



# Maternal and Child Health in Snohomish County 1990 -1999

**Series IV** : A report on the health of pregnant women

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## Contacts & Acknowledgements

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## Introduction & Objectives

Maternal and Child Health in Snohomish County, a Series of Four Reports

### **INTRODUCTION**

Maternal and child health (MCH) is a key program area in public health. Many public health programs focus on the health of at-risk and underserved women and children. Through education, policy development, and services, public health can help this target population enjoy better health and decreasing morbidity and mortality.

Public health services include a variety of community-based programs. Tobacco programs provide education on hazards of tobacco use, encourage smoke-free policies to limit exposure to environmental tobacco smoke, and sponsor smoking cessation classes. Community health programs assist clients in making informed choices about contraceptive methods and family planning. Public health nurses make home visits to pregnant and parenting women to educate them about smoking, breastfeeding, parenting, and child development. Childhood immunizations and dental sealants are provided in clinics.

### **OBJECTIVES**

A variety of data resources is currently available about populations of women and children and their health. However, information is not compiled in a single location or not presented specific to MCH needs. Thus, the Health Statistics and Assessment program at Snohomish Health District is preparing a series of four reports addressing important indicators for mothers and children living in Snohomish County (For details see following page).

The objectives of the data included in these reports were to:

- ◆ Provide information for outcomes or indicators applicable to existing programs or activities;
- ◆ Provide estimates to assist in the evaluation of program effectiveness;
- ◆ Assist health care providers and agencies in identifying, planning and developing future programs; or
- ◆ Identify gaps in existing data measures or surveillance activities.

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## Four-Part Series

Data were separated into four reports, each focusing on a distinct population, to provide potentially more meaningful results for service agencies and providers. When appropriate, Washington State data are presented for comparison along with national Healthy People 2000 or 2010 goals.

The following descriptions provide an overview of the content of each report:

### **Series I: Women of Childbearing Age (15-44 years)**

- ◆ Demographics—age, race, income
- ◆ Family structure—marital status, education, insurance, parenting
- ◆ Health & Prevention—birth control, checkups
- ◆ Hospitalizations—rates and leading causes
- ◆ Domestic violence
- ◆ Tobacco use
- ◆ Alcohol use
- ◆ Mortality—rates and leading causes

### **Series II: Children (1-17 years)**

- ◆ Demographics—age, race
- ◆ Family structure—foster care, poverty, child abuse
- ◆ Health & Prevention—immunizations, checkups, special health care needs, overweight, physical activity, weight loss, asthma, seatbelt use
- ◆ Tobacco & Alcohol use
- ◆ Hospitalizations—rates and leading causes
- ◆ Mortality –rates and leading causes

### **Series III: Infants (Younger than 1 year)**

- ◆ Demographics—sex, race
- ◆ Mortality—rates and leading causes, SIDS, congenital anomalies
- ◆ Birth outcomes—low birth weight, prematurity
- ◆ Infant care—breastfeeding, sleeping position, well-baby checks, car seat use

### **Series IV: Pregnant Women**

- ◆ Demographics—age, race
- ◆ Pregnancy outcomes—abortions, birth
- ◆ Health & Prevention—prenatal care, folic acid
- ◆ Tobacco use
- ◆ Pregnancy experiences—unintended pregnancies, violence

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## **GEOGRAPHY**

Snohomish County is the third most populous county in Washington State. It is preceded in size by King County and Pierce County. In 1999, 51.5% of the state's population resided in these three counties. Snohomish County is located north of King County and the Seattle metropolitan area. Most of the urban areas are in the southwestern part of the county between Everett and the King County line along Interstate 5 and Highway 99. North of Everett is the Tulalip Indian Reservation. Only 5.5% of Snohomish County is used for farmland, which is located in the western part of the county. Eastern Snohomish County is largely mountainous wilderness.

## **SUMMARY OF DATA SOURCES**

Data in this report came from multiple sources. The reference for each data source is located in the body of the report. The following is a summary of sources used:

- ◆ Birth and death certificates
- ◆ US Census Bureau, 1990 and 2000
- ◆ Behavioral Risk Factor Surveillance Survey (BRFSS)
- ◆ Pregnancy Risk Factor Assessment Monitoring System (PRAMS) survey
- ◆ Local Health Jurisdiction Immunization Assessment Capacity Building Project
- ◆ National Immunization Survey
- ◆ Risk and Protection Profile for Substance Abuse Prevention in Snohomish County
- ◆ Healthy People 2000 and Healthy People 2010
- ◆ Youth Risk Behavior Survey (YRBS)
- ◆ Comprehensive Hospital Abstract Reporting System (CHARS)

## **METHODS**

When possible all pertinent data were included. However, there were some areas where appropriate data were not available or were lacking. Measures of prevalence and incidence were based on 1999 data as these were the most current data available consistently across topics and populations. In addition to the 1999 data, time trends are also presented. Except where noted, information provided in this report represents population-based estimates. Where appropriate the denominators used in calculations are presented and are noted by "N=" followed by the population count. Numerator counts are identified using an "n=".

Confidence intervals (CI) are ranges of numbers that indicate the accuracy of the statistics reported. This series uses 95% as the level of probability, which means the "true" population value will be within the CI 95% of the time. Washington State values are compared to Snohomish County CIs. If the state value is within the CI of Snohomish County, there is no statistically significant difference between Snohomish County and Washington State.

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## Summary of Major Findings for Pregnant Women in Snohomish County

### **PREGNANCY OUTCOMES**

- ◆ Pregnancy, abortion, and birth rates among women age 15-44 years significantly declined between 1990-1999.
- ◆ 76.6% of all pregnancies among women age 15-44 years ended in a live birth.
- ◆ Compared to Washington State, Snohomish County women age 20-34 years had a significantly higher birth rate and women age 15-19 years had a significantly lower birth rate.
- ◆ 22.9% of pregnancies in women age 15-44 years ended in abortion.
- ◆ Women age 15-19 years were twice as likely as older women to have a pregnancy end in an abortion.
- ◆ Women age 20-34 years had a higher pregnancy rate in Snohomish County than statewide.

### **HEALTH & PREVENTION**

- ◆ 37.6% of pregnancies were unintended.
- ◆ 26.5% of women smoked cigarettes while pregnant.
- ◆ Maternal smoking was most likely among younger women.
- ◆ Native American women had the highest proportion of maternal smoking.
- ◆ 5.3% of women reported intimate partner violence during pregnancy.
- ◆ 71.4% of women knew that folic acid was beneficial when taken during pregnancy.
- ◆ Folic acid knowledge was lowest among Hispanics and women less than 20 years old.
- ◆ Among women age 15-44 years, prenatal care beginning in the first trimester occurred at a significantly higher rate in Snohomish County than in Washington State.
- ◆ Black women had the lowest rate of beginning prenatal care in the first trimester.

## Pregnancy Outcomes Data Source

Birth outcomes were obtained from the Washington State Department of Health, Center for Health Statistics. Birth certificates were used to obtain counts of live births. Pregnancy counts were the sum of live births, abortions, and fetal deaths reported to the state. Abortions reflect a purposeful or induced interruption of a pregnancy regardless of the duration of pregnancy. Abortions are voluntarily reported to the Department of Health and may under-represent the true count. Abortion counts, and thus, overall pregnancies were not available by race and ethnicity. The Washington State Department of Health defines fetal death as death prior to complete expulsion or extraction of a product of human conception from its mother, irrespective of the duration of pregnancy. Fetal deaths are only reported for pregnancies of 20 weeks gestation or greater and do not include early fetal deaths or miscarriages.



## Birth

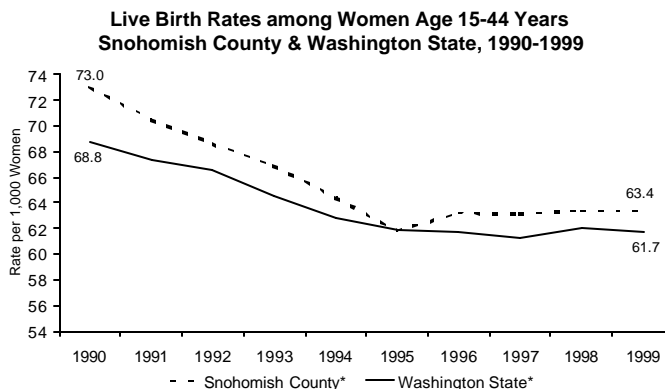
Among women age 15-44 years during 1999, Snohomish County had a rate of 63.4 live births per 1,000 women (95% CI=62.0, 64.7), which was significantly higher than Washington State (61.7 per 1,000 women). Both Snohomish County and Washington State had a significant decline (p<0.001) in the live birth rate from 1990-1995 (Figure 1). The rates then leveled out and there was no significant change from 1996-1999. Live birth rates for women age 15-44 years decreased from a 1990 rate of 73.0 per 1,000 women in Snohomish County (95% CI=71.5, 74.6) and 68.8 per 1,000 women in Washington State.

Among women age 15-44 years in 1999, Snohomish County had a significantly higher proportion of pregnancies end in a live birth (76.6%, 95% CI=75.8%, 77.4%) than Washington State (75.5%). However, the difference was only 0.9%. Between 1990-1999 there was a significant increase (p<0.001) in the percent of pregnancies ending in a live birth in both Snohomish County and Washington State. Snohomish County increased from 72.3% in 1990 to 76.6% in 1999, while Washington State increased from 72.0% in 1990 to 75.5% in 1999.



### Key Finding

- Snohomish County and Washington State had a significant decline in the live birth rate from 1990-1995.
- Between 1990-1999 there was a significant increase in the percent of pregnancies ending in a live birth.



\* Statistically significant decrease from 1990-1995  
 Source: Birth Certificates, 1990-1999

Figure 1

## Birth by Age Group

During 1999 women age 20-34 years had the highest live birth rate in both Snohomish County and Washington State (Table 1, Appendix). The Snohomish County rate of 110.0 live births per 1,000 women (95% CI=107.3, 112.6) was significantly higher than the Washington State rate of 100.8. However, among women age 15-19 years, the live birth rate was significantly lower in Snohomish County (35.4 per 1,000 women, 95% CI=32.9, 38.1) than in Washington State (40.7 per 1,000 women). There was no difference among women age 35-44 years.

When examined by age group, Snohomish County had a significant decreasing trend (between 1990-1999) in the live birth rate among women age 15-19 years and women age 20-34 years. However, the live birth rate for women age 35-44 years increased significantly during the same 10-year period. Washington State had similar results.

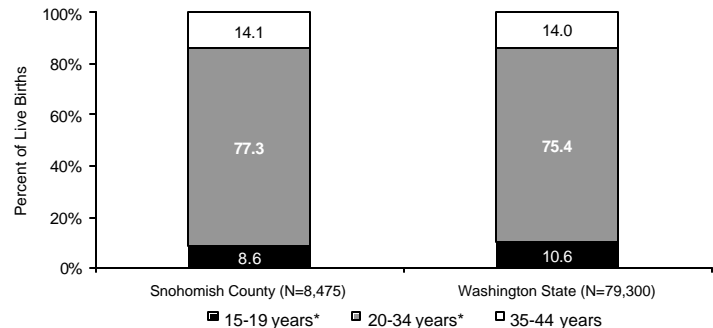
During 1999 women age 20-34 years delivered the greatest proportion of all live births in both Snohomish County (77.3%, 95% CI=76.4%, 78.2%) and Washington State (75.4%) (Figure 2). Snohomish County had a significantly higher proportion of live births in this age group than Washington State. The proportion of all live births to women age 15-19 years was significantly lower in Snohomish County (8.6%, 95% CI=8.0%, 9.2%) compared to Washington State (10.6%). There was no difference among women age 35-44 years.



### Key Finding

- Women age 20-34 years delivered the greatest proportion of all live births.

**Proportion of Live Births by Age Group among Women Age 15-44 Years Snohomish County & Washington State, 1999**



\* Statistically significant difference between Snohomish County and Washington State  
Source: Birth Certificates, 1999

**Figure 2**

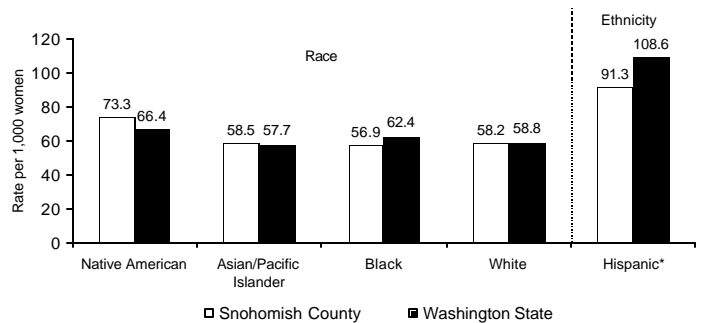
## Birth by Race/Ethnicity

Among women age 15-44 years, Hispanics as an ethnicity had the highest live birth rate in Snohomish County in 1999 at 91.3 per 1,000 women (95% CI=84.1, 98.9). Snohomish County Hispanic women had a significantly higher live birth rate than the state (108.6 per 1,000 women).

In 1999 Snohomish County live birth rates for non-Whites, were highest among Native Americans, followed by Asian and Pacific Islanders, then Blacks (Figure 3; Table 2, Appendix). There were no significant differences in non-White live birth rates between Snohomish County and Washington State. Whites had the lowest live birth rate in Snohomish County at 58.2 per 1,000 women age 15-44 years (95% CI=56.9, 59.6), which was similar to the statewide rate of 58.5 per 1,000 women.

From 1990 to 1999 there were significant decreases in live birth rates among White, Black, and Asian and Pacific Islander women age 15-44 years in Snohomish County. There was no change in the live birth rate of Native Americans in the county. The Hispanic birth rate significantly increased. During the same 10-year period, Washington State saw significant decreases in trends for every race as well as Hispanics as an ethnic group.

Live Birth Rates by Race and Ethnicity among Women Age 15-44 Years Snohomish County & Washington State, 1999



\* Statistically significant difference between Snohomish County and Washington State  
Source: Birth Certificates, 1999

Figure 3

## Abortion

In 1999 Snohomish County women between 15 and 44 years had 18.9 abortions per 1,000 women (95% CI=18.2, 19.7). This was significantly lower than the Washington State rate of 20.0 abortions per 1,000 women. Abortion rates between 1990-1999 significantly decreased ( $p < 0.001$ ) in both Snohomish County and Washington State (Figure 4). Snohomish County decreased from a 1990 rate of 27.6 per 1,000 women (95% CI=26.7, 28.6) and Washington State decreased from 26.4 per 1,000 women in 1990. The 1990 Snohomish County abortion rate was significantly higher than the statewide rate.

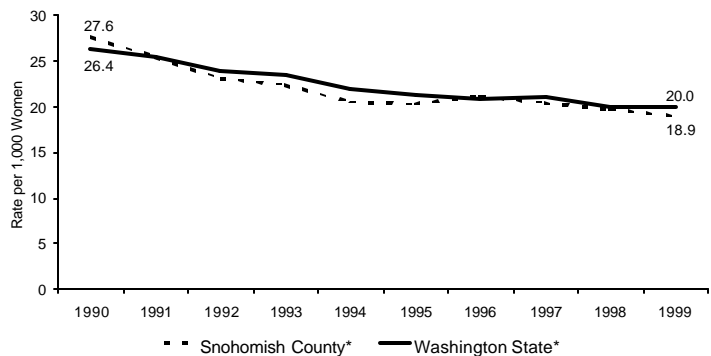
In 1999 22.9% (95% CI=22.1%, 23.7%) of pregnancies ended in abortion among Snohomish County women age 15-44 years, which was significantly lower than the proportion in Washington State (24.3%). Both Snohomish County and Washington State had a significant decrease ( $p < 0.001$ ) in the proportion of pregnancies ending in abortion between 1990-1999. Snohomish County decreased from 27.4% in 1990 (95% CI=26.6%, 28.2%) and Washington State decreased from 27.6% in 1990.



### Key Finding

- Abortion rates between 1990-1999 significantly decreased.

Abortion Rates among Women Age 15-44 Years  
Snohomish County & Washington State, 1990-1999



\* Statistically significant decrease  
Source: Abortion Certificates, 1990-1999

Figure 4

## Abortion by Age Group

When examined by age group, the 1999 abortion rates did not significantly differ between Snohomish County and Washington State among women age 15-19 years and 35-44 years (Table 1, Appendix). However, Snohomish County women age 20-34 years had a significantly lower rate of abortions (27.5 per 1,000 women, 95% CI=26.2, 28.8) than Washington State (29.1 per 1,000 women).

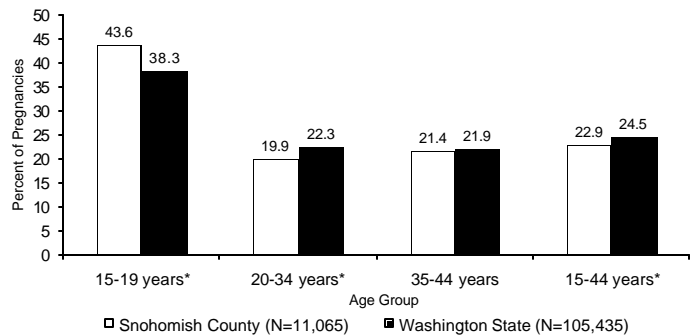
Women age 15-19 years were approximately twice as likely to have their pregnancy end in an abortion than older women (Figure 5; Table 3, Appendix). The proportion of pregnancies ending in abortion in this age group was significantly higher in Snohomish County (43.6%, 95% CI=40.9%, 43.6%) than Washington State and (38.3%). Among Snohomish County women age 20-34 years, the proportion of aborted pregnancies was significantly lower than Washington State (19.9%, 95% CI=19.0%, 20.8% and 22.3%, respectively).



### Key Finding

- Women age 15-19 years were approximately twice as likely as older women to have their pregnancy end in an abortion.

Proportion of Pregnancies Ending in Abortion  
Snohomish County & Washington State, 1999

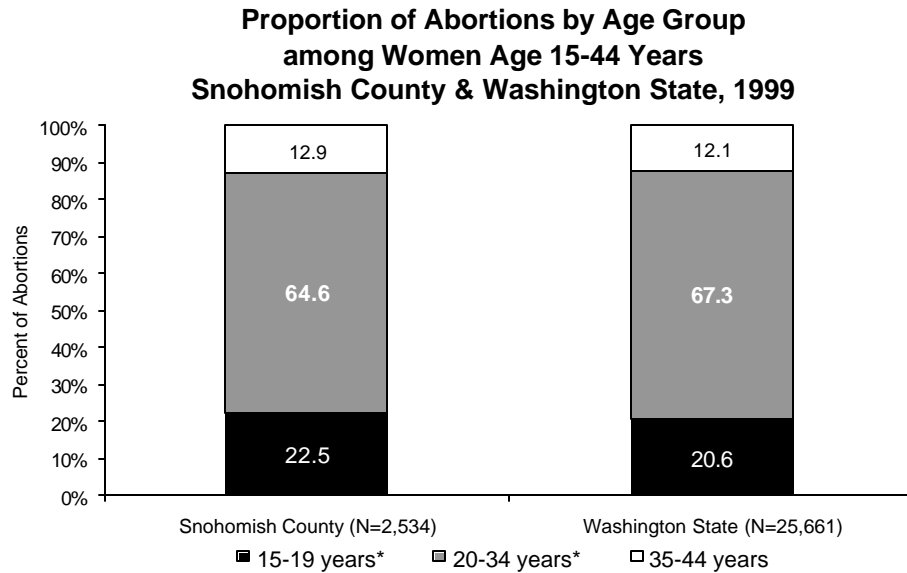


\* Statistically significant difference between Snohomish County and Washington State  
Source: Birth Certificates, Fetal Death Certificates, and Abortion Certificates, 1999

Figure 5

## Abortion by Age Group

Among all women age 15-44 years, approximately two thirds of abortions in 1999 occurred among women age 20-34 years in both Snohomish County and Washington State (Figure 6). Snohomish County women of this age group had a significantly lower proportion of abortions (64.6%, 95% CI=62.7%, 66.5%) compared to Washington State (67.3%). However, women age 15-19 years in Snohomish County represented a significantly higher proportion of all abortions (22.5%, 95% CI=20.9%, 24.2%) than those in Washington State (20.6%). There was no difference among women age 35-44 years.



\* Statistically significant difference between Snohomish County and Washington State  
Source: Abortion Certificates, 1999

**Figure 6**

## Fetal Death

Fetal deaths represented 0.5% of all pregnancies in 1999 among women age 15-44 years in Snohomish County and 0.4% in Washington State. Snohomish County had a statistically significant increase ( $p=0.03$ ) in the proportion of pregnancies ending in fetal death between 1990-1999. The increase was small though, from 0.3% in 1990 to 0.5% in 1999. The proportion statewide stayed at 0.4% every year between 1990-1999.

More information on rates of fetal deaths is available in series III of the Maternal and Child Health In Snohomish County report.

## Pregnancy

Pregnancy rates were calculated from the sum of live births, abortions, and fetal deaths. Pregnancy outcomes have improved over time. Between 1990-1999 the proportion of pregnancies ending in a live birth increased 4.3% in Snohomish County and 3.5% in Washington State. There was an accompanying decrease in the proportion of pregnancies ending in abortion, 4.5% in Snohomish County and 3.3% statewide. Snohomish County also had a 0.2% increase in pregnancies ending in fetal death. Washington State had no change in the proportion of pregnancies ending in fetal death.

In 1999 Snohomish County women age 15-44 years had a pregnancy rate of 82.7 per 1,000 women (95% CI=81.3, 84.2), which was not significantly different from the Washington State rate of 82.0 per 1,000 women. From 1990-1999 the pregnancy rate significantly ( $p < 0.001$ ) decreased in both Snohomish County and Washington State (Figure 7). Snohomish County declined from 101.0 per 1,000 women (95% CI=99.2, 102.8) in 1990 and Washington State decreased from 95.5 per 1,000 women in 1990.

(Continued on page 10)



### Key Finding

- From 1990-1999 the pregnancy rate significantly decreased in both Snohomish County and Washington State.

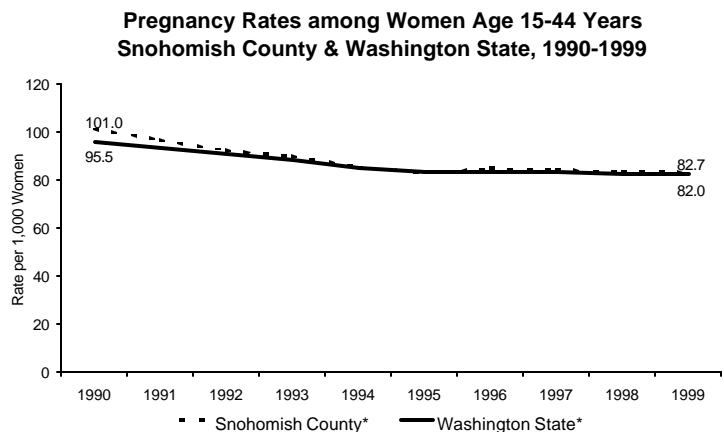


Figure 7

## Pregnancy Continued

*(Continued from page 9)*

Women age 20-34 years had the highest pregnancy rate. During 1999 Snohomish County women in this age group had a pregnancy rate of 138.1 per 1,000 women (95% CI=135.3, 140.9). This was significantly higher than the Washington State rate of 130.5 per 1,000 women (Table 1, Appendix). There was no significant difference between Snohomish County and Washington State pregnancy rates for women age 15-19 years and 35-44 years. Women age 20-34 years were two times more likely to become pregnant as 15-19 year old women and over four times more likely as women age 35-44 years.



### Key Finding

- Women age 20-34 years were more likely to become pregnant than women in other age groups.



## Health & Prevention Data Source

Information on experiences of mothers prior to, during, and shortly after pregnancy were obtained from the Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS is an ongoing population based surveillance system sponsored by the Centers for Disease Control and Prevention (CDC) that surveys new mothers who are representative of all registered births to Washington State residents.

The Washington State Department of Health has collected PRAMS data since 1993. Data were collected from a sample of all mothers and may include women who are outside the usual childbearing age of 15-44 years. Non-White mothers were over-sampled in order to have large enough samples to measure differences. Approximately 238 Snohomish County mothers and 3,007 mothers statewide were sampled annually from 1993 through 1998. Combined data from 1993-1998 were used to evaluate maternal smoking and intimate partner violence in Snohomish County<sup>1</sup> and maternal smoking in Washington State. Data from 1996-1998 were used for unintended pregnancy and folic acid knowledge in both Snohomish County<sup>1</sup> and Washington State.<sup>2</sup>

Prenatal care information was obtained from the Washington State Department of Health, Center for Health Statistics. Birth certificates contain the month prenatal care began.



## Unintended Pregnancy

Unintended pregnancies were defined as women who reported they wanted to be pregnant later or did not want to be pregnant then or at any time in the future. The PRAMS survey revealed that 37.6% (95% CI=31.2%, 44.4%) of pregnancies in Snohomish County were unintended, which was similar to Washington State (37.1%).<sup>2</sup> In both Snohomish County and Washington State, reporting an unintended pregnancy was inversely proportional to maternal age group (Figure 8; Table 4, Appendix). The proportion of women reporting an unintended pregnancy did not differ within age group when comparing Snohomish County and Washington State.

Healthy People 2010<sup>3</sup> sets a goal for 70% of pregnancies to be intended. Both Snohomish County (62.4%) and Washington State (62.9%) were below this goal, especially among women less than 25 years of age.

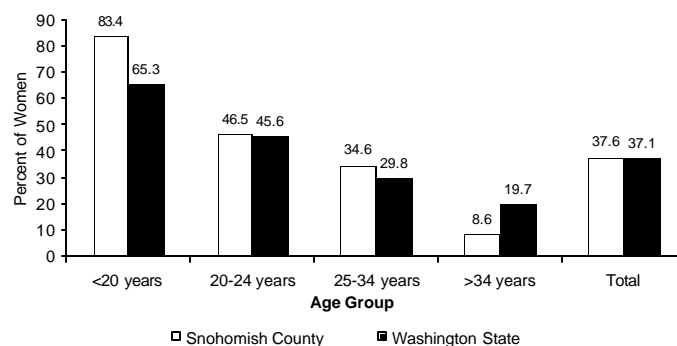
In Snohomish County Native Americans had the highest proportion of unintended pregnancies (49.0%, 95% CI=38.4%, 59.8%) (Figure 9; Table 4, Appendix). Asian and Pacific Islander women had the lowest proportion (36.1%, 95% CI=27.9%, 45.2%). In Washington State Black women had the highest proportion of unintended pregnancies (57.0%) and White women had the lowest (35.1%). There were no significant differences between Snohomish County and Washington State by race or ethnicity.



### Key Finding

- More than one third of pregnancies were unintended.

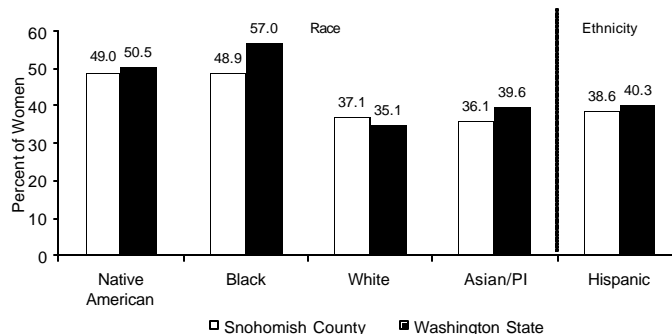
**Unintended Pregnancy\* by Age Group  
Snohomish County & Washington State, 1996-1998**



\* Unintended Pregnancy defined as wanting to be pregnant at a later time or not at all  
Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

**Figure 8**

**Unintended Pregnancy\* by Race and Ethnicity  
Snohomish County & Washington State, 1996-1998**



\* Unintended Pregnancy defined as wanting to be pregnant at a later time or not at all  
Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

**Figure 9**

## Maternal Smoking

According to the PRAMS survey, 26.5% (95% CI=21.4%, 32.2%) of Snohomish County women reported smoking cigarettes during the three months prior to becoming pregnant and/or during the last trimester of pregnancy.<sup>1</sup> This was similar to Washington State (26%). Healthy People 2000<sup>4</sup> sets a goal of 10% or less of pregnant women smoking cigarettes. Healthy People 2010<sup>3</sup> decreased that goal to 1%. Neither Snohomish County nor Washington State met the target goals.

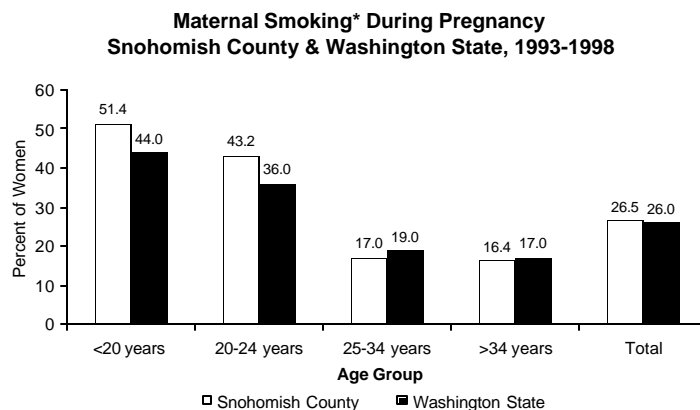
Younger women were more likely to report pregnancy-related smoking than older women (Figure 10; Table 5, Appendix). Among women under the age of 20 years, 51.4% (95% CI=33.6%, 68.9%) in Snohomish County and 44% in Washington State smoked during pregnancy. This was significantly higher than the proportion of women age 35 years and older in either Snohomish County (16.4%, 95% CI=8.4%, 29.5%) or Washington State (17%). There were no significant differences between Snohomish County and Washington State in maternal smoking by age group.

(Continued on page 14)



### Key Finding

- Nearly 27% of Snohomish County women reported smoking during the three months prior to becoming pregnant and/or during their last trimester of pregnancy.



\* Smoking 3 months before and/or in the last 3 months of pregnancy  
Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

Figure 10

## Maternal Smoking Continued

*(Continued from page 13)*

In Snohomish County Native American women had the highest proportion of maternal smoking (46.8%, 95% CI=38.4%, 55.4%), while Asian and Pacific Islanders had the lowest (10.0%, 95% CI=6.3%, 15.5%). Among Washington State women, Native Americans again had the highest proportion (48%) and Hispanics the lowest (10%). There were no significant differences between Snohomish County and Washington State for maternal smoking by race and ethnicity (Table 5, Appendix).



## Intimate Partner Violence

Intimate partner violence while pregnant was reported by 5.3% (95% CI=2.8%, 9.7%) of PRAMS respondents in Snohomish County.<sup>1</sup> The highest proportion of reported abuse was among Native Americans (13.0%, 95% CI=7.0%, 22.8%) and among women age 20-34 years (9.0%, 95% CI=3.5%, 21.3%) (Table 6, Appendix). However, the numbers were small, which make the estimates unstable.



## Folic Acid Knowledge

The PRAMS survey asked if women knew of the benefits of taking folic acid.<sup>12</sup> Seventy-one percent (95% CI=64.9%, 77.2%) of women in Snohomish County and 70.4% in Washington State reported some knowledge of the benefits of folic acid. The proportion of women who knew about the benefits of folic acid increased with age (Figure 11; Table 7, Appendix). Among women over 34 years of age in Snohomish County, 85.3% (95% CI=66.7%, 94.4%) reported they knew about the benefits of taking folic acid. This did not differ significantly from the state proportion of 79.1% for the same age group.

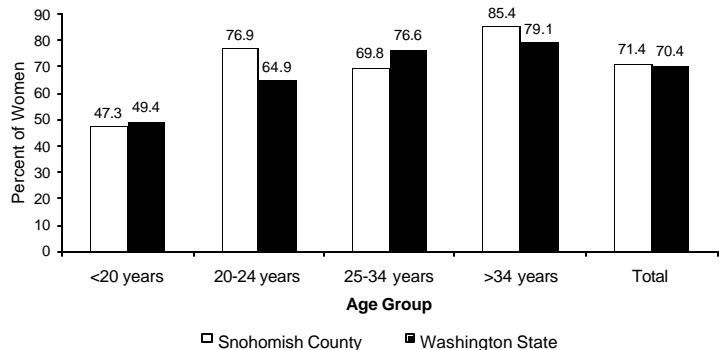
White women were more likely to know about folic acid compared to other races, 75.4% (95% CI=67.3%, 82.1%) in Snohomish County and 76.4% in Washington State. Hispanics were the least likely in both areas, 40.2% (95% CI=28.3%, 53.4%) in Snohomish County and 48.7% in Washington State. There were no significant differences by race or ethnicity between Snohomish County and Washington State (Table 7, Appendix).



### Key Finding

- The proportion of women who knew about the benefits of folic acid increased with age.

**Folic Acid Knowledge by Age Group  
Snohomish County & Washington State, 1996-1998**



Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

Figure 11

## Prenatal Care

In 1999 89.8% of women age 15-44 years began prenatal care in the first trimester in Snohomish County (95% CI=87.7%, 91.9%) compared to 82.9% in Washington State. The Snohomish County rate was significantly higher than Washington State. From 1990 to 1999 both Snohomish County and Washington State experienced a significant increase ( $p < 0.001$ ) in the rate of prenatal care beginning in the first trimester (Figure 12). Snohomish County increased from 83.6% in 1990 (95% CI=81.6%, 85.6%), while Washington State increased from 77.7% in 1990. Snohomish County maintained a significantly higher rate than Washington State from 1990-1999.

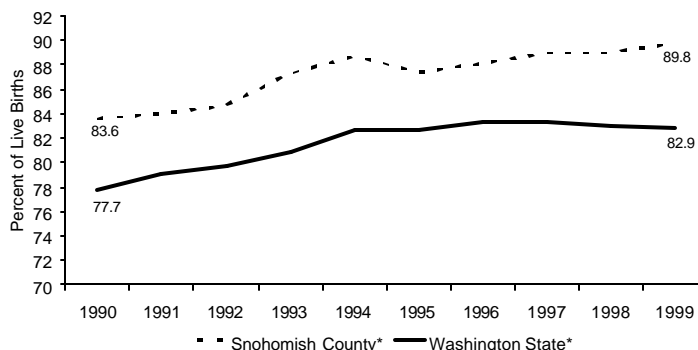
Healthy People 2000<sup>4</sup> set a goal of 90% of pregnant women beginning prenatal care in the first trimester. Among pregnancies ending in a live birth, Snohomish County was near the goal and the rate has increased over time. Washington State was below the goal, but its rate has also increased over time.



### Key Finding

- From 1990-1999 both Snohomish County and Washington State experienced a significant increase in the rate of prenatal care beginning in the first trimester.

Prenatal Care Beginning in the First Trimester  
Snohomish County & Washington State, 1990-1999



\* Statistically significant increase  
Source: Birth Certificates, 1990-1999

Figure 12

## Prenatal Care Continued

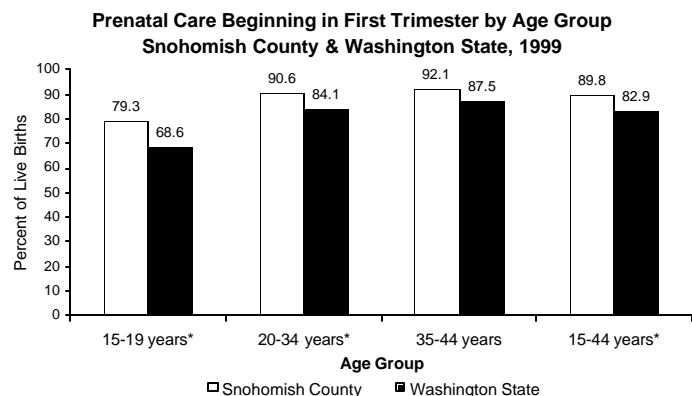
The proportion of women beginning prenatal care in the first trimester increased with age in both Snohomish County and Washington State (Figure 13; Table 8, Appendix). Snohomish County had significantly higher proportions of first trimester prenatal care among women age 15-19 years (79.3%, 95% CI=72.8%, 86.2%) and 20-34 years (90.6%, 95% CI=88.2%, 93.0%) than Washington State (68.6% and 83.3%, respectively). There was no significant difference among women age 35-44 years.

When examined by race, in Snohomish County Blacks had the lowest proportion of mothers beginning prenatal care in the first trimester (79.8%, 95% CI=65.2%, 96.8%). In Washington State Hispanics and Native Americans had the lowest proportions (71.2% and 71.3%, respectively). Compared to Washington State, Snohomish County had significantly higher proportions of early prenatal care among all races and Hispanics, except for Blacks (Table 8, Appendix).



### Key Finding

- The proportion of women beginning prenatal care in the first trimester increased with age.



\* Statistically significant difference between Snohomish County and Washington State  
Source: Birth Certificates, 1999

Figure 13

# Appendix

**Table 1. Pregnancy\*, Abortion, and Birth Rates by Maternal Age Group, Snohomish County and Washington State, 1999**

	Snohomish County			Washington State
	Rate per 1,000 Women	95 %CI†	Number of Occurrences	Rate per 1,000 Women
<b>Pregnancy*</b>				
<b>15-44 years</b>	82.7	81.3, 84.2	11,065	82.0
15-19 years	63.5	60.2, 66.9	1,308	66.5
20-34 years	138.1	135.3, 140.9	8,226	130.5
35-44 years	28.6	27.2, 30.0	1,531	29.4
<b>Abortion</b>				
<b>15-44 years</b>	18.9	18.2, 19.7	2,534	20.0
15-19 years	27.7	25.4, 30.0	570	25.5
20-34 years	27.5	26.2, 28.8	1,637	29.1
35-44 years	6.1	5.5, 6.8	327	6.4
<b>Live Birth</b>				
<b>15-44 years</b>	63.4	62.0, 64.7	8,475	61.7
15-19 years	35.4	32.9, 38.1	730	40.7
20-34 years	110.0	107.3, 112.6	6,550	100.8
35-44 years	22.3	21.1, 23.6	1,195	22.8

\* Pregnancies calculated as the sum of live births, abortions, and fetal deaths.

† 95 % Confidence interval

Source: Birth Certificates, Fetal Death Certificates, Abortion Certificates: WA State Department of Health

More information on rates of fetal deaths is available in series III of the Maternal and Child Health In Snohomish County report

**Table 2. Birth Rates by Race and Ethnicity among Women Age 15-44 Years, Snohomish County and Washington State, 1999**

Race	Snohomish County			Washington State
	Rate per 1,000 Women	95 % CI*	Number of Live Births	Rate per 1,000 Women
White	58.2	56.9, 59.6	6,896	58.5
Black	56.9	47.8, 67.2	139	62.4
Native American	73.3	62.8, 85.1	173	66.4
Asian/PI†	58.5	54.0, 63.3	616	57.7
Ethnicity				
Hispanic	91.3	84.1, 98.9	592	108.6

\* 95% Confidence Interval

† Pacific Islanders

Source: Birth Certificates: WA State Department of Health

**Table 3. Pregnancies Ending in Abortion by Age Group, Snohomish County and Washington State, 1999**

	Snohomish County			Washington State
	Percent of Pregnancies Ending in Abortion	Number of Abortions	95% CI*	Percent of Pregnancies Ending in Abortion
<b>15-44 years</b>	22.9	2,534	22.1, 23.7	24.5
15-19 years	43.6	570	40.9, 43.6	38.3
20-34 years	19.9	1,637	19.0, 20.8	22.3
35-44 years	21.4	327	19.3, 23.5	21.9

\* 95% Confidence Interval

Source: Birth Certificates, Fetal Death Certificates, Abortion Certificates: WA State Department of Health

<b>Table 4. Unintended Pregnancies* by Maternal Age Group, Race, and Ethnicity, Snohomish County and Washington State, 1996-1998</b>				
	Snohomish County			Washington State
	Percent Reporting Unintended Pregnancy	N	95% CI <sup>†</sup>	Percent Reporting Unintended Pregnancy
Total	37.6	469	31.2, 44.4	37.1
<b>Age Group</b>				
<20 years	83.4	45	57.8, 94.8	65.3
20-24 years	46.5	98	32.2, 61.5	45.6
25-34 years	34.6	266	26.7, 43.4	29.8
>34 years	8.6	60	2.8, 23.7	19.7
<b>Race</b>				
White	37.1	153	29.7, 45.3	35.1
Black	48.9	50	34.7, 63.2	57.0
Native American	49.0	85	38.3, 59.8	50.5
Asian/PI <sup>‡</sup>	36.1	123	28.0, 45.1	39.6
<b>Ethnicity</b>				
Hispanic	38.6	58	26.8, 51.9	40.3

\* Unintended pregnancy defined as wanting to be pregnant at a later time or not at all

† 95% Confidence interval

‡ Pacific Islander

Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

**Table 5. Maternal Smoking\* by Age Group, Race, and Ethnicity, Snohomish County and Washington State, 1993-1998**

	Snohomish County			Washington State
	Percent smoking	N	95% CI <sup>†</sup>	Percent smoking
Total	26.5	946	21.4, 32.2	26
<b>Age Group</b>				
<20 years	51.4	99	33.6, 68.9	44
20-24 years	43.2	202	30.4, 56.9	36
25-34 years	17.0	525	12.3, 23.1	19
>34 years	16.4	120	8.4, 29.5	17
<b>Race</b>				
White	27.9	363	22.1, 34.5	29
Black	24.5	87	15.9, 35.7	22
Native American	46.8	162	38.4, 55.4	48
Asian/ PI <sup>‡</sup>	10.0	239	6.3, 15.5	12
<b>Ethnicity</b>				
Hispanic	17.6	95	10.2, 28.4	10

\* Smoking 3 months before pregnancy or during the last 3 months of pregnancy

† 95% Confidence interval

‡ Pacific Islander

Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

<b>Table 6. Intimate Partner Violence by Maternal Age Group, Race, and Ethnicity, Snohomish County, 1996-1998</b>				
	Percent reporting intimate partner violence during pregnancy	N	95% CI*	Number reporting intimate partner violence during pregnancy
Total	5.3	463	2.8, 9.7	26
<b>Age Group</b>				
<20 years	2.6	54	0.9, 7.0	6
20-24 years	9.0	96	3.5, 21.3	9
25-34 years	4.1	250	1.5, 10.9	8
>34 years	†			
<b>Race</b>				
White	5.3	141	2.5, 10.9	7
Black	†			
Native American	13.0	90	7.0, 22.8	10
Asian/ PI‡	4.4	121	1.8, 10.3	5
<b>Ethnicity</b>				
Hispanic	†			

\* 95% Confidence interval

† Unable to calculate rates because n<5

‡ Pacific Islander

Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

**Table 7. Folic Acid Knowledge by Maternal Age Group, Race, and Ethnicity Snohomish County and Washington State, 1996-1998**

	Snohomish County			Washington State
	Percent knowing folic acid is beneficial during pregnancy	N	95% CI*	Percent knowing folic acid is beneficial during pregnancy
Total	71.4	460	86.9, 77.2	70.4
<b>Age Group</b>				
<20 years	47.3	54	24.9, 70.8	49.4
20-24 years	76.9	95	63.6, 86.4	64.9
25-34 years	69.8	250	60.8, 77.5	76.6
>34 years	85.4	61	66.7, 94.4	79.1
<b>Race</b>				
White	75.4	140	67.3, 82.1	76.4
Black	63.5	51	48.3, 76.3	51.7
Native American	52.0	90	41.4, 62.4	54.3
Asian/PI <sup>†</sup>	61.3	120	51.9, 69.9	57.2
<b>Ethnicity</b>				
Hispanic	40.2	59	28.3, 53.4	48.7

\* 95% Confidence interval

† Pacific Islander

Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

**Table 8. Prenatal Care Beginning in the First Trimester by Maternal Age Group, Race, and Ethnicity, Snohomish County and Washington State, 1999**

	Snohomish County			Washington State
	Percent of live births	N	95% CI*	Percent of live births
<b>Age Group</b>				
<b>15-44 years</b>	89.8	7,884	87.7, 91.9	82.9
15-19 years	79.3	691	72.8, 86.2	68.6
20-34 years	90.6	6,109	88.2, 93.0	84.1
35-44 years	92.1	1,084	86.5, 98.0	87.5
<b>Race</b>				
White	90.4	6,585	88.1, 92.7	83.7
Black	79.8	129	65.2, 96.8	75.5
Native American	85.2	162	71.6, 100.6	71.3
Asian/PI†	89.3	572	81.8, 97.4	80.5
<b>Ethnicity</b>				
Hispanic	83.4	543	75.9, 91.5	71.2

\* 95% Confidence interval

† Pacific Islander

Source: Birth Certificates: WA Department of Health

1. Snohomish Health District (December 2000) *The Health of Mothers and Infants in Snohomish County: The Findings of the Pregnancy Risk Assessment Monitoring Survey (PRAMS) 1993-1998*.
2. Eaglin, ME, Robbins, JM, VanBuren J, Bell, TM. (1996-1998) *Washington State PRAMS Surveillance Report – Volume I*. Olympia, WA: Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 2001.
3. US Department of Health and Human Services. (November 2000) *Healthy People 2010: Understanding and Improving Health*. 2<sup>nd</sup> ed. Washington, DC: U.S. Government Printing Office.
4. US Department of Health and Human Services, Public Health Service. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. Washington DC: U.S. Government Printing Office, DHHS Publication No. (PHS) 91-50212.