

CHAPTER 1:

INTRODUCTION

This report examines the health status of King County residents in 1996 and changes since 1980. In this report, we describe a range of health indicators by age, gender, race/ethnicity, socioeconomic status, time trend, and place of residence. Selection of the health indicators is based on the severity and frequency of the diseases, whether a disease is amenable to prevention and early detection, and data availability.

The main sources of data include death and birth certificates (vital statistics), hospital discharge records, reports of sexually transmitted diseases and other communicable diseases, HIV/AIDS surveillance data, the Behavioral Risk Factor Survey, the Washington State Cancer Registry data, and a number of other local and statewide surveys. Population estimates are provided by the Washington State Office of Financial Management.

DATA INTERPRETATION

Crude, Age-Specific, and Age-Adjusted Rate:

A rate in this report is usually expressed as the number of events per 100,000 population per year. When this applies to the total population (all ages), the rate is called *the crude rate*. When the rate applies to a specific age group (e.g., age 15-24), it is called *the age-specific rate*. The crude and age-specific rates present the actual magnitude of an event within a population or age group.

When comparing rates between populations, it is useful to calculate a rate which is not affected by differences in the age composition of the populations. For example, if one population has a higher death rate and more older people, it will not be easy to determine if its rate is truly higher or just reflects the high death rate among older people. *The age-adjusted rate* is a rate that mathematically removes the effect of the age composition. By convention, the rate is often adjusted to the age distribution of the 1940 U.S. population. In this report, whenever comparisons are made between areas, between racial/ethnic groups, and between gender groups, the age-adjusted rates are used.

Confidence Interval:

When comparing rates between different groups in King County with bar graphs, the “95% confidence interval” or margin of error is given for each rate to assess how much the rate is likely to vary due to chance. For each estimated rate, one would expect the rate to fluctuate, but to remain within the confidence interval 95% of the time. The larger the population under consideration, the smaller the confidence interval, and thus the more reliable the rate. When comparing two rates, if the confidence intervals do not overlap the difference in the rates is considered “statistically significant,” that is, chance or random variation is unlikely to be the reason for the difference.

The following graph is an example which shows the age-adjusted death rate and 95% confidence interval for coronary heart disease (CHD) by race/ethnicity in King County. The CHD death rate for Native Americans appears to be higher than the rate for Hispanics. However, since the higher end of the CHD confidence interval for Hispanics is greater than the lower

end of the confidence interval for Native Americans, their confidence intervals overlap. Therefore the difference between the two rates is not statistically significant. The confidence interval for African Americans, however, does not overlap with the intervals for the other racial/ethnic groups. As a result, we can state that the CHD death rate for African Americans is significantly higher than the rates for the other groups.

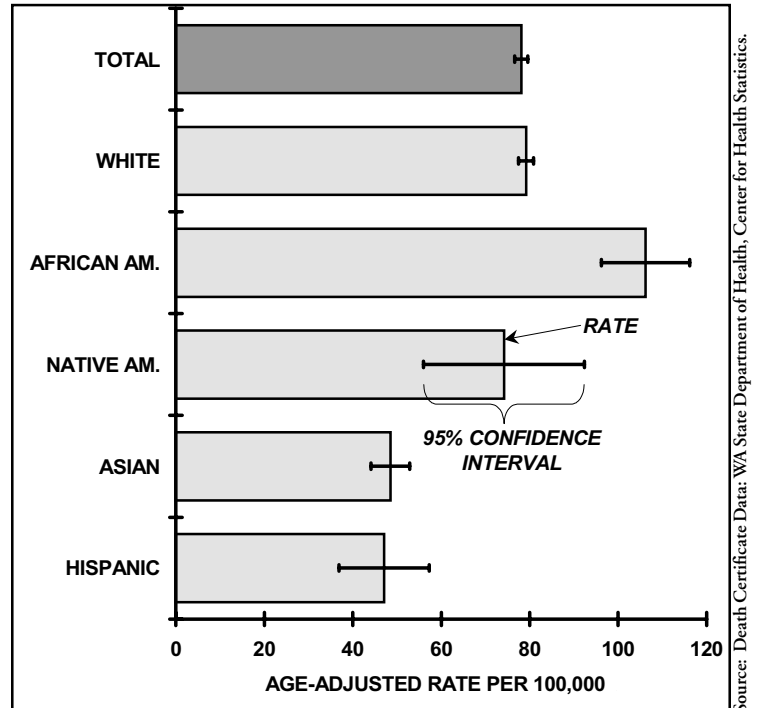
Race/Ethnicity:

Most researchers believe that race/ethnicity is a marker for complex social, economic and political factors that are important influences on community and individual health, and that differences in rates of most diseases and injuries are not due to biologic or genetic factors. Many communities of color in this country have experienced social and economic discrimination and other forms of racism, which can negatively affect the health of these communities. We continue to examine and present data by race/ethnicity because we believe that it is important to understand which racial/ethnic groups are disproportionately affected by significant health issues. We hope this understanding will lead to strategies that address these issues, as well as the social and economic inequities which underlie them.

Rolling Averages:

For populations of small size (Native Americans in King County for example), small changes in the number of events will cause the rate to fluctuate substantially. To help stabilize the rate and observe the time trend of an event, rates are sometimes aggregated into “rolled” averages, such as in 3 or 5 year intervals, across the total observed period. For example, if there is a highly fluctuating rate caused by low numbers of events for years 1992 through 1996, the rates are instead reported as three-year rolling averages: 1992-1994, 1993-1995, and 1994-1996.

**Figure 1-1:
Confidence Interval Example:
Age-Adjusted CHD Death Rate by Race/Ethnicity
King County, 1992-1996 Average**



Neighborhood Poverty Level:

To examine the relationship between poverty level and health indicators, the census tracts or zip codes in King County are ranked by the percentage of population living below the Federal Poverty Level in 1989. We then divided them into three groups in which more than 20%, 5 to 20%, and less than 5% of the population were living below poverty. These groups are labeled as “high poverty,” “medium poverty,” and “low poverty” neighborhoods respectively.

Health Planning Areas and Health Regions:

In addition to examining data for King County and Seattle, we also analyzed the data by the four health administrative regions and the 21 Health Planning Areas used by the Seattle-King County

Department of Public Health. The Health Planning Areas are aggregates of census tracts or zip codes and many of them approximately correspond to the incorporated cities in King County.

**Figure 1-2:
King County Health Planning Areas and
King County Four Health Regions**

