Derivation of Life Table Functions From

Insufficient Information

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In preparing Volume II of the book Medical Risks: Patterns of Mortality and Survival difficulties have been encountered in deriving some of the common life table functions from insufficient data, mainly in making analyses of death rates by age and duration. Such problems arise also in estimating mortality from personnel records.

In trying to draw conclusions from insufficient data it is usually necessary to introduce extraneous assumptions, which may be regarded as Bayesian priors. In most situations it is desirable to find out whether the assumptions introduced result in robust estimates.

The kinds of problems involved may be illustrated by

(1)   Making assumptions as to age/sex distributions when only age distributions for both sexes combined are available.

(2)   Making assumptions as to the distribution of entrants by calendar year of entry when only the distribution for the entire period of study is available.

(3)   Making assumptions as to the population at entry from expected deaths.

(4)   Making. assumptions as to the approximate levels of death rates by age when only mortality ratios by duration are available.

Several concrete examples will be discussed.