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Investigating Causal Mortality using the Multinomial Logistic Model

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We separate mortality into component parts in order to analyze observed trends over time. The components are based on internationally classified cause-of-death categories and the data obtained from the World Health Organization. We model causal mortality simultaneously in a multinomial logistic framework, which naturally accounts for the inherent dependence amongst the competing causes. This framework allows us to investigate the effects of improvements in, or the elimination of, cause-specific mortality in a sound probabilistic way. We quantify the subsequent change in aggregate mortality using residual life expectancies.