



# Maternal and Child Health in Snohomish County 1990 -1999

**Series II:** A report on the health of children age 1-17

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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 Children Age 1-17 Years in Snohomish County

### DEMOGRAPHICS

- ◆ Asians and Pacific Islanders comprised the second-largest race, following Whites.
- ◆ Snohomish County had a lower proportion of children in poverty than Washington State.
- ◆ The rate of students receiving reduced fee and free lunch declined since 1995.
- ◆ 3% of children under the age of three were enrolled in a public early intervention program for children with developmental delays or disabilities.

### HEALTH AND PREVENTION

- ◆ 81% of children age 19-35 months completed a 4:3:1:3 immunization series.
- ◆ 13% of adolescents reported having an asthma attack or using asthma medication in the past year.
- ◆ Approximately 80% of adolescents reported wearing a seatbelt most or all of the time.
- ◆ 21% of adolescents smoked cigarettes.
- ◆ Among 2<sup>nd</sup> and 3<sup>rd</sup> grade students, 26% had untreated dental decay and 58% had sealants. These results are not representative of the county because schools were selected to oversample low-income and minority children.
- ◆ A higher proportion of White non-Hispanic 2<sup>nd</sup> and 3<sup>rd</sup> grade students had dental insurance (86.6%) than those students who were non-White or Hispanic (78.3%).
- ◆ Hospitalizations rates and death rates of children decreased from 1990 to 1999.
- ◆ The leading cause of hospitalizations among children was childbirth among adolescent females, followed by unintentional injury and respiratory disease.
- ◆ The leading cause of death for children was unintentional injury.
- ◆ Males comprised 79% of all child deaths.
- ◆ Approximately 50% of unintentional injury deaths in children were due to motor vehicle crashes.

## Demographics Data Source

To calculate countywide rates and age- and sex-specific rates, preliminary 2000 census data were used to calculate intercensal estimates. Because of unpredicted changes from 1990 to 2000 in the Snohomish County population, interim census estimates based on 1990 provide inaccurate counts. Final data for 2000 were not available at the time analysis for this report was done. However, it is believed that the preliminary 2000 interim estimates are more accurate than the 1990-based estimates.

Calculations of the intercensal estimates by race, however, are not yet available from the 2000 US Census. In addition, the methods and categorization of race categories changed in the 2000 US Census. Thus, interim rates for race are based on the estimates of the 1990 US Census. Race was categorized as White, Black, Native American, and Asian/Pacific Islander. Hispanics were considered an ethnicity and may be of any race.



### Age

In 1999, Snohomish County had 591,590 residents representing 10.1% of Washington State’s total population. Children age 1-17 years represented 26.4% and 24.7% of the population in Snohomish County and Washington State, respectively. The proportion of children by age group in Snohomish County was similar to Washington State. The largest proportion of children was in the age group 5-9 years, followed closely by those age 10-14 years (Figure 1).

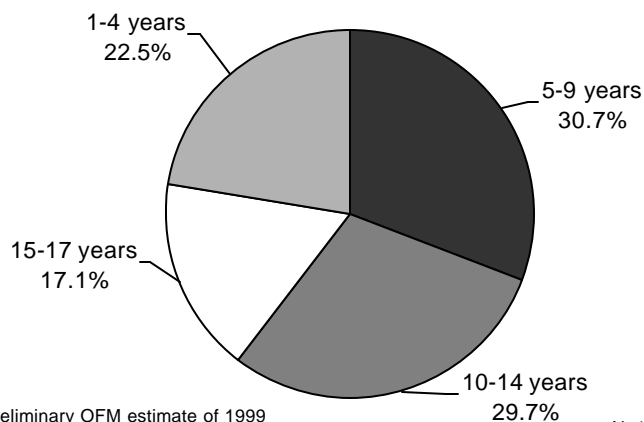
Between 1990-1999 among children age 1-17 years there was an increase in the proportion of older children, while the proportion of younger children decreased. This pattern was seen in Snohomish County and Washington State. The proportion of children age 1-9 years decreased 5.5% in Snohomish County and 3.8% in Washington State. The proportion of children age 10-17 years increased the same amount.



#### Key Finding

- Between 1990 and 1999, there was an increase in the proportion of older children, while the proportion of younger children decreased.

Proportion of Children by Age Group  
Snohomish County, 1999



Source: Preliminary OFM estimate of 1999 based on 2000 US Census

N=155,915

Figure 1

## Race & Ethnicity

### RACE

The predominant race in Snohomish County and Washington State was White. In 1999, White children represented 90.4% and 86.2% of children in Snohomish County and Washington State, respectively. Asians and Pacific Islanders comprised the second-largest race, 5.9% in Snohomish County and 6.8% in Washington State (Figure 2). From 1990 to 1999, the proportion of the child population represented by Whites decreased 2.0% in Snohomish County and 1.9% in Washington State (Figure 3). In the same time period, the proportion of Asian and Pacific Islander children increased 1.5% in both Snohomish County and Washington State. In the same time period, the proportion of Asian and Pacific Islander children increased 1.5% in both Snohomish County and Washington State.

### HISPANICS

In 1999, among children age 1-17 years, Hispanic children as an ethnic group represented 4.0% in Snohomish County and 9.0% in Washington State. From 1990 to 1999 the Hispanic child population increased 0.8% in Snohomish County and 2.4% in Washington State. The increase in the Hispanic child population was similar to the change in Hispanic women of childbearing age as presented in Series I of this report.

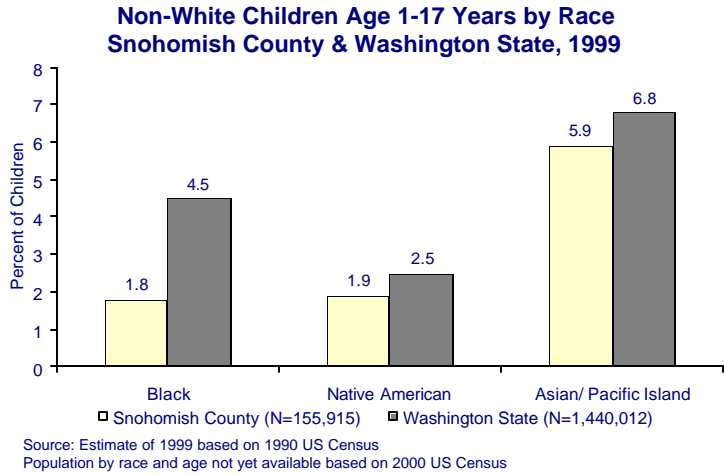


Figure 2

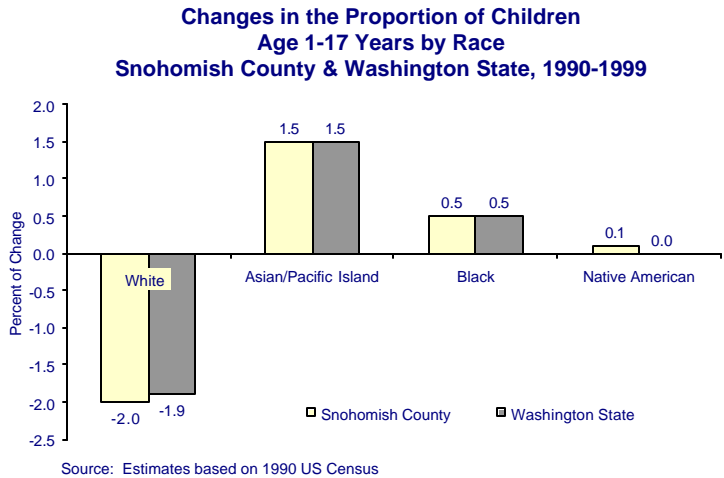


Figure 3

# Demographics

## Sex

When the child population was examined by sex, there were 51% males and 49% females in both Snohomish County and Washington State. This ratio held constant for every year between 1990-1999.



## Family Structure Data Source

The US Census Bureau provided state and county level poverty estimates. The estimates were not a direct count or direct estimate from a sample survey. Instead, a variety of data sources was used to estimate poverty levels. The data sources included the Current Population Survey, tax returns, counts of food stamp participants, data from the Bureau of Economic Analysis, decennial census estimates, and intercensal population estimates.<sup>1</sup>

Washington State Department of Social and Health Services (DSHS) published a *Risk and Protection Profile for Substance Abuse Prevention in Snohomish County*<sup>2</sup>. The document provided counts and rates of various factors that may affect substance use. Although this report of the Maternal and Child Health in Snohomish County series focuses on children age 1-17 years, infants age less than one year could not be separated from older children for statistics taken from the DSHS document. DSHS reported statistics on students approved for reduced fee and free lunch programs as an example of economic deprivation and the number of children in foster care as an example of family management problems. Information on the number of child abuse referrals was also provided.



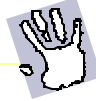
## Foster Care & Poverty

### FOSTER CARE

In 1999, there were 522 children age 0-17 years in foster care in Snohomish County, or 3.2 per 1,000 (95% CI=3.0, 3.5).<sup>2</sup> The 1990 rate was similar for Snohomish County children (3.1 per 1,000, 95% CI=2.8, 3.4). The Snohomish County rate has been consistently lower than the Washington State rates between 1990-1999. The rate of Washington State children in foster care decreased from 4.41 per 1,000 in 1990 to 4.07 per 1,000 in 1999.

### POVERTY

Poverty estimates were based on 100% of the federal poverty level, which is all that is currently available.<sup>1</sup> The federal poverty level for a family of four in 1998 was \$16,500. In 1998, Snohomish County had 14,845 children age 0-17 years living in poverty (9.1%, 95% CI=6.7%, 11.4%). Snohomish County had a statistically significant lower proportion of children in poverty compared to Washington State (13.7%). Foster children and other unrelated children were excluded in the definition of "related children in families." Snohomish County had 9,825 related children age 5-17 years in families in poverty in 1998 (8.3%, 95% CI=5.7%, 10.9%). This proportion in Snohomish County was statistically lower than Washington State (12.7%). Statistics on children under the age of 5 years were not available at the county level. In 1998, Washington State had 57,131 children under the age of 5 years living in poverty (14.7%).



### Key Finding

- ♦ In 1998, Snohomish County had a significantly lower proportion of children in poverty compared to Washington State.

### Reduced Fee & Free Lunch Program (R/F%)

The eligibility criterion for a free lunch program is 130% of federal poverty guidelines and 185% for a reduced fee lunch program. In 1998, 19.8% (95% CI=19.6%, 20.1%, n=21,295) of Snohomish County students in grades K-12 were approved for reduced fee and free lunch programs (R/F%).<sup>2</sup> In Washington State for 1998 the percent of R/F% was 31.3%. The percent in Snohomish County for K-12 R/F% increased from 14.6% (95% CI=14.4%, 14.8%) in 1990 to a peak of 23.1% (95% CI=22.9%, 23.4%) in 1995 and has since been decreasing (Figure 4). Overall from 1990-1998, there was a statistically significant increase in K-12 R/F% in Snohomish County (p<0.001). Snohomish County had been approximately 8-9% lower than the state rate from 1990-1997 for the K-12 R/F%, but in 1998 the difference was 11.5%.

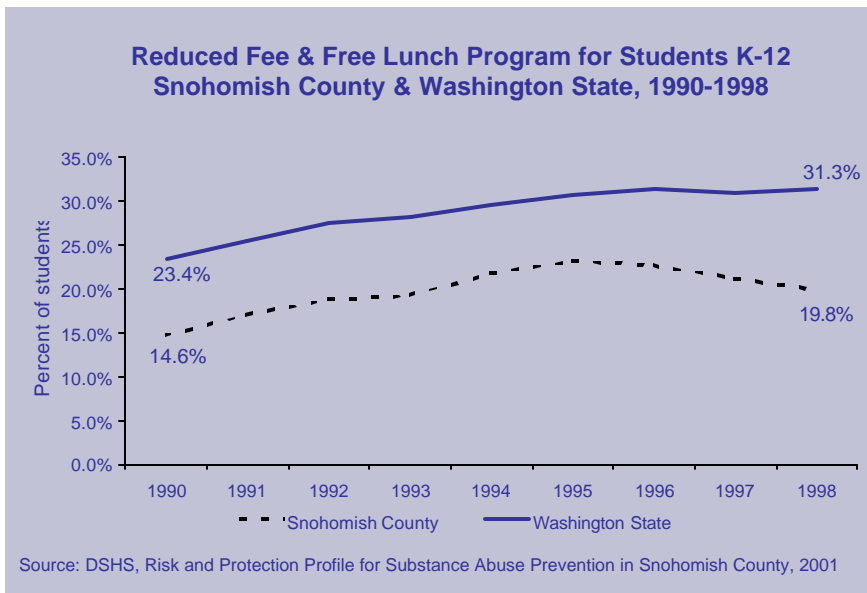


Figure 4

### Child Abuse Referrals

The following data represent child abuse referrals, which may not be substantiated as actual abuse cases. Washington State DSHS Children’s Administration estimated that between 15-30% of child abuse referrals turn out to be actual child abuse cases.

In 1999, Snohomish County had 6,118 child abuse referrals, or 38.0 abuse referrals per 1,000 children age 0-17 years (95% CI=37.0, 38.9) (Figure 5).<sup>2</sup> The 1991 child abuse referral rate was 40.6 per 1,000 (95% CI=39.6, 41.7). Snohomish County child abuse referral rates varied over time and it appeared there might be a cyclical pattern. This may be due to a number of possibilities such as reporting methods, abuse definitions, or investigational staffing. The data source did not lend itself to further evaluation in this matter.

Washington State child abuse referral rates did not show the same pattern as Snohomish County. The child abuse referral rates in Washington State seemed to decrease fairly consistently from a 1990 rate of 43.5 per 1,000 to 37.5 per 1,000 children in 1999 (Figure 5).<sup>2</sup> In 1999, there was no statistical difference in the rates of Snohomish County and Washington State.

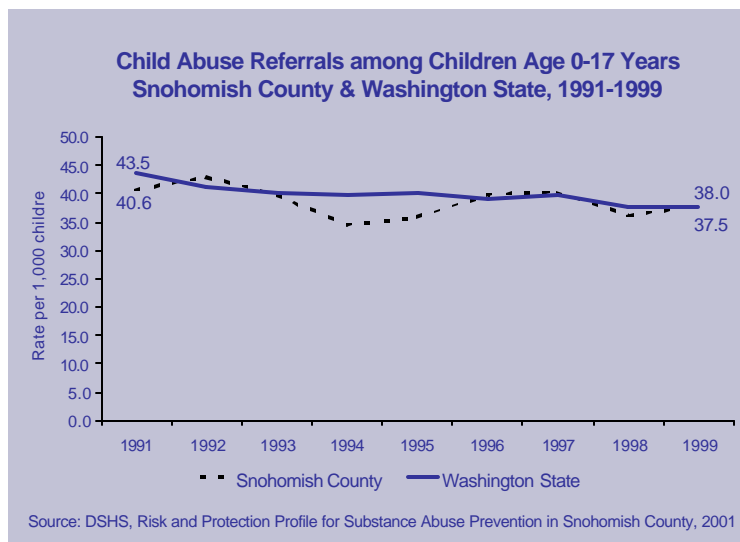


Figure 5

## Health & Prevention Data Source

Snohomish County childhood immunization coverage for children age 19-35 months was assessed in 1998 through the Local Health Jurisdiction Immunization Assessment Capacity Building Project.<sup>3</sup> A door-to-door survey of a random sample of households was conducted in two Health Planning Areas (HPA's) in Snohomish County. The HPA's used were Everett and Highway 99, which are both urban areas, border each other, have a high population density, and have a high ratio of minorities and low-income individuals. A child's current immunization status was confirmed from shot records kept in the home, the CHILD Profile database that contains information on children who received immunizations at the Snohomish Health District, and checks of provider's medical records of the child. Of the households identified with eligible children, 71.6% completed the survey (169/236). A total of 181 surveys were completed in 169 households. Washington State data was obtained from the National Immunization Survey.<sup>4</sup> This was a random digit telephone survey to determine immunization coverage among children age 19-35 months.

In 1999, Snohomish County and Washington State conducted a survey of health behaviors among school age children. The Snohomish County Youth Risk Behavior Survey<sup>5</sup> (YRBS) was administered to 36 schools in seven school districts within the county. A total of 9,922 students in grades 6, 8, 10, and 12 participated in the survey, which represented 33% of all students in those grades enrolled in Snohomish County public schools. Some of the same schools also participated in the Washington State Youth Risk Behavior Survey<sup>6</sup> (WA-YRBS), which was administered to a sample of students throughout the state. The WA-YRBS was administered to a total of 4,022 Snohomish County students in grades 9-12. These surveys did not capture information on youth who drop out of school.

Various questions in YRBS asked about a student's health and safety prevention practices. Students were asked when they last had a checkup with a physician and had visited a dentist. Height and weight information collected during the survey was used to determine if students were overweight. Participants were asked about asthma history, which was determined by whether they had ever been diagnosed with asthma and if they currently had asthma. Participants also reported how often they wore a seatbelt when riding in a car driven by someone else.

Information on children with disabilities and special health care needs was provided in *Washington's Infant Toddler Early Intervention Program Study: December 1, 1999*.<sup>7</sup> Data were gathered from four sources for this report. The first source was from a provider survey that was mailed to early intervention service agencies. Completed surveys were collected from all service providers contacted. Additional sources included the DSHS Division of Developmental Disabilities Common Client Database, the Department of Health Community Family Health Database, and the First Steps Database. Children enrolled in public early intervention programs were described.

## Health & Prevention Data Source Continued

Each year Snohomish Health District surveys health behaviors among county residents. This survey is based on the Behavioral Risk Factor Surveillance System (BRFSS) coordinated by Centers for Disease Control and Prevention (CDC) in collaboration with the Washington State Department of Health (DOH). This is a population-based telephone survey of adults 18 years and older. The 1999 BRFSS, the most recent survey report for Snohomish County, was used in this report. The sample of 800 Snohomish County residents in the 1999 survey provided a margin of error of  $\pm 5\%$  for each sex. Results presented for childhood asthma were not weighted. *Snohomish County Behavioral Risk Factor Surveillance Report, 1999* is available on our Web site: [www.snohd.org/hlthstats](http://www.snohd.org/hlthstats).

DOH evaluated the oral health of 2<sup>nd</sup> and 3<sup>rd</sup> grade children with the *SMILE Survey 2000*.<sup>8</sup> Schools were randomly selected after ordering by the percent of minority enrollment to ensure an adequate number of minority children were represented. A total of 48 schools statewide were selected and agreed to participate. Snohomish County performed an oversample using the same methodology.<sup>9</sup> A total of 12 Snohomish County schools agreed to participate.

The response rate of the *SMILE Survey 2000* was approximately 40% for both the state and Snohomish County samples. A total of 2,699 2<sup>nd</sup> and 3<sup>rd</sup> grade students statewide and 751 Snohomish County students completed the survey. Because both minority and low-income children were oversampled and because there was a relatively low response rate, the results were not representative of all students. Comparisons between overall county and statewide data should be interpreted with caution.



## Immunizations

In 1998, Snohomish County and Washington State achieved 81% immunization coverage for the 4:3:1:3 combined series among children age 19-35 months.<sup>3</sup> That series included completion of four DTP (Diphtheria, Tetanus, Pertussis), three Polio, one MMR (Measles Mumps, Rubella) and three Hib (Haemophilus influenzae type b) doses (Table 1, Appendix). For some specific vaccines, Washington State had greater than 90% completion.<sup>4</sup> Polio was the only vaccination in Snohomish County that reached 90% coverage. Varicella immunization in Washington State was 21%. Information on Varicella coverage in Snohomish County was unavailable.

Healthy People 2000<sup>10</sup> set a goal of 90% of children under age two years to have a complete vaccination series. Healthy People 2010<sup>11</sup> maintained the goal of 90%, but changed the age group to children age 19-35 months. Complete immunizations for a child included the same 4:3:1:3 series, but also included one Varicella and three Hepatitis B vaccinations.



### Key Finding

- ♦ In 1998, 81% of young children had complete immunizations.

## Medical Checkups

The majority of Snohomish County students (55.7%, 95% CI=54.7%, 56.7%) and Washington State students (60.7%) reported having a routine visit to a physician in the year prior to the survey (Table 2, Appendix).<sup>5,6</sup> In Snohomish County, 18.8% (95% CI=18.0%, 19.6%) of students reported a routine visit to a physician more than one year prior to the survey. The proportion was higher (21.6%) for Washington State. Students who had never seen a physician for a routine visit represented 6.7% (95% CI=6.3%, 7.3%) of Snohomish County students and 6.9% of Washington State students.



### Key Finding

- ♦ The majority of students reported visiting a physician for a routine exam within the prior year.



## Oral Health

*Except where noted, all oral health results were from the Smile Survey 2000.*

### DENTAL CHECKUP

From YRBS<sup>5,6</sup> approximately 75% of students in both Snohomish County and Washington State had seen a dentist in the year prior to the survey (Table 3, Appendix). Snohomish County had 14.1% (95% CI=13.4%, 14.8%) of students report it had been greater than one year since visiting a dentist. The proportion was 17.4% among Washington State students. Only 2.3% (95% CI=2.0%, 2.6%) of Snohomish County students and 2.6% of Washington State students reported never having seen a dentist.

### HISTORY OF DENTAL DECAY

Slightly more than half of the 2<sup>nd</sup> and 3<sup>rd</sup> grade students in both Snohomish County (54.9%, 95% CI=49.1%, 60.5%) and Washington State (55.6%) had a history of dental decay in either primary or permanent teeth.<sup>8,9</sup> Healthy People 2010<sup>11</sup> set oral health goals for young children. The target for dental caries experience in primary and permanent teeth was 42% for children age 6-8 years. Both Snohomish County and Washington State were above this target goal.

## Oral Health

### UNTREATED DENTAL DECAY

In Snohomish County 26.2% (95% CI=21.6%, 31.4%) of students had untreated dental decay.<sup>9</sup> Twenty-one percent of Washington State students had untreated dental decay.<sup>8</sup> Healthy People 2010<sup>11</sup> set a target of no more than 21% of children age 6-8 years having untreated dental decay. Snohomish County did not meet this goal, but Washington State did.

### SEALANTS

Among 2<sup>nd</sup> and 3<sup>rd</sup> grade students 58.1% (95% CI=52.6%, 63.4%) in Snohomish County and 47.2% in Washington State had sealants.<sup>8,9</sup> Healthy People 2010<sup>11</sup> set a target goal for 50% of 8-year-old children to have sealants. Snohomish County met this goal, but Washington State was slightly below it.

### DENTAL INSURANCE

In both Snohomish County and Washington State, 85.3% of 2<sup>nd</sup> and 3<sup>rd</sup> grade students had dental insurance.<sup>8,9</sup>



### Key Finding

- ♦ In Snohomish County, 26.2% of students had untreated dental decay.

## Oral Health

### REDUCED FEE & FREE LUNCH PROGRAM (R/F%)

Dental outcomes were examined by whether students were eligible for R/F% as a proxy for income level (see definition of eligibility on page 6).<sup>8,9</sup> A significantly higher proportion of Snohomish County children who were eligible for R/F% had a history of decay in either primary or permanent teeth and untreated decay compared to those children not eligible. Among children eligible for R/F%, 65.8% (95% CI=55.9%, 74.6%) had a history of dental decay and 35.8% (95% CI=28.7%, 43.7%) had untreated dental decay. In children not eligible for R/F%, 54.1% (95% CI=49.1%, 58.9%) had a history of dental decay and 24.0% (95% CI=18.7%, 30.3%) had untreated dental decay. Snohomish County children eligible for R/F% were also significantly less likely to have dental insurance (81.0%, 95% CI=74.0%, 86.5%) compared to those who were not eligible (86.6%, 95% CI=84.3%, 88.7%). There was no significant difference for having sealants by R/F% eligibility (Table 4, Appendix).

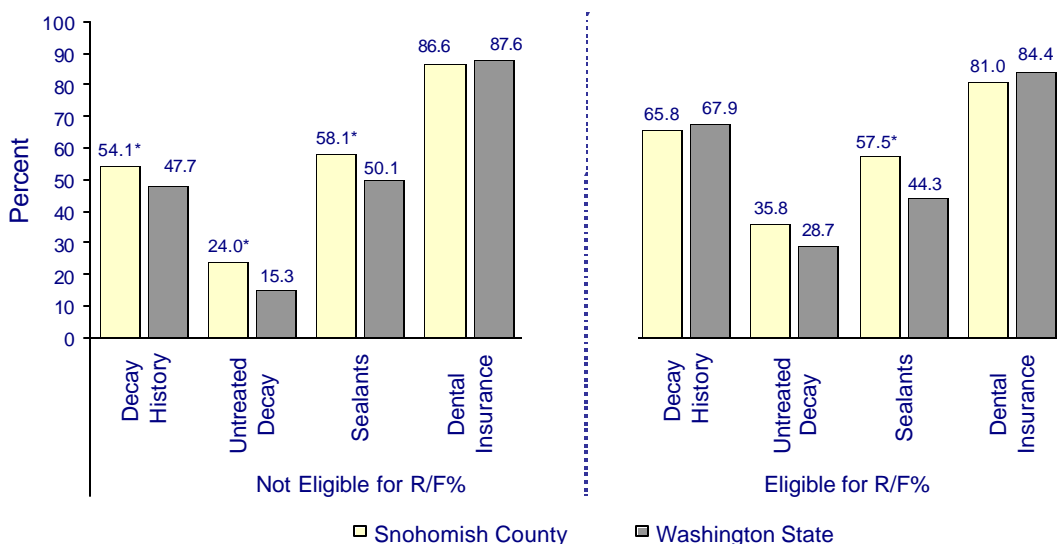


## Oral Health

### REDUCED FEE & FREE LUNCH PROGRAM (R/F%)

Compared to Washington State, Snohomish County children not eligible for R/F% had significantly higher proportions of decay experience in primary or permanent teeth, untreated decay, and having sealants.<sup>8,9</sup> There was no difference in having dental insurance. Among children who were eligible for R/F%, the proportion with sealants was higher in Snohomish County than in Washington State. There was no difference for decay experience in primary or permanent teeth, untreated decay, or having dental insurance (Figure 6; Table 4, Appendix).

Oral Health Status among 2nd and 3rd Grade Students by Eligibility for Reduced Fee & Free Lunch Program (R/F%) Snohomish County & Washington State, 2000



\* Statistically significant difference compared to Washington State  
 Source: Smile Survey, 2000 - May not be representative due to sampling methods and low response rate

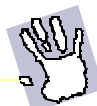
Figure 6

## Oral Health

### OUTCOMES BY RACE/ETHNICITY

Dental outcomes also were examined by race and ethnicity (Table 5, Appendix). In Snohomish County, a significantly higher proportion of White non-Hispanic children had dental insurance (86.6%, 95% CI=84.0%, 88.9%,  $p=0.02$ ) compared to non-White and/or Hispanic children (78.3%, 95% CI=69.9%, 84.8%). There was no significant difference between White non-Hispanic children and non-White and /or Hispanic children for the percent with decay experience in primary or permanent teeth, untreated decay, or having sealants.

Compared to Washington State, Snohomish County White non-Hispanic children had a significantly higher percent of untreated decay and having sealants. Proportions for decay experience in primary or permanent teeth and having dental insurance were not significantly different. Snohomish County non-White and/or Hispanic children had a significantly higher proportion with sealants than did Washington State. There was no significant difference for percent with decay experience in primary or permanent teeth, untreated decay, or having dental insurance.



### Key Finding

- A higher proportion of White, non-Hispanic children had dental insurance.

## Special Health Care Needs & Overweight

### SPECIAL HEALTH CARE NEEDS

Enrollment in public early intervention programs was used to estimate the number of children with disabilities or special health care needs. In 1999, Snohomish County had a total of 721 (or 3.2%) children under the age of three enrolled in a public, early intervention program. In Washington State 2.3% of children were in an early intervention program for a total of 5,557 children. Statewide the number of children enrolled for services increased 37% from the 1993 rate of 1.7%.

### OVERWEIGHT

Using CDC national norms, overweight was defined as being in the top 15<sup>th</sup> percentile nationally for body mass index (BMI) based on age and sex. BMI was defined as kilograms of weight divided by meters of height squared. Based on the 1999 YRBS, 20% (n=1,750) of Snohomish County students and 21% (n=778) of Washington State students were found to be overweight using the 1991 national norms for weight. Overweight students varied by sex. In Snohomish County, 14% (n=599) of females and 25% (n=1146) of males were overweight. Washington State had 17% (n=294) of females and 24% (n=471) of males in the top 15<sup>th</sup> percentile.



#### Key Finding

- ♦ In 1999, one in five students was overweight.



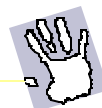
## Physical Activities & Weight Loss

### PHYSICAL ACTIVITIES

Among Snohomish County students who participated in the 1999 YRBS, 42.3% reported they were trying to lose weight. The proportion was similar for each grade. Of those who were overweight, 63.7% reported they were trying to lose weight (95% CI= 61.4%, 66.0%) and 35.7% (95% CI= 34.5%, 36.8%) of students who were not overweight were trying to lose weight (Table 6, Appendix). Even though a higher proportion of overweight students were trying to lose weight, they were not more physically active. There was no significant difference between overweight students and those who were not overweight in the number of days per week where they aerobically exercised 20 or more minutes. Nearly two-thirds of all students exercised four or more days per week (Figure 7).

### WEIGHT LOSS MEASURES

Of high school students in Snohomish County in the 30 days prior to the survey, 8.9% ate less, 22.1% exercised, and 31.0% both ate less and exercised in order to lose or keep from gaining weight.<sup>5</sup> Other methods for weight loss or to keep from gaining weight were fasting (5.9%), taking pills (3.8%), and vomiting (2.0%). An additional 5.4% of students used two or all of the three prior methods.



#### Key Finding

- ◆ Nearly two-thirds of all students exercised four or more days per week.

Physical Activity\* by Weight Status  
among 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> Grade Students  
Snohomish County, 1999

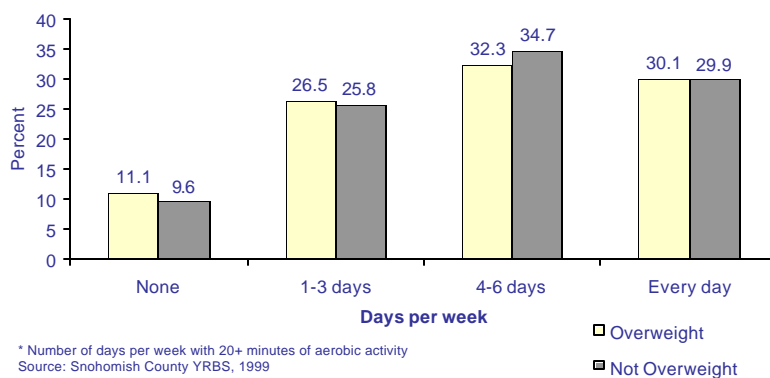
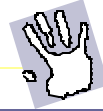


Figure 7

## Asthma

According to the 1999 Youth Risk Behavior Survey, 16% (95% CI=15.5%, 17.0%) of Snohomish County students and 21% of Washington State students reported they had ever been diagnosed with asthma. Current asthma (having an asthma attack or using asthma medication in the year prior to the survey) was reported by 13% (95% CI= 12.7%, 14.1%) of Snohomish County students and 15% of Washington State students. There was no difference in those reporting current asthma by grade in either Snohomish County or Washington State. There was also no difference in Snohomish County by sex. However, Washington State female students were more likely to report current asthma than males (17.4% and 12.2%, respectively).

In 1999, asthma was the fifth leading cause of hospitalization among children age 1-17 years in both Snohomish County and Washington State. Males had a significantly higher rate of hospitalization for asthma than females. (See Hospitalizations pp. 31-32)



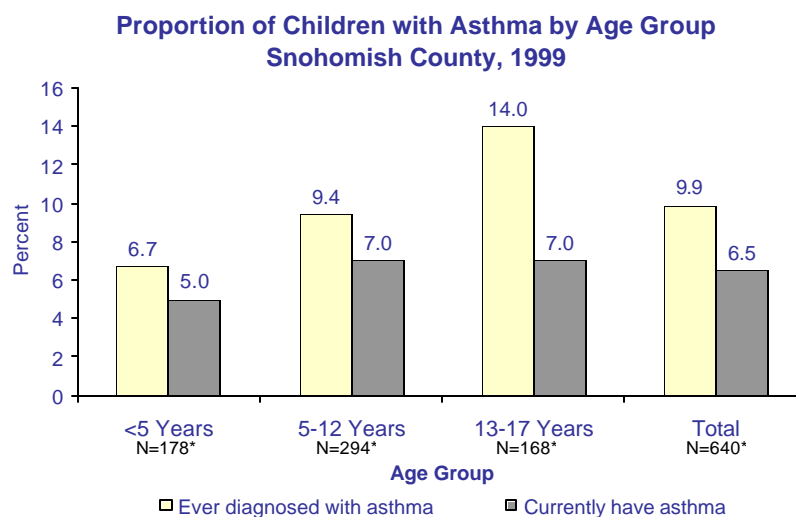
### Key Finding

- ◆ Sixteen percent of Snohomish County students and 21% of Washington State students reported being diagnosed with asthma.



## Asthma

Adults surveyed during the 1999 Behavioral Risk Factor Survey were asked if children living in the home had been diagnosed with asthma and if they still had asthma. Results were reported for the proportion of children identified, not the proportion of households. A household may have had more than one child included in these survey questions. In Snohomish County, 9.9% of children had been told they had asthma and 6.5% of children still had asthma. The proportion of children who had been told they had asthma increased with age (Figure 8). The proportion of children age 13-17 years diagnosed with asthma was double that of children less than age 5 years. Washington State had similar findings.



Source: BRFSS, 1999

**Figure 8**

## Seatbelt Use

As a passenger in a vehicle, 79.1% (95% CI=77.7%, 80.3%) of Snohomish County high school students reported wearing a seatbelt most or all of the time in 1999. Washington State students reported that 77.7% used a seatbelt most or all of the time. Female students more often reported using a seatbelt most or all of the time compared to males in both Snohomish County (82.5% of females, 75.7% of males) and Washington State (82.1% of females, 74.0% of males). In 1999, almost 4% of students in both Snohomish County and Washington State reported never wearing a seatbelt.



### Key Finding

- ♦ Approximately 80% of students in 1999 reported wearing a seatbelt most or all of the time.



## Tobacco & Alcohol Use Data Source

The Snohomish County and Washington State YRBS (see Health and Prevention pp. 10) asked participants about cigarette and alcohol use.<sup>5,6</sup> Tobacco use was defined as having smoked a cigarette within the 30 days preceding the survey. Alcohol use was identified as using any alcohol within the month prior to the survey. Binge drinking was defined as five or more drinks within a span of a few hours at anytime in the 30 days before the survey.



## Tobacco Use

Snohomish County had a higher percent of students in grades 10 and 12 (28.7% and 39.6%) who had smoked cigarettes in the last 30 days than did Washington State (25.0% and 35.2%) (Figure 9; Table 7, Appendix).<sup>5,6</sup> The proportion of students who smoked a cigarette in the last 30 days increased as the students advanced grades.

Among 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades combined, 20.9% of Snohomish County adolescents had smoked a cigarette in the last 30 days. Between 1993-1999 each grade saw an increase in the rate of student smoking (Figure 10).<sup>5</sup> Healthy People 2010<sup>11</sup> set a goal to reduce adolescent cigarette smoking among those in 9<sup>th</sup> – 12<sup>th</sup> grade to 16%. Thus, not only are the rates in Snohomish County youth higher than the Healthy People 2010<sup>11</sup> target, they also include a slightly younger survey population and are continuing to increase.

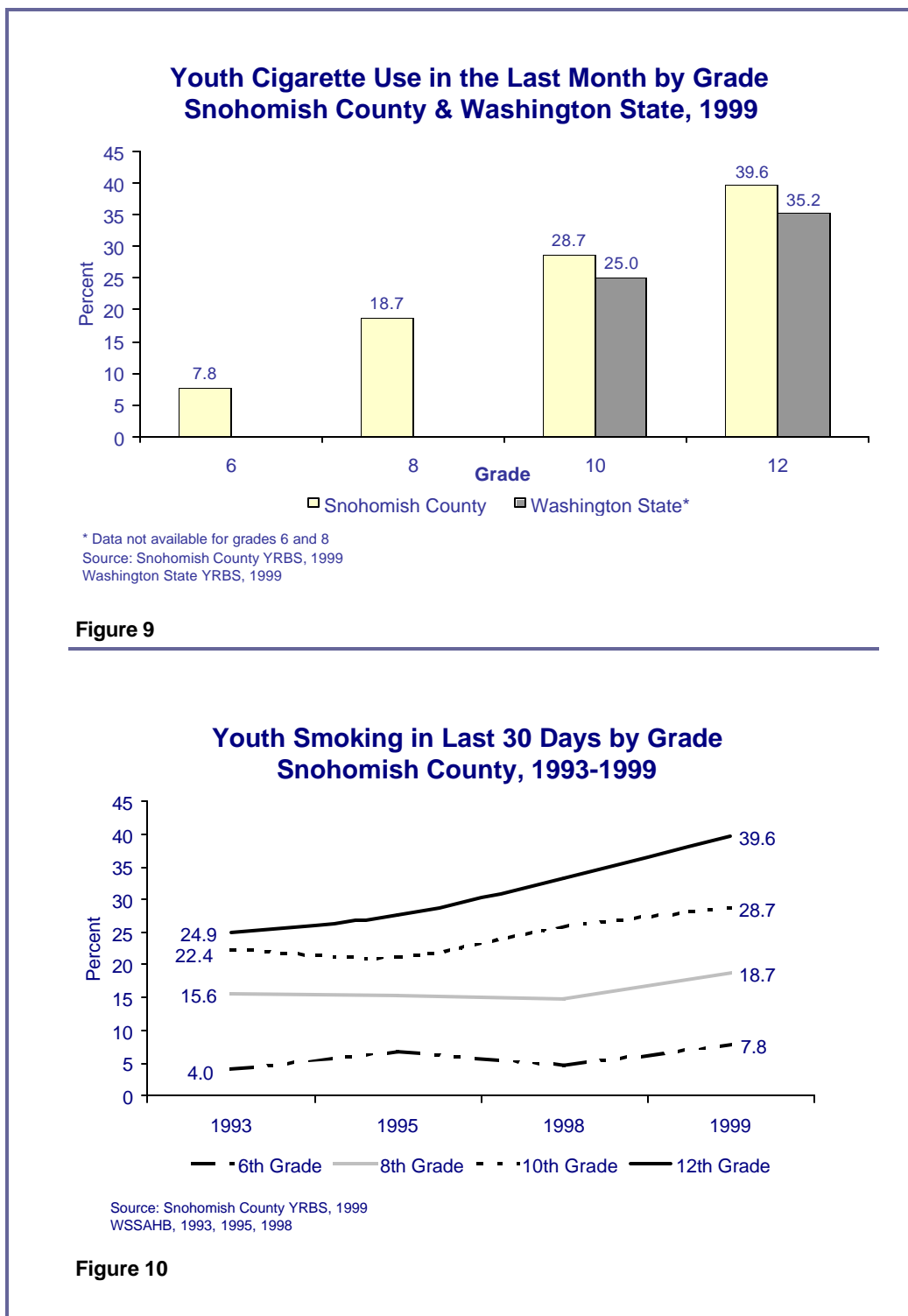


### Key Finding

- ◆ Snohomish County had a higher percent of students who smoked in the past 30 days than Washington State.
- ◆ Between 1993 and 1999, Snohomish County experienced an increase in the rate of student smoking.

## Tobacco Use

# Tobacco & Alcohol Use

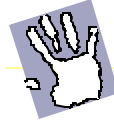


## Alcohol Use

Thirty-two percent (95% CI= 31.2%, 33.0%) of all Snohomish County students and 44% of Washington State students had at least one alcoholic drink in the 30 days prior to the survey.<sup>5,6</sup> In both Snohomish County and Washington State 10<sup>th</sup> graders, 45% drank alcohol in the prior month (Figure 11). By 12<sup>th</sup> grade the percent increased to 57% (95% CI= 53.9%, 59.4%) in Snohomish County and 49% in Washington (Table 8, Appendix).

Healthy People 2000<sup>10</sup> set a target of 12.6% for adolescents age 12-17 to have used alcohol in the last month. Healthy People 2010<sup>11</sup> combined alcohol and illicit drugs in their target of 21% of adolescents age 12-17 years having used either substance. Both Snohomish County and Washington State were higher than these target goals.

Binge drinking was considered five or more drinks within a couple of hours.<sup>5,6</sup> In Snohomish County, 23% of 6<sup>th</sup> and 8<sup>th</sup> grade students and 37% of 10<sup>th</sup> and 12<sup>th</sup> grade students reported binge drinking in the month preceding the survey. Among Washington State 10<sup>th</sup> and 12<sup>th</sup> grade students, 29.7% reported binge drinking (Figure 12; Table 8, Appendix).



### Key Finding

- ♦ Fifty-seven percent of 12<sup>th</sup> grade students drank alcohol in the past 30 days.
- ♦ In Snohomish County, 37% of 10<sup>th</sup> and 12<sup>th</sup> grade students reported binge drinking in the past 30 days.

## Alcohol Use

# Tobacco & Alcohol Use

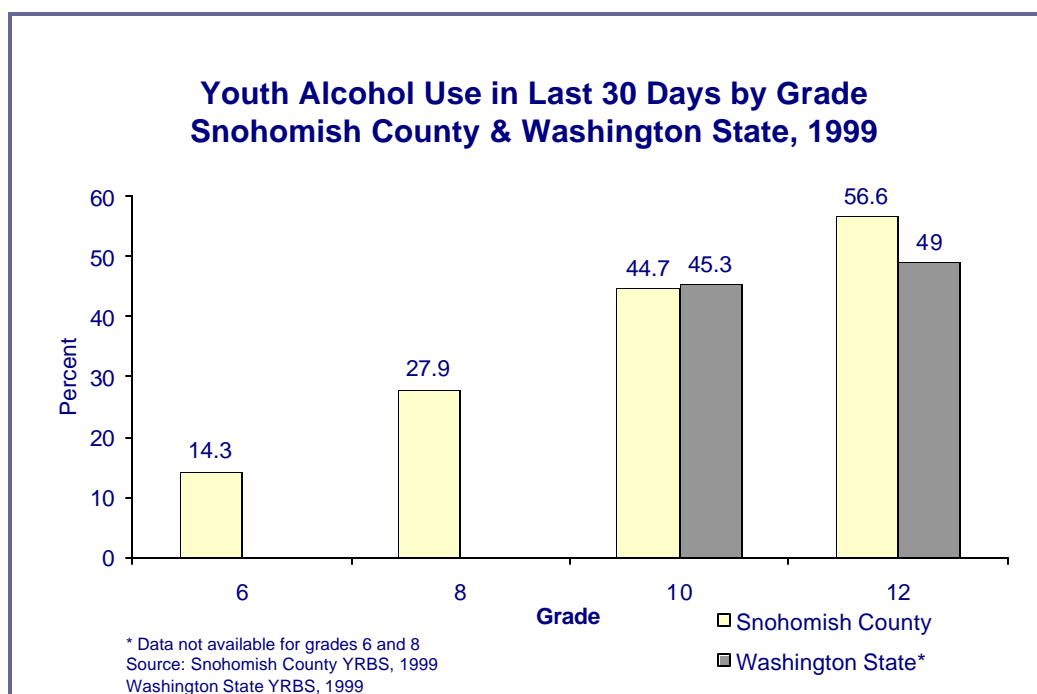


Figure 11

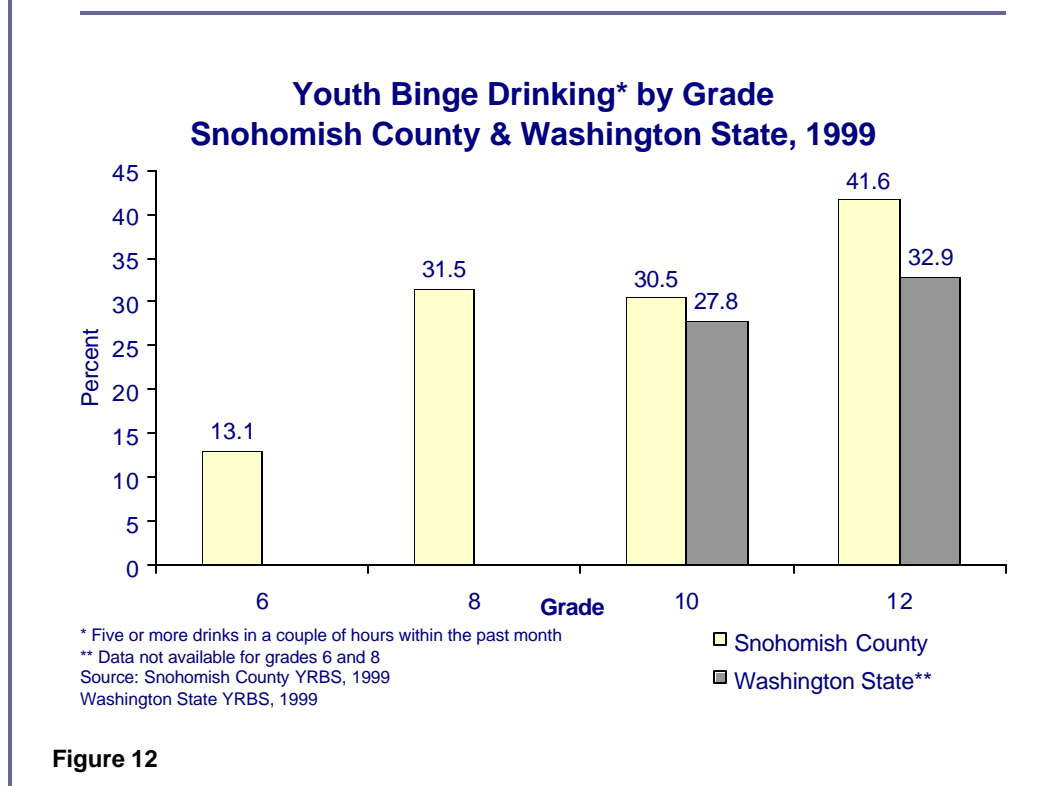


Figure 12

# Hospitalizations

## Hospitalizations Data Source

Counts of hospitalizations and underlying causes of the hospitalization were collected in the Comprehensive Hospital Abstract Reporting System (CHARS). This database provided information about the disposition of inpatients.



## Hospitalizations

In 1999, for all children age 1-17 years there were no differences between Snohomish County and Washington State hospitalization rates. However, Washington State children age 10-17 years had a higher rate of hospitalization (2051.0 per 100,000) than did Snohomish County (1927.1 per 100,000, 95% CI=1827.8, 2030.5) (Table 9, Appendix). For children age 1-9 years the rates were similar in Snohomish County and Washington State. The rate of hospitalization was 15-20% higher for children age 10-17 years than for 1-9 year olds in both Snohomish County and Washington State ( $p < 0.001$ ).

The hospitalization rate among female children age 1-17 years was significantly lower in Snohomish County (1836.3 per 100,000, 95% CI=1741.5, 1935.1) than the statewide rate (1975.2 per 100,000) (Table 10, Appendix). There was no significant difference in the hospitalization rate between male children age 1-17 years of Snohomish County compared to those in Washington State. There was also no significant difference between hospitalization rates of male children compared to female children within Snohomish County. In Washington State, however, male children were 14% less likely to be hospitalized than female children ( $p < 0.05$ ).



### Key Finding

- ◆ Child hospitalization rates declined significantly between 1990-1999.
- ◆ The rate of hospitalization was 15-20% higher for children age 10-17 years than for 1-9 year olds.

# Hospitalizations

## Hospitalizations

Ten-year trend analyses (1990-1999) of hospitalization rates among children for all ages (1-17 years) and for the individual age groups of 1-9, and 10-17 years were done. There were significant ( $p < 0.001$ ) declines in child hospitalization rates in both Snohomish County and Washington State among all age groups (Figures 13 and 14). Among Snohomish County children age 1-9 years, the hospitalization rate fluctuated and only showed a significant decrease when all 10 years were incorporated. Statewide, the decline among children age 1-9 years occurred from 1990-1994 with no significant change from 1995-1999.

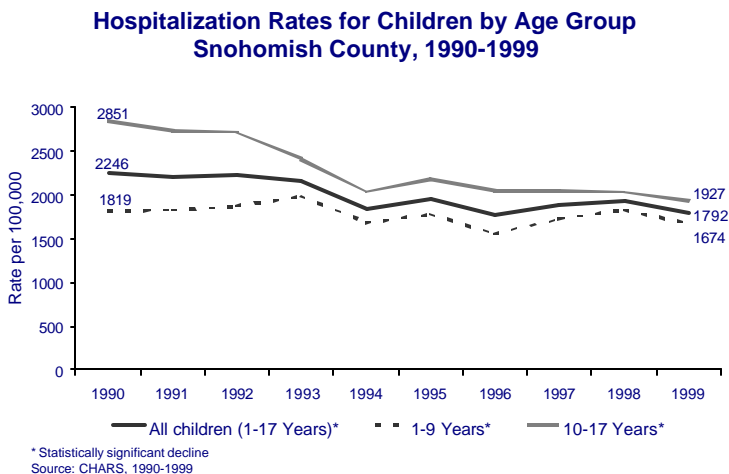


Figure 13

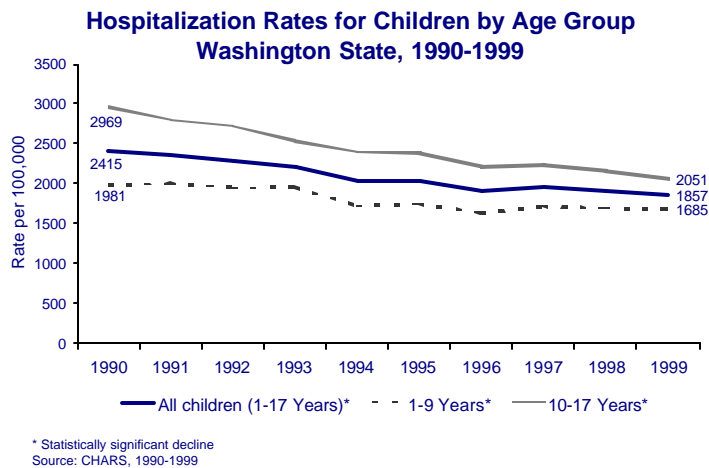


Figure 14

## Leading Causes

In 1999, the top five causes of hospitalization among children age 1-17 years for both Snohomish County and Washington State were adolescent women giving birth, unintentional injury, respiratory disease, digestive disorders, and asthma (Figure 15). The rate of hospitalization for respiratory disease does not include hospitalizations for asthma. If asthma, however, were included with other respiratory diseases, respiratory disease was the second leading cause of hospitalization. For all children age 1-17 years, Snohomish County had significantly lower rates of young women giving birth, digestive disorders, and respiratory disease than Washington State (Table 9, Appendix).

Young women age 10-17 years hospitalized for childbirth represented a small proportion of women age 10-44 years who gave birth. In Snohomish County, 2.8% (95% CI=2.5%, 3.2%) of childbirth hospitalizations were for young women age 10-17 years compared to 3.8% statewide. The majority of young women giving birth (95%) were age 15-17 years in both Snohomish County and Washington State.

Causes of hospitalizations among Snohomish County children varied by age and sex (Tables 9 and 10, Appendix). Male children had significantly higher rates of hospitalization than did female children for asthma and unintentional injury. Generally, the leading conditions requiring hospitalization varied for children by each age group. Washington State showed a similar pattern.



### Key Finding

- ♦ The top causes of hospitalization were adolescent women giving birth and unintentional injury.

### Leading Causes

Compared to Washington State, Snohomish County had significantly lower hospitalization rates for several of the leading causes of hospitalization when examined by sex and age group (Tables 9 and 10, Appendix). Males had lower rates of respiratory disease and digestive disorders, while females had lower childbirth rates. Children age 1-9 years in Snohomish County had lower rates of respiratory disease, influenza, and digestive disorders than those in Washington State. Children age 10-17 years had lower rates of childbirth and pregnancy complications.

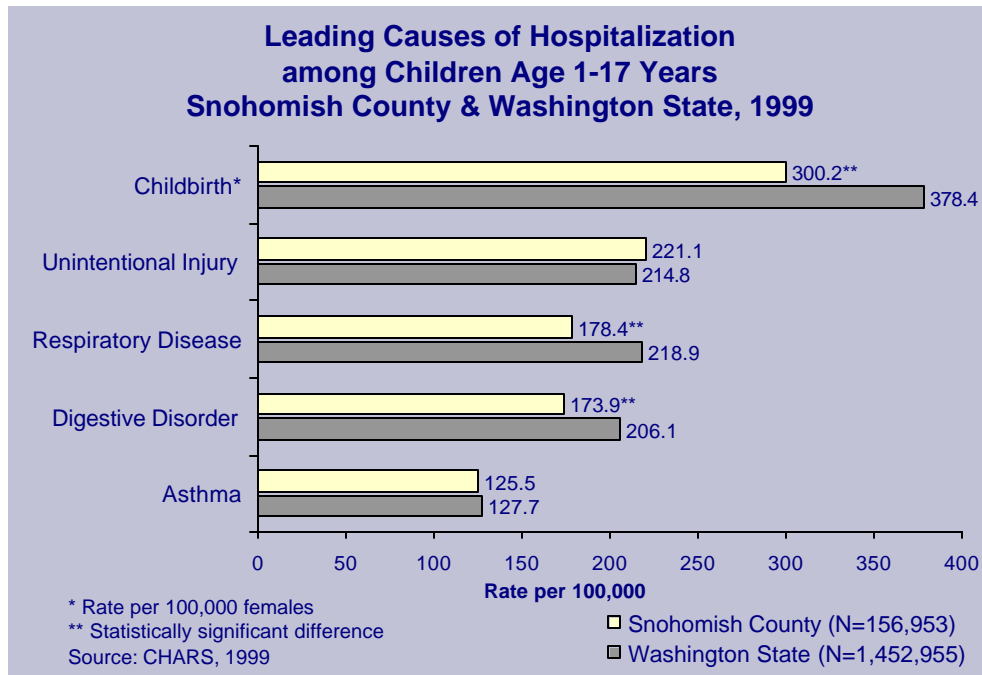


Figure 15

## Mortality Data Source

Death counts were obtained from the Washington Department of Health, Center for Health Statistics. Death certificates were used to count deaths and their causes.

In 1999, International Classification of Diseases (ICD) codes used to classify causes of death changed from ICD-9 to ICD-10. Comparability ratios were applied to convert ICD-10 1999 causes of death to ICD-9. The adjustment made a minimal difference and the order of leading causes of death was not affected.

# Mortality

## Mortality

The 1999 death rate of children age 1-17 years was 17.9 per 100,000 (95% CI=11.9, 25.9) in Snohomish County and 24.3 per 100,000 in Washington State. Although Snohomish County had a lower death rate than Washington State, the difference was not statistically significant.

There was a statistically significant ( $p < 0.05$ ) decreasing trend in the death rate of children age 1-17 years in both Snohomish County and Washington State between 1990-1999 (Figure 16). When examined by age and sex, there was a significant decrease in all Snohomish County children age 10-17 years, males age 10-17 years, and all female children (Figures 17 and 18). Male children in Snohomish County were three and a half times more likely to die than females. Male children in Washington State were nearly twice as likely to die than females. During 1999, males accounted for 78.6% (N=28) of child deaths in Snohomish County and 66.6% (N=350) in Washington State (Tables 11 and 12, Appendix). The death rate in 1-17 year old males in Snohomish County was 27.4 per 100,000 (95% CI=17.2, 41.6), while the rate in females was 7.9 per 100,000 (95% CI=2.9, 17.0) (Table 11, Appendix). Washington State males 1-17 years old had a death rate of 31.5 per 100,000, while the female rate was 16.7 per 100,000. The male and female death rates were not significantly different between Snohomish County and Washington State.



### Key Finding

- ◆ Male children were more likely to die than female children.

Death Rate of Children Age 1-17 Years  
Snohomish County & Washington State, 1990-1999

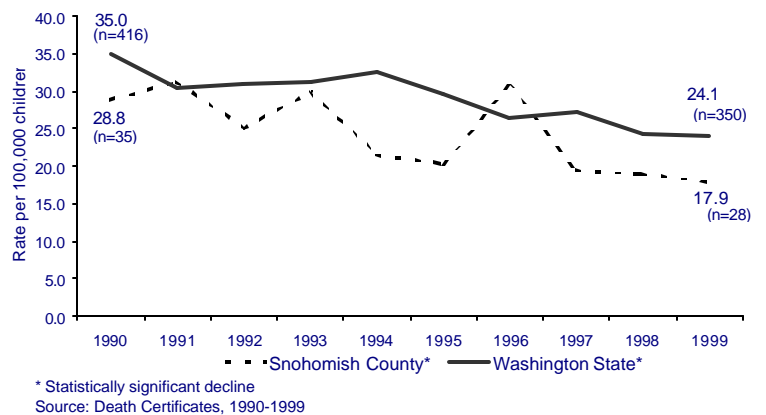


Figure 16

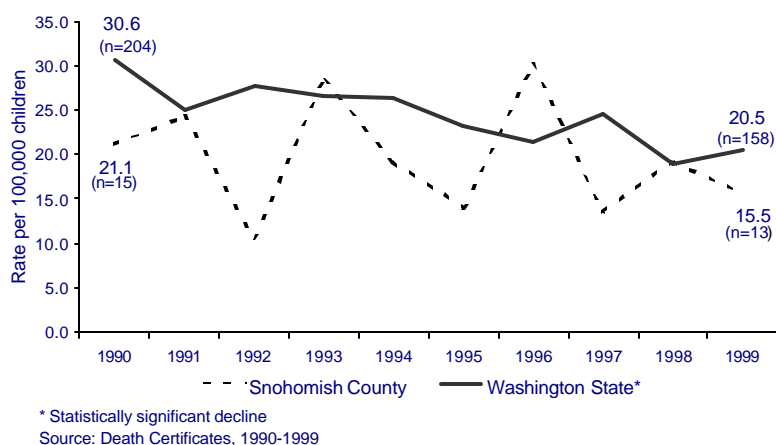
## Mortality by Age Group

The death rate for children age 1-9 years in 1999 was 15.6 per 100,000 (95% CI=8.3, 26.6) in Snohomish County and 21.0 per 100,000 in Washington State (Tables 11 and 13, Appendix). This difference was not statistically significant. There was no significant difference in the death rates of 1-9 years old children compared to those age 10-17 years in either Snohomish County or Washington State. Neither Snohomish County nor Washington State meet the Healthy People 2010<sup>11</sup> target goal of no more than 15.5 deaths per 100,000 for children age 1-9 years.

The 1999 death rate of children age 10-17 years was 20.6 per 100,000 (95% CI=11.5, 33.8) in Snohomish County and 28.0 per 100,000 in Washington (Tables 11 and 13, Appendix). This difference was not statistically significant. Healthy People 2010<sup>11</sup> set a target goal for child death as 28.3 per 100,000 for children age 10-19 years. Both Snohomish County and Washington State were below the Healthy People 2010<sup>11</sup> goal, but the Healthy People 2010 goal included 18- and 19-year-olds. Snohomish County and statewide statistics were reported for children younger than 18 years old.

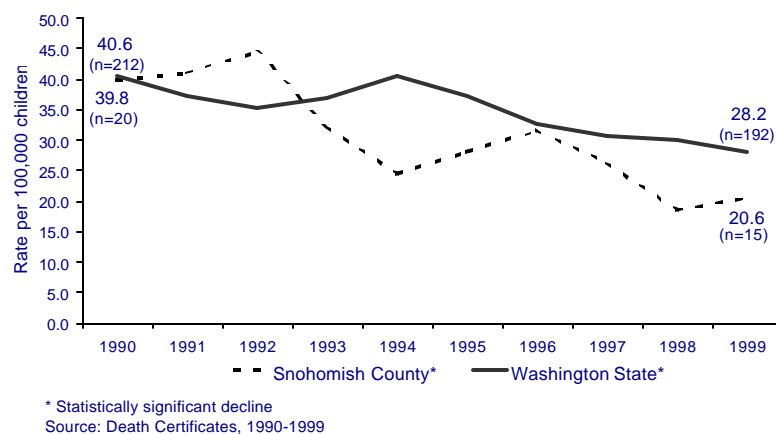
The 1999 death rate for 1-14 year-olds in Snohomish County was 10.8 per 100,000 (95% CI=5.9, 18.1) and 19.8 per 100,000 in Washington State. Snohomish County had a statistically significant lower death rate than Washington State. Both Snohomish County and Washington State achieved the Healthy People 2000<sup>10</sup> target of 28 deaths per 100,000 children age 1-14 years.

**Death Rate of Children Age 1-9 Years  
Snohomish County & Washington State, 1990-1999**



**Figure 17**

**Death Rate of Children Age 10-17 Years  
Snohomish County & Washington State, 1990-1999**



**Figure 18**

## Mortality by Race/Ethnicity

White children in Snohomish County had a death rate of 16.3 per 100,000 (95% CI=10.3, 24.4) and Asian/Pacific Islander children had a rate of 54.3 per 100,000 (95% CI=17.6, 124.8) (Table 14, Appendix). Although the numbers were small, Asian/Pacific Islander children were more likely to die compared to White children ( $p<0.05$ ). Snohomish County had no deaths in 1999 among the 2,753 Black, 3,041 Native American, and 6,690 Hispanic children age 1-17 years. The groups with a zero mortality rate showed no significant difference from the White rate when the upper bound of the 95% confidence interval was calculated.

In 1999 among Washington State children age 1-17 years, Native Americans had the lowest death rate at 19.1 per 100,000 and Blacks had the highest at 37.0 per 100,000 (Table 15, Appendix). Black and Hispanic children were each about 1.5 times more likely to die ( $p<0.05$ ) than White children. There was no significant difference between White children and either Native American or Asian/Pacific Islander children.



### Key Finding

- ◆ In Snohomish County, Asian/Pacific Islander children were more likely to die than White children.
- ◆ Statewide, Black and Hispanic children were each nearly 1.5 times more likely to die than White children.

## Leading Causes

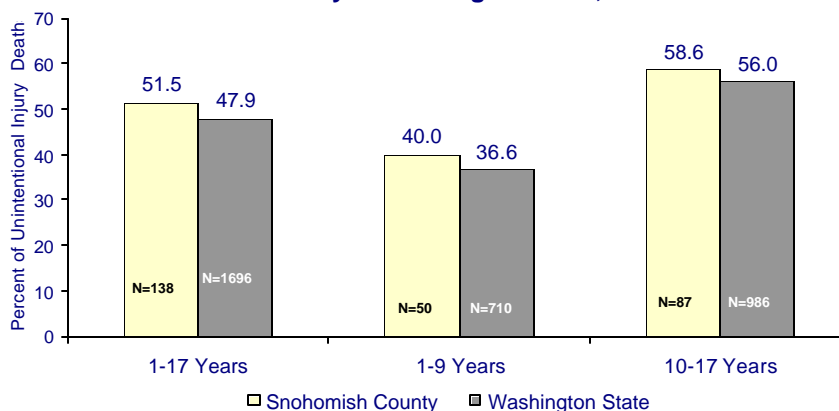
In 1999, the leading cause of death for children age 1-17 years for both Snohomish County and Washington State was unintentional injuries (Tables 11 and 13, Appendix). However, because the number of deaths were too few in 1999 to do reliable analysis in Snohomish County, child deaths from 1990-1999 were combined (Table 16, Appendix). In both Snohomish County and Washington State approximately 50% of unintentional injury deaths among 1-17 year old children were due to motor vehicle crashes (Figure 19). A higher proportion of 10-17 year old unintentional injury deaths were attributed to motor vehicle crashes in both Snohomish County (58.6%) and Washington State (56.0%) compared to 1-9 year-old children (40.0% and 36.6%, respectively). Unspecified non-transport injuries and drowning were the next leading causes of unintentional injury deaths among children regardless of age group.



### Key Finding

- ◆ The leading cause of death was unintentional injuries.
- ◆ Approximately 50% of unintentional injury deaths were due to motor vehicle crashes.

**Deaths Due to Motor Vehicle Crash Injuries among Children by Age Group Snohomish County & Washington State, 1990-1999**



Source: Death Certificates, 1990-1999

**Figure 19**

## Leading Causes

After unintentional injury, the leading causes of child deaths in Snohomish County were cancer, homicide, congenital malformations, and suicide for children age 1-17 years (Figure 20). The order of the cause of death varied by age group. For children age 1-9 years, it was cancer, congenital malformations, homicide, and cardiovascular disease. For those age 10-17 years the order was suicide, homicide, cancer, and cardiovascular disease. Analysis by race was not done because the numbers were too small.

In Washington State cancer was the second leading cause of death for all children, children 1-9 years, for males and females, and for Whites and Asian/Pacific Islanders. Suicide was the second leading cause of death for 10-17 year olds. Homicide was second for Blacks and Hispanics in Washington State (Tables 15, Appendix).



### Key Finding

Among youth age 10-17 years, suicide was the leading cause of death in Snohomish County and the 2<sup>nd</sup> leading cause of death statewide.

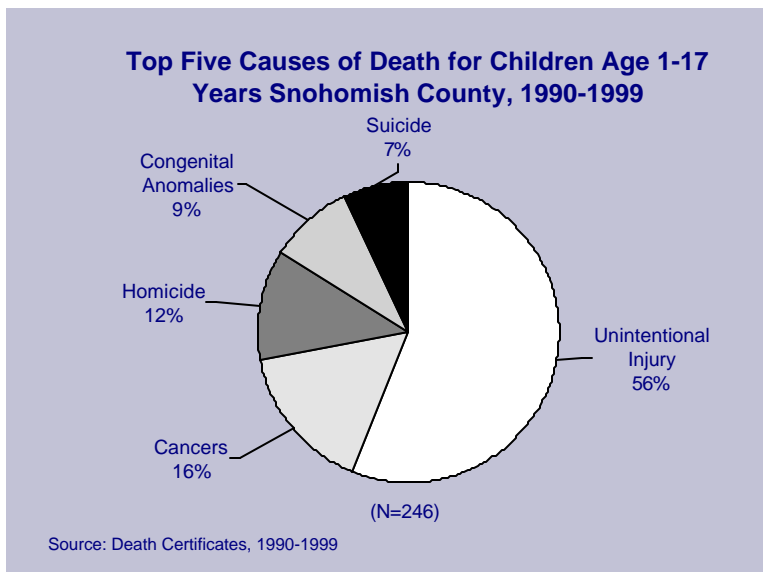


Figure 20

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# Appendix

# Appendix

**Table 1. Immunization Coverage of Children Age 19-35 Months, Snohomish County and Washington State, 1998**

# of Doses and Vaccine	Snohomish County		Washington State
	% Completed	95% CI †	% Completed
4 DTP	86	81, 90	84
3 OPV	90	86, 93	92
1 MMR	88	84, 92	90
3 Hib	88	85, 92	95
3 Hepatitis B	84	79, 89	81
1 Varicella	*		21
4:3:1:3‡ combined series	81	76, 86	81

\* Data unavailable

† 95% Confidence Interval

‡ 4 DTP, 3 OPV, 1 MMR, and 3 Hib

Sources: Snohomish Health District, *Local Health Jurisdiction Immunization Assessment Capacity Building Project*, January 1999.

Herrera G.A. et al., *National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19-35 Months – United States, 1998*, MMWR, Sep. 22, 2000, Vol.49, No.SS-9.

**Table 2. Last Physician Checkup by Grade, Snohomish County and Washington State, 1999**

School Grade	Snohomish County					Washington State				
	N	<12 mo	≥12 mo	Never	Unsure	N	<12 mo	≥12 mo	Never	Unsure
6	2,750	50.1%	12.4%	4.9%	32.5%	*				
8	3,071	58.3%	18.2%	6.1%	17.5%	*				
9	*					1,059	61.4%	19.1%	6.3%	13.2%
10	2,418	57.9%	24.1%	8.3%	9.8%	926	63.2%	20.8%	6.2%	9.8%
11	*					871	58.1%	23.7%	7.9%	10.2%
12	1,265	57.3%	24.2%	9.2%	9.3%	577	59.3%	25.5%	7.5%	7.8%
Total	5,295	55.7%	18.8%	6.7%	18.8%	3,506	60.7%	21.3%	6.9%	10.7%

\* Grade not surveyed

Sources: 1999 Snohomish County YRBS, 1999 Washington State YRBS

**Table 3. Last Checkup With a Dentist by Grade, Snohomish County and Washington State, 1999**

School Grade	Snohomish County					Washington State				
	N	<12 mo	≥12 mo	Never	Unsure	N	<12 mo	≥12 mo	Never	Unsure
6	2,726	70.2%	10.1%	1.9%	17.7%	*				
8	3,034	75.8%	13.7%	2.0%	8.5%	*				
9	*					1,145	75.3%	16.0%	2.3%	6.5%
10	2,425	76.2%	16.7%	2.8%	4.3%	1,074	76.0%	17.9%	2.2%	3.9%
11	*					987	76.7%	15.6%	3.1%	4.6%
12	1,264	75.4%	18.4%	2.6%	3.6%	626	72.7%	22.0%	2.9%	2.4%
Total	7,015	74.2%	14.1%	2.3%	9.4%	3,915	75.3%	17.4%	2.6%	4.7%

\* Grade not surveyed

Sources: 1999 Snohomish County YRBS, 1999 Washington State YRBS

**Table 4. Oral Health Status for 2<sup>nd</sup> and 3<sup>rd</sup> Grade Children by Eligibility for Reduced Fee & Free Lunch Program, Snohomish County and Washington State, 2000**

Oral Health Status	Snohomish County		Washington State	
	Not Eligible (N=529) % (95% CI)*	Eligible (N=131) % (95% CI)*	Not Eligible (N=1,322) % (95% CI)*	Eligible (N=764) % (95% CI)*
History of Decay in Primary or Permanent Teeth	54.1 (49.1, 58.9)	65.8 (55.9, 74.6)	47.7 (45.0, 50.4)	67.9 (64.6, 71.2)
Untreated Decay	24.0 (18.7, 30.3)	35.8 (28.7, 43.7)	15.3 (14.4, 16.2)	28.7 (25.5, 31.9)
Sealants	58.1 (51.5, 64.4)	57.5 (51.5, 63.3)	50.1 (47.0, 52.8)	44.3 (40.8, 47.8)
Dental Insurance	86.6 (84.3, 88.7)	81.0 (74.0, 86.5)	87.6 (85.9, 89.2)	84.4 (81.8, 86.9)

\* 95% Confidence Interval

Source: *Smile Survey 2000* (may not be representative due to sampling method and low response rate)

**Table 5. Oral Health Status for 2<sup>nd</sup> and 3<sup>rd</sup> Grade Children by Race and Ethnicity, Snohomish County and Washington State, 2000**

Oral Health Status	Snohomish County		Washington State	
	White non-Hispanic (N=679) % (95% CI)*	Non-White and/or Hispanic (N=158) % (95% CI)*	White non-Hispanic (N=1,901) % (95% CI)*	Non-White and/or Hispanic (N=726) % (95% CI)*
History of Decay in Primary or Permanent Teeth	53.0 (47.0, 58.8)	62.0 (50.8, 72.0)	51.6 (49.4, 53.9)	65.4 (61.9, 68.8)
Untreated Decay	25.2 (19.6, 31.8)	31.0 (21.7, 42.2)	17.6 (15.9, 19.3)	29.1 (25.7, 32.3)
Sealants	58.3 (52.3, 64.1)	57.0 (45.5, 67.8)	49.4 (47.2, 51.7)	42.0 (38.4, 45.6)
Dental Insurance	86.6 (84.0, 88.9)	78.3 (69.9, 84.8)	86.1 (84.6, 87.6)	82.5 (79.7, 85.2)

\* 95% Confidence Interval

Source: *Smile Survey 2000* (may not be representative due to sampling method and low response rate)

**Table 6. Weight Loss Intention and Physical Inactivity by Grade and Overweight Status among 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> Grade Students, Snohomish County, 1999**

Grade	Overweight Students						Not-Overweight Students			
	Trying to Lose Weight			No Exercise			Trying to Lose Weight		No Exercise	
	N	%	95% CI*	N	%	95% CI*	N	%	N	%
6	524	60.7	54.4, 64.9	517	8.9	6.5, 11.7	1,866	31.6	1,862	8.2
8	527	66.0	61.8, 70.1	525	8.4	6.2, 11.1	2,254	36.3	2,241	6.3
10	435	63.2	58.5, 67.8	435	13.6	10.5, 17.1	1,888	37.6	1,880	11.3
12	215	66.5	59.8, 72.8	212	17.9	13.0, 23.8	1,004	38.2	996	16.9
Total	1,701	63.7	61.4, 66.0	1,689	11.1	9.6, 12.7	7,012	35.7	6,979	9.6

\* 95% Confidence Interval

Source: 1999 Snohomish County YRBS

**Table 7. Tobacco Use by Grade, Snohomish County and Washington State, 1999**

Snohomish County			Washington State	
Grade	N	% Smoked Cigarette in Last 30 Days	N	% Smoked Cigarette in Last 30 Days
6	2,675	7.8	*	
8	3,020	18.7	*	
9	*		1,111	25.7
10	2,475	28.7	1,049	25.0
11	*		969	28.9
12	1,276	39.6	619	35.2

\* Data not collected for these grades

Sources: 1999 Snohomish County YRBS, 1999 Washington State YRBS

**Table 8. Alcohol Use by Grade, Snohomish County and Washington State, 1999**

Snohomish County					Washington State			
Grade	N	% Drank Alcohol in Last 30 Days	N	% Binge Drinking <sup>†</sup>	N	% Drank Alcohol in Last 30 Days	N	% Binge Drinking <sup>†</sup>
6	2,748	14.3	2,807	13.1	*		*	
8	3,094	27.9	3,115	31.5	*		*	
9	*		*		1,111	39.1	1,151	24.4
10	2,448	44.7	2,511	30.5	1,056	45.3	1,085	27.8
11	*		*		979	44.9	998	29.3
12	1,266	56.6	3,801	41.6	616	49.0	629	32.9

\* Data not collected for these grades

† Having 5 or more drinks in a couple of hours during the past month

Sources: 1999 Snohomish County YRBS, 1999 Washington State YRBS

**Table 9. Leading Causes of Hospitalization among Children by Age Group, Snohomish County and Washington State, 1999\***

Snohomish County					Washington State	
Age Group	Cause of Hospitalization	Rate per 100,000	95% CI †	Number of hospitalizations	Cause of Hospitalization	Rate per 100,000
<b>1-17 years</b>	Total (N=156,953)	1,791.6	1726.0, 1859.1	2,812	Total (N=1,452,955)	1,856.6
	Childbirth	300.2	262.6, 341.7	229	Childbirth	378.4
	Unintentional Injury	221.1	198.5, 245.6	347	Respiratory Disease‡	218.9
	Respiratory Disease‡	178.4	158.7, 201.3	281	Unintentional Injury	214.8
	Digestive Disorder	173.9	153.9, 195.8	273	Digestive Disorder	206.1
	Asthma	125.5	108.6, 144.3	197	Asthma	127.7
1-9 years	Total (N=83,942)	1,673.8	1587.4, 1763.7	1,405	Total (N=771,131)	1,684.7
	Respiratory Disease‡	282.3	247.6, 320.6	237	Respiratory Disease‡	345.6
	Asthma	183.5	155.7, 214.8	154	Asthma	185.5
	Unintentional Injury	159.6	133.8, 189.0	134	Unintentional Injury	182.1
	Pneumonia/Influenza	141.8	117.5, 169.6	119	Pneumonia/Influenza	178.8
	Digestive Disorder	139.4	115.3, 167.0	117	Digestive Disorder	172.5
10-17 years	Total (N=73,011)	1,927.1	1827.8, 2030.5	1,407	Total (N=671,697)	2,051.0
	Childbirth	644.7	564.0, 733.8	229	Childbirth	807.1
	Unintentional Injury	291.7	253.9, 333.7	213	Unintentional Injury	251.8
	Digestive Disorder	213.7	181.5, 249.9	156	Digestive Disorder	244.1
	Psychoses	172.6	143.8, 205.4	126	Pregnancy complications	210.3
	Depression	152.0	125.1, 183.1	111	Psychoses	172.6

\* Denominator determined using 1990 US Census

† 95% Confidence Interval

‡ Excludes asthma

Source: Comprehensive Hospital Abstract Reporting System: Washington State Department of Health

**Table 10. Leading Causes of Hospitalization among Children Age 1-17 Years by Sex, Snohomish County and Washington State, 1999\***

Snohomish County					Washington State	
Sex	Cause of Hospitalization	Rate per 100,000	95% CI †	Number of Hospitalizations	Cause of Hospitalization	Rate per 100,000
Male	Total (N=80,660)	1,749.3	1659.3, 1843.1	1,411	Total (N=744,968)	1,743.8
	Unintentional Injury	272.8	237.9, 311.3	220	Unintentional Injury	265.5
	Respiratory Disease‡	181.0	152.9, 212.9	146	Respiratory Disease‡	242.8
	Asthma	153.7	127.9, 183.3	124	Digestive Disorder	223.2
	Digestive Disorder	145.1	120.0, 173.8	117	Asthma	147.3
	Fractures	128.9	105.4, 156.2	104	Fractures	118.7
Females	Total (N=76,294)	1,836.3	1741.5, 1935.1	1,401	Total (N=707,987)	1,975.2
	Childbirth	300.2	262.6, 341.7	229	Childbirth	378.4
	Digestive Disorder	204.5	173.7, 239.2	156	Respiratory Disease‡	193.6
	Respiratory Disease‡	176.9	148.4, 209.4	135	Digestive Disease	188.0
	Unintentional Injury	166.5	138.8, 198.0	127	Unintentional Injury	161.4
	Genitourinary Disease	136.3	111.4, 165.1	104	Genitourinary Disease	114.0

\* Denominator determined using 1990 US Census

† 95% Confidence Interval

‡ Excludes asthma

Source: Comprehensive Hospital Abstract Reporting System: Washington State Department of Health



# Appendix

**Table 11. Leading Causes of Death among Children by Age Group and Sex, Snohomish County, 1999\***

Age Group	Cause of Death	Number of Deaths	Rate per 100,000	95% CI †
<b>1-17 years<sup>‡</sup></b> (N=156,201)	Total	28	17.9	11.9, 25.9
	Unintentional Injury	11	7.0	3.5, 12.5
1-9 years <sup>‡</sup> (N=83,254)	Total	13	15.6	8.3, 26.6
10-17 years <sup>‡</sup> (N=72,947)	Total	15	20.6	11.5, 33.8
<b>Sex</b>				
Male <sup>‡</sup> (N=80,276)	Total	22	27.4	17.2, 41.5
	Unintentional Injury	9	11.2	5.1, 21.2
Female <sup>‡</sup> (N=75,925)	Total	6	7.9	2.9, 17.0

\* Denominator determined using preliminary 2000 US Census statistics

† 95% Confidence Interval

‡ Because n<5, rates for more detailed causes of death cannot be calculated

Source: Death Certificates: Washington State Department of Health

**Table 12. Leading Causes of Death among Children Age 1-17 Years by Sex, Washington State, 1999\***

Sex	Cause of Death	Number of Deaths	Rate per 100,000	95% CI †
Male (N=739,219)	Total	233	31.5	27.6, 35.8
	Unintentional Injury	100	13.5	11.0, 16.4
	Malignant neoplasms	23	3.1	2.0, 4.7
	Suicide	23	3.1	2.0, 4.7
	Homicide	18	2.4	1.4, 3.8
	Congenital Anomalies	10	1.4	0.6, 2.5
Female (N=700,283)	Total	117	16.7	13.8, 20.0
	Unintentional Injury	41	5.9	4.2, 7.9
	Malignant neoplasms	19	2.7	1.6, 4.2
	Homicide	11	1.6	0.8, 2.8
	Cardiovascular Disease	5	0.7	0.2, 1.6
	Heart Disease	5	0.7	0.2, 1.6

\* Denominator determined using preliminary 2000 US Census statistics

† 95% Confidence Interval

Source: Death Certificates: Washington State Department of Health

**Table 13. Leading Causes of Death among Children by Age Group, Washington State, 1999\***

Age Group	Cause of Death	Number of Deaths	Rate per 100,000	95% CI †
<b>1-17 years</b> (N=1,439,502)	Total	350	24.3	21.8, 27.0
	Unintentional Injury	141	9.8	8.2, 11.6
	Malignant Neoplasms	42	2.9	2.1, 3.9
	Homicide	29	2.0	1.4, 2.9
	Suicide	27	1.9	1.2, 2.7
	Congenital Anomalies	14	1.0	0.5, 1.6
1-9 years (N=753,323)	Total	158	21.0	17.8, 24.5
	Unintentional Injury	51	6.8	5.0, 8.9
	Malignant Neoplasms	27	3.6	2.4, 5.2
	Homicide	13	1.7	0.9, 2.9
	Congenital Anomalies	11	1.5	0.7, 2.6
	Cardiovascular Disease	7	0.9	0.4, 1.9
10-17 years (N=686,179)	Total	192	28.0	24.2, 32.2
	Unintentional Injury	90	13.1	10.6, 16.1
	Suicide	27	3.9	2.6, 5.7
	Homicide	16	2.3	1.3, 3.8
	Malignant Neoplasms	15	2.2	1.2, 3.6
	Lower Respiratory Disease	5	0.7	0.2, 1.7

\* Denominator determined using preliminary 2000 US Census statistics

† 95% Confidence Interval

Source: Death Certificates: Washington State Department of Health

**Table 14. Leading Causes of Death among Children Age 1-17 Years by Race, Snohomish County, 1999<sup>†</sup>**

Race	Cause of Death	Number of Deaths	Rate per 100,000	95% CI ‡
White <sup>¶</sup> (N=141,482)	Total	23	16.3	10.3, 24.4
	Unintentional Injury	8	5.7	2.4, 11.1
Asian/ PI <sup>§</sup> (9,204)	Total	5	54.3	17.6, 124.8

\* Denominator determined using 1990 US Census

† Zero mortality rates for Black, Native American, and Hispanic, n=0

‡ 95% Confidence Interval

¶ Because n<5, rates for more detailed causes of death cannot be calculated

§ Pacific Islanders

Source: Death Certificates: Washington State Department of Health

**Table 15. Leading Causes of Death among Children Age 1-17 Years by Race and Ethnicity, Washington State, 1999\***

Race	Cause of Death	Number of Deaths	Rate per 100,000	95% CI †
White‡ (N=1,253,104)	Total	296	23.6	21.0, 26.5
	Unintentional Injury	123	9.8	8.2, 11.7
	Malignant Neoplasms	35	2.8	1.9, 3.9
	Suicide	25	2.0	1.3, 2.9
	Homicide	21	1.7	1.0, 2.6
	Congenital Anomalies	10	0.8	0.4, 1.5
Black‡ (N=64,924)	Total	24	37.0	23.7, 55.0
	Unintentional Injury	6	9.2	3.4, 19.9
	Homicide	6	9.2	3.4, 19.9
Asian/ PI‡¶ (N=98,293)	Total	21	21.4	13.2, 32.6
	Unintentional Injury	11	11.2	5.6, 19.9
	Malignant Neoplasms	7	7.1	2.9, 14.5
Native American‡ (N=36,634)	Total	7	19.1	7.7, 39.0
<b>Ethnicity</b>				
Hispanic‡ (N=131,190)	Total	45	34.3	25.0, 45.9
	Unintentional Injury	24	18.3	11.7, 27.2
	Homicide	6	4.6	1.7, 9.8

\* Denominator determined using 1990 US Census

† 95% Confidence Interval

‡ Because n<5, rates for more detailed causes of death cannot be calculated

¶ Pacific Islanders

Source: Death Certificates: Washington State Department of Health

**Table 16. Leading Causes of Child Deaths from Unintentional Injury by Age Group, Snohomish County and Washington State, 1990-1999**

Snohomish County					Washington State	
Age Group	Cause of Death	Rate per 100,000	95% CI †	Number of Deaths	Cause of Death	Rate per 100,000
<b>1-17 years</b>	Total Unintentional Injury (N=1,400,871)	9.8	8.3, 11.6	138	Total Unintentional Injury (N=13,465,760)	12.6
	Motor Vehicle Crashes	5.1	3.9, 6.4	71	Motor Vehicle Crashes	6.0
	Unspecified Non-transport Injury	1.4	0.8, 2.2	19	Unspecified Non-transport Injury	1.9
	Drowning/Submersion	1.2	0.7, 1.9	17	Drowning/Submersion	1.6
	Exposure to Smoke/Fire	0.5	0.2, 1.0	7	Exposure to Smoke/Fire	0.9
	Unspecified Transport Injury	0.4	0.1, 0.8	5	Unspecified Transport Injury	0.3
1-9 years	Total Unintentional Injury (N=779,498)	6.5	4.8, 8.5	50	Total Unintentional Injury (N=7,258,929)	9.8
	Motor Vehicle Crashes	2.5	1.5, 3.9	20	Motor Vehicle Crashes	3.6
	Unspecified Non-transport Injury	1.3	0.6, 2.3	10	Unspecified Non-transport Injury	2.0
	Drowning/Submersion	1.2	0.5, 2.2	9	Drowning/Submersion	1.8
	Exposure to Smoke/Fire	0.7	0.3, 1.6	6	Exposure to Smoke/Fire	1.4
	‡				Unspecified Transport Injury	0.2
10-17 years	Total Unintentional Injury (N=621,373)	14.0	11.3, 17.3	87	Total Unintentional Injury (N=6,206,831)	15.9
	Motor Vehicle Crashes	8.2	6.1, 10.8	51	Motor Vehicle Crashes	8.9
	Unspecified Non-transport Injury	1.5	0.7, 2.8	10	Unspecified Non-transport Injury	1.8
	Drowning/Submersion	1.3	0.6, 2.5	8	Drowning/Submersion	1.5
	‡				Discharge of Firearms	0.6
					Unspecified Transport Injury	0.5

\* Denominator determined using preliminary 2000 US Census statistics

† 95% Confidence Interval

‡ Because n<5, rates for more detailed causes of death cannot be calculated

Source: Death Certificates: Washington State Department of Health

# References

1. [www.census.gov/hhes/www/saipe.html](http://www.census.gov/hhes/www/saipe.html)
2. Research and Data Analysis, Washington State Department of Social and Health Services. (May 2001) *Risk and Protection Profile for Substance Abuse Prevention in Snohomish County*. DSHS Report #4.40-31
3. Snohomish Health District. (January 1999) *Local Health Jurisdiction Immunization Assessment Capacity Building Project*.
4. Herrera G.A. et al. (September 22, 2000) *National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19-35 Months – United States, 1998*, MMWR, Vol.49, SS-9
5. Snohomish Health District. (March 2000) *Snohomish County Youth Risk Behavior Survey 1999*.
6. Washington State Department of Health. (July 2000) *Washington State Youth Risk Behavior Survey 1999*.
7. Research and Data Analysis, Washington State Department of Social and Health Services. (July 2000) *Washington's Infant Toddler Early Intervention Program Study: December 1, 1999*, Report 7.79g
8. Washington State Department of Health. (May 2001) *SMILE Survey 2000*.
9. Snohomish Health District. (September 2002) *Snohomish County SMILE Survey 2000*.
10. US Department of Health and Human Services, Public Health Service. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. Washington DC: US Government Printing Office, DHHS Publication No. (PHS) 91-50212.
11. US Department of Health and Human Services. (November 2000) *Healthy People 2010: Understanding and Improving Health* (2<sup>nd</sup> ed). Washington, DC: US Government Printing Office.

