Trends in Health and Mortality Inequalities in the United States

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Throughout the past century, life expectancy in the United States and other developed nations has increased due to innovations in medical science and technology. More recently, however, the longevity gap between richer and poorer individuals, i.e., mortality inequality, has widened. Understanding whether this gap will continue to grow is important for policymakers. For example, because mortality is (negatively) correlated with income and wealth, increases in mortality inequality may result in increases in aggregate Social Security payouts, because individuals with greater annual benefits tend to live longer.

Changes in health behavior are one possible explanation for life expectancy changes. While previous research has documented trends in mortality inequality by using mortality data and some education and income measures of socio-economic status (SES), it often has not looked at health status directly. Moreover, because of the lack of health data, most econometric models on mortality relied on extrapolations from past trends to forecast mortality for future cohorts. Such extrapolations may be problematic, because they do not account for changes in health trends that may cause changes in mortality trends.

To gain new insights on widening mortality inequality, we documented trends by SES in various health measures of the Health and Retirement Study (HRS). The HRS is a nationally representative panel survey conducted every two years since 1992 of U.S. individuals at least 51 years old. The HRS has a variety of health and SES measures. We assessed data for persons 54 to 60 years old across cohorts born 1934 to 1959.

For SES, we used HRS measures on predicted Social Security (SS) wealth (defined as expected lifetime Social Security benefits) and educational attainment. For our health measures, we used, among others, self-reported health, body mass index, diabetes, reported pain, limitations with activities of daily living (ADL limitations), active smokers, and subjective survival probabilities measured by respondent answers to the question, "What is the percent chance that you will live to be 75 or more?"

Subjective survival probabilities and self-reported health

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have been stable across cohorts for individuals in the top SES groupings, but have worsened for those in the bottom. Average body mass index increased for all groups, as did the proportion who live with diabetes.

The proportion who report moderate or severe pain increased as well, particularly for those of lower SES. For example, among men in the top SS-wealth quintile, the fraction reporting at least a moderate amount of pain increased from 18.3% to 25.3% across cohorts, while among those in the bottom quintile, the fraction reporting such pain increased from 31.6% to 47.0%. Similarly, among women the proportion in the top quintile reporting moderate or worse pain increased from 24.0% to 29.8%, while in the bottom quintile it increased from 42.6%to 64.0%. In short, pain increased for all, but it increased more for those in the lowest SES groups, leading to increased inequalities.

The number of ADL limitations also increased over time and did so more for those in lower SES groups. The fraction of smokers decreased, but differences among SES groups increased as those in higher SES groups were less likely to smoke.

We summarized the different health measures' changes by estimating an objective health index. We found SES to be a strong predictor of changes in this index, with index scores little changed for those in top SES groups, but decreasing for those in lower SES groups.

In considering these and other trends used to forecast future life expectancy, we found that life expectancy is likely to increase overall, but mortality inequalities are likely to widen. For example, the expected age of death for those in the lowest Social Security wealth quintile will remain relatively unchanged across cohorts, while that for those in the highest quintiles will increase by about six years.

We find similar results by race, job type, and place of residence. Whites, workers whose current or most-recent job is a high-skilled, white-collar one, and persons in urban areas have higher subjective survival probabilities and score higher on our health index than others do.

Deteriorating health conditions in the population coupled with longer life expectancies may seem paradoxical. There are two possible explanations for this. First, mortality is a byproduct of middle-aged health status and medical technology to treat old or sick individuals. It may be that the health of individuals in their late 50s declined over time due to increasing levels of unhealthy behavior but that continually improving medical technology has offset these behaviors. Second, it may be that mortality forecasts for the youngest birth cohorts are biased downward, that is, that they are predicting lower mortality than will actually occur, because they are based on extrapolations from past trends in survival. If this is the case, then the observed declines in middle-aged health may eventually translate into decreased life expectancy we are not yet able to measure. Further research and more waves of HRS data are required to find out what explains these patterns in health and mortality. ❖