Tools of the Trade:

ADJUSTED vs. SPECIFIC RATES

In "Adjusted Rates," you learned how to compute rates adjusted to one or more demographic factor/s, usually age, sex and/or race. These rates involved computations of specific mortality rates and, then, the mathematical use of a "standard" population to arrive at the final number. An adjusted rate is not a good indicator of the absolute level of mortality in a population, but is useful for purposes of comparison. However, some people contend that adjusted rates can easily lead to misinterpretation. They believe that age, sex and/or race specific rates are more useful descriptions of vital events and do not easily lend themselves to misinterpretation.

The following are some pros and cons about these two different types of rates:

An *adjusted rate* is an artificially created figure that enables comparison across time and space. It should only be compared with another adjusted rate that was computed using the same "standard" population. However, it does provide a single figure which can be easily used and adapted for comparative analysis. There is still the possibility of misuse of this type of rate by people unfamiliar with its meaning. For instance, multiplying an adjusted mortality rate by the actual population being studied will not produce a figure representing the actual number of deaths. As an example, in our last issue, we computed County I's 1982 age-adjusted death rate as 907.9 per 100,000 population. County I's population in 1982 was 68,292. If you multiply 68,292 by .009079, you will get a figure of 620 rather than the actual number of 556 resident deaths in 1982 in County I. For this reason alone, adjusted rates should always be thoroughly qualified when being used.

A *specific rate* is a real number. It provides an absolute measurement as well as a useful statistical tool for comparison and trend analysis. For example, Pennsylvania's crude birth rate expressed as the number of resident live births per 1,000 total population has shown a gradual increase from 12.9 in 1978 to 13.6 in. 1982. However, if you compute age-specific birth rates for each of those years (i.e. the number of live births per 1,000 total women for each five year age group 10-44), you will discover a significant decrease in the age-specific birth rates among women under 25 with corresponding significant increases for women 25 and over. This indicates a trend that actually reverses a past pattern. Unfortunately, use of specific rates in analysis can result in massive amounts of data with which to work and/or display. Large amounts of data can become difficult for user and audiences to digest.

Proper or improper use of adjusted or specific rates usually depends on the analyst's needs. Whichever serves the purpose of getting an important point across simply, clearly, and accurately is the most appropriate. But always make certain that both you and your audience understand exactly what the rate is you are using to make that important point of yours.