

Excess mortality during pandemic was higher among workers in critical occupations

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While numerous news reports and previous studies have revealed disparities in COVID-19-related deaths among certain populations, including older adults, people of color, and people with pre-existing medical conditions, researchers at the University of Minnesota School of Public Health (SPH) have now added a new element to this

conversation—differences in rates of death among workers in critical occupations during the pandemic.

The study, published in the [*American Journal of Public Health*](#), examined the occupational risk associated with COVID-19 among those working in areas essential to continued critical infrastructure operations as defined by the Cybersecurity and Infrastructure Security Agency.

In Minnesota, this included people employed in health care, emergency response, [child care](#), K–12 schools, food processing and agriculture, food service, transportation and logistics, public transit, airport and [postal service](#); and some categories of manufacturing, construction and retail.

Researchers examined death certificates and occupational employment rates in Minnesota between 2017 and 2021. They then estimated the excess mortality rate (EMR), defined as deaths beyond those expected during usual circumstances, for those in critical occupations in 2020 and 2021, further detailing these rates by different racial groups and vaccine rollout phases. The study found:

- Excess mortality during the COVID-19 pandemic was higher for workers in critical occupations than for other workers. For example, the 2021 EMR for workers in food processing, a critical sector, was 9.6 per 10,000, compared to 1.9 per 10,000 for workers outside critical occupations.
- Some critical occupations, such as transportation and logistics, construction, and food service, experienced higher excess mortality than did other critical occupations, such as health care, K–12 schools and agriculture.
- In almost all occupations investigated, workers of color experienced higher excess mortality than white workers, particularly in food processing, food service, construction, retail,

and transportation and logistics. Overall, Black, Indigenous and [people of color](#) experienced higher EMR (4.6 in 2020 and 5.6 in 2021) than white workers (2.7 and 4.4, respectively).

The study also looked at Minnesota's system of vaccine eligibility, which was designed to allocate limited vaccine supplies to workers with the greatest risk of death, prioritizing health care and child care workers for vaccination. The findings suggest this system insufficiently prioritized some vulnerable groups of workers. People working in [food service](#), retail and [food processing](#), for example, were included in later vaccine phases and experienced higher EMR than workers included in earlier phases.

"This research advances our understanding of the ways the pandemic accentuated existing disparities, and suggests vaccine eligibility for some vulnerable groups was insufficiently prioritized in Minnesota," said Harshada Karnik, SPH researcher and lead author on the study. "Higher rates of EMR among BIPOC Minnesotans in critical care occupations compared to workers in higher vaccine priority, predominantly white occupations, suggests that vaccine efforts prioritized lower-risk white workers above higher-risk BIPOC workers."

The study suggests the adoption of additional measures to improve vaccine prioritization for higher-risk workers. It also suggests identifying and more widely implementing workplace precautions that [health care](#) facilities adopted during the pandemic to protect workers.

More information: Harshada Karnik et al, Examining Excess Mortality Among Critical Workers in Minnesota During 2020–2021: An Occupational Analysis, *American Journal of Public Health* (2023). [DOI: 10.2105/AJPH.2023.307395](https://doi.org/10.2105/AJPH.2023.307395)

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