Wealth and Health Across America: Two Decades of Evidence from Medicare

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Abstract

Importance The relationship between local economic circumstances and health in the United States is well-established but poorly understood.

Objectives To measure the level and the long-term trend—nationally and across health regions—in the association between neighborhood affluence and the prevalence of chronic disease, healthcare utilization and spending, and mortality among older adults in the Medicare program.

Design, Setting, and Participants This study used individual-level Medicare Research Identifiable Files for beneficiaries aged 65 to 70 from 1999 through 2022. Dates of birth and death, sex, and residential ZIP+4 code were obtained for all beneficiaries. For those enrolled in Traditional Medicare, healthcare utilization and spending were obtained for 1999 through 2022 and indicators for 26 chronic diagnosis categories for 1999 through 2021. Five health regions were defined by grouping counties into quintiles of life expectancy at age 65 over the study period. Neighborhood affluence was defined as percentiles of block group median household income among adults aged 45–64 in the 2010 Census. Beneficiaries were linked to these area-level measures through their residential ZIP+4 code in each year.

Exposures Neighborhood affluence percentile.

Main Outcomes and Measures Main outcomes included the total count of chronic conditions, total healthcare spending adjusted to 2022 dollars, and one-year mortality. Secondary outcomes included detailed disaggregated measures of healthcare and pharmaceutical utilization and spending as well as the prevalence of individual chronic conditions. Outcomes were age- and sex-adjusted.

Results The study included 347,905,832 person-year observations. Mean age was 67.4 years, 52.9% were women, and 71.8% were enrolled in Traditional Medicare. Mean number of chronic conditions was 2.17, mean annual healthcare spending was $9,670, and mean one-year mortality was 1.52%.

We report three main findings. First, poorer neighborhoods had substantially higher chronic disease prevalence, total annual healthcare spending, and mortality. Individuals in the poorest 1% of neighborhoods had on average 1.0 (59.2%) more chronic conditions, $6,369 (81.8%) more in healthcare spending, and a 2.0 percentage point (276.4%) higher one-year mortality rate than those in the richest 1%. Most secondary outcomes followed the same pattern, although the shape and magnitude of the association varied. Notable exceptions included diagnoses for breast and prostate cancer and spending on imaging, tests, and physician office services, which were positively associated with neighborhood affluence.

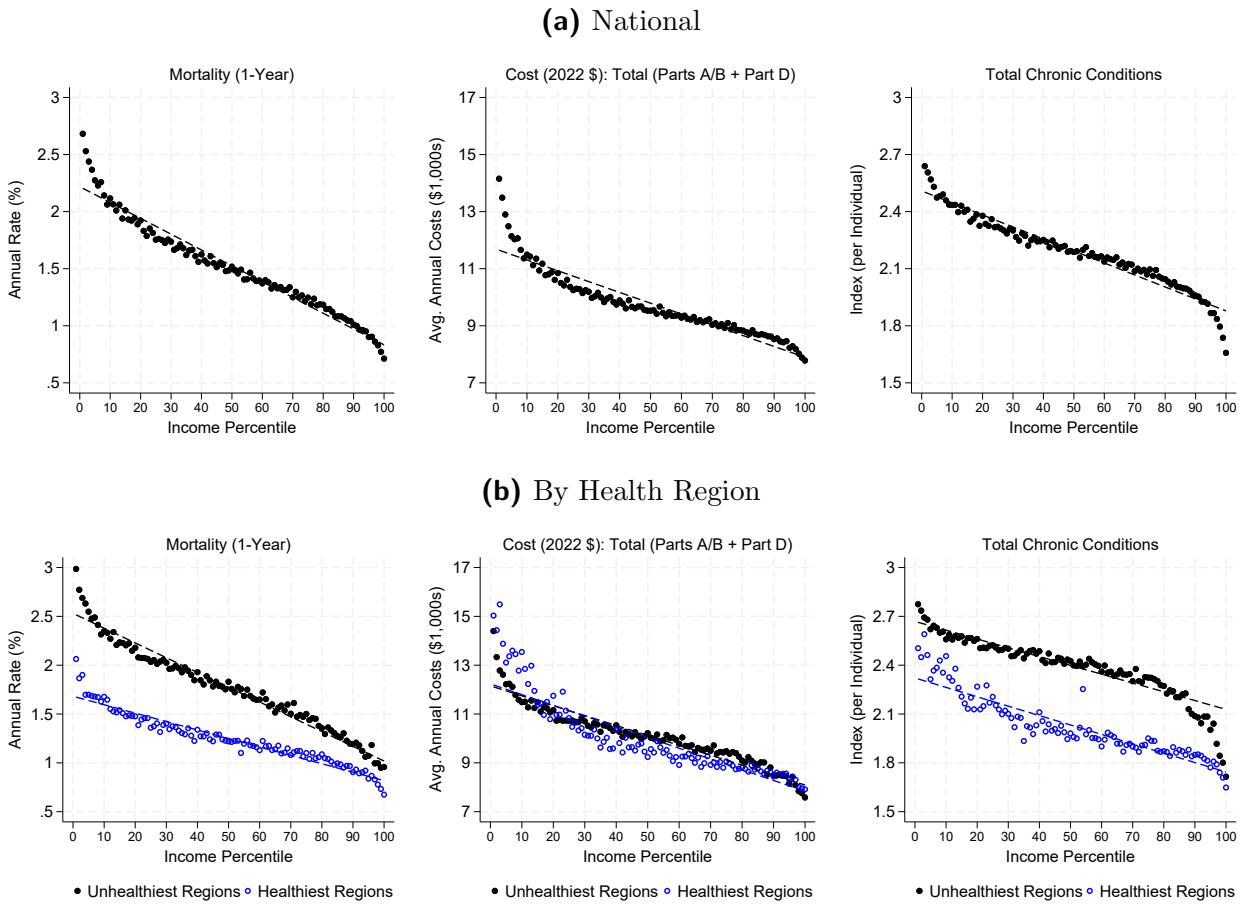
Second, the association between neighborhood affluence and outcomes differed substantially across health regions. At every level of neighborhood affluence, the prevalence of chronic disease and one-year mortality was higher in the least healthy region as compared to the healthiest region. The mortality gap was largest in the poorest neighborhoods and shrank with increasing affluence. The gap in chronic disease prevalence was most pronounced between the 10th and 90th percentiles of neighborhood affluence, narrowing for the poorest neighborhoods and nearly closing for the richest. Healthcare spending followed a different pattern: in middle- and high-affluence neighborhoods, spending was similar or slightly lower in the healthiest regions, but among the poorest 10%, this gap flipped, with spending higher in the healthiest regions.

Third, over time, mortality declined across all groups, whereas morbidity and medical expenditures rose in the early 2000s and then largely stabilized. National gaps between richest and poorest neighborhoods did not change over the span of nearly 25 years. Poorest neighborhoods in the least healthy regions, however, exhibited a substantially faster increase in the rate of chronic disease relative to the poorest neighborhoods in the healthiest regions of the country, with a substantial gap in chronic conditions opening up by 2020.

Conclusions and Relevance Among older U.S. adults, both neighborhood affluence and the general health of a region are strongly associated with health outcomes and healthcare

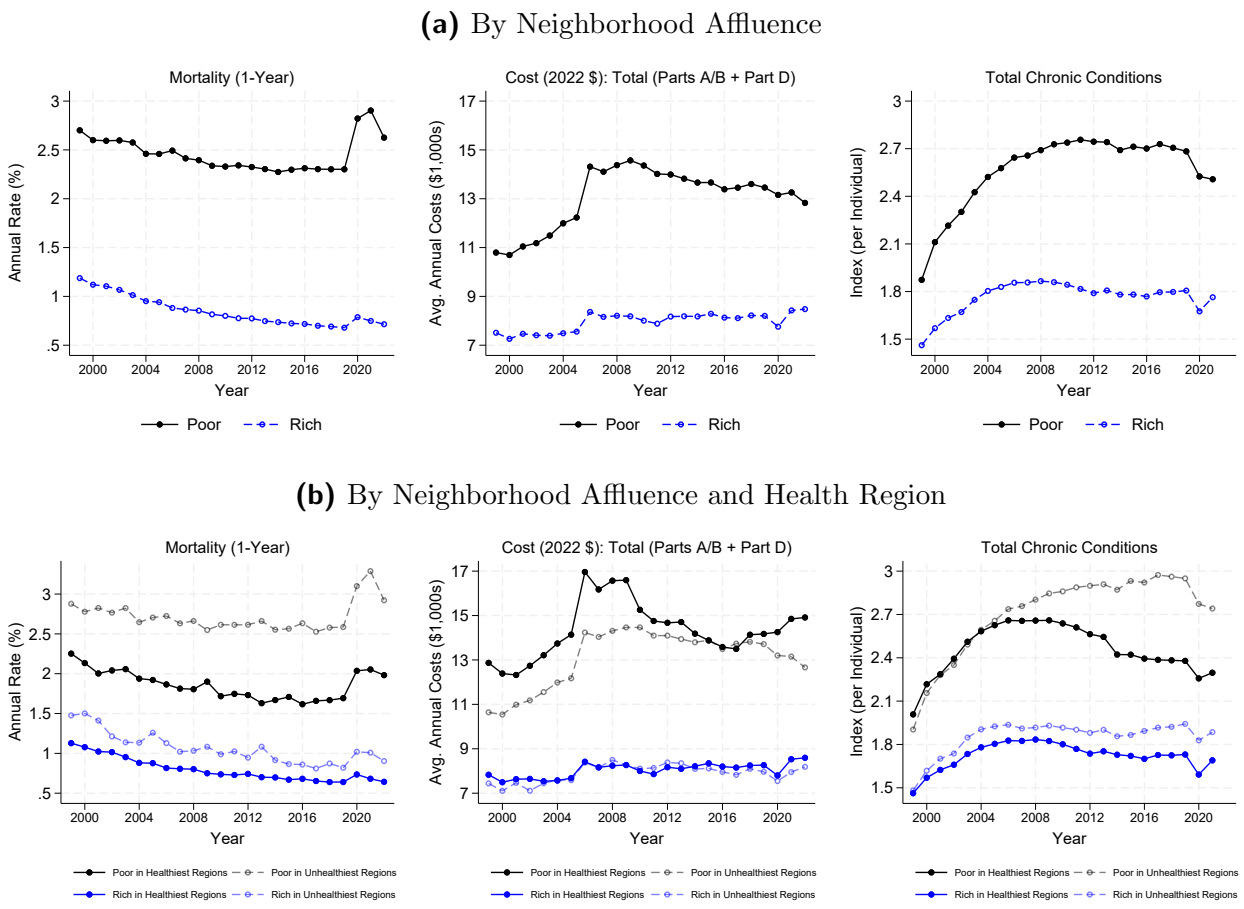
spending. Poor neighborhoods in the least healthy areas of the country exhibit a particularly high level of disease burden and a deteriorating trend in outcomes despite similar or even higher spending on healthcare. These findings underscore that understanding the role of local socio-economic conditions alone is insufficient for understanding the drivers of health outcomes among older adults.

Figure 1: Health Outcomes by Neighborhood Affluence Among Medicare Beneficiaries Aged 65–70, 1999–2022



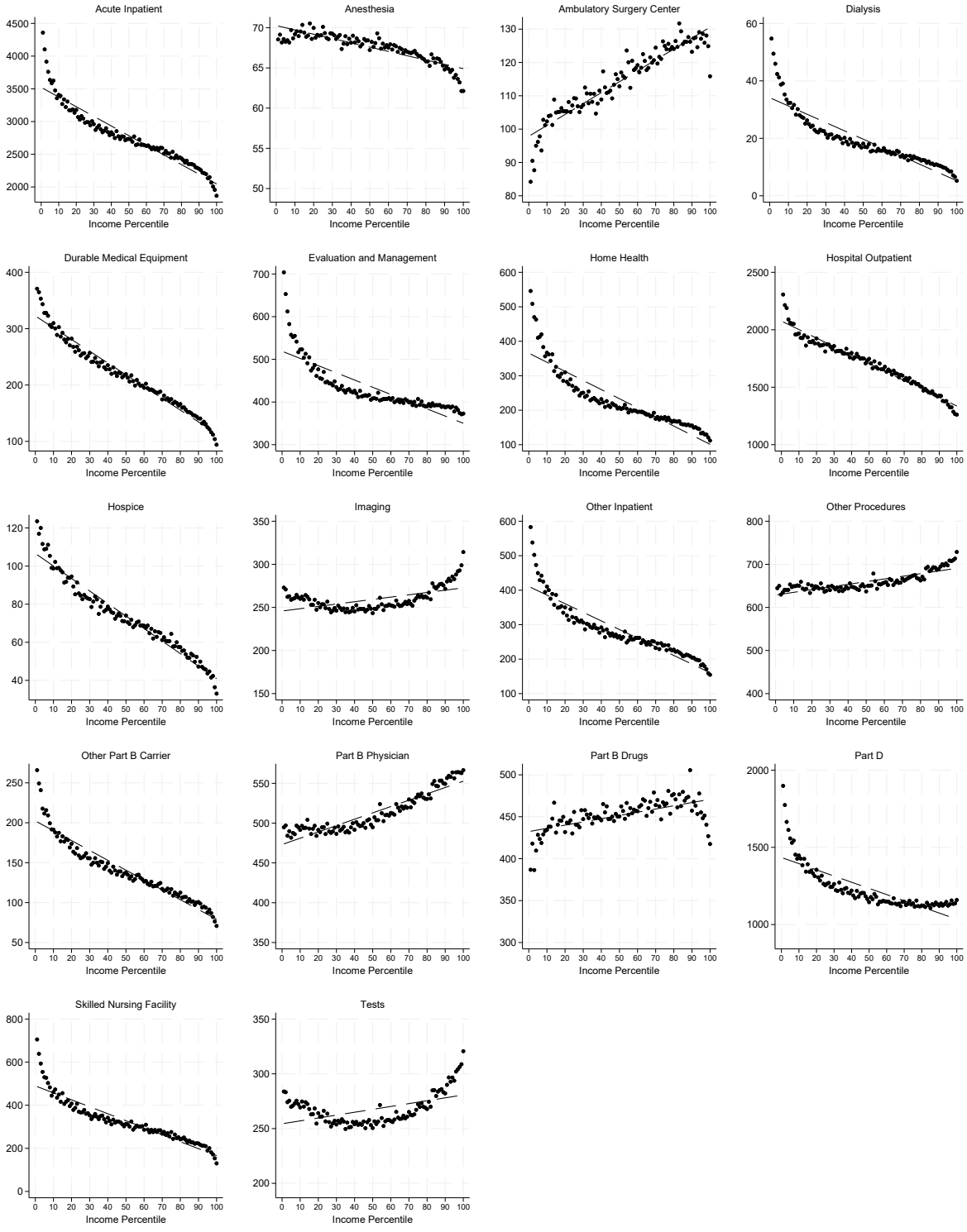
Notes: Each point represents an age- and sex-adjusted mean at one percentile of neighborhood affluence, defined as block group median household income among adults aged 45–64 in the 2010 Census. Panel (a) reports national means, and panel (b) reports means separately for the healthiest and least healthy of five health regions defined by county-level life expectancy at age 65 over the study period. The sample includes Medicare beneficiaries aged 65 to 70, 1999–2022. One-year mortality is measured for all beneficiaries; healthcare spending and chronic conditions are measured for those enrolled in Traditional Medicare. Healthcare spending is the sum of all primary payer, beneficiary, and Medicare payments (Parts A/B) and total reported drug costs (Part D), in 2022 dollars. Chronic conditions are the count of 26 diagnosis categories meeting claims-based criteria.

Figure 2: Health Trends by Neighborhood Affluence Among Medicare Beneficiaries Aged 65–70, 1999–2022



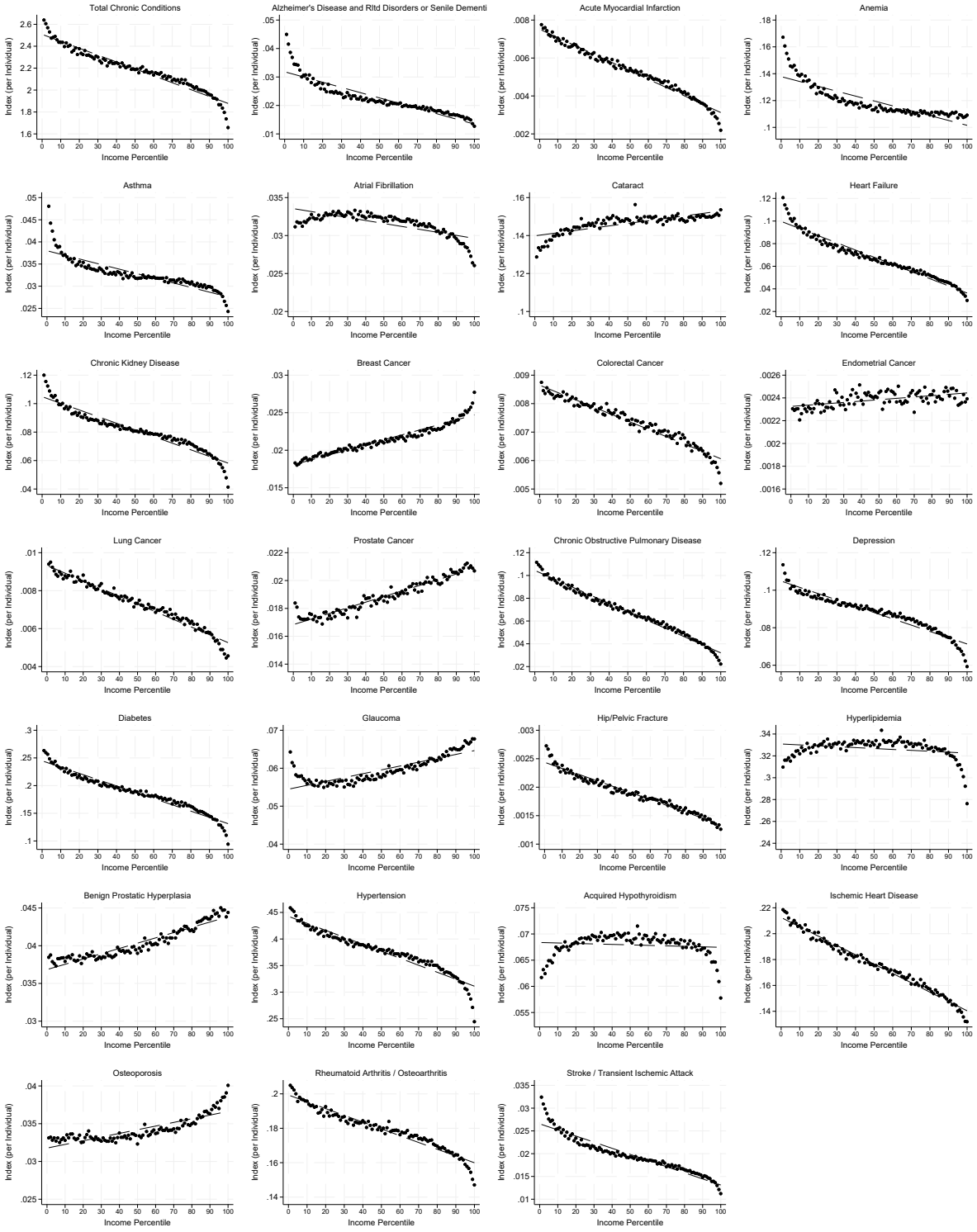
Notes: Each point represents an age- and sex-adjusted annual mean. Panel (a) reports means separately for the richest and poorest 5% of neighborhoods. Panel (b) reports means separately for the richest and poorest 5% of neighborhoods within the healthiest and least healthy of five health regions. Neighborhood affluence is defined as block group median household income among adults aged 45–64 in the 2010 Census. Health regions are defined by county-level life expectancy at age 65 over the study period. The sample includes Medicare beneficiaries aged 65 to 70, 1999–2022. One-year mortality is measured for all beneficiaries; healthcare spending and chronic conditions are measured for those enrolled in Traditional Medicare. Healthcare spending is the sum of all primary payer, beneficiary, and Medicare payments (Parts A/B) and total reported drug costs (Part D), in 2022 dollars. Chronic conditions are the count of 26 diagnosis categories meeting claims-based criteria.

Figure 3: Healthcare Spending Categories and Neighborhood Affluence Among Medicare Beneficiaries Aged 65–70, 1999–2022



Notes: Each point represents an age- and sex-adjusted mean at one percentile of neighborhood affluence. Sample and variable definitions are as described in Figure 1. Each panel shows spending for an individual service category, in 2022 dollars.

Figure 4: Chronic Condition Categories by Neighborhood Affluence Among Medicare Beneficiaries Aged 65–70, 1999–2022



Notes: Each point represents an age- and sex-adjusted mean at one percentile of neighborhood affluence. Sample and variable definitions are as described in Figure 1. Each panel shows the prevalence of an individual chronic condition category.