Healthy lives: Delayed onset, improved recovery, or mortality change?

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Abstract

Background Healthy life expectancy at older ages in the United States has steadily increased in recent decades. We do not know whether changes in disease onset, recovery, or mortality drive this trend.

Objective We aim to determine how much of the change in healthy and unhealthy life expectancy between 1995 and 2015 is due to changes in onset, recovery, and mortality.

Data and Methods We use the US Health and Retirement Study to estimate transition rates between health and mild and severe disability states, as well as state-specific death rates, for the years 1995, 2004, and 2014. We calculate remaining healthy, disabled, and total life expectancy at age 50 using incidence-based Markov matrix models. We decompose the difference between time points and population strata into 9 separate age-specific components for onset, recovery, and mortality using pseudo-continuous decomposition.

Results We describe preliminary results for males, all education groups combined. Perhaps counter to intuition, most change in healthy life expectancy is due to mortality and not to onset of or recovery from disability. Most of the two-year increase in healthy life expectancy since 1995 is due to decreased mortality of healthy people, whereas delayed onset and slowed recovery from disability offset each other. Expected years in mild disability increased by about 4 months over the two decades, mostly due to improved mortality of both healthy and mildly disabled people. Delayed onset of mild disability almost equally offset the effects of improved mortality among the mildly disabled. Expected years in severe disability increased by about half a year, also mostly due to improved mortality in all health states.

Conclusions Healthy life expectancy at age 50 increased relatively faster than disabled life expectancy, both driven by mortality improvements. Years spent in disability have been pushed into higher ages, indicating a slight delay of onset.

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