Declining COVID-19 mortality risk ratios must be interpreted with caution

In their recent letter in *J Epidemiol Community Health*, Schultes *et al* examined patterns of declining race/ethnic disparities in COVID-19 mortality in Connecticut from March 2020 to December 2021. This work is a helpful contribution to the expanding literature on race/ethnic disparities in SARS-CoV-2 mortality, and due to its attention to the differential toll of SARS-CoV-2 in congregate versus non-congregate settings by race/ethnicity is particularly important.

However, motivated by our shared concern about the inequities highlighted by Schultes *et al*, we feel compelled to address the authors’ contention that their ‘findings suggest that attenuation of racial and ethnic disparities is an achievable public health goal’. We believe that this statement reflects a broadly held misapprehension about the meaningfulness of declining mortality rate ratios (MRRs) as evidence of progress against inequity in pandemic-related mortality.

While changes in the MRR for non-whites as compared with whites—the main indicator of disparity used in the paper—may reflect some progress against race/ethnic and class-based disparities SARS-CoV-2 in infection and mortality, a narrow focus on declining group-specific MRRs may paint a far more optimistic picture of this progress than is warranted.

On a methodological level, ratio-based measures of SARS-CoV-2 inequality are made difficult to interpret because of their susceptibility to distortion from change in the denominator: Diminishing MRRs by race may reflect declines in the numerator (the minoritised group in question) or increases in the denominator (an advantaged group, typically whites). In fact, Lawton *et al* found that much of the declines in county-level SARS-CoV-2 MRRs by race were better explained by increasing overall prevalence reflecting increased infection and death among whites than precipitous declines in infection among non-whites.

From a health justice perspective, it is critical that within-pandemic successes in attenuating disparities not be conflated with success in combating racial capitalism and other manifestations of structural racism which contributed to differential participation in hazardous ‘essential work’ and other risks that made irreversible early-pandemic mortality disparities inevitable.

We suggest that, at a minimum, researchers and policymakers contemplate a simple thought experiment before concluding that secular declines in race/ethnic MRRs for COVID-19 suggest progress against infection inequity: If a novel pandemic characterised by similar lethality and transmissibility to SARS-CoV-2 was to emerge in the coming months, would the factors that led to declining MRRs during this pandemic translate into dramatically decreased disparities in death at the beginning of the next one? We doubt it and advocate for caution in interpretation of these declines as a result.

**Jon Zelner*1,2 and **Ramy Chehab Naraharisetti*1,2

1Epidemiology, University of Michigan School of Public Health, Ann Arbor, Michigan, USA
2Center for Social Epidemiology and Population Health, University of Michigan School of Public Health, Ann Arbor, Michigan, USA

**Correspondence to** Dr Jon Zelner, Epidemiology, University of Michigan School of Public Health, Ann Arbor, Michigan, USA; jzelner@umich.edu

**Twitter** Jon Zelner @jzelner

**Contributors** Both authors contributed to the drafting and editing of this manuscript.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not applicable.

**Ethics approval** Not applicable.

**Provenance and peer review** Not commissioned; internally peer reviewed.

© Author(s) (or their employer(s)) 2022. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite** Zelner J, Naraharisetti R. *J Epidemiol Community Health* 2022;76:840.

Received 21 April 2022
Accepted 30 April 2022
Published Online First 13 May 2022

**ORCID iD**

Jon Zelner http://orcid.org/0000-0002-0708-2008

**REFERENCES**


