Review 2: "The relationship between neighborhood poverty and COVID-19 mortality within racial/ethnic groups (Cook County, Illinois)"

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RR:C19 Evidence Scale rating by reviewer:

- **Reliable.** The main study claims are generally justified by its methods and data. The results and conclusions are likely to be similar to the hypothetical ideal study. There are some minor caveats or limitations, but they would/do not change the major claims of the study. The study provides sufficient strength of evidence on its own that its main claims should be considered actionable, with some room for future revision.

Review:

The paper offers an analysis of the interactions between race/ethnicity and neighborhood socioeconomic status in relation to COVID-19 deaths, using individual-level, open-access data from Cook County, Illinois. Deaths that occurred in nursing homes were excluded as the neighborhood income for care home residents may not be an appropriate proxy measure of their socioeconomic status. The impact of this exclusion on the findings could be substantial if the associations between race/ethnicity, poverty, and COVID-19 are different in this population as 40% of COVID-19 related deaths took place in nursing homes and other institutions. Findings are consistent with typical interactions between socioeconomic status and race/ethnicity in US populations—or example the finding that the death rate for older non-Hispanic white people in the poorest quartile was lower than that for non-Hispanic black and Hispanic/Latinx in the least poor quartile is similar to previous studies of infant mortality in relation to mother's education status where college-educated black mothers have a higher risk of losing their babies than the least educated white women. This is a reliable study with its main claims justified by the quality of the data and the appropriately applied and straightforward analyses. The authors are cautious in stating that racial/ethnic inequalities in COVID-19 deaths are at least partly attributable to the higher average socioeconomic position of white people, and recognize that lower neighborhood socioeconomic status is a proxy for a wide range of factors that will be associated with higher COVID-19 deaths, including exposure to air pollution, and higher rates of essential workers unable to shield from exposure. This is a straightforward descriptive study with findings useful for future research and for policy; claims are generally supported by the data and methods used, and decision-makers should consider the claims in this study actionable with limitations (in that they do not apply to those living in care homes/institutions). I recommend acceptance of the manuscript without modification.