoring
- 3. Induction of labor
- 4. Stimulation of labor
- 5. Tocolysis
- 6. Ultrasound
- 7. None
- 8. Other (specify) \_\_\_\_\_

**62. METHOD OF DELIVERY**

- 1. Vaginal
- 2. Vaginal birth after previous C-section
- 3. Primary C-section
- 4. Repeat C-section with no labor
- 5. Repeat C-section with trial of labor
- 6. Forceps
- 7. Vacuum extraction
- 8. Other (specify) \_\_\_\_\_

**63. COMPLICATIONS OF LABOR AND/OR DELIVERY**

- 1. Febrile (> 100°F or 38°C)
- 2. Meconium, moderate/heavy
- 3. Premature rupture of membrane (>12 hrs)
- 4. Abruptio placenta
- 5. Placenta previa
- 6. Other excessive bleeding
- 7. Seizures during labor
- 8. Precipitous labor (<3 hrs)
- 9. Prolonged labor (>20 hrs)
- 10. Dysfunctional labor
- 11. Breech/Malpresentation
- 12. Cephalopelvic disproportion
- 13. Cord prolapse
- 14. Anesthetic complications
- 15. Fetal distress
- 16. None
- 17. Other (specify) \_\_\_\_\_

**64. ABNORMAL CONDITIONS OF THE NEWBORN**

- 1. Anemia (Hct <39/Hgb. <13)
- 2. Birth injury
- 3. Fetal alcohol syndrome
- 4. Hyaline membrane disease/RDS
- 5. Meconium aspiration syndrome
- 6. Drug withdrawal syndrome in newborn
- 7. Assisted ventilation <30 min.
- 8. Assisted ventilation ≥30 min.
- 9. Seizures

Continued Next Column

**64. ABNORMAL CONDITIONS OF THE NEWBORN (CONTINUED)**

- 10. Sepsis
- 11. Asphyxia/Depression
- 12. Erb's palsy
- 13. Jaundice (greater than 10 in 1st 48 hrs.)
- 14. None
- 15. Other (specify) \_\_\_\_\_

**65. CONGENITAL ANOMALIES OF CHILD**

- 1. Anencephalus
- 2. Spina bifida/Meningocele
- 3. Hydrocephalus
- 4. Microcephalus
- 5. Other central nervous system anomalies (specify) \_\_\_\_\_
- 6. Heart malformations
- 7. Other circulatory/respiratory anomalies (specify) \_\_\_\_\_
- 8. Rectal atresia/stenosis
- 9. Tracheo-esophageal fistula/Esophageal atresia
- 10. Omphalocele/Gastroschisis
- 11. Other gastrointestinal anomalies (specify) \_\_\_\_\_
- 12. Malformed genitalia
- 13. Renal agenesis
- 14. Other urogenital anomalies (specify) \_\_\_\_\_
- 15. Cleft lip/palate
- 16. Polydactyly/Syndactyly/Adactyly
- 17. Club foot
- 18. Diaphragmatic hernia
- 19. Other musculoskeletal/integumental anomalies (specify) \_\_\_\_\_
- 20. Down's syndrome
- 21. Other chromosomal anomalies (specify) \_\_\_\_\_
- 22. None
- 23. Other anomalies (specify) \_\_\_\_\_

VITAL RECORDS USE ONLY A DISTRICT

STATE OF WASHINGTON DEPARTMENT OF HEALTH VITAL RECORDS CERTIFICATE OF FETAL DEATH 146

B COPIES C HOSPITAL D OCCURRENCE E RESIDENCE F. RESIDENCE G. HOW LONG AT CURRENT RESIDENCY H. TRACT I. CAUSE FETAL DEATH J. K. L. M. N. O. F. M. O. Q. QUERIES DATE RECEIVED BY STATE REGISTRAR DO NOT USE THIS FORM FOR FETAL DEATHS THAT ARE LESS THAN 20 WEEKS GESTATION SEE HANDBOOK FOR INSTRUCTIONS TYPE OR PRINT ENTIRE FORM IN PERMANENT BLACK INK

FETUS NAME—FIRST MIDDLE LAST 2. SEX 3. DATE OF DELIVERY (Mo., Day, Yr.) 4. TIME OF DELIVERY 5. PLACE OF DELIVERY (specify type) 6. NAME OF FACILITY IF NOT A FACILITY ENTER NAME OF PLACE AND ADDRESS 7. CITY, TOWN, OR LOCATION 8. COUNTY OF DELIVERY 9. FATHER'S NAME—FIRST MIDDLE LAST 10. DATE OF BIRTH (Mo., Day, Yr.) 11. STATE OF BIRTH (If not U.S. give country) 12. MOTHER CURRENT LEGAL NAME—FIRST MIDDLE LAST 13. MAIDEN SURNAME (Birth Name) 14. DATE OF BIRTH (Mo., Day, Yr.) 15. STATE OF BIRTH (If not U.S. give country) 16. RESIDENCE (Number and Street) 17. CITY, TOWN, OR LOCATION 18. INSIDE OF CITY 19. COUNTY 20. STATE/ZIP CODE 21. HOW LONG AT CURRENT RESIDENCY 22. REGISTRAR SIGNATURE 23. DATE FILED BY REGISTRAR 24. BURIAL/CREMATION REMOVAL DATE (Mo., Day, Yr.) 25. DATE (Mo., Day, Yr.) 26. CEMETERY/CREMATORY—NAME 27. LOCATION—CITY/TOWN, STATE 28. FUNERAL DIRECTOR SIGNATURE 29. NAME OF FACILITY 30. ADDRESS OF FACILITY 31. PART I (enter only one choice per line for (A), (B), AND (C)) Fetal or Maternal condition directly causing fetal death. A IMMEDIATE CAUSE B DUE TO, OR AS A CONSEQUENCE OF C DUE TO, OR AS A CONSEQUENCE OF 32. SPECIFY FETAL OR MATERNAL 33. PART II. OTHER SIGNIFICANT CONDITIONS OF FETUS OR MOTHER: Conditions contributing to fetal death but not resulting in the underlying cause given in Part (A). 34. FETUS DIED 1 Before Labor 2 During Labor 3 During Delivery 4 Unknown 35. AUTOPSY 1 YES 2 NO 36. I CERTIFY THAT THE STATED INFORMATION CONCERNING THIS FETUS IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF 37. DATE SIGNED (Mo., Day, Yr.) 38. NAME, TITLE ATTENDANT AT DELIVERY IF OTHER THAN CERTIFIER (Type or Print) 39. CERTIFIER NAME AND TITLE (Type or Print) 40. ATTENDANT'S MAILING ADDRESS (Street, Box Number, City, State, ZIP Code)

CONFIDENTIAL INFORMATION FOR MEDICAL AND RESEARCH USE ONLY 41. OF HISPANIC ORIGIN OR DESCENT? (Ancestry) (Specify yes or no) If yes, specify Cuban, Mexican, Puerto Rican, etc. 1. YES 2. NO 42. OCCUPATION (Indicate most recent employment) (Pressman, painter, computer programmer) (specify) 43. TYPE OF BUSINESS OR INDUSTRY (paper mill, bakery, construction, teacher) (specify) 44. EDUCATION—Highest Grade Completed (0-17+) 45. RACE (White, Black, Asian or Pacific Islander, Am. Indian, Hispanic, etc.) (specify) 46. OF HISPANIC ORIGIN OR DESCENT? (Ancestry) (Specify yes or no) If yes, specify Cuban, Mexican, Puerto Rican, etc. 1. YES 2. NO 47. OCCUPATION (Indicate most recent employment) (fruit packer, cashier, registered nurse) (specify) 48. TYPE OF BUSINESS OR INDUSTRY (apple orchard, retail store, hospital) (specify) 49. EDUCATION—Highest Grade Completed (0-17+) 50. RACE (White, Black, Asian or Pacific Islander, Am. Indian, Hispanic, etc.) (specify) 51. PRIOR LIVE BIRTHS NONE NOW LIVING NOW DEAD NUMBER DATE LAST LIVE BIRTH (MO, YR) 52. OTHER PREGNANCY OUTCOMES (Not live births) (Do Not include this delivery) NONE 20+ WEEKS < 20 WEEKS DATE LAST SPONTANEOUS OUTCOME NUMBER SPONTANEOUS NUMBER INDUCED (Any Gest. Age) DATE LAST INDUCED 53. IS MOTHER MARRIED? 1. YES 2. NO 54. TOTAL PRIOR PREGNANCIES 55. DATE LAST NORMAL MENSES BEGAN (Mo., Day, Yr.) 56. MONTH OF PREGNANCY/PRENATAL CARE BEGAN (1st, 2nd, 3rd, etc.) 57. TOTAL NUMBER OF PRENATAL VISITS (If none, enter 0) 58. CLINICAL ESTIMATE OF GESTATION (Wks.) 59. PLURALITY—Single, Twin, Triplet, etc. (Specify) 60. IF NOT SINGLE (delivered, 1st, 2nd, 3rd, etc.) (Specify) 61. FETUS WEIGHT (Specify Unit) lbs. oza. or grams

CHECK ALL BOXES IN EACH COLUMN OR WRITE IN "OTHER" IF NO BOXES APPLY. 62. MEDICAL RISK FACTORS FOR THIS PREGNANCY 1. Anemia (Hct. < 30Hgb. < 10) 2. Cardiac disease 3. Acute or chronic lung disease 4. Diabetes, Gest. Estab. 5. Genital herpes—active HX 6. Polyhydramnios 7. Oligohydramnios 8. Hemoglobinopathy 9. Hypertension, chronic 10. Hypertension, pregnancy-associated 11. Eclampsia 12. Incompetent cervix 13. Previous infant 4000+ grams 14. Previous preterm or small-for-gestational age infant 15. Renal disease 16. Rh sensitization 17. 1st trimester bleeding 18. Epilepsy 19. Syphilis 20. Rubella—test positive 21. None 22. Other (specify) 63. OTHER RISK FACTORS FOR THIS PREGNANCY 1. Tobacco use during pregnancy? 1. YES 2. NO Av. No. cig. per day 2. Alcohol use during pregnancy? 1. YES 2. NO Av. No. drinks per wk 3. Weight gained during preg. lbs. 64. OBSTETRIC PROCEDURES 1. Amniocentesis If yes, specify trimesters 1 2 3 2. Electronic fetal monitoring 3. Induction of labor 4. Stimulation of labor 65. METHOD OF DELIVERY 1. Vaginal 2. Vaginal birth after previous C-section 3. Primary C-section 4. Repeat C-section with no labor 5. Repeat C-section with trial of labor 6. Forceps 7. Vacuum extraction 8. Other (specify) 66. COMPLICATIONS OF LABOR AND/OR DELIVERY 1. Fetal (> 100°F or 38°C) 2. Meconium, moderate/heavy 3. Premature rupture of membrane (> 12 hrs.) 4. Abruptio placenta 5. Placenta previa 6. Other excessive bleeding 7. Seizures during labor 8. Precipitous labor (< 3 hrs) 9. Prolonged labor (> 20 hrs) 10. Dysfunctional labor 11. Breech/Malpresentation 12. Cephalopelvic disproportion 13. Cord prolapse 14. Anesthetic complications 15. Fetal distress 16. None 17. Other (specify) 67. CONDITIONS OF FETUS 1. Fetal Hemorrhage 2. Placenta and cord conditions (specify) 3. Hemolytic Disease 4. Fetal Hydrops 5. Shoulder Dystocia 6. Other (specify) 7. None 68. CONGENITAL MALFORMATIONS OR ANOMALIES OF FETUS: 1. Anencephalus 2. Spina bifida/Meningocele 3. Hydrocephalus 4. Microcephalus 5. Other central nervous system anomalies (specify) 6. Heart malformations 7. Other circulatory/respiratory anomalies (specify) 8. Rectal atresia/stenosis 9. Tracheo-esophageal fistula/esophageal atresia 10. Omphalocele/gastrochisis 11. Other gastrointestinal anomalies (specify) 12. Malformed genitalia 13. Renal agenesis 14. Other urogenital anomalies (specify) 15. Cleft lip/palate 16. Polydactyly/Syndactyly/Adactyly 17. Club foot 18. Diaphragmatic hernia 19. Other musculo-skeletal/integumental anomalies (specify) 20. Down's syndrome 21. Other chromosomal anomalies (specify) 22. None 23. Other anomalies (specify)





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