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How life expectancy varies with perturbations in age-specific mortality

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Abstract

Background: A naturally arising question in demography is how a given change in mortality affects life expectancy. Scholars have targeted this question with different aims and from different perspectives.

Objective: We present and prove the central relationship between change in mortality and resulting change in e_0 , and we systematically apply it to investigate the effect of specific mortality perturbations.

Comments: Expressions for the change in e_0 resulting from a change in the parameters of the standard parametric mortality model in demography, the Gompertz-Makeham model, include well-known demographic quantities, which might prove useful for future studies.

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