Table 3. Age Adjustment of the All-Cause Death Rate Using the Indirect Method: Hertford County, North Carolina Residents (1991–95 Combined)

Age Group	1 Total Population (1991–95)	2 Age-Specific Death Rates in 1993 North Carolina Standard Population (per 1,000)	3 Expected Deaths in Hertford County
0–4	8,150	2.44	20
5–14	17,109	0.25	4
15–24	16,601	0.98	16
25–34	14,872	1.53	23
35–44	16,199	2.55	41
45–54	12,381	5.03	62
55–64	10,277	12.41	128
65–74	9,370	28.48	267
75–84	5,631	63.19	356
85+	1,829	147.85	270
Total	112,419	9.0 (Crude Rate in Standard)	1,187

Indirect Method

When to Use:

- When the numbers of deaths in each age group in the study population are too small to calculate stable age-specific rates.
- In developing countries or other areas where no information is available on age-specific deaths for the study population, only for a national or standard population.

The indirect method of age-adjustment applies the age-specific death rates of the standard population to the age distribution of the study population in order to generate expected deaths in the study population. **These are the deaths that would occur in the study population IF the age-specific death rates in the standard population were in operation.** The expected deaths are then summed across the age groups and compared to the actual or observed number of deaths for the study population. This ratio of observed/expected deaths is often referred to as the **standardized mortality ratio**, or SMR. A ratio greater than 1.0 indicates higher mortality in the study population compared to the standard population (controlling for age distribution), while a ratio less than 1.0 indicates lower mortality in the study population. The SMR controls for age distribution since both the observed and expected deaths are based on the age distribution of the study population. Multiplying the SMR times the crude death rate in the standard population produces the **indirectly standardized death rate** for the study population.

Table 3 presents an example of indirectly standardized death rates. After moving the decimals three places to the left, age-specific death rates in the 1993 North Carolina standard population (column 2) are multiplied by the 1991–95 Hertford County population in column 1 to produce the expected deaths in column 3. These expected deaths by age group may be compared to the actual 1991–95 deaths by age group in Hertford County (Table 1, column 1). Dividing the 1,336 total deaths observed in Hertford County during 1991–95