How Will COVID-19 Affect the Mortality of Older Adults?

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COVID caused over 1 million deaths in the United States, concentrated among older populations.
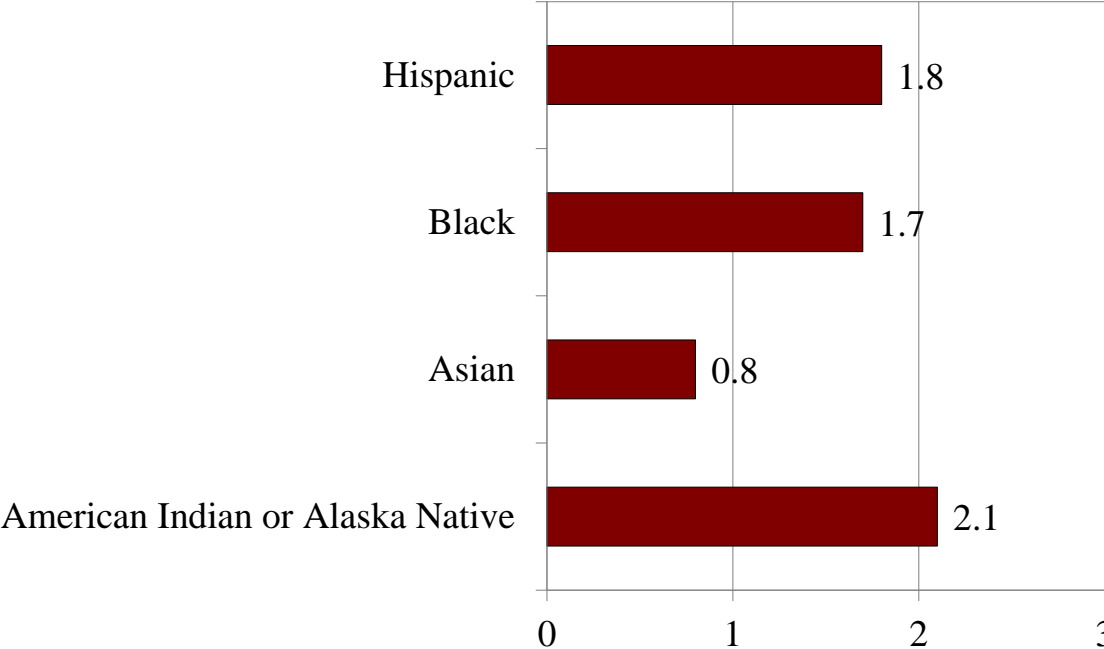
COVID Mortality Hazard Relative to Ages 50-64
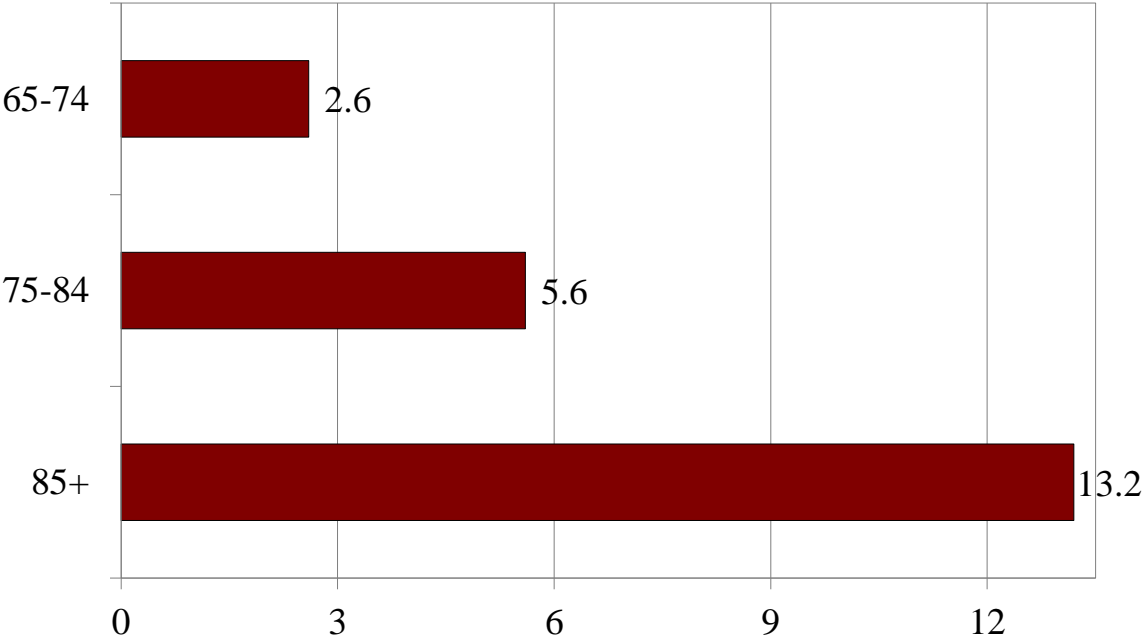
Source: Centers for Disease Control (2022).

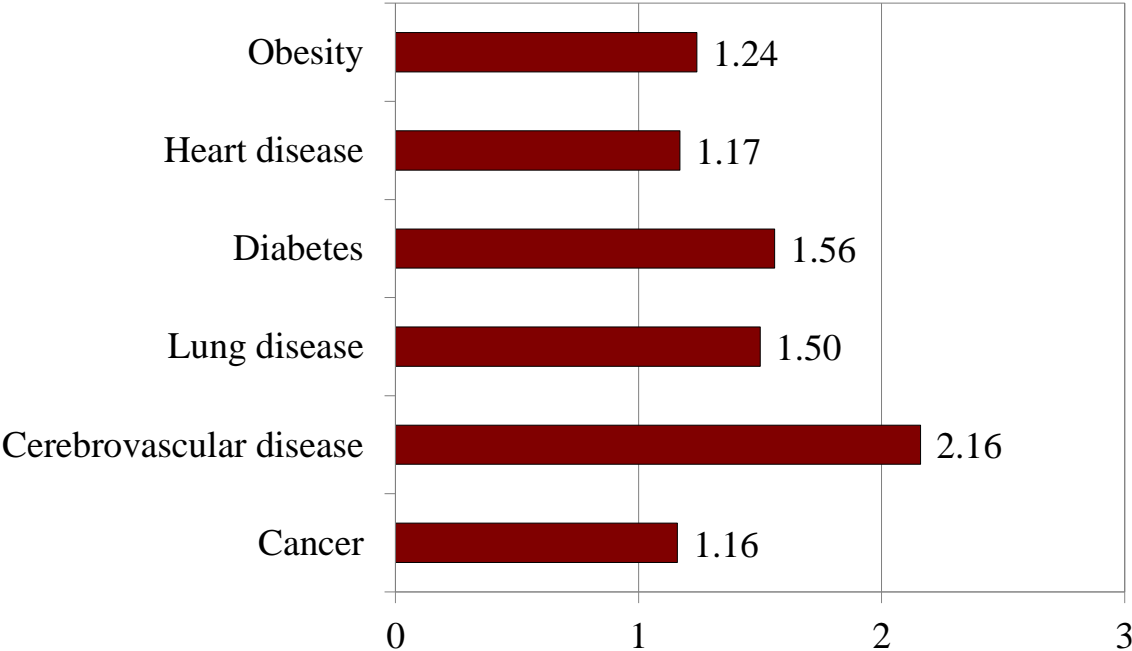# Minorities were also at disproportionately high risk of COVID mortality.

COVID Mortality Hazard Relative to Non-Hispanic Whites

Finally, deaths were highest among individuals with certain chronic health conditions.

COVID Mortality Hazard Relative to "Healthy" Individuals

Source: Authors' review of the literature.

The question is, since high-mortality groups were more likely to die, will survivors have a lower mortality rate?

- The analysis estimates how existing SSA life tables might be adjusted to account for this selection effect.

- This adjustment can inform SSA about expected mortality patterns in the coming years.

- The decline in future mortality from selective COVID deaths is *second order*, and only modestly counteracts the large rise in mortality due to COVID's direct impact.

The analysis proceeds in the following steps:

- characterizing the 2019 age 60+ population by demographics and health status;

- finding pre-COVID and COVID mortality hazards for each group from the literature;

- constructing the new 2021 population, without those who died from COVID, in terms of demographics and health status;

- and estimating life tables for this new population as of mid-2021.

- We assume (incorrectly) COVID will not *directly* impact mortality in coming years.

# What dimensions of the population need to be considered?

- Since demographics and health play major roles in COVID mortality risk, we focus on these dimensions.

- Demographic groups are the intersection of male/female; Black/white; Hispanic/non-Hispanic; and 10-year age bins, starting at 60.

- The health statuses that have documented differential hazards of COVID mortality relative to "healthy" individuals are: cancer; cerebrovascular disease; lung disease; diabetes; heart disease; and obesity.

Characterizing the pre-COVID population:

- The analysis uses the 2019 *American Community Survey* to estimate the size of each demographic group before the pandemic.

- Using the HRS, each group is then partitioned into each of the health statuses and a "healthy" group that has none of the COVID-relevant conditions.

The first results are the partition of the 2019 population into demographic/health groups.

Distribution of Conditions by Age Group

Men

Women
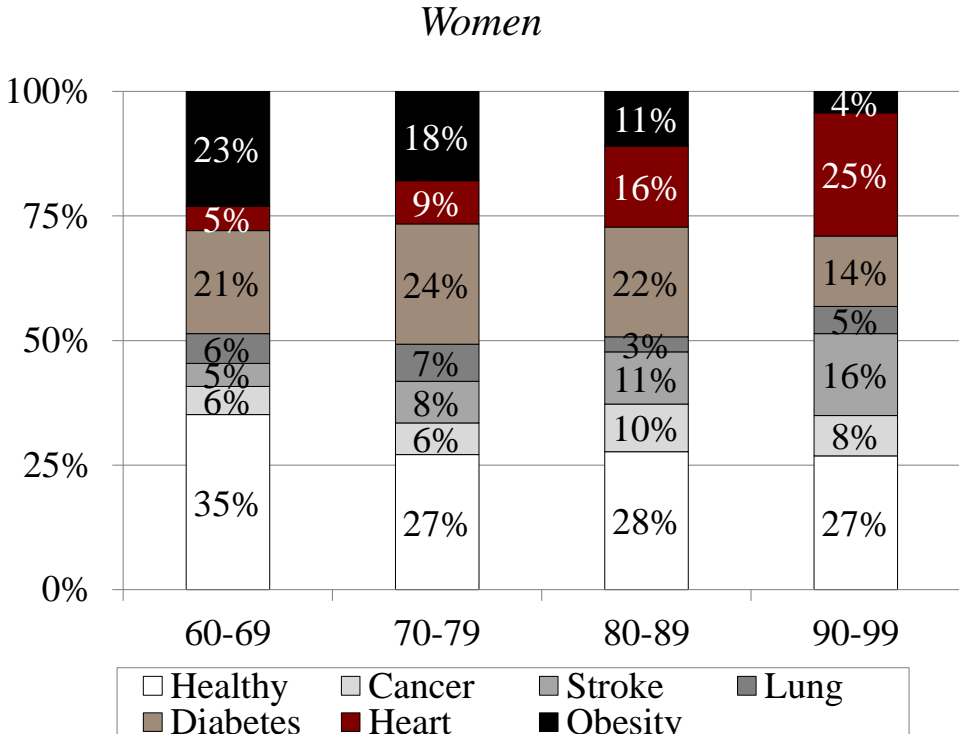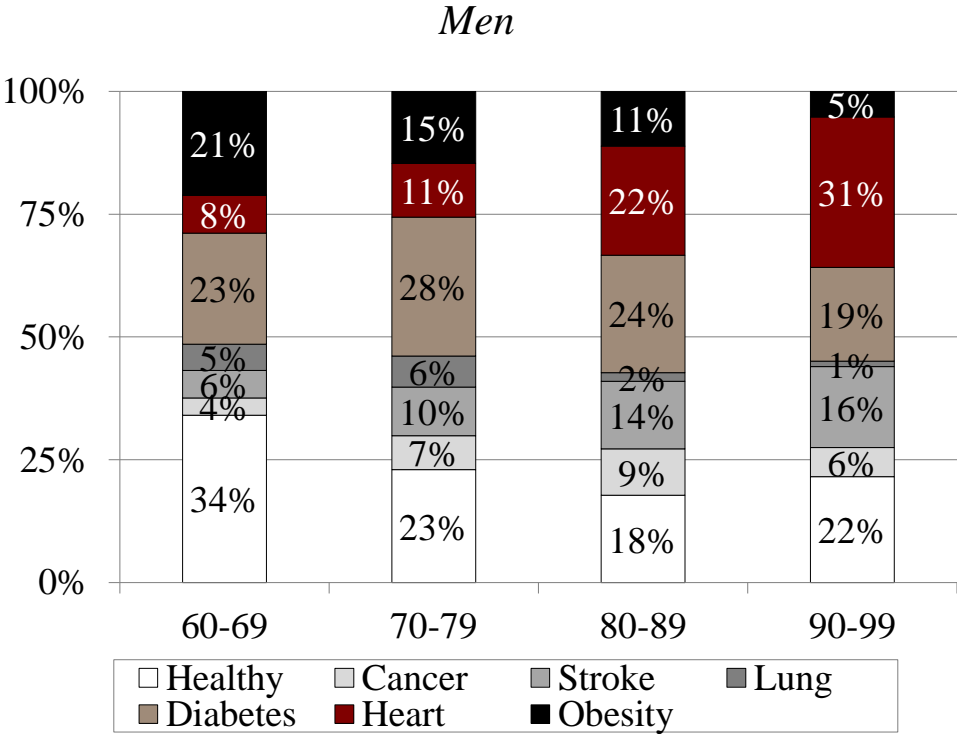
Of those alive in 2019, who died by mid-2021?

- We use the *National Vital Statistics System,* which records all U.S. deaths in 2020 by cause of death.

- We know the demographics of each death, but not its associated chronic conditions.

- Therefore, for each demographic group, we assume that deaths of a cause related to one of the six health conditions come from individuals who have that condition.

- For example, if among Black men ages 60-69 there were 50 cancer-related deaths and 75 people with cancer, all cancer-related deaths are assigned to that group.

Allocation of COVID deaths relies on epidemiological literature.

- COVID deaths for each demographic group are allocated to each health status group within the demographic according to the health condition's relative COVID risk.

- 2020 mortality rates are extrapolated to the first quarter of 2021 to estimate the April 2021 population.

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After adjusting the population to reflect the lower mortality of the survivors, modest declines in mortality should be anticipated, particularly at older ages.

Change in 10-Year Mortality Rates, Post-COVID
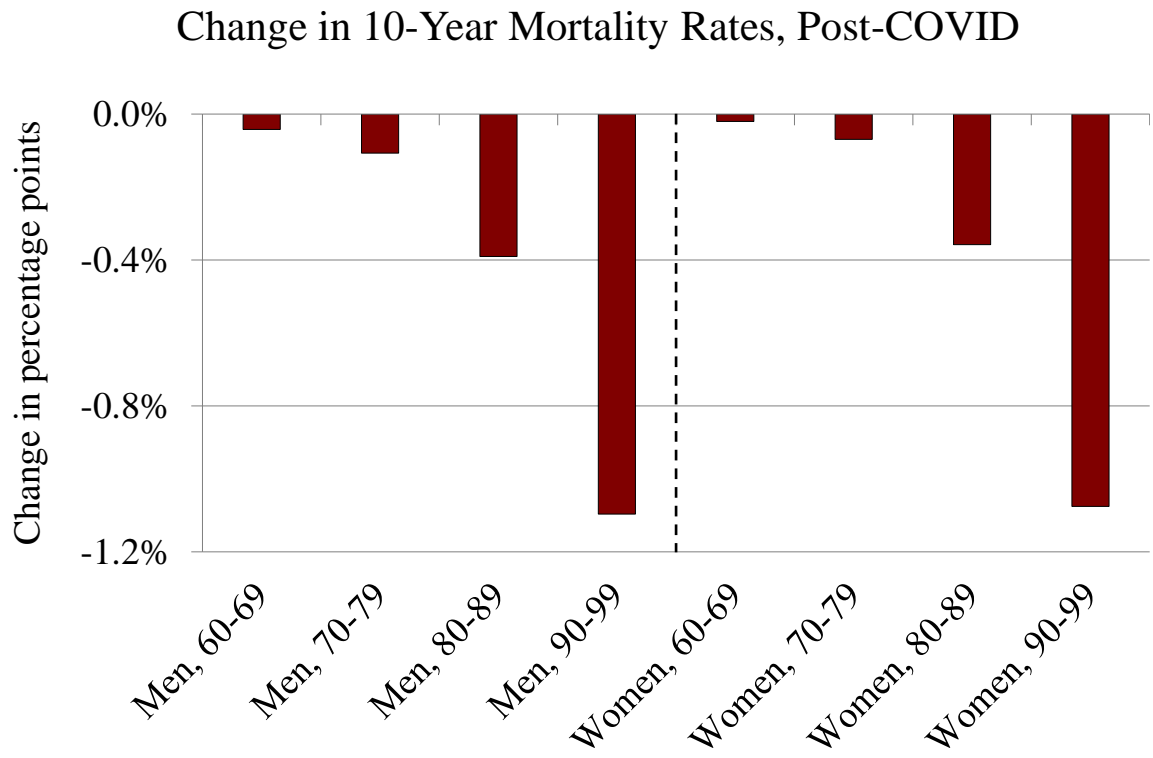
Source: Authors' calculations.

COVID was selective in its victims – mortality will decline by over half as much as maximally possible.

Change in 10-Year Mortality Rates Post-COVID, Estimated and Maximal
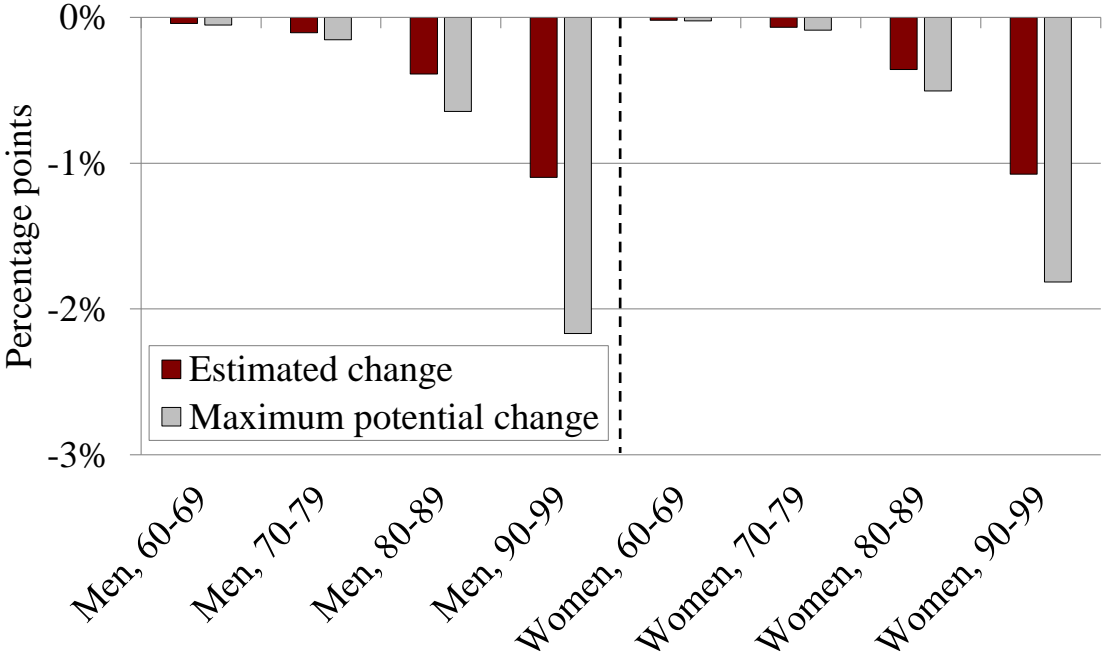
Source: Authors' calculations.

Conclusion

- COVID led to over a million deaths, concentrated in populations with otherwise high mortality rates.

- Consequently, survivors are likely to have modestly lower mortality rates going forward.
    - This assumes COVID itself will not be a large driver of mortality, a conservative assumption for Social Security finances.

- Particularly among those over 80, where the toll of COVID was heaviest, the findings suggest large deviations from pre-pandemic mortality expectations.

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