Technical Notes — Methodology

"That, sir, is the good of counting; it brings everything to a certainty, which before floated in the mind indefinitely."
—*Samuel Johnson*

INDUCED TERMINATIONS OF PREGNANCY

Except for incomplete reporting by providers, the data represent *all* abortions performed in Oregon during the current data year. That is, the data constitute events associated with the place of occurrence rather than the "residence data" used in estimating births. This is necessary because many abortions obtained out-of-state by Oregon residents are not reported to Oregon's Center for Health Statistics. It reflects the great variation in abortion reporting procedures among states (e.g., some states do not record the patient's residence) as well as the fact that a comprehensive data collection network among all states, similar to that used in reporting births, does not exist in regard to abortions.

In using "occurrence" data rather than "residence" data to estimate abortion rates for Oregon residents, an implicit assumption is made that the number of Oregon residents who leave the state to obtain an abortion equals the number of out-of-state residents who obtain an abortion in Oregon. In formulating generalizations which involve trends or long-term behavioral patterns, annual totals are treated as sample values generated by ongoing social, economic, or political processes and thus subject to "chance" variability. For most purposes, numbers offered in this report should be viewed only as careful approximations and interpreted only within the framework of statistical safeguards developed to take sampling variability into account.

Some rates in this section are based on relatively *few events* and for most comparisons may be used only with extreme caution--due to the chance fluctuations associated with small numbers. A small percentage of abortion reports lack certain data items. This may

**NUMBER OF FIRST-TIME ABORTIONS BY YEAR AND AGE GROUP,
OREGON OCCURRENCE, 1975-1989**

YEAR	AGE GROUPS					
	15-19	20-24	25-29	30-34	35-39	40-44
1975	3,470	2,751	1,331	620	296	107
1976	3,877	3,125	1,551	616	297	108
1977	3,605	2,921	1,467	650	300	107
1978	3,620	3,041	1,573	786	327	98
1979	3,821	3,149	1,552	811	289	108
1980	3,792	2,965	1,540	795	345	90
1981	3,261	2,643	1,361	760	343	96
1982	2,530	2,066	1,093	607	263	83
1983	2,340	1,976	971	519	287	67
1984	2,340	2,091	995	580	299	80
1985	2,442	2,041	915	496	324	64
1986	2,065	1,694	880	506	270	70
1987	2,375	1,926	935	584	322	83
1988	2,844	2,281	1,086	661	379	94
1989	2,801	2,453	1,245	637	415	110

greatly affect the estimation of rates. To minimize the potential bias inherent in such estimates, unknown events in some cases (Table 4-1) are assigned to the categories of analysis proportional to the distribution of known events. In this way, rates calculated for subsets (e.g., "abortions per thousand teen females") are, on average, less affected by incomplete data.

ESTIMATION OF THE CUMULATIVE PROPORTION OF FEMALES WHO HAVE EXPERIENCED AN ABORTION

This figure is estimated by tracing the abortion experience of a specific cohort of females over an extended time period. In the table on the previous page, an approximation of the "cumulative total" of first-time abortions by one of the cohorts may be obtained by summing the figures in the boxed area.

To obtain this value, it is necessary to sum the number of first-time abortions for 15- to 19-year-olds from 1975 to 1979 and those of 20- to 24-year-olds from 1980 to 1984 with those of 25- to 29-year-olds from 1985 to 1989. This provides an estimate of the numerator in the following equation:

$$\text{Cumulative proportion of females who have had an abortion} = \frac{\text{Total number of first time abortions among a specific cohort of females}}{\text{Number of females in cohort}}$$

The denominator may be estimated by averaging the size of the cohort during 1975-1989. Table A-1 lists the annual estimate of the number of females within each cohort. For example, in 1975 the number of 15- to 19-year-old females was estimated to be 110,334; in the next year it was 111,184. The average size of this age group from 1975 to 1979 was 112,047. Similarly, the number of 20- to 24-year-old women between 1980 and 1984 was 114,553 on average; the number of 25- to 29-year-olds averaged 111,724 between 1985 and 1989. Thus, between 1975 and 1989 the cohort of interest had an average population size of 112,775.

Substituting into the formula given above:

$$Cp = \frac{\text{Sum of First Abortions}}{N} = \frac{35.195}{112.775} = .312 \text{ or } 31.2 \text{ percent}$$

This figure approximates the proportion of females in the 25- to 29-year-old cohort who, by 1989, had *ever had an abortion*. This method of estimation assumes that factors such as deaths and migration have not altered the composition of the female population in Oregon--that is, the women who have left the state display the same characteristics as those who have moved into Oregon. It also assumes that patients with a history of previous abortions do not report the current procedure as a first abortion.

TEEN PREGNANCY

Pregnancy estimates are based upon the estimated number of teen births and induced terminations among Oregon teens; they do not include the number of fetal deaths or miscarriages (spontaneous abortions) which occur. The estimation of teen births is considered to be relatively complete and includes births to resident teens even when they occur out-of-state. The estimation of teen abortions is based on all reported abortions to teen age residents of Oregon; however, because states often do not report abortions obtained within their borders to the state of residence as occurs with vital events such as birth and death, an unknown number of Oregon teens obtain abortion services out-of-state. As a consequence, estimates of teen abortions and teen pregnancies should be considered minimal in nature.

Furthermore, because estimates of abortion for teens are based on "residence data," figures given in Chapter 4 do not correspond exactly to those in Chapter 3, which are based on "occurrence data." (See Induced Terminations of Pregnancy methodology section.)

The estimation of rates requires an estimate of the size of the appropriate population. Such estimates are now available for 15- to 17-year-olds and 18- to 19-year-olds for each county on an annual basis. Because estimated rates based on a small population may vary greatly due to chance factors, rates of teen pregnancy, birth, and abortion were calculated for these age groups only if there were 50 or more female residents of the appropriate age group in the county.

Similarly, rates for 15- to 19-year-olds were calculated whenever a county had 50 or more female residents in this age group.

Great caution must be taken in the use of pregnancy statistics associated with females under 15 years of age. This is due to the fact that relatively few events are recorded each year for this group. Also, rates are based on the estimated population cohort of 10-14 year old females—many of whom are physiologically not yet at risk of pregnancy. Thus, any *direct* comparison of rates between this group and another age group—e.g., 15- to 17-year-olds—would be inappropriate.

DEMOGRAPHICS

The extent to which Oregon's demographic composition may affect its national ranking is indicated by comparisons shown in the sidebar. In 1990, Oregon's birth rate for all teens (regardless of race or ethnic affiliation) was nine percent lower than that of the U.S. and, among all 50 states, it had the 24th lowest teen birth rate. Yet, if comparisons were made in terms of births to non-Hispanic white teens only, Oregon would have been 36th and the rate would have been 19 percent *higher* than that of the U.S. This results from the fact that 87 percent of 15- to 19-year-old females in Oregon were non-Hispanic whites and only seven percent were either Hispanic or non-Hispanic African Americans. By comparison, 70 percent of the U.S. female population of that age were non-Hispanic whites and 26 percent were Hispanics or non-Hispanic African Americans.

TEEN BIRTH RATES, U.S. VS. OREGON, AGES 15-19, 1990		
RACE/ETHNICITY	BIRTH RATE „	
	U.S.	OREGON
TOTAL †	59.9	54.8
NON-HISPANIC WHITES	42.5	50.6
„ ALL RATES PER 1,000 FEMALES.		
† ALL RACES AND ETHNICITIES COMBINED.		