Mortality Rates by Race and Ethnicity Among People with Disabilities*

Madeline Helfer† Becky Staiger‡ Jessica Van Parys§

August 19, 2026

Abstract

This paper uses Medicaid claims data from 2017-2021 to measure racial/ethnic disparities in mid-life mortality rates among low-income adults with disabilities receiving Supplemental Security Income (SSI). We find that American Indian and Alaska Native and White SSI recipients have the highest age-adjusted mid-life mortality rates (2.85% and 2.48%, respectively), followed by Black and Hispanic recipients (2.18% and 1.82%), and then Asian recipients (1.53%). We also find differences in diagnosed chronic conditions, "despair-related" conditions, substance use disorders, and disabling conditions by race/ethnicity. Controlling for these differences attenuates the White-Hispanic, White-Asian, and AIAN-White mortality gaps; however, differences in clinical diagnoses by race do not diminish the White-Black mortality gap. Our results show that within a socioeconomically vulnerable population, Black adults have lower mid-life mortality rates than Whites.

*The research reported herein was derived in whole or in part from research activities performed pursuant to grant RDR18000003 from the US Social Security Administration (SSA) funded as part of the Retirement and Disability Research Consortium (RDRC). The opinions and conclusions expressed are solely those of the authors and do not represent the opinions or policy of SSA, any agency of the Federal Government, or the NBER. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation or favoring by the United States Government or any agency thereof. We thank Nicole Maestas, who directed the former NBER RDRC, and we thank Mohan Ramanujan, who helped us access data at the NBER. We also thank Ben Sommers and attendees at the 2026 Northeast Medicaid Research Symposium. Madeline Helfer further acknowledges support by the National Science Foundation Graduate Research Fellowship under Grant No. 2234657.

†Boston University, 270 Bay State Rd #445, Boston, MA 02215, United States. Email: mshelfer@bu.edu

‡UC Berkeley. 2121 Berkeley Way #5424, Berkeley, CA 94704, United States. Email: bstaiger@berkeley.edu

§Hunter College, CUNY and NBER. 695 Park Avenue HW 1529, New York, NY 10065, United States. jessica.vanparys@hunter.cuny.edu

1 Introduction

There are large differences in life expectancy between racial/ethnic groups in the U.S. (Dwyer-Lindgren et al., 2023; Ndugga, Hill and Artiga, 2024; Arias, Xu and Kochanek, 2025; Kaestner, Gangopadhyaya and Schiman, 2025). From 2000–2019, White non-Hispanic Americans lived between 3.6 to 5.8 years longer than Black Americans, on average, and 4.1 to 5.8 years longer than American Indian and Alaska Native (AIAN) Americans (Dwyer-Lindgren et al., 2022). While the magnitudes of these differences have changed over time—declining with increased mid-life mortality rates among White Americans in the early 2000s (Case and Deaton, 2021; Schwandt et al., 2021) and increasing again with the COVID-19 pandemic and opioid crisis' impact on Black Americans (Andrasfay and Goldman, 2021; Alsan, Chandra and Simon, 2021; Hébert and Hill, 2024; Miller, Wherry and Mazumder, 2021)—life expectancy at birth for the average White American was still nearly 5 years longer than life expectancy for the average Black American in 2023 (Arias, Xu and Kochanek, 2025).

However, the reasons why White non-Hispanic Americans live longer than Black and AIAN Americans remain unclear. One hypothesis is that White individuals have more socioeconomic advantages, which lead to better health (Town et al., 2024; Williams and Jackson, 2005; Alexander and Currie, 2017; Cullen, Cummins and Fuchs, 2012; Morenoff et al., 2007; Foote et al., 2025). These advantages are easily observed empirically: in surveys of working-age Americans, White individuals have more education, higher incomes, higher rates of home ownership, and more wealth than AIAN and Black Americans (Bhutta et al., 2020; Karna et al., 2025; Budig, Lim and Hodges, 2021). White individuals also have lower rates of disability and unemployment than these other groups (Goodman, Morris and Boston, 2017; BLS, 2024; Steinweg, 2023). A large body of research establishes that higher socioeconomic status (SES) is positively correlated with good health and longevity in general (Currie, 2009; Cutler, Lleras-Muney and Vogl, 2011; Chetty et al., 2016). Three recent studies using survey data have further shown that the Black-White mid-life mortality gap diminishes substantially after controlling for income and education levels (Doza, Jensen and Tarraf, 2021; Luo, Hendryx and Wang, 2021; Kaestner, Gangopadhyaya and Schiman, 2025). Yet, few studies have used large-scale administrative data to estimate mid-life mortality rates by race/ethnicity in populations with similar SES characteristics.

In this paper, we utilize national Medicaid administrative claims data from 39 states from 2017-2021 to estimate differences in mid-life mortality rates by race/ethnicity within a low-income population. We

focus on mid-life mortality as an outcome due to its role in driving recent fluctuations in life expectancy gaps by race/ethnicity (Case and Deaton, 2017; Andrasfay and Goldman, 2021). Our sample includes low-income, working-age adults (ages 18-64) with disabilities who are enrolled in Supplemental Security Income (SSI) and Medicaid. SSI and Medicaid are programs that provide financial support to low-income people with disabilities (PWD). SSI provides monthly payments to low-income individuals who have work-limiting disabilities. Medicaid covers healthcare costs for low-income PWD. In most states, enrollment in SSI is a direct pathway to Medicaid eligibility. Medicaid expenditures per capita are about 3 times higher for SSI recipients under age 65 compared with ACA expansion adults (Medicaid and CHIP Payment and Access Commission, 2026). Disease burden is thought to be very high among adult SSI recipients. However, no research has used Medicaid claims data to estimate rates of chronic conditions or mid-life mortality in this high-needs population.

A key feature of our approach is our sample's shared socioeconomic characteristics: adults with disabilities who receive SSI face strict eligibility requirements to receive cash assistance and Medicaid health insurance. Their income (in 2026$) must remain below $994 for single adults (or $1,491 for couples), their assets must be less than $2,000 ($3,000 if married), and their disability must be severe enough to limit their capacity to work. The adults in our sample have similar rates of disability and employment, and similar average incomes and assets, but they differ in terms of race and ethnicity. We show these facts empirically using the Current Population Survey data.

Our sample is well-suited to measuring mid-life mortality rates by race/ethnicity among PWD for three reasons. First, low-income adults with disabilities who receive SSI are typically eligible for Medicaid; therefore, the Medicaid database that we use is the most comprehensive data set for tracking the health of the SSI population. Second, the SSI population is more racially and ethnically diverse than the general population—32.8% of SSI recipients are Black, 13.0% Hispanic, 2.2% Asian, and 1.3% AIAN—obviating concerns about estimating mid-life mortality rates for small racial/ethnic groups. Third, we find that less than 3% of working-age SSI enrollees exit Medicaid each year for reasons other than death, which means that we observe mid-life mortality (or not) for the vast majority of SSI recipients.

Our methods are simple; we rely on the richness of our data to help explain racial/ethnic differences in mid-life mortality among adults with disabilities. First we estimate age-adjusted mortality rates for SSI recipients from 2017–2021 by race/ethnicity (White, Black, Hispanic, Asian, and AIAN). Next,

we adjust these rates for the recipient's sex, types of functional impairments, dual Medicaid-Medicare status, an urban county-of-residence indicator, and state-by-year fixed effects. Then we control for county-of-residence fixed effects instead of the urban county indicator. Then we progressively add other predictors of mid-life mortality that might be correlated with race/ethnicity, such as indicators for 29 diagnosed chronic conditions, indicators for 10 "despair related conditions," an indicator for a substance use disorder, and 27 indicators for "other chronic and disabling conditions." Finally, we control for average smoking rates among low-income people in the SSI recipient's same racial/ethnic group, state, and year. The goal of estimating these models is to determine if the gaps in mid-life mortality by race/ethnicity are attenuated when adults have similar SES characteristics and clinical profiles.

Our results are striking. We first show that the White age-adjusted mid-life mortality rate is *higher* than the Black and Hispanic mortality rates, though lower than the AIAN mortality rate. Adjusting for characteristics such as sex and functional impairments does not change our result. Next, we show that the rank order of mortality rates (highest to lowest) by race/ethnicity is persistent across the age distribution from 18-64: namely, AIAN mortality (2.85%) exceeds White mortality (2.48%), which exceeds Black (2.18%) and Hispanic mortality (1.82%), which exceeds Asian mortality (1.53%). Next we show that controlling for the county in which individuals live does not significantly change our estimates. We then show that differences in diagnosed health conditions by race/ethnicity attenuate the White-Hispanic, White-Asian, and AIAN-White mortality gaps, but controlling for these differences does not attenuate the White-Black mortality gap. Specifically, controlling for chronic conditions, despair conditions (e.g., chronic liver disease, chronic pain, and mental health conditions), a substance use disorder, and other chronic and disabling conditions attenuates the difference between the White mortality rate and the Black mortality rate only slightly, with Black SSI recipients remaining 14.9% less likely to die than their White counterparts. Similarly, the AIAN mortality rate continues to exceed the mortality rate for all other racial/ethnic groups, conditional on clinical profile. Aggregated measures of smoking behavior marginally attenuate the estimated gaps in mortality.[1] We provide results from several robustness checks in the paper and in the appendix; namely, we make sure that our results are not driven by COVID-19 pandemic years (2020-21), by our linear functional form assumption, or by states with poor quality race/ethnicity data. All of our estimates show that AIAN and White SSI recipients have the highest mid-life mortality rates among all five racial/ethnic groups.

[1]This is in contrast to Foote et al. (2025), who find long-run smoking rates explain a substantial share of mortality gaps by education level in the U.S.

One potential explanation for our results is that White adults with disabilities may enter SSI in poorer health, on average, compared to other racial/ethnic groups. We take four approaches to discern how much selection into SSI by race/ethnicity could drive our results. First, we control for 67 diagnosed health conditions, where we define these health conditions flexibly and we require SSI enrollees to have at least one year of Medicaid enrollment in which to observe the 67 conditions. Since we control for such an extensive number of observable health conditions, White SSI recipients must be *unobservably* sicker or have more severe disabilities than Black SSI recipients who live in the same county for selection to explain the White-Black mortality gap. Second, we plot mid-life mortality rates by race/ethnicity against time-in-the-sample, ranging from Year 1 to Year 5. Here we look for whether the White-Black mortality rate gap is especially high in Year 1 vs. later years. Such a finding could suggest that White individuals enter SSI unobservably sicker and die quickly. We do not find that result. We find that the White-Black mortality gap is relatively stable from Years 1 to 3, then it starts to diminish in Years 4 and 5. However, Years 4 and 5 are the same as the COVID-19 pandemic years 2020-2021, where we observe unusually high Black mortality rates. So it is unclear whether the convergence between White and Black mortality rates by Years 4-5 is due to some selection or whether it is due to the COVID-19 pandemic. Third, we use the American Community Survey (ACS) to measure SSI take-up rates by race/ethnicity among people who are likely eligible for SSI (i.e., unmarried, low-income PWD). We show that Black low-income PWD are 4.7 percentage points more likely to take up SSI than their White counterparts, potentially making a case for selection. In response to this evidence, we use the estimated difference in SSI take-up rates to construct "Lee bounds" on the White-Black mid-life mortality gap. We show that the "excess" selected subsample of Black SSI recipients would need to have a mid-life mortality rate less than zero to equalize the mid-life mortality rates across the White and (non-selected) Black SSI samples. Finally, we recreate our results for a sample of Social Security Disability Insurance (SSDI) recipients enrolled in Medicare and/or Medicaid, where we estimate that the Black SSDI take-up rate is only 1.3 percentage points higher than the White SSDI take-up rate. Among SSDI recipients, we still estimate that the Black mid-life mortality rate is 11.6% ($= \frac{0.0033}{0.0284} * 100\%$) lower than the White mid-life mortality rate. Altogether, these results suggest that differential selection into SSI/SSDI by race/ethnicity might partially explain, but is unlikely to fully explain, the White-Black mortality gap among SSI and SSDI recipients.

Overall, our paper contributes to the racial health disparities literature by demonstrating that within a low-income sample of people with disabilities, where socioeconomic (dis)advantage is more equalized

across racial/ethnic groups, Black individuals have lower mortality rates than Whites in middle age. Our results are consistent with other research on low-income populations, but are less consistent with research on the general U.S. population. Research on the general U.S. population shows that mid-life mortality is highest among AIAN, then Black, then White non-Hispanic Americans; whereas we find that mid-life mortality is highest among AIAN, then White non-Hispanic, then Black low-income PWD. Our results more closely mirror studies of other socioeconomically vulnerable populations, such as the homeless, where the mid-life mortality rate of Whites exceeds Blacks, on average (Fowle, Chang and Saxton, 2024). Our findings also resemble Novosad, Rafkin and Asher (2022), who find that the White mortality rate exceeds the Black mortality rate among adults in the bottom 10% of the education distribution. Our paper, in conjunction with this prior literature, suggests that there is a difference between the relative mortality rates of *average* White and Black Americans, and the relative mortality rates of *low-SES* White and Black Americans. One potential interpretation of these results is that socioeconomic factors play a large role in explaining racial/ethnic mortality differences in the general population, as implied by recent survey evidence (Doza, Jensen and Tarraf, 2021; Luo, Hendryx and Wang, 2021; Kaestner, Gangopadhyaya and Schiman, 2025).

2 Data and Descriptive Statistics

To identify SSI recipients and their health outcomes, we use Medicaid administrative claims from the Transformed Medicaid Statistical Information System (T-MSIS) Analytical Files (TAF), 2017-2021. The TAF data provide a complete record of Medicaid claims for hospitalizations, long-term care, other services, and prescriptions, allowing us to identify diagnoses and health characteristics across many different care settings in 50 states and D.C. The TAF also contain a rich array of demographic, geographic, and eligibility-related information for enrollees with fee-for-service (FFS) or managed-care (MC) benefits, which enables us to identify individuals' SSI receipt, race/ethnicity, and county of residence, among other key characteristics that may be associated with mortality.

The TAF data offer several advantages over other data sources that have previously been used to document mortality differences. First, the TAF data represent a near-universe of SSI recipients across the U.S. In 2021, 84% of SSI recipients received Medicaid coverage, due in large part to the tight link between SSI receipt and Medicaid eligibility (Giefer, 2023). State Medicaid programs fall into 3 categories: 1634 (34 states + D.C.), SSI Criteria (8 states), and 209b (8 states). In both 1634 and SSI

Criteria states, SSI receipt guarantees Medicaid eligibility, and there is automatic enrollment in 1634 states. SSI recipients in 209b states face additional eligibility requirements for Medicaid; however, given the low income and asset limits for the SSI program, many SSI recipients in 209b states qualify for coverage through other pathways (Rupp and Riley, 2016). Therefore, Medicaid administrative claims provide a unique opportunity to study a representative sample of the SSI population.

We identify SSI recipients in the TAF as Medicaid beneficiaries with reported SSI receipt or Medicaid eligibility through SSI in any month of the given calendar year.[2] We further restrict our sample to SSI recipients aged 18-64 years. We do this to remove Child (<18) and Aged (65+) SSI recipients, who face different eligibility criteria than working-age adults (Duggan, Kearney and Rennane, 2015). We also restrict to SSI recipients who were enrolled in Medicaid in the prior reporting year. We do this to ensure that we have enough Medicaid claims history to construct a clinical profile for each adult in our sample. We additionally remove SSI recipients missing key demographic information – namely race, sex, and/or county of residence. Finally, once an adult receiving SSI enters our sample, they remain in our sample as long as they remain enrolled in Medicaid. In other words, we allow for adults to "churn" in and out of SSI eligibility while remaining in Medicaid.[3]

One concern with using the TAF is that mortality may be underreported in certain states and years (Li and Udalova, 2025). We account for this in two ways. First, we merge TAF records to the Medicare Master Beneficiary Summary File (MBSF) to supplement TAF date-of-death information for dual Medicare-Medicaid enrollees in our sample. Second, in our main results, we drop 110 state-year observations with greater than 10% missing deaths as reported in Li and Udalova (2025).[4][5] However, we show that the mortality differences by race/ethnicity are similar when we include all state-years in our analysis (Appendix Table A4). This suggests that missing deaths may be less problematic in the SSI sample overall and/or that the degree of missing deaths does not vary by race/ethnicity.

Another advantage of the TAF is its vast information on beneficiary health. The TAF allows us to identify chronic conditions, other disabling conditions, substance use disorders (SUD), and conditions commonly associated with the "deaths of despair" literature (Case and Deaton, 2017). Specifically, we identify 29 chronic conditions using the Centers for Medicare & Medicaid Services (CMS) Chronic

[2]Please refer to Appendix B.1 to see how we define SSI receipt in the TAF.

[3]The share of adults who churn out of SSI for causes unrelated to death is about 3% per year.

[4]In our main results, the sample includes 39 states as shown in Appendix Table B3.

[5]Importantly, 0.9%–1.5% of deaths recorded in the TAF were missing from the Census Numident file, while an average of 13.5% of deaths recorded in the Census were missing in the TAF (Li and Udalova, 2025).

Conditions Warehouse (CCW). These conditions include disorders with large, documented racial/ethnic disparities in incidence, such as hypertension, diabetes, and heart disease (Boustan and Margo, 2014; Hutchinson and Shin, 2014; Sequist, Cullen and Acton, 2011; Lee, Brancati and Yeh, 2011). We identify 27 indicators for "other chronic and disabling conditions" from the CMS CCW, which include epilepsy, muscular dystrophy, autism, and hepatitis, among others. We determine whether SSI recipients have any substance use disorder (SUD) by following the technical specifications in Baller et al. (2021). Finally, we identify the health conditions discussed in Case and Deaton (2015), such as chronic liver disease, chronic pain, obesity, and mental health disorders.[6] For all conditions, we utilize claims for the full preceding calendar year to ensure we capture a full clinical profile of beneficiaries prior to death.[7] By measuring the clinical profiles of SSI recipients, we can show how mortality rates differ by race/ethnicity for people with the same diagnosed conditions.

We define several additional variables from the TAF. First, we focus on five racial/ethnic categories: White (non-Hispanic), Black (non-Hispanic), Hispanic, Asian, and American Indian and Alaska Native (non-Hispanic).[8] Second, we code other covariates for our analysis, including sex (male or female), age (1 year bins), whether the individual is dually-enrolled in Medicare ("duals"), whether the individual lives in an urban county, and whether the individual has one of seven documented functional impairments (e.g., vision difficulties, difficulty doing errands, etc.).[9] Finally, we code our outcome variable – an indicator for mortality – using the date of death in the TAF.

To motivate our focus on SSI recipients for this study, Panel A of Table 1 presents average socioeconomic characteristics of working-age SSI recipients using the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) for 2017-2021. The CPS data show small socioeconomic differences between White SSI recipients and SSI recipients of other races/ethnicities (Table 1 Panel A). The SES differences between White and Black SSI recipients, in particular, are much smaller than what we observe in the general population (Table A1). For instance, Black-White gaps in income among SSI

[6]Please refer to Table B1 for the full list of health conditions.

[7]To identify these conditions, we use all claims from the inpatient, other services, and long term care files. A beneficiary is classified as having a specific condition if they have at least one claim containing a diagnosis code associated with that condition in the preceding year. Our coding approach is broader than the CCW algorithm, which typically requires multiple claims to justify a diagnosis. We adopt this broader approach to mitigate the impact of disparities in access to care by race/ethnicity, which have been highlighted in related literature (Ndugga, Hill and Artiga, 2024). Nevertheless, our results are robust to using the more restrictive CCW algorithmic approach.

[8]We define SSI recipients who report non-Hispanic multiracial identity as Black non-Hispanic. We also drop "other race/ethnicity" SSI recipients.

[9]The full list of impairments includes vision difficulties, hearing difficulties, concentrating difficulties, difficulties dressing/bathing, difficulty doing errands, difficulty walking, or other disability.

recipients are 6.4% the size of these income gaps in the full population. Nevertheless, even among SSI recipients, we still find that Whites are slightly more advantaged in income, home ownership, and rates of college education compared to Black, Hispanic, and AIAN SSI recipients. We return to this fact when discussing our main results. Lastly, the percentage of SSI respondents in CPS who report being in "Poor Self-Reported Health" previews the main result of our paper: 23.2% of White SSI recipients report poor health compared with 20.3% of Black SSI recipients, 21.0% of Hispanic SSI recipients, 13.7% of Asian SSI recipients, and 27.2% of AIAN SSI recipients. Therefore, the CPS data also show that White SSI recipients are in poorer health than other racial/ethnic groups, with the exception of AIAN.

In Table 1 Panel B, we present summary statistics of SSI recipients identified in the TAF 2017-2021. While average age is similar across SSI recipients in our sample, White, Asian, and AIAN recipients are the oldest at 46 years, followed by Black (45) and Hispanic (44) SSI recipients. Share female in the sample is similar across racial/ethnic groups, ranging from 50% among Asian SSI recipients to 54% among Black SSI recipients. However, large differences emerge when we examine urbanicity.[10] 94% of Asian SSI recipients reside in an urban county, followed by 82% of Hispanic recipients, 69% of Black recipients, 48% of White recipients, and 37% of AIAN recipients. These significant geographic differences motivate our use of an urban county indicator, state-by-year fixed effects, and ultimately county fixed effects.

Several interesting patterns emerge when we examine the clinical profile of SSI recipients in Table 1 Panel B. Asian SSI recipients have the highest rate of chronic conditions (45%), followed by AIAN (44%), Black (41%), Hispanic (40%), and White recipients (40%). Rates of "despair" conditions – liver disease, chronic pain, and mental health disorders – are the highest among AIAN SSI recipients (52%), followed by White and Hispanic recipients (49%).[11] SUD is the highest among AIAN (23%) and White (21%) SSI recipients, consistent with estimates for the full U.S. population (Dwyer-Lindgren et al., 2023).

Table 2 provides additional detail on chronic conditions, despair conditions, and other chronic and disabling conditions by race/ethnicity in the SSI population. The table lists the most commonly diagnosed conditions in our data. The most common condition overall is chronic pain, diagnosed in 33-43% of each racial/ethnic group. The second most commonly diagnosed condition is hypertension, which is diagnosed in 21-27% of each group. In general, the percentages of White SSI recipients who are diagnosed

[10] We define urban counties as those with 200,000 or more residents.

[11] This is largely due to the disproportionate rate of liver disease among the Hispanic population (Carrion et al., 2011).

with COPD (11.6%), depression (19.1%), anxiety (17.8%), bipolar (8.6%), and other mood disorders (14.7%) are higher than for other racial/ethnic groups. The percentages of AIAN SSI recipients who are diagnosed with chronic kidney disease (12.9%), diabetes (18.0%), liver disease (5.5%), and SUD (23.4%) are higher compared to other groups. The percentages of Black SSI recipients who are diagnosed with hypertension (27.1%) and heart failure (4.6%) are higher compared to other groups. Overall the table shows meaningful differences in rates of diagnoses across racial/ethnic groups. Controlling for health conditions could be critical for explaining racial/ethnic gaps in mortality among SSI recipients.

3 Empirical Approach

Our empirical goal is to compare mortality rates across populations that are as similar as possible along key dimensions (socioeconomic status, age, gender, clinical profile, and geographic location), but who differ by race/ethnicity. To do so, we use least squares to estimate models of the following form:[12]

$$P(death_{ist} = 1) = \beta_1 Black_i + \beta_2 Hispanic_i + \beta_3 Asian_i + \beta_4 AIAN_i + \Gamma X_{ist} + \lambda_{st} + u_{ist} \qquad (1)$$

where $death_{ist}$ is a binary variable indicating whether SSI recipient i in state s died in year $t \in (2017, 2021)$. Our coefficients of interest are the βs, showing how the average probability of mortality differs for Black, Hispanic, Asian, and AIAN SSI recipients relative to White SSI recipients. X_{ist} is a vector of the SSI recipients' demographic characteristics including sex (male or female), "6 question" functional impairment indicators, age (1-year bins), a dual Medicaid-Medicare enrollment indicator, and an urban county-of-residence indicator. In model (2) we replace the urban county indicator with county-of-residence fixed effects. In models (3)–(5), we control for 29 chronic conditions, 10 "despair conditions," an indicator for a substance use disorder, and 27 other chronic and disabling conditions. In our final model (6), we assign each SSI recipient in our sample the average tobacco smoking rate for their race/ethnic group in their state and year using the CPS Tobacco Supplement.[13] In all specifications, we include state-by-year fixed effects (λ_{st}) and report standard errors clustered by state-year.[14]

[12] We have also estimated non-linear, logistic models. Results are similar and appear in the Appendix Table A2.

[13] Average tobacco smoking rates are calculated among respondents whose incomes fall below 100% of the federal poverty line (FPL), stratified by race/ethnicity, state, and year. Since the CPS Tobacco Supplement is administered only in select years, we impute missing values by using the nearest available yearly estimates: the 2015 average for 2016, the 2018 rate for 2017, the 2019 rate for 2020, and the 2022 rate for 2021.

[14] We have also estimated models clustering by state instead of state-year, and we find qualitatively similar results

4 Results

Our results are divided into three sections. The first section includes our main results on mid-life mortality rates by race/ethnicity among SSI recipients. We also discuss some of our robustness tests related to these results. The second section delves into one hypothesis for why we find a reverse White-Black mortality gap: namely, that Black SSI recipients enter SSI in better health than their White counterparts. We use four approaches to ascertain whether selection into SSI explains the White-Black mortality differences that we observe. The evidence from that section shows that selection is unlikely to be the only explanation for the reverse White-Black mortality gap. The last section describes the data limitations of the paper.

4.1 Main Results

Figure 1 displays age-adjusted (dark blue bars) and fully adjusted[15] (light blue bars) mortality rates by race/ethnicity among SSI recipients ages 18-64. Our age-adjusted estimates show that mortality rates are highest among AIAN adults (2.9%), followed by White (2.5%), Black (2.2%), Hispanic (1.8%), and Asian adults (1.5%). The mean mortality rate in the SSI sample is 2.3%, which is nearly three times as large as the mid-life mortality rate among all U.S. adults ages 18-64 in 2019 (0.78%) (Dwyer-Lindgren et al., 2023). Further adjusting the mortality rates by sex, functional impairments, dual Medicaid-Medicare enrollment, an urban county indicator, and state-by-year fixed effects barely changes the results. The covariates primarily reduce the difference between the Black and Hispanic mortality rates. We note that Hispanic SSI recipients in our sample are more likely to live in urban counties and to have at least one reported functional impairment than Black SSI recipients (Table 1 Panel B). In Figure 2 we further split the sample by sex. We find that mid-life mortality rates are higher among men than women, but that the rank ordering (highest to lowest) of mortality rates by race/ethnicity is the same regardless of sex.

Figure 3 shows how adjusted mortality rates change across the age distribution by race/ethnicity. As expected, mortality rates increase significantly with age across all racial/ethnic groups, from about 1% of the SSI population ages 35–39 to more than 4.5% of the SSI population ages 60–64. AIAN SSI

(available upon request).

[15] "Fully adjusted" means we account for differences in age, sex, seven functional impairment indicators, dual Medicare-Medicaid enrollment, an urban county-of-residence indicator, and state-by-year fixed effects.

recipients have the highest mortality rate starting at ages 25–29, and persisting until their mortality rate is statistically similar to Whites at ages 55–59. At the other extreme, Asian mortality rates remain below rates for the other groups at every point in the age distribution. White mortality rates start increasing faster than Black and Hispanic mortality rates around ages 45–49, and are statistically similar to AIAN mortality rates by ages 55–59.

Figure 4 shows how adjusted mid-life mortality rates changed before vs. during the COVID-19 pandemic. The figure plots mid-life mortality rates for White, Black, Hispanic, Asian, and AIAN SSI recipients from 2017–2021. Mortality rates for all groups increased notably in 2020 and remained elevated in 2021 above their pre-pandemic levels. On average, mid-life mortality rates were 32% higher in 2020-21 vs. 2017-19. As a percent of the pre-COVID-19 mean, mortality rates increased the most for AIAN (46%), then Black (36%), then Hispanic and Asian (27%), and finally White SSI recipients (20%) in 2020-21. As a result, the White-Black mortality gap became smaller, but still statistically significant, in 2020-21 vs. earlier years.

Table 3 shows results from estimating Equation 1, with and without controls for county-of-residence, clinical diagnoses, and race-state-year-imputed smoking rates. The goal of Table 3 is to explain why White SSI recipients die at a higher rate than other racial/ethnic groups, except AIAN, on average. Column 1 shows how Black, Hispanic, Asian, and AIAN mortality rates compare to White mortality rates (the omitted group) after controlling for 1-year age bins, sex, functional impairments, dual Medicaid-Medicare enrollment, an urban county-of-residence indicator, and state×year fixed effects. The results in Column 1 mirror the results shown in the light blue bars in Figure 1: Black mortality is 14% lower than White mortality, Hispanic mortality is 22% lower than White mortality, Asian mortality is 32% lower than White mortality, and AIAN mortality is 18% higher than White mortality, on average.

Column 2 of Table 3 explores whether geography explains our observed differences in mortality rates between White SSI recipients and the other groups by removing the urban county indicator, and adding county fixed effects. We continue to find higher mortality rates among White SSI recipients relative to Black, Hispanic, and Asian SSI recipients. Indeed, our estimated mortality gaps in Column 2 are nearly indistinguishable from those estimated in Column 1 for all racial/ethnic groups. In addition, there is virtually no improvement in model fit, as measured by the adjusted R^2. The lack of improvement in model fit (R^2) suggests that county-of-residence does not significantly predict SSI recipient mortality rates after accounting for age, sex, functional impairments, dual Medicaid-Medicare enrollment, and

state-by-year effects. Therefore, time-invariant differences across counties are unlikely to explain why adult White SSI recipients have a higher mid-life mortality rate than Black, Hispanic, or Asian SSI recipients.

Column 3 of Table 3 adds indicators for 29 chronic conditions. Table 1 showed that White SSI recipients are the least likely to have a diagnosed chronic condition (40%) compared to all other racial/ethnic groups. Table 2 further showed that the types of diagnosed chronic conditions vary by race/ethnicity. For example, White SSI recipients have the highest rate of chronic obstructive pulmonary disease diagnoses among all racial/ethnic groups, while Black SSI recipients have the highest rates of diagnosed hypertension and heart failure. Once we control for these differences, Black mortality is now 18.6% lower than White mortality (i.e., a widening of the gap compared to Column 2), Hispanic mortality is 20.2% lower than White mortality, Asian mortality is 21.7% lower than White mortality, and AIAN mortality is 9.8% higher than White mortality.

Column 4 of Table 3 adds indicators for the despair-related conditions and an indicator for a substance use disorder (SUD). Table 1 showed that AIAN SSI recipients are most likely to have despair conditions (52%) and a SUD (23%). White SSI recipients are diagnosed with a despair-related condition (49%) at a similar rate as all other racial/ethnic groups (48-52%). However, White SSI recipients are the second most likely to have a SUD. Controlling for despair conditions and SUDs brings Black mortality to 16.4% lower than White mortality. Controlling for despair-related conditions and SUDs brings AIAN mortality to 8.1% higher than White mortality. Overall, controlling for despair conditions and SUDs attenuates mortality gaps across all groups.

Column 5 of Table 3 adds indicators for other chronic and disabling conditions that were not included among the original 29 chronic conditions or the 10 despair conditions and SUD. Table 1 showed that Black SSI recipients are the least likely to be diagnosed with one of these conditions (26%), followed by White and Asian recipients (30%). Adding controls for these conditions slightly shrinks the gap between Black and White mortality. Black SSI recipient mortality is now 14.9% lower than White mortality, Hispanic mortality is 19.5% lower than White mortality, and Asian mortality is 16.6% lower than White mortality. AIAN mortality is 7.2% higher than White mortality. Taken together, Columns 3-5 show that for SSI recipients who live in the same county and who share the same set of diagnosed conditions, AIAN and White SSI recipients die at the highest rates.

In Column 6 of Table 3, we consider differences in smoking rates as a contributor to the relatively high

mid-life mortality among White SSI recipients. Unfortunately, the TAF only contains information about whether an enrollee receives treatment for smoking cessation, a variable we already include among the list of SUDs. The TAF does not survey Medicaid enrollees about their smoking behaviors. To address this limitation, we turn to the CPS Tobacco Supplement (TS). The CPS TS asks respondents about their smoking behavior. We restrict the CPS TS to low-income adults, and calculate the share of respondents who ever smoked by racial/ethnic group, state, and year. Then we assign those rates to our SSI recipients in the TAF.[16] Average smoking rates by race/ethnicity appear in Table 1 Panel A. About 45% of low-income White adults report ever smoking from 2017-2021 compared with only 28% of Black adults, 16% of Hispanic adults, and 10% of Asian adults. The smoking rate is highest among AIAN adults at 49%. The results obtained after including these smoking probabilities appear in Column 6 of Table 3. The White-Black and White-Hispanic mid-life mortality gaps attenuate marginally, though the White-Asian mortality gap attenuates more significantly and the AIAN-White gap loses statistical significance.[17]

We use a Gelbach (2016) decomposition to summarize the relative importance of chronic conditions, despair conditions, other chronic and disabling conditions, and smoking rates in explaining mortality differences by race/ethnicity (Table 4). The Gelbach decomposition decomposes the total change in the estimated coefficients from the base model (Column 2, Table 3) to the full model (Column 6, Table 3) into the amounts attributable to each set of explanatory variables. The rows correspond to the average Black-White, Hispanic-White, Asian-White, and AIAN-White differences in mid-life mortality rates. The first row shows that despair conditions attenuate the White-Black mortality gap the most (-0.00048), while chronic conditions actually increase the gap (0.00060). The second row shows that smoking rates attenuate the White-Hispanic mortality gap the most (-0.00053), but chronic conditions are a close second place (-0.00048). The third and fourth rows show that chronic conditions attenuate the White-Asian and AIAN-White mortality gaps the most. Overall, controlling for diagnosed chronic conditions reduces the differences in mortality rates between White and Hispanic/Asian/AIAN SSI recipients, but not between White and Black SSI recipients.

In robustness tests in the Appendix, we generally find similar mortality differences by race/ethnicity when we estimate logistic models (Appendix Table A2), when we estimate models using only states with

[16]For example, if the low-income, White adult smoking rate was 0.3 in Alabama in 2017, then our White SSI recipients living in Alabama in 2017 receive a value of 0.3 for their probability of smoking.

[17]We acknowledge that measurement error in the assigned smoking rates could limit the variable's ability to explain more of the variance in mortality by race/ethnicity.

sufficiently high-quality race data according to the DQ Atlas (Appendix Table A3), and when we estimate models using data from all states (Appendix Table A4). We further show that the average Black-White mortality gaps are consistently negative for every state in our sample except for VT (Appendix Figure A1). The only consequential difference between our robustness estimates and our main estimates relates to the AIAN-White mortality difference. Our main estimates show this difference is positive and significant, but in our robustness tests (e.g., using states with high quality race/ethnicity data), the difference reduces to zero and loses statistical significance.

4.2 Selection into SSI

What explains the relatively higher mid-life mortality rates among White (vs. Black) SSI recipients? One hypothesis is that Black adults enter the SSI program earlier in their disability history, or in better health than White adults. In this section, we take four approaches to determine whether differential selection into SSI as a function of health by race and ethnicity could explain the White-Black mid-life mortality gap in the TAF data.

First, we consider what we might observe empirically if Black SSI recipients entered SSI in better health than White SSI recipients. If that were true, then we might expect the White-Black mortality gap to attenuate toward zero after controlling for differences in the clinical profiles of the two groups.[18][19] However, we find that the White-Black mortality gap persists, conditional on diagnoses. This means that Black SSI enrollees must be in *unobservably* better health or have less severe disabilities than White SSI enrollees,[20] in order for differential selection into SSI by race/ethnicity to generate our results.

Second, if Black SSI recipients are in unobservably better health, or earlier in their disability history, than White SSI recipients at SSI entry, then the White-Black mortality gap might diminish with time spent in SSI. For example, the mid-life mortality difference between White and Black SSI recipients might be especially large in Year 1 of SSI receipt, but decrease thereafter. We explore this possibility in

[18]Recall that we control for 56 chronic and disabling conditions, 10 despair-related conditions, and an indicator for a substance use disorder in our mortality models.

[19]One limitation is that diagnoses originate from interactions with the health care system; our observed diagnoses do not perfectly capture true incidence. Interactions with the health care system could also differ by race/ethnicity even within the same county. Prior research suggests that diagnosis-relative-to-incidence rates are higher for White adults vs. racial/ethnic minorities (Ahmed et al., 2023; Lin et al., 2021; Kim et al., 2018). If that result holds true in our subsample of SSI recipients, then we would over-adjust for Whites' conditions and understate the true White-Black mortality gap. On the other hand, if Black SSI recipients have higher rates of diagnosis conditional on incidence, then we would overstate the White-Black mortality gap.

[20]For example, if Black SSI enrollees have stage I lung cancer, while White SSI enrollees have stage IV lung cancer, on average.

Figure 5. We find that the White-Black mortality gaps are large and fairly persistent from Years 1 to 3 in our sample. The White-Black mortality difference starts to diminish in Year 4 and even converge by Year 5; however, those years correspond to the COVID-19 pandemic years of 2020-2021,[21] where we showed in Figure 4 that the Black mortality rate increases relative to White. As a result, we do not find definitive evidence of a diminishing White-Black mortality gap as SSI recipients spend more time in the program.

Third, we investigate whether take-up rates of SSI are different for Black vs. White adults, conditional on disability and low-income. Then we show what needs to be true about the selection process to overturn the White-Black mortality gap. Figure 6 shows that the take-up rate of SSI benefits is higher among low-income Black adults with disabilities (43%) compared to White adults (38%), perhaps suggesting differential selection into SSI as a function of health by race/ethnicity. So we conduct a bounding exercise to determine the extent to which differential selection into SSI could explain the White-Black mortality gap. We follow Lee (2009) in our approach. Figure 6, using ACS data, showed that the White SSI take-up rate is 38%, while the Black SSI take-up rate is 43%.[22] The differential SSI take-up rate between Black and White adults is 4.7 percentage points, or 10.9% of the Black SSI take-up rate ($10.9\% = \frac{4.7}{43} \times 100\%$).[23] We then split the Black SSI recipient sample into a "trimmed" (89.1%=100%-10.9%) component and an "excess" (i.e., selected) component ($\tau = 10.9\%$). Panel A in Figure 7 shows that even if the "excess" subsample of Black SSI recipients had a mortality rate equal to 0 ($m_e = 0$), the mortality rate in the "trimmed" subsample of Black SSI recipients would be smaller than the mortality rate of White SSI recipients for our estimate of $\tau = 10.9$. However, for $\tau = 11.9\%$ (age-adjusted) and for $\tau = 14.5\%$ (fully-adjusted), Black mortality in the trimmed sample equals White mortality. Moreover, the confidence intervals are wide, meaning that we cannot rule out that the White-Black mortality gap equals 0 in the presence of extreme selection on unobserved health ($m_e = 0$). Panel B then shows the range of τ and the Black mortality rate in the excess sample that would overturn the reverse White-

[21] Recall that our sample begins in 2017 with a lookback period to 2016. The cohort that enters SSI in 2017 is in Year 4 in 2020 and in Year 5 in 2021. The cohort that enters SSI in 2018 is in Year 4 in 2021.

[22] We calculate the SSI take-up rate as the # SSI enrollees divided by the total # of low-income, unmarried PWD in the ACS, by race/ethnicity. We note that the take-up rates are sensitive to how we construct the denominator. For example, the Black SSI take-up rate is much larger than the White SSI take-up rate if we use the full Black/White population as the denominator; however, the goal of our paper is to compare outcomes for people with similar socioeconomic characteristics. Hence we limit the denominator to people who are most likely to be eligible for SSI (low-income and disabled).

[23] We can also compare the relative odds of Black vs. White SSI take-up to the relative odds of Black vs. White take-up of Medicaid in general. We find an odds ratio for Black vs. White SSI take-up of 1.23, which is similar to Smith, Aboulafia and Sommers (2025), who find odds ratios ranging between 1.0 to 1.21 for Black vs. White take-up of Medicaid from 2017–2019.

Black mid-life mortality gap among SSI recipients. For mid-life mortality estimates in the range of 0.7% (taken from the full U.S. population in Dwyer-Lindgren et al. (2023)), the excess Black SSI take-up rate needs to exceed 16% using the age-adjusted model and exceed 20% using our fully adjusted model. We do not know of research that has estimated such large differences in SSI take-up rates between White and Black low-income PWD.

Fourth, we estimate mid-life mortality results by race/ethnicity for recipients of Social Security Disability Insurance (SSDI).[24] We re-estimate Figure 1 for SSDI recipients ages 18-64 who are enrolled in Medicare and/or Medicaid. SSDI recipients generally have higher incomes and longer work histories than SSI recipients, and they qualify for Medicare health insurance after a 24-month waiting period. Using CPS data, we estimate smaller differences in SSDI take-up rates by race/ethnicity compared to SSI.[25] Panel A in Figure 8 shows that the White SSDI take-up rate is 22.9%, while the Black SSDI take-up rate is 24.2%, making the differential take-up rate 1.3 percentage points (or $\tau = 5.4\%$ of the Black SSDI take-up rate). Meanwhile Panel B in Figure 8 shows that the age-adjusted White SSDI mortality rate is 2.82%, while the age-adjusted Black SSDI mortality rate is 2.60%, again highlighting a reverse White-Black mid-life mortality gap among adults with disabilities.

Figure 9 shows the results from the Lee bounding exercise for SSDI recipients. Panel A shows that even if the "excess" subsample of Black SSDI enrollees had a mortality rate equal to 0, the mortality rate in the "trimmed" subsample of Black SSDI enrollees would be smaller than the mortality rate of White SSDI recipients, for our estimate of $\tau = 5.4$. However, as in the case of SSI, for larger values of the trimming share (i.e., $\tau = 7.7\%$ (age-adjusted) and $\tau = 11.8\%$ (fully-adjusted)), Black mortality in the trimmed sample equals White mortality in the presence of extreme selection ($m_e = 0$). Panel B shows the range of τ and Black mortality in the excess sample that would overturn the reverse White-Black mid-life mortality gap among SSDI recipients. For mid-life mortality estimates similar to the full U.S. population (e.g., 0.7%), the excess Black SSDI take-up rate needs to be greater than 10% using the age-adjusted model and greater than 15% using our fully adjusted model to equalize mid-life mortality rates between White and Black SSDI recipients.

[24] We primarily conduct this exercise to provide evidence on whether differential selection into disability programs by race/ethnicity explains White-Black mid-life mortality differences. Another advantage of this exercise is that it helps us verify the deaths data in TAF. Specifically, SSDI recipients who are enrolled in Medicaid and Medicare should have their deaths recorded in both data sets (i.e., in the Medicare Master Beneficiary Summary File (MBSF) and in the TAF Demographic and Enrollment file). So we use the MBSF to confirm deaths for these duals. We find that fewer than 0.21% of SSDI Medicare-Medicaid duals with a death recorded in the MBSF had a missing death record in the TAF.

[25] We use the CPS, rather than the ACS, to estimate SSDI take-up, since the ACS does not distinguish between Social Security Retirement, Survivorship, and Disability benefit receipt.

4.3 Limitations

One limitation of our study is that the TAF data has some quality issues. The primary quality concerns in our context are (i) missing dates of death for some Medicaid enrollees and/or (ii) incomplete reporting of race/ethnicity data. To address missing deaths, our main results restrict to state-years with $< 10\%$ misreported deaths following Li and Udalova (2025), but our results are robust to including all states and years (Appendix Table A4). Our results are also robust to restricting to the 20 states with sufficiently high-quality race/ethnicity TAF data (Appendix Table A3).[26] We further use Medicare claims data and find similar estimates of mid-life mortality by race/ethnicity among SSDI recipients. Overall, we think it is unlikely that data quality issues drive our results, particularly when rates of missing deaths in TAF would have to differ systematically by race/ethnicity to bias the estimates.

5 Conclusion

This paper presents two key findings that advance our understanding of mid-life mortality in the United States. First, we show that mid-life mortality rates are nearly three times higher among low-income people with disabilities who receive Supplemental Security Income (SSI) than in the general population. Second, we show that AIAN and White SSI recipients have higher mid-life mortality rates than similar Black, Hispanic, and Asian individuals. While prior research has demonstrated that AIAN individuals have the highest mortality rates among these racial/ethnic groups, our study finds a reverse White-Black mortality gap compared to other studies (Dwyer-Lindgren et al., 2023; Doza, Jensen and Tarraf, 2021; Luo, Hendryx and Wang, 2021; Schwandt et al., 2021; Kaestner, Gangopadhyaya and Schiman, 2025).

Our results suggest that average differences in mid-life mortality rates between White and Black adults may not apply to low-SES populations. Even after accounting for health conditions (such as despair-related conditions) and risky health behaviors (such as tobacco use) that are more common among White (vs. Black) individuals, we find that White SSI recipients have higher mortality rates than Black SSI recipients. This finding is particularly notable because we also show that White SSI recipients are slightly more economically advantaged than Black SSI recipients, as measured by average income, home ownership rates, and college education rates. Prior research using data through 2019 has

[26] Per the DQ Atlas, these states include: CA, DE, FL, GA, ID, IL, IN, KY, ME, MN, NC, NH, ND, NJ, NM, OH, SD, VA, VT, WI.

demonstrated that the White-Black mortality gap closes after adjusting for income (Cullen, Cummins and Fuchs, 2012; Doza, Jensen and Tarraf, 2021; Luo, Hendryx and Wang, 2021; Kaestner, Gangopadhyaya and Schiman, 2025); now, using more recent data on low-income PWD, we show that the gap reverses. Our result is broadly consistent with Novosad, Rafkin and Asher (2022), who also find a reverse White-Black mortality gap among the least educated 10% of U.S. adults ages 50+ from 2016-2018. Future research could explore why racial health disparities in low-SES populations are somewhat different than the disparities observed in the general population.

References

Ahmed, Yunus, Pieter A. J. van Bakel, Hechuan Hou, Devraj Sukul, Donald S. Likosky, Joost A. van Herwaarden, Daphne C. Watkins, Gorav Ailawadi, Himanshu J. Patel, and Michael P. Thompson. 2023. "Racial and Ethnic Disparities in Diagnosis, Management and Outcomes of Aortic Stenosis in the Medicare Population." *PLOS ONE*, 18(4): e0281811.

Alexander, Diane, and Janet Currie. 2017. "Is it who you are or where you live? Residential segregation and racial gaps in childhood asthma." *Journal of Health Economics*, 55: 186–200.

Alsan, Marcella, Amitabh Chandra, and Kosali Simon. 2021. "The Great Unequalizer: Initial Health Effects of COVID-19 in the United States." *Journal of Economic Perspectives*, 35(3): 25–46.

Andrasfay, Theresa, and Noreen Goldman. 2021. "Reductions in 2020 US life expectancy due to COVID-19 and the disproportionate impact on the Black and Latino populations." *Proceedings of the National Academy of Sciences*, 118(5): e2014746118.

Arias, Elizabeth, Jiaquan Xu, and Kenneth Kochanek. 2025. "United States Life Tables, 2023." *National Vital Statistics Reports*, 74(6).

Baller, Julia, Allison Barrett, Preeti Gill, Andres Arguello, Puja Nair, Kimberly Proctor, Jessie Parker, and Jeffrey Galecki. 2021. "Identifying Beneficiaries with a Treated Substance Use Disorder (SUD): Technical Specifications." Centers for Medicare & Medicaid Services (CMS), Medicaid and CHIP Business Information Solutions (MACBIS) Technical Report. Prepared by Mathematica and CMS, Center for Medicaid and CHIP Services.

Bhutta, Neil, Andrew C. Chang, Lisa J. Dettling, and Joanne W. Hsu. 2020. "Disparities in Wealth by Race and Ethnicity in the 2019 Survey of Consumer Finances." *FEDS Notes*.

BLS. 2024. "Labor force characteristics by race and ethnicity, 2023." Bureau of Labor Statistics 1113.

Borchgrevink, Petter C., Mari Glette, Astrid Woodhouse, Stephen Butler, Tormod Landmark, Pål Romundstad, Ola Dale, Tore C. Stiles, Kaare H. Bonaa, Dagfinn Thorsvik, Sabina Thünte, and Stein Kaasa. 2022. "A Clinical Description of Chronic Pain in a General Population Using ICD-10 and ICD-11 (The HUNT Pain Examination Study)." *The Journal of Pain*, 23(2): 337–348. Publisher: Elsevier.

Boustan, Leah, and Robert A Margo. 2014. "Racial Differences in Health in Long-Run Perspective: A Brief Introduction." National Bureau of Economic Research Working Paper 20765.

Budig, Michelle J., Misun Lim, and Melissa J. Hodges. 2021. "Racial and gender pay disparities: The role of education." *Social Science Research*, 98: 102580.

Carrion, Andres F., Ravi Ghanta, Olveen Carrasquillo, and Paul Martin. 2011. "Chronic Liver Disease in the Hispanic Population of the United States." *Clinical Gastroenterology and Hepatology*, 9(10): 834–841.

Case, Anne, and Angus Deaton. 2015. "Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century." *PNAS*, 112(49).

Case, Anne, and Angus Deaton. 2017. "Mortality and Morbidity in the 21st Century." *Brookings Papers on Economic Activity*, 2017: 397–476.

Case, Anne, and Angus Deaton. 2021. "Life expectancy in adulthood is falling for those without a BA degree, but as educational gaps have widened, racial gaps have narrowed." *Proceedings of the National Academy of Sciences*, 118(11): e2024777118.

Centers for Medicare & Medicaid Services. 2025*a*. "DQ Atlas." *https://www.medicaid.gov/dq-atlas/welcome*, Accessed: July 2025.

Centers for Medicare & Medicaid Services, Chronic Conditions Warehouse (CCW). 2025*b*. "30 CCW Chronic Conditions Algorithms & Other Chronic Health, Mental Health, and Potentially Disabling Conditions Algorithms." Chronic Conditions Warehouse (CCW), CMS.

Chetty, Raj, Michael Stepner, Sarah Abraham, Shelby Lin, Benjamin Scuderi, Nicholas Turner, Augustin Bergeron, and David Cutler. 2016. "The Association Between Income and Life Expectancy in the United States, 2001–2014." *JAMA*, 315(16): 1750–1766.

Cullen, Mark R., Clint Cummins, and Victor R. Fuchs. 2012. "Geographic and Racial Variation in Premature Mortality in the U.S.: Analyzing the Disparities." *PLOS ONE*, 7(4): 1–13.

Currie, Janet. 2009. "Healthy, Wealthy, and Wise: Socioeconomic Status, Poor Health in Childhood, and Human Capital Development." *Journal of Economic Literature*, 47(1): 87–122.

Cutler, David M., Adriana Lleras-Muney, and Tom Vogl. 2011. "Socioeconomic Status and Health: Dimensions and Mechanisms." In *The Oxford Handbook of Health Economics.* , ed. Sherry Glied and Peter C. Smith, 0. Oxford University Press.

Doza, Adit, Gail A Jensen, and Wassim Tarraf. 2021. "Racial/Ethnic Differences in Mortality in Late Midlife: Have They Narrowed in Recent Years?" *The Journals of Gerontology: Series B*, 76(7): 1475–1487.

Duggan, Mark, Melissa S. Kearney, and Stephanie Rennane. 2015. "The Supplemental Security Income Program." *Economics of Means-Tested Transfer Programs in the United States, Volume 2*, 1–58. University of Chicago Press.

Dwyer-Lindgren, Laura, Parkes Kendrick, Yekaterina O Kelly, Dillon O Sylte, Chris Schmidt, Brigette F Blacker, Farah Daoud, Amal A Abdi, Mathew Baumann, Farah Mouhanna, Ethan Kahn, Simon I Hay, George A Mensah, Anna M Nápoles, Eliseo J Pérez-Stable, Meredith Shiels, Neal Freedman, Elizabeth Arias, Stephanie A George, David M Murray, John WR Phillips, Michael L Spittel, Christopher JL Murray, and Ali H Mokdad. 2022. "Life expectancy by county, race, and ethnicity in the USA, 2000–19: a systematic analysis of health disparities." *The Lancet*, 400(10345): 25–38.

Dwyer-Lindgren, Laura, Parkes Kendrick, Yekaterina O Kelly, Mathew M Baumann, Kelly Compton, Brigette F Blacker, Farah Daoud, Zhuochen Li, Farah Mouhanna, Hasan Nassereldine, Chris Schmidt, Dillon O Sylte, Simon I Hay, George A Mensah, Anna M Nápoles, Eliseo J Pérez-Stable, Christopher J L Murray, and Ali H Mokdad. 2023. "Cause-specific mortality by county, race, and ethnicity in the USA, 2000–19: a systematic analysis of health disparities." *The Lancet*, 402(10407): 1065–1082.

Figueroa, Jose F., Jessica Phelan, E. John Orav, Vikram Patel, and Ashish K. Jha. 2020. "Association of Mental Health Disorders With Health Care Spending in the Medicare Population." *JAMA Network Open*, 3(3): e201210.

Foote, Christopher, Ellen Meara, Jonathan S. Skinner, and Luke R. Stewart. 2025. "Explaining the Widening Divides in US Midlife Mortality: Is There a Smoking Gun?" National Bureau of Economic Research Working Paper 34553.

Fowle, Matthew, Jamie Chang, and Katherine Saxton. 2024. ""Racial mortality inversion": Black-white disparities in mortality among people experiencing homelessness in the United States." *SSM - Population Health*, 27: 101688.

Gelbach, Jonah B. 2016. "When Do Covariates Matter? And Which Ones, and How Much?" *Journal of Labor Economics*, 34(2): 509–543.

Giefer, Katherine. 2023. "Supplemental Security Income (SSI): 2021." U.S Census Bureau P70FS-189.

Goodman, N., M. Morris, and K. Boston. 2017. "Financial Inequality: Disability, Race, and Poverty in America." National Disability Institute.

Hutchinson, Rebecca Newlin, and Sonya Shin. 2014. "Systematic Review of Health Disparities for Cardiovascular Diseases and Associated Factors among American Indian and Alaska Native Populations." *PLOS ONE*, 9(1): e80973.

Hébert, Anne H., and Alison L. Hill. 2024. "Impact of opioid overdoses on US life expectancy and years of life lost, by demographic group and stimulant co-involvement: a mortality data analysis from 2019 to 2022." *The Lancet Regional Health – Americas*, 36.

Kaestner, Robert, Anuj Gangopadhyaya, and Cuiping Schiman. 2025. "Racial Disparities in Mortality by Sex, Age, and Cause of Death." National Bureau of Economic Research Working Paper 33905.

Karna, Uditi, Min Sok Lee, John A. List, Andrew Simon, and Haruka Uchida. 2025. "Measuring racial educational disparities over time amongst top achievers." *Nature*, 639: 976–984.

Kim, Eun Ji, Taekyu Kim, Joseph Conigliaro, Jane M. Liebschutz, Michael K. Paasche-Orlow, and Amresh D. Hanchate. 2018. "Racial and Ethnic Disparities in Diagnosis of Chronic Medical Conditions in the USA." *Journal of General Internal Medicine*, 33.

Lee, David S. 2009. "Training, Wages, and Sample Selection: Estimating Sharp Bounds on Treatment Effects." *The Review of Economic Studies*, 76(3): 1071–1102.

Lee, Ji Won R., Frederick L. Brancati, and Hsin-Chieh Yeh. 2011. "Trends in the Prevalence of Type 2 Diabetes in Asians Versus Whites: Results from the United States National Health Interview Survey, 1997–2008." *Diabetes Care*, 34(2): 353–357.

Li, Gina, and Victoria Udalova. 2025. "Evaluating the Completeness of Mortality Information in Medicaid Records." *Health Services Research*, n/a(n/a).

Lin, Pei-Jung, Allan T. Daly, Natalia Olchanski, Joshua T. Cohen, Peter J. Neumann, Jessica D. Faul, Howard M. Fillit, and Karen M. Freund. 2021. "Dementia Diagnosis Disparities by Race and Ethnicity." *Medical Care*, 59(8): 679–686.

Luo, Juhua, Michael Hendryx, and Fengge Wang. 2021. "Mortality disparities between Black and White Americans mediated by income and health behaviors." *SSM - Population Health*, 17: 101019.

Medicaid and CHIP Payment and Access Commission. 2026. "Exhibit 22. Medicaid Benefit Spending Per Full-Year Equivalent (FYE) Enrollee by State and Eligibility Group, FY 2023." *MACStats: Medicaid and CHIP Data Book*, Accessed: 2026-04-28.

Miller, Sarah, Laura R. Wherry, and Bhashkar Mazumder. 2021. "Estimated Mortality Increases During The COVID-19 Pandemic By Socioeconomic Status, Race, And Ethnicity." *Health Affairs*, 40(8): 1252–1260. Publisher: Health Affairs.

Morenoff, Jeffrey D., James S. House, Ben B. Hansen, David R. Williams, George A. Kaplan, and Haslyn E. Hunte. 2007. "Understanding social disparities in hypertension prevalence, awareness, treatment, and control: The role of neighborhood context." *Social Science & Medicine*, 65(9): 1853–1866. Placing Health in Context.

Ndugga, Nambi, Latoya Hill, and Samantha Artiga. 2024. "Key Data on Health and Health Care by Race and Ethnicity."

Novosad, Paul, Charlie Rafkin, and Sam Asher. 2022. "Mortality Change among Less Educated Americans." *American Economic Journal: Applied Economics*, 14(4): 1–34.

Rupp, Kalman, and Gerald Riley. 2016. "State Medicaid Eligibility and Enrollment Policies and Rates of Medicaid Participation among Disabled Supplemental Security Income Recipients." *Social Security Bulletin*, 76(3).

Schpero, William L., K. John McConnell, Greta Bushnell, Alina Denham, Patience M. Dow, Shashi N. Kapadia, Stephan R. Lindner, Hillary Samples, Lindsay Shea, Kelsey Watson, and Sarah H. Gordon. 2025. "The T-MSIS Analytic Files (TAF) Analysis Reporting Checklist: A Guide for Research Using Medicaid Claims Data." *JAMA Health Forum*, 6(10): e253622.

Schwandt, Hannes, Janet Currie, Marlies Bär, James Banks, Paola Bertoli, Aline Bütikofer, Sarah Cattan, Beatrice Zong-Ying Chao, Claudia Costa, Libertad González, Veronica Grembi, Kristiina Huttunen, René Karadakic, Lucy Kraftman, Sonya Krutikova, Stefano Lombardi, Peter Redler, Carlos Riumallo-Herl, Ana Rodríguez-González, Kjell G. Salvanes, Paula Santana, Josselin Thuilliez, Eddy van Doorslaer, Tom Van Ourti, Joachim K. Winter, Bram Wouterse, and Amelie Wuppermann. 2021. "Inequality in mortality between Black and White Americans by age, place, and cause and in comparison to Europe, 1990 to 2018." *Proceedings of the National Academy of Sciences*, 118(40): e2104684118.

Sequist, Thomas D., Theresa Cullen, and Kelly J. Acton. 2011. "Indian Health Service Innovations Have Helped Reduce Health Disparities Affecting American Indian And Alaska Native People." *Health Affairs*, 30(10): 1965–1973. Publisher: Health Affairs.

Smith, Rachel B., Gideon Aboulafia, and Benjamin D. Sommers. 2025. "Who Enrolls in Coverage and Who Remains Uninsured? Medicaid Take-Up Before and After the Affordable Care Act and During Unwinding." *The Milbank Quarterly*, 103(2): 0526.

Steinweg, Amy. 2023. "Non-Hispanic Black Adults Have Higher Rates of Disability Due to Arthritis, Diabetes, Hypertension Than Non-Hispanic White Adults." US Census Bureau. Section: Government.

Town, Machell, Paul Eke, Guixiang Zhao, Craig W. Thomas, Jason Hsia, Carol Pierannunzi, and Karen Hacker. 2024. "Racial and Ethnic Differences in Social Determinants of Health and Health-Related Social Needs Among Adults — Behavioral Risk Factor Surveillance System, United States, 2022." *Morbidity and Mortality Weekly Report*, 73(9): 204–209.

Williams, David R., and Pamela Braboy Jackson. 2005. "Social Sources Of Racial Disparities In Health." *Health Affairs*, 24(2): 325–334.

Tables & Figures

Table 1: SSI Recipient Characteristics

	White	Black	Hispanic	Asian	AIAN
Panel A. Working-Age SSI Recipients, CPS 2017 – 2021					
College Educated (%)	7.3	5.3	4.4	12	5.1
Employed, Any (%)	6.9	5.4	4.4	7.0	7.2
Full-Time (%)	18	33	36	24	11
Total Income ($)	14922	13682	13191	15017	13365
Below FPL (%)	37	47	37	20	47
Married (%)	25	14	22	32	28
W/ Children (%)	23	23	30	32	30
Owns Home (%)	54	30	38	51	50
Any Health Insurance (%)	99	99	98	99	99
Medicaid (%)	91	95	93	92	92
Medicare (%)	35	31	27	24	28
Private Health Coverage (%)	17	11	14	19	10
Poor Self-Reported Health (%)	23	20	21	14	27
Low Income Smoking, State-Year (%)	45	28	16	10	49
Num. Respondents	5181	2933	1715	228	307
Panel B. Working-Age SSI Recipients, TAF 2017 – 2021					
Avg Age	46	45	44	46	46
Female (%)	53	54	52	50	51
Urban County (%)	48	69	82	94	37
Functional Limitation (%)	50	47	61	76	38
Dual Medicaid-Medicare (%)	39	34	34	30	32
Chronic Condition (%)	40	41	40	45	44
Despair Condition (%)	49	48	49	48	52
SUD (%)	21	18	15	7	23
Other Chronic & Disabling Condition (%)	30	26	31	30	32
Deceased (%)	2.55	2.12	1.69	1.63	2.92
Num. SSI Recipients	2317804	1495157	593708	98789	58402
Num. States	39	38	38	32	38
Num. Years	5	5	5	5	5
Num. Recipient-Years	6281111	4214073	1856297	324572	147963

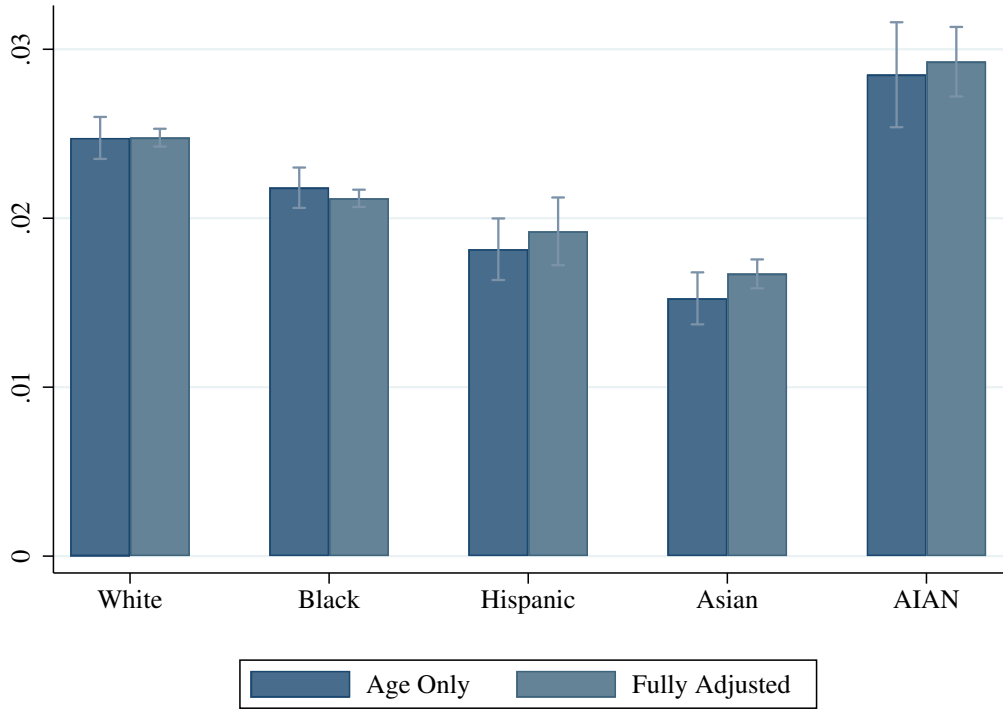
This table depicts summary statistics for working-age SSI recipients by race/ethnicity using the CPS ASEC 2017-2021 and TAF 2017-2021. Races are non-Hispanic unless otherwise specified.

Table 2: Diagnosis Rates (%) of the Most Common Conditions among SSI Recipients by Race/Ethnicity

		White	Black	Hispanic	Asian	AIAN
Chronic Conditions						
Chronic Kidney Disease		8.7	10.4	10.4	10.6	12.9
COPD		11.6	7.3	6.3	4.6	9.3
Asthma		5.3	7.3	7.1	4.9	6.6
Pneumonia		3.7	3.3	3.3	2.7	4.9
Stroke		1.8	2.3	1.9	2.1	2.1
Atrial Fibrillation		1.5	1.2	1.0	1.2	1.3
Hypertension		21.0	27.1	20.8	23.6	23.2
Heart Failure		3.5	4.6	3.1	2.8	3.9
Ischemic Heart Disease		4.9	4.2	4.0	3.8	4.6
Acquired Hypothyroidism		5.8	2.5	4.7	4.8	4.3
Diabetes		11.5	13.1	14.8	17.1	18.0
Anemia		6.4	9.5	7.9	7.8	8.7
Hyperlipidemia		13.4	11.4	13.7	20.7	11.0
Arthritis		10.9	9.6	9.3	7.1	12.4
Cataracts		2.4	2.4	2.7	4.2	3.2
Glaucoma		1.3	2.5	2.3	3.3	2.2
"Despair" Conditions & SUD						
Liver Disease		3.9	2.4	4.5	3.6	5.5
Chronic Pain		38.7	38.7	38.0	33.1	43.2
Obesity		8.7	9.9	11.1	5.1	8.8
Anxiety		17.8	9.6	13.5	9.1	14.9
Depression		19.1	13.3	17.0	13.7	17.0
Bipolar Disorder		8.6	5.5	6.7	3.8	6.7
Other Mood Disorders		14.7	10.6	13.8	11.9	13.7
Personality Disorders		2.6	1.5	2.0	1.6	2.2
PTSD		4.9	2.9	3.5	3.5	5.6
Psychotic Disorders		7.0	9.3	9.6	13.5	8.0
SUD		20.9	18.1	14.6	7.3	23.4
Other Chronic & Disabling Conditions	ADHD	3.3	2.1	2.7	1.6	2.6
Autism		2.3	1.1	2.5	4.0	1.2
Epilepsy		4.3	3.5	4.5	4.2	4.7
Fibromyalgia		12.8	10.1	9.8	5.9	13.8
Intellectual Disabilities		4.5	3.2	6.6	9.4	3.7
Migraine and Chronic Headache		3.8	2.8	3.2	2.2	3.4
Mobility Impairment		1.7	2.3	2.2	2.6	2.6
Peripheral Vascular Disease		2.3	2.2	2.3	1.5	2.5
Ulcers		1.8	1.6	1.7	1.0	3.1

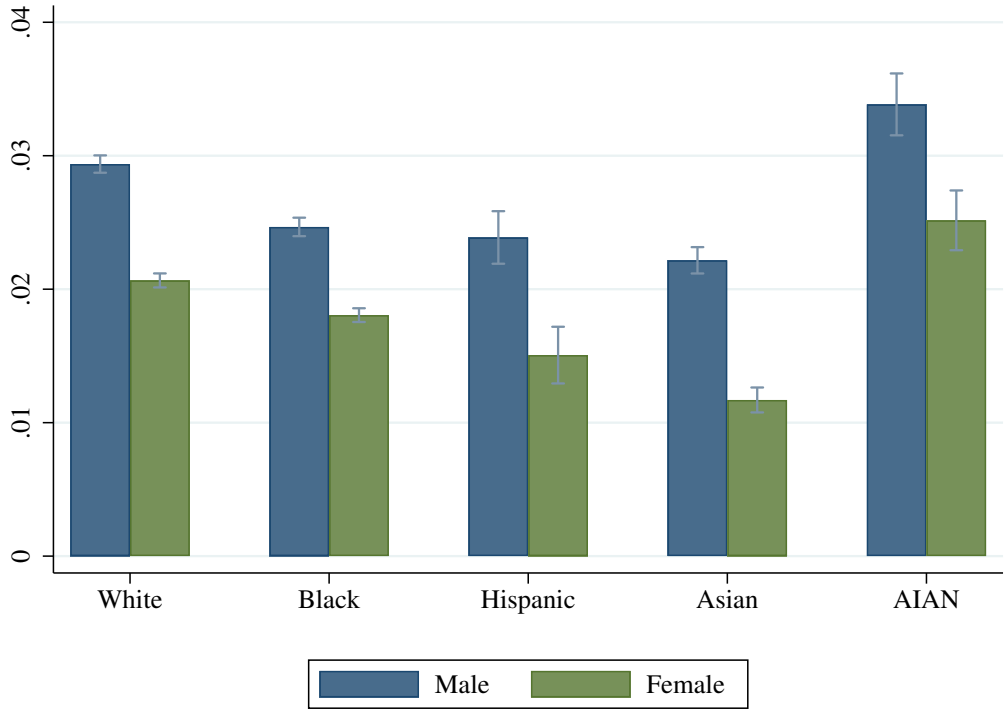
This table depicts the average diagnosis rates of conditions among working-age SSI recipients by race/ethnicity (as a % of each subsample). The most common conditions are displayed; rare conditions are suppressed. Data are from TAF 2017-2021. Conditions are lagged by one year. Races are non-Hispanic unless otherwise specified.

Figure 1: Mortality Rates among SSI Recipients by Race/Ethnicity



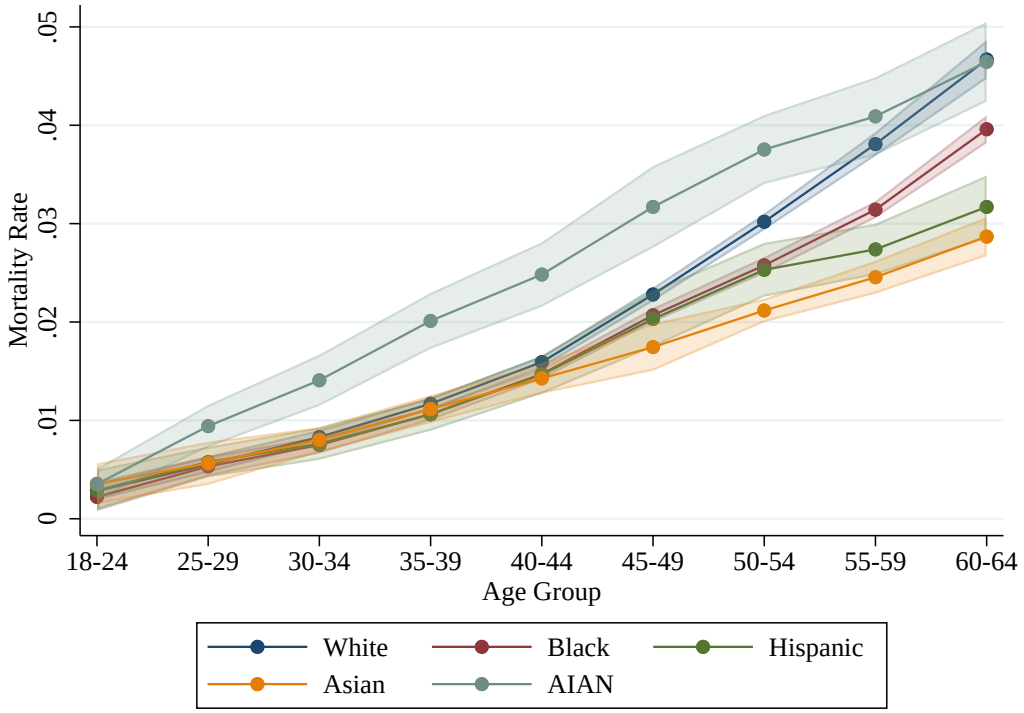
This figure depicts age adjusted and fully adjusted average mortality rates among SSI recipients by race/ethnicity. Data are from TAF 2017-2021. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Adjusted averages include controls for functional impairment (6Q or other), age fixed effects, sex, dual Medicare enrollment, urban county, and state*year fixed effects.

Figure 2: Adjusted Mortality Rates by Sex



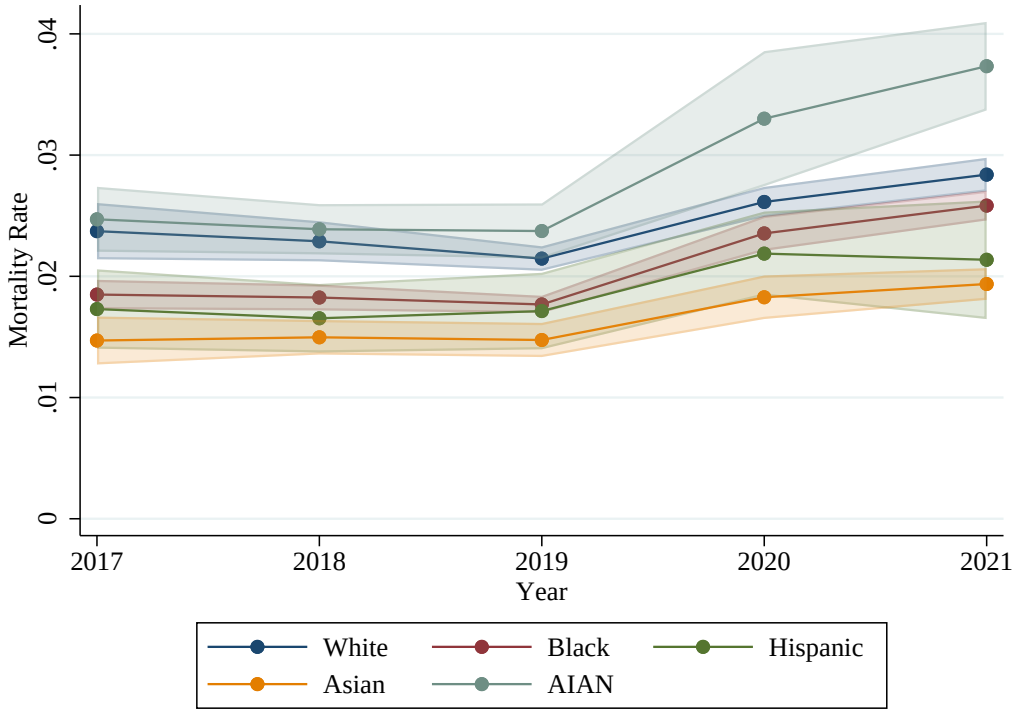
This figure depicts adjusted average mortality rates among SSI recipients by race/ethnicity and sex. Data are from TAF 2017-2021. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Adjusted averages include controls for functional impairment (6Q or other), age fixed effects, dual Medicare enrollment, urban county, and state*year fixed effects.

Figure 3: Adjusted Mortality Rates by Age Group



This figure depicts adjusted average mortality rates among SSI recipients by 5-year age groups, comparing across races/ethnicities. Data are from TAF 2017-2021. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Averages are adjusted by age, sex, functional impairment (6Q or other), dual Medicare enrollment, urban county, and state*year FE.

Figure 4: Adjusted Mortality Rates Before and During the COVID-19 Pandemic, 2017-2021



This figure depicts adjusted average mortality rates among SSI recipients over the sample period 2017-2021, comparing across race/ethnicities. Data are from TAF 2017-2021. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Averages are adjusted by age, sex, functional impairment (6Q), dual Medicare enrollment, urban county, and state× year FE.

Table 3: Disparities in Mid-Life Mortality by Race/Ethnicity

	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.00359***	-0.00392***	-0.00465***	-0.00410***	-0.00373***	-0.00339***
	(0.000399)	(0.000427)	(0.000385)	(0.000372)	(0.000373)	(0.000395)
Hispanic	-0.00554***	-0.00549***	-0.00505***	-0.00495***	-0.00487***	-0.00433***
	(0.00125)	(0.00123)	(0.00112)	(0.00110)	(0.00107)	(0.000920)
Asian	-0.00806***	-0.00797***	-0.00543***	-0.00482***	-0.00415***	-0.00353***
	(0.000474)	(0.000435)	(0.000446)	(0.000455)	(0.000455)	(0.000545)
American Indian or Alaska Native	0.00450***	0.00430***	0.00246*	0.00202*	0.00179*	0.00165
	(0.00107)	(0.00117)	(0.000961)	(0.000938)	(0.000904)	(0.000983)
Observations	12824016	12824016	12824016	12824016	12824016	12824016
Adjusted R^2	0.011	0.011	0.047	0.049	0.051	0.051
Avg White Mortality	0.025	0.025	0.025	0.025	0.025	0.025
County FE		Y	Y	Y	Y	Y
Chronic Conditions			Y	Y	Y	Y
Despair Conditions				Y	Y	Y
Other Chronic & Disabling Conditions					Y	Y
State-Year-Race Smoking						Y

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

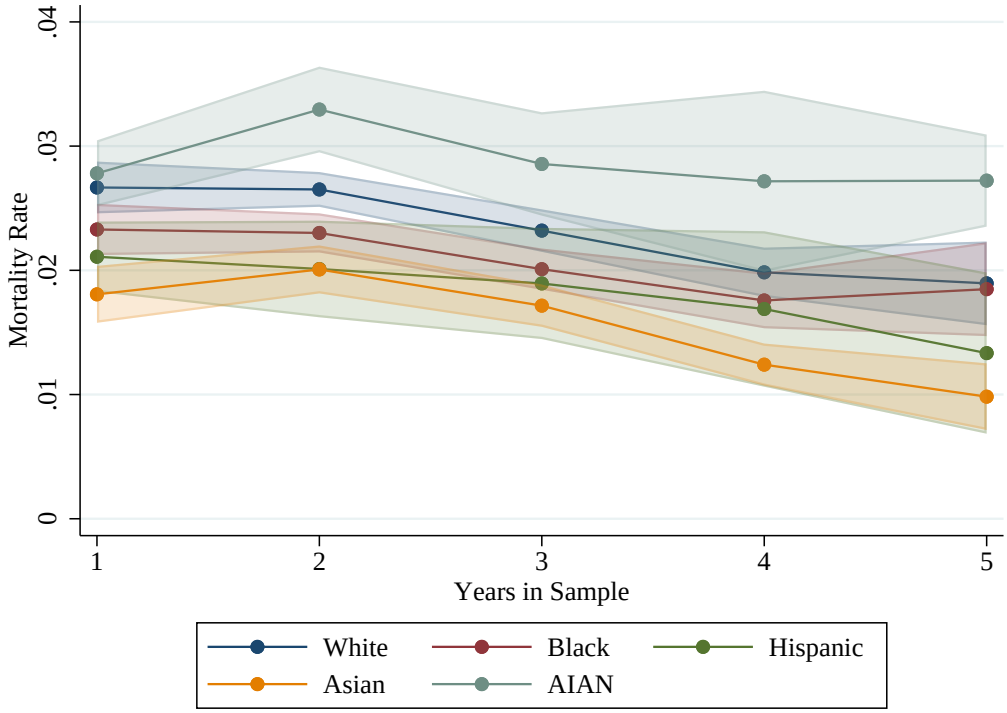
This table depicts a regression of mortality on race dummies, demographic characteristics, and certain health conditions. Column (1) presents results with demographic controls. Column (2) replaces the urban county indicator with county fixed effects. Column (3) presents results with demographic controls and chronic conditions (CC). Column (4) includes demographic controls, CC, despair conditions (DC), and Column (5) adds other chronic and disabling conditions. Column (6) adds state-year-race smoking rates. Data are from TAF 2017-2021. Health conditions are lagged by one year. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Demographic characteristics include age fixed effects, sex, functional impairment (6Q or other indicators), dual Medicare enrollment, urban county indicator, and state*year fixed effects. State-year-race smoking rates are obtained from CPS Tobacco supplement for 2015, 2018, 2019, and 2022.

Table 4: Gelbach (2016) Decomposition of Race and Ethnicity Coefficients

	Base	Full	Total Δ	Chronic	Despair	Other	Smoking
Black	-0.00392	-0.00339	-0.00052	0.00060	-0.00048	-0.00031	-0.00034
Hispanic	-0.00549	-0.00433	-0.00116	-0.00048	-0.00013	-0.00001	-0.00053
Asian	-0.00797	-0.00353	-0.00444	-0.00234	-0.00057	-0.00090	-0.00062
American Indian or Alaska Native	0.00430	0.00165	0.00265	0.00154	0.00044	0.00053	0.00014

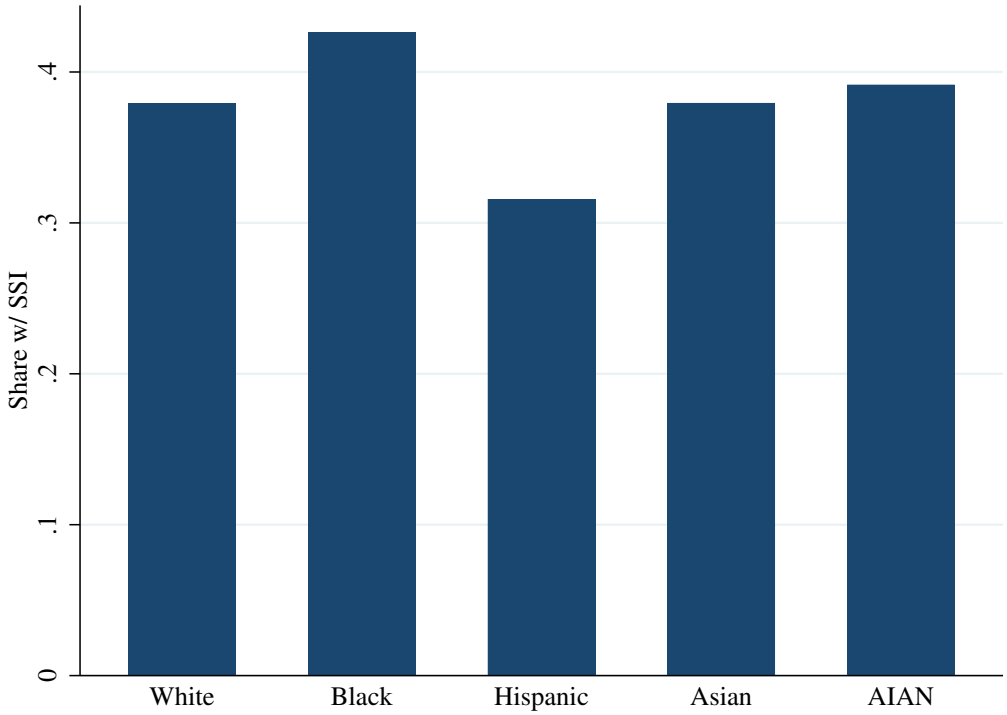
This table depicts a Gelbach (2016) decomposition for the specifications presented in Table 3 to assess the relative significance of each set of covariates for the change in the coefficients (Total Δ = Base − Full). The base and full specifications correspond to Col. 2 and Col. 6 in Table 3. Data are from TAF 2017-2021.

Figure 5: Adjusted Mortality Rates by Years in the Sample



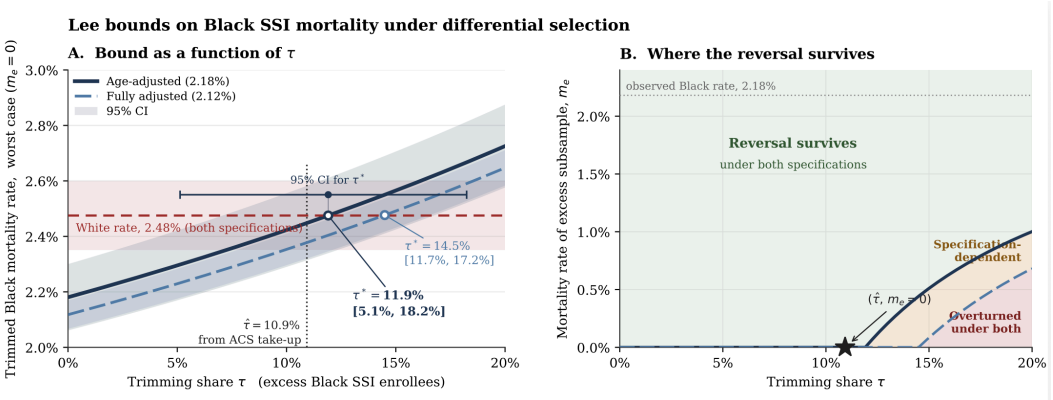
This figure depicts adjusted average mortality rates among SSI recipients by the number of years recorded in our sample, comparing across race/ethnicities. Data are from TAF 2017-2021. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Averages are adjusted by age, sex, functional impairment (6Q), dual Medicare enrollment, urban county, and state× year FE.

Figure 6: SSI Take-up among Low Income Respondents w/ Disabilities, ACS 2017-2021



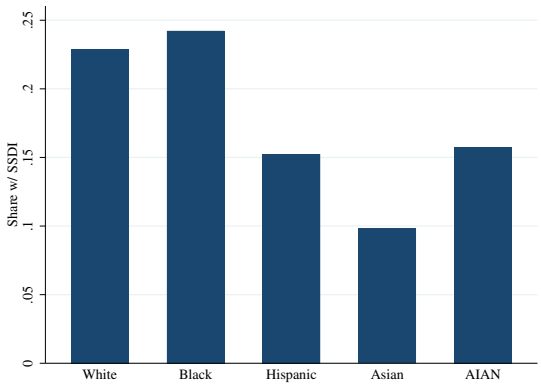
This figure depicts the average SSI take-up rate among low income, unmarried working-age respondents with disabilities. Data are from ACS 2017-2021 for specific state-years with adequate TAF data quality. Races are non-Hispanic unless otherwise specified.

Figure 7: Lee Bounding Exercise - Black SSI Mortality under Selection

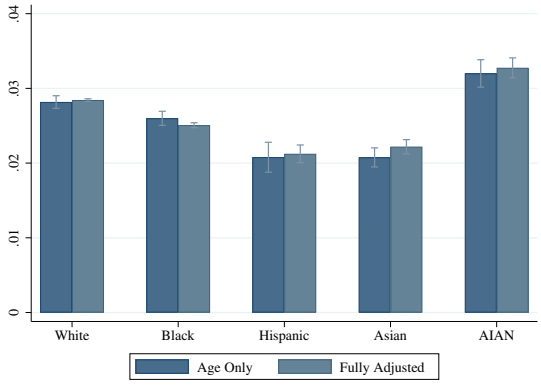


Panel A trims the share of Black enrollees in excess of the White SSI take-up rate and plots the extreme case where the mortality rate in the excess Black sample equals 0 ($me = 0$). Then the trimmed rate is $\frac{m_B}{(1-\tau)}$. The reverse White-Black mortality gap is overturned where each curve crosses its White rate, at $\tau^* = 1 - \frac{m_B}{m_W}$. Bracketed intervals are 95% confidence intervals for that crossing (drawn only for the age-adjusted case) and treat the White and Black estimates as independent. Panel B plots the frontier, $m_e^*(\tau) = \frac{[m_B - m_W(1-\tau)]}{\tau}$, for each specification at the point estimates; the reverse Black-White mid-life mortality gap is overturned below a curve; it survives above it. The Black excess SSI take-up rate, $\tau = 10.9\% = (4.7 \text{ pp} \div 43) \times 100\%$, is calculated from the ACS among low-income unmarried PWD.

Figure 8: Take-up & Mid-Life Mortality Rates among SSDI Recipients by Race/Ethnicity



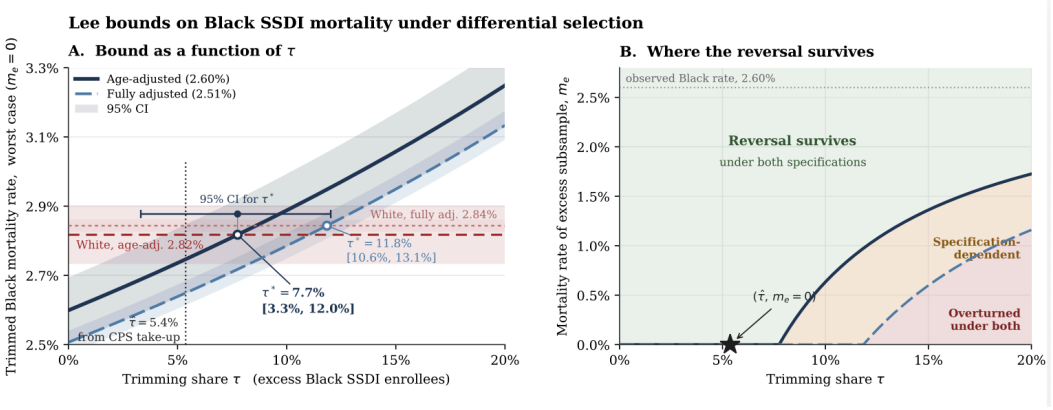
(a) Take-up



(b) Mortality

Panel A depicts SSDI take-up rates among a low-income sample with disabilities in the CPS ASEC 2017-2021. Panel B depicts age-adjusted and demographic adjusted average mortality rates among SSDI recipients enrolled in Medicare and/or Medicaid by race/ethnicity. Data are from TAF & MBSF 2017-2021. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSDI recipients aged 18-64 years. Adjusted averages include controls for age fixed effects, sex, dual Medicare enrollment, and state*year fixed effects.

Figure 9: Lee Bounding Exercise - Black SSDI Mortality under Selection



Panel A trims the share of Black enrollees in excess of the White SSDI take-up rate and plots the extreme case where the mortality rate in the excess Black sample equals 0 ($me = 0$). Then the trimmed rate is $\frac{m_B}{(1-\tau)}$. The reverse White-Black mortality gap is overturned where each curve crosses its White rate, at $\tau^* = 1 - \frac{m_B}{m_W}$. Bracketed intervals are 95% confidence intervals for that crossing (drawn only for the age-adjusted case) and treat the White and Black estimates as independent. Panel B plots the frontier, $m_e^*(\tau) = \frac{[m_B - m_W(1-\tau)]}{\tau}$, for each specification at the point estimates; the reverse Black-White mid-life mortality gap is overturned below a curve; it survives above it. The Black excess take-up rate, $\tau = 5.4\% = (1.3 \text{ pp} \div 24.2) \times 100\%$, is calculated from the CPS.

Supplemental Appendix

A Additional Tables & Figures

Table A1: Summary Statistics of Working-Age CPS Respondents, 2017-2021

	White	Black	Hispanic	Asian	AIAN
College Educated (%)	38	24	17	57	17
Employed, Any (%)	75	66	70	70	59
Full-Time (%)	75	76	75	79	75
Total Income ($)	55381	36023	32581	56904	33348
Below FPL (%)	8.2	18	15	8.8	21
Married (%)	57	32	48	61	39
W/ Children (%)	43	37	48	46	42
Owns Home (%)	74	47	51	62	58
Any Health Insurance (%)	92	86	77	91	89
Medicaid (%)	13	26	27	15	27
Medicare (%)	4.3	7.1	3.1	1.9	6.1
Private Health Coverage (%)	85	71	74	85	56
Poor Self-Reported Health (%)	2.5	3.7	2.2	1.3	5.4
Low Income Ever Smoked, State-Year (%)	44	27	15	10	49
Num. Respondents	298467	59047	102909	34695	6358

This table reports summary statistics for working-age respondents in the CPS 2017-2021. Characteristics include demographic, socioeconomic, and health characteristics by race/ethnicity. Data are from CPS ASEC 2017-2021. Races are non-Hispanic unless otherwise specified.

Table A2: Disparities in Mortality by Race/Ethnicity —Logit Regression

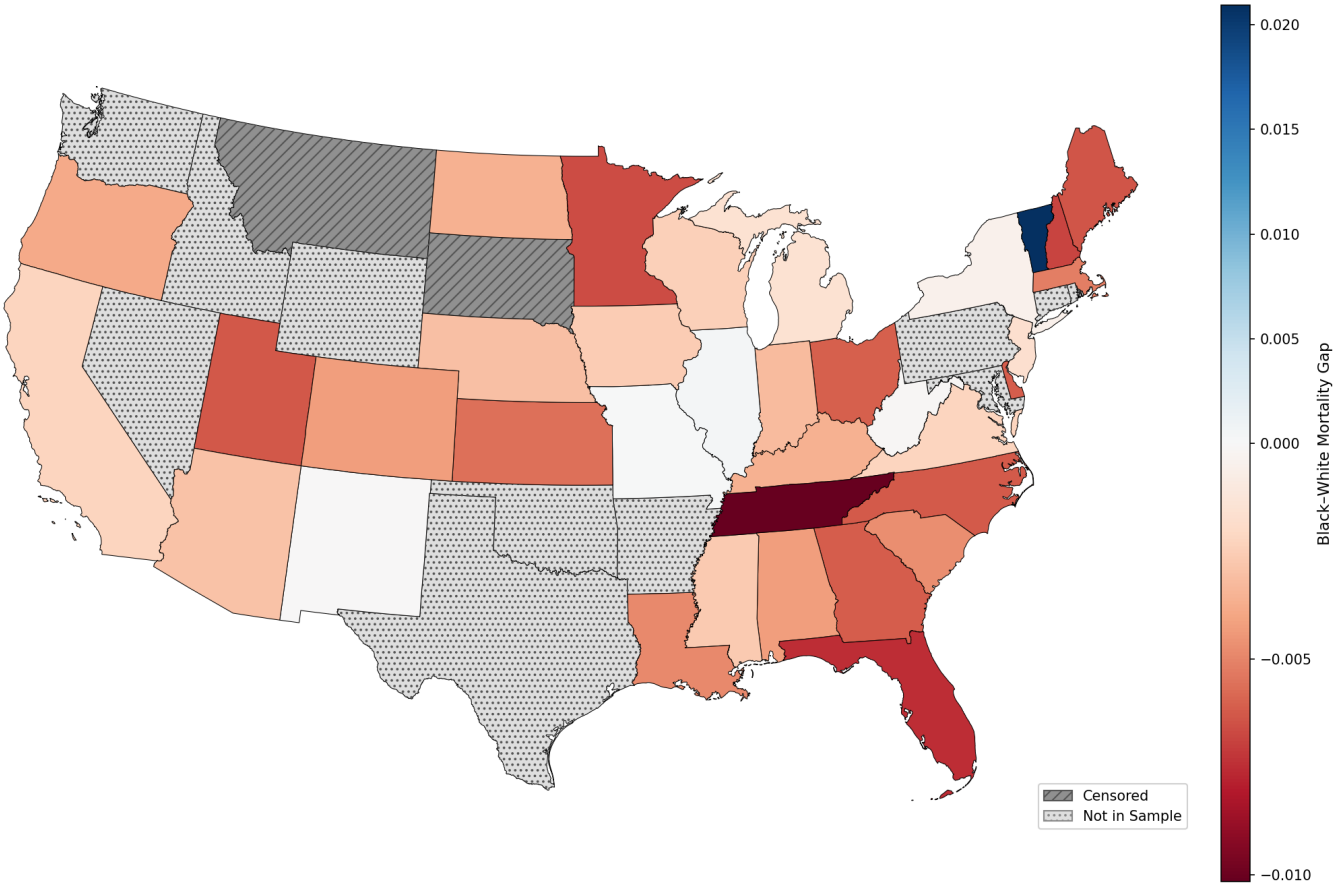
	(1)	(2)	(3)	(4)	(5)
Black	-0.00335***	-0.00408***	-0.00355***	-0.00349***	-0.00324***
	(0.000371)	(0.000339)	(0.000323)	(0.000328)	(0.000382)
Hispanic	-0.00591***	-0.00552***	-0.00532***	-0.00527***	-0.00490***
	(0.00144)	(0.00132)	(0.00129)	(0.00128)	(0.00112)
Asian	-0.00849***	-0.00632***	-0.00526***	-0.00464***	-0.00421***
	(0.000455)	(0.000416)	(0.000421)	(0.000415)	(0.000522)
American Indian or Alaska Native	0.00393***	0.00250***	0.00212**	0.00206**	0.00204**
	(0.000786)	(0.000702)	(0.000692)	(0.000684)	(0.000724)
Observations	12824016	12824016	12824016	12824016	12824016
Adjusted R^2					
Avg White Mortality	0.025	0.025	0.025	0.025	0.025
Chronic Conditions		Y	Y	Y	Y
Despair Conditions			Y	Y	Y
Other Chronic & Disabling Conditions				Y	Y
State-Year-Race Smoking					Y

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table depicts marginal effects from a logit regression of mortality on race dummies, demographic characteristics, and certain health conditions. Column (1) presents results with demographic controls. Column (2) presents results with demographic controls and chronic conditions (CC). Column (3) includes demographic controls, CC, despair conditions (DC), and Column (4) adds other chronic and disabling conditions. Column (5) adds state-year-race smoking rates. Data are from TAF 2017-2021. Health conditions are lagged by one year. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Demographic characteristics include age fixed effects, sex, functional impairment (6Q or other category), dual Medicare enrollment, urban county indicator, and state*year fixed effects. State-year-race smoking rates are obtained from CPS Tobacco supplement for 2015, 2018, 2019, and 2022.

Figure A1: Black-White Mortality Gap by State, 2017-2021



This figure depicts adjusted Black-White mortality gaps among SSI recipients by state over the sample period. Data are from TAF 2017-2021. MT and SD are suppressed for insufficient cell size. Mortality is adjusted by age, sex, functional impairment (6Q), dual Medicare enrollment, urban county, and state× year FE.

Table A3: Disparities in Mortality by Race/Ethnicity —States with Sufficiently High-Quality Race Data

	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.00398***	-0.00420***	-0.00484***	-0.00427***	-0.00386***	-0.00359***
	(0.000401)	(0.000438)	(0.000373)	(0.000359)	(0.000361)	(0.000329)
Hispanic	-0.00484***	-0.00462***	-0.00426***	-0.00415***	-0.00408***	-0.00366***
	(0.00132)	(0.00115)	(0.000912)	(0.000878)	(0.000826)	(0.000941)
Asian	-0.00837***	-0.00817***	-0.00540***	-0.00469***	-0.00402***	-0.00353***
	(0.000585)	(0.000516)	(0.000499)	(0.000500)	(0.000493)	(0.000710)
American Indian or Alaska Native	0.00250*	0.00199*	0.000761	0.000351	0.000326	0.0000868
	(0.00102)	(0.000929)	(0.000871)	(0.000863)	(0.000866)	(0.000928)
Observations	8335068	8335068	8335068	8335068	8335068	8335068
Adjusted R^2	0.009	0.010	0.046	0.048	0.050	0.050
Avg White Mortality	0.025	0.025	0.025	0.025	0.025	0.025
County FE		Y	Y	Y	Y	Y
Chronic Conditions			Y	Y	Y	Y
Despair Conditions				Y	Y	Y
Other Chronic & Disabling Conditions					Y	Y
State-Yea-Race Smoking						Y

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table depicts a regression of mortality on race dummies, demographic characteristics, and certain health conditions after restricting to states with low or medium concern race/ethnicity data quality according to the DQ Atlas. Column (1) presents results with demographic controls. Column (2) replaces the urban county indicator with county fixed effects. Column (3) presents results with demographic controls and chronic conditions (CC). Column (4) includes demographic controls, CC, despair conditions (DC), and Column (5) adds other chronic and disabling conditions. Column (6) adds state-year-race smoking rates. Data are from TAF 2017-2021. Health conditions are lagged by one year. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Demographic characteristics include age fixed effects, sex, functional impairment (6Q or other category), dual Medicare enrollment, urban county indicator, and state*year fixed effects. State-year-race smoking rates are obtained from CPS Tobacco supplement for 2015, 2018, 2019, and 2022.

Table A4: Disparities in Mortality by Race/Ethnicity —All States

	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.00381***	-0.00396***	-0.00469***	-0.00422***	-0.00381***	-0.00361***
	(0.000285)	(0.000299)	(0.000272)	(0.000263)	(0.000262)	(0.000320)
Hispanic	-0.00515***	-0.00509***	-0.00445***	-0.00438***	-0.00421***	-0.00391***
	(0.000818)	(0.000830)	(0.000754)	(0.000734)	(0.000721)	(0.000637)
Asian	-0.00835***	-0.00819***	-0.00573***	-0.00517***	-0.00454***	-0.00417***
	(0.000426)	(0.000402)	(0.000372)	(0.000374)	(0.000370)	(0.000484)
American Indian or Alaska Native	0.00355***	0.00327***	0.00183**	0.00140*	0.00127*	0.00120
	(0.000709)	(0.000747)	(0.000638)	(0.000631)	(0.000613)	(0.000641)
Observations	21624777	21624777	21624777	21624777	21624777	21624777
Adjusted R^2	0.011	0.011	0.045	0.046	0.048	0.048
Avg White Mortality	0.024	0.024	0.024	0.024	0.024	0.024
County FE		Y	Y	Y	Y	Y
Chronic Conditions			Y	Y	Y	Y
Despair Conditions				Y	Y	Y
Other Chronic & Disabling Conditions					Y	Y
State-Year-Race Smoking						Y

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table depicts a regression of mortality on race dummies, demographic characteristics, and certain health conditions without restricting to states with high-quality death records according to Li and Udalova (2025). Column (1) presents results with demographic controls. Column (2) replaces the urban county indicator with county fixed effects. Column (3) presents results with demographic controls and chronic conditions (CC). Column (4) includes demographic controls, CC, despair conditions (DC), and Column (5) adds other chronic and disabling conditions. Data are from TAF 2017-2021. Column (6) adds state-year-race smoking rates. Health conditions are lagged by one year. Races are non-Hispanic unless otherwise specified. We restrict the sample to SSI recipients aged 18-64 years. Demographic characteristics include age fixed effects, sex, functional impairment (6Q or other category), dual Medicare enrollment, urban county indicator, and state*year fixed effects. State-year-race smoking rates are obtained from CPS Tobacco supplement for 2015, 2018, 2019, and 2022.

B TAF Reporting Checklist & Sample Construction

B.1 Data & Sample Description

We use the 100% Demographic & Eligibility (DE) File, Inpatient (IP) File, Other Services (OT) File, Pharmacy (RX) File, and Long-term Care (LT) File. We use Release 2 for TAF 2017-2018 files, and Release 1 for TAF 2019-2021 files. We use TAF 2016 (Release 2) to construct lagged clinical profiles and enrollment history for beneficiaries enrolled in 2017.

To identify SSI recipients, we use 3 variables (month 12) provided in the TAF DE File and Disability & Needs Supplement: ELGBLTY_GRP_CD_12, SSI_IND_12, and SSI_STUS_CD_12. ELGBLTY_GRP_CD_12 equal to 11 or 13 details Medicaid eligibility through SSI receipt in 1634 and SSI criteria states, and 12 through disability in a 209b state. States further report SSI_IND_12 and SSI_STUS_CD_12 to identify SSI recipients in the TAF. We code a Medicaid beneficiary as a SSI recipient if they are represented in any of the 3 variables in any of the 12 months of the reported year. We do this to ensure we identify SSI recipients that qualify for Medicaid through pathways outside of SSI receipt (Centers for Medicare & Medicaid Services, 2025*a*).

We restrict our sample to SSI recipients aged 18-64 years who had a Medicaid enrollment span of any length in the prior reporting year. We do not restrict by benefit type (full scope, comprehensive, or restricted). Beneficiaries enrolled in both fee-for-service (FFS) or Medicaid managed care (MMC)

plans are included in our sample. We similarly include both full and partial dual Medicare-Medicaid enrollees.

Table B1: Chronic, Despair, and Other Chronic & Disabling Conditions—Conditions List

Category	Health Conditions	Source(s)
Chronic Conditions	Chronic Kidney Disease, Asthma, Chronic Obstructive Pulmonary disorder (COPD), Pneumonia, Acute Myocardial Infarction, Atrial Fibrillation, Hypertension, Heart Failure, Ischemic Heart Disease, Stroke, Anemia, Acquired Hypothyroidism, Diabetes, Hyperlipidemia, Breast Cancer, Colorectal Cancer, Endometrial Cancer, Lung Cancer, Prostate Cancer, Urologic Cancer, Alzheimer's, Senile Dementia and Related Disorders, Parkinson's, Osteoporosis, Hip/Pelvis Fractures, Arthritis, Cataracts, Glaucoma, and Benign Prostatic Hyperplasia.	Centers for Medicare & Medicaid Services (2025*b*)
"Despair" Conditions	Depression, Anxiety disorders, Bipolar disorder, Mood disorders, Personality disorders, PTSD, Psychotic Disorders, Chronic Liver Disease, Chronic Pain, Obesity	Borchgrevink et al. (2022); Figueroa et al. (2020); Centers for Medicare & Medicaid Services (2025*b*)
Substance Abuse Disorders	Alcohol, Tobacco, Opioid, Cannabis, Caffeine, Hallucinogen, Inhalant, Sedative, or Other Specified Addiction.	Baller et al. (2021); Centers for Medicare & Medicaid Services (2025*b*)
Other Chronic & Disabling Conditions	ADHD, Autism Spectrum Disorders, Cerebral Palsy, Cystic Fibrosis and other Metabolic Developmental Disorders, Epilepsy, Fibromyalgia, HIV/AIDS, Intellectual Disabilities and Related Conditions, Learning Disabilities, Leukemias and Lymphomas, Migraine and Other Chronic Headache, Mobility Impairments, Multiple Sclerosis and Transverse Myelitis, Muscular Dystrophy, Other Developmental Delays, Peripheral Vascular Disease (PVD), Pressure Ulcers and Chronic Ulcers, Blindness and Visual Impairment, Deafness and Hearing impairment, Sickle Cell Disease, Spina Bifida and Other Congenital Anomalies of the Nervous System, Spinal Cord Injury, Traumatic Brain Injury, Hepatitis A, Hepatitis B, Hepatitis C, and Hepatitis E.	Centers for Medicare & Medicaid Services (2025*b*)

This table describes our categorizations of various health conditions, as well as sources for the ICD-10 codes used to identify each condition.

B.2 TAF Reporting Checklist

Table B2: The T-MSIS Analytic Files (TAF) Analysis Reporting Checklist

Category	Description	Location(s) Where Items Reported
Data		
Files, Years, Release Versions, and Data Extract	• Indicate which TAF files were used in the analysis (e.g., Demographic and Eligibility File, Inpatient File, Other Services File) • Indicate which years of TAF data were included in the analysis • Indicate which file versions were included in the analysis (e.g., preliminary, release 1, release 2) • Indicate whether the study drew from 100% TAF files or pre-specified extracts	p.5, p.40
Analytic Sample		
Eligibility Criteria	• If applicable, describe what eligibility category codes were used to identify the study sample and whether they were used in combination with any other variables (e.g., age, receipt of specific medical services)	p.5-6, p.40
Enrollment Span	• If applicable, indicate the minimum period of enrollment required for an enrollee to be included in the study sample and how the enrollment period was defined	p.5-6, p.40
Scope of Benefits	• If applicable, indicate whether the analysis included enrollees with full scope, comprehensive, or restricted benefits	p.40
Encounter Data	• Indicate whether the analysis excluded either fee-for-service or managed care enrollees; if managed care enrollees were excluded, define the criteria used to do so • Indicate which types of claims records (e.g., fee-for-service claims, service tracking claims, capitation payments; see variable CLM_TYPE_CD) were included in the analysis	p.40
Dual Eligibility	• Describe whether individuals dually enrolled in Medicare and Medicaid were included in or excluded from the study sample and, if applicable, how dual eligibility was defined	p.40
State and Territory Exclusions		
Criteria	• Indicate which states and/or territories were included (or excluded) from the analysis on the basis of data quality concerns • Indicate the criteria by which state exclusions were made, including measures, data sources, and thresholds	p.6, p.16, p.43
State Variation Table	• Consider including a state-level table (which may appear in an appendix) summarizing the number of observations, means, medians, and missingness for key study measures	Table 1 Panel B, Table B3
Special Considerations		
Spending	• Indicate which types of claims records (e.g., fee-for-service claims, service tracking claims, capitation payments; see variable CLM_TYPE_CD) were included to measure spending • If including service-specific spending for managed care encounters, indicate how spending was imputed (payments from plans to health care facilities and professionals on encounter records are generally redacted)	N/A
Using TAF with Predecessor MAX Data	• Indicate if the analysis included data from the MAX files and, if so, for what years and which states • If applicable, include an exhibit examining trends in key measures by state over time and particularly during any transition from MAX to TAF	N/A

This table depicts page numbers detailing TAF sample information as recommended in Schpero et al. (2025).

Table B3: State Variation in Analysis Sample

State	Years	High Race/Ethnicity Data Quality
AL	2017, 2018, 2019, 2020, 2021	
AZ	2017, 2018, 2019, 2020, 2021	
CA	2017, 2018, 2019, 2020, 2021	Yes
CO	2020, 2021	
DE	2018, 2019, 2020, 2021	Yes
FL	2017, 2018, 2019, 2020, 2021	Yes
GA	2017, 2018, 2019, 2020, 2021	Yes
HI	2017, 2018, 2019, 2020, 2021	
IA	2017, 2018, 2019, 2020, 2021	
ID	2017, 2018, 2019, 2020, 2021	Yes
IL	2020, 2021	Yes
IN	2018, 2019, 2020	Yes
KS	2017, 2018, 2019, 2020, 2021	
KY	2018, 2019, 2020, 2021	Yes
LA	2017, 2018, 2019, 2020, 2021	
MA	2020, 2021	
ME	2018, 2019, 2020, 2021	Yes
MI	2017, 2018, 2019	
MN	2017	Yes
MO	2017, 2018, 2019, 2020, 2021	
MS	2020, 2021	
MT	2017, 2020, 2021	
NC	2017, 2018, 2019, 2020	Yes
ND	2020, 2021	Yes
NE	2017, 2018, 2019, 2020, 2021	
NH	2020, 2021	Yes
NJ	2017, 2018, 2019, 2020, 2021	Yes
NM	2017, 2020, 2021	Yes
NY	2020, 2021	
OH	2020	Yes
OR	2021	
SC	2020	
SD	2020	Yes
TN	2020, 2021	
UT	2020	
VA	2017, 2018, 2019, 2020, 2021	Yes
VT	2020, 2021	Yes
WI	2020, 2021	Yes
WV	2020, 2021	

This table lists which states and years are included in our final analytical sample. The third column indicates whether each state reports sufficiently high quality race/ethnicity reporting in all sample years to be included in Table A3.