Substituting Morbidity for Fatality in Taiwan

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Due to the green revolution and epidemiologic transition, human longevity has drastically improved during the past two centuries. While Japan emerged to generate a longest living population, Taiwan has recently surpassed the United States in the life expectancy at birth, tracing behind U.K., Hong Kong, Singapore, and South Korea, located in between Finland and Germany. Increasing life expectancy does not necessarily mean the better health at the higher end of human longevity, however. A thorough excavation and understanding of the shifts in the health conditions of population appears imperative. This paper examines the substitution of morbidity for fatality in Taiwan. Based on a catastrophic illness file of the National Health Insurance, which covers 99% of the population in Taiwan, the paper presents the results of decomposing the death rate

$$d(t) = \frac{D(t)}{P(t)} = \frac{1}{P(t)} \sum_{x} D(x, t) = \sum_{x} \frac{D(x, t)}{Q(x, t)} \frac{Q(x, t)}{P(x, t)} \frac{P(x, t)}{P(t)}$$

into disease fatality and prevalence, and population age structure. The catastrophic illness reported in the paper includes cancer, cardiovascular disease, diabetes, end-stage renal disease, etc., a total of 30 groups identified by the Bureau of National Health Insurance. Patients suffering from the catastrophic illness are given a certificate to exempt from partial payments. The procedure is in a sense certification of suffering from major illness, excluding the screening for the illness. It is shown that while the diseases are becoming less lethal due to the advancement in medical treatments, the prevalence is concurrently growing, net of the changes in age structure. The decomposition indicates that as the disease fatality moves downward, the prevalence moves toward the opposite direction; results in the substitution of morbidity for fatality.