Data supports early COVID-19 vaccination for essential workers

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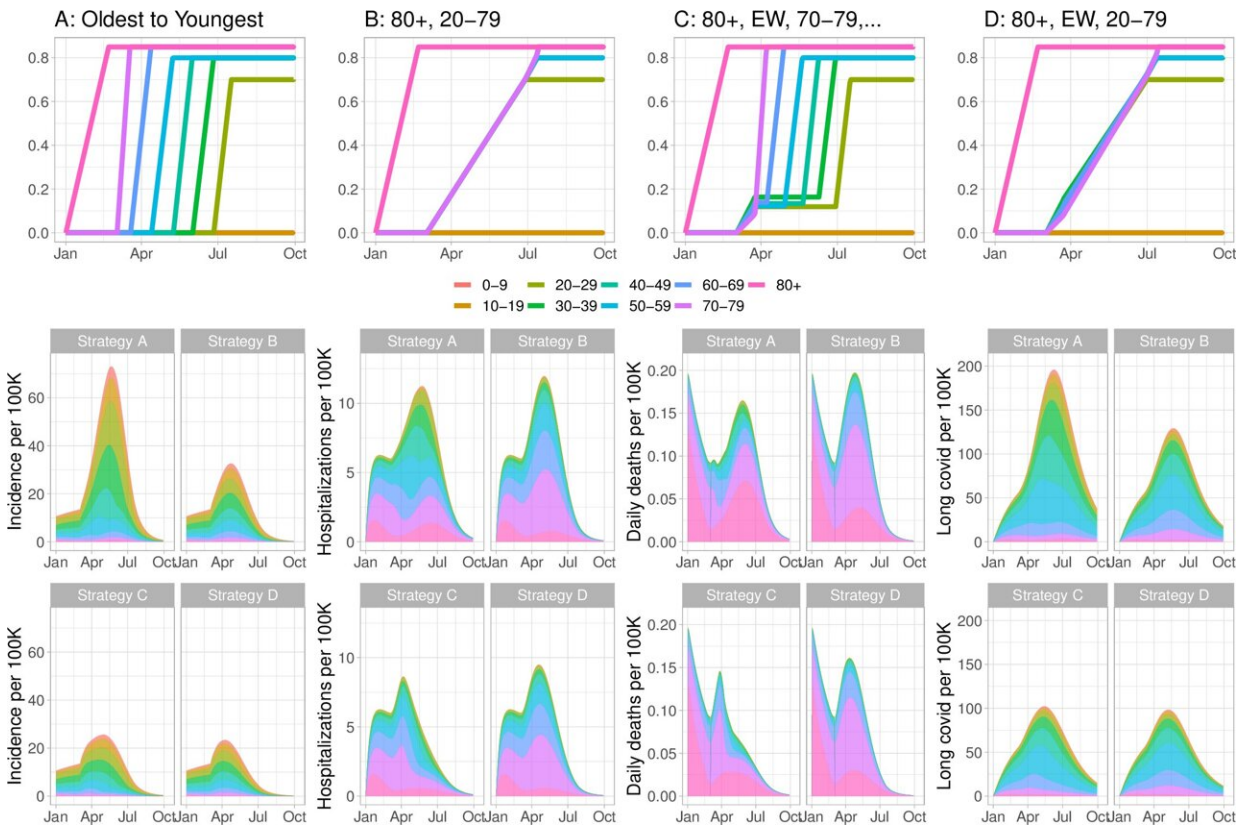

Cases, deaths, hospitalizations and Long COVID cases under four distinct vaccination strategies. Vaccinating essential workers before people aged 70+ (strategies C and D) reduces cases, deaths, hospitalizations and Long COVID compared to vaccinating people aged 70+ first (strategies A and B). Credit: Mulberry et al., 2021, CC-BY 4.0 (creativecommons.org/licenses/by/4.0/)

In areas where COVID-19 vaccines are limited, vaccinating essential workers before older adults can reduce infections and deaths, according to a modeling study published this week in the new open-access journal PLOS Global Public Health by Nicola Mulberry of Simon Fraser University, Canada, and colleagues.

In vaccination campaigns against COVID-19, many jurisdictions are using age-based rollout strategies, reflecting the higher risk of severe outcomes of infections in older adults. However, as new data emerge on the effectiveness of approved COVID-19 vaccines in reducing infection and transmission as well as minimizing severe outcomes and "Long COVID," vaccine rollout strategies must be reassessed.

In the new study, researchers modeled the impact of five different vaccination strategies on COVID-19 infections, chronic outcomes, hospitalization and deaths in British Columbia, Canada. For each vaccine rollout scenario, the rates of vaccination per day matched the projected timelines released by the British Columbia Centre for Disease Control. The scenarios varied in whether or not vaccines were distributed by age group, and whether or not essential workers were given priority vaccination. In all scenarios, adults aged 80 years and older were vaccinated before any other groups.

The team found that, across a range of scenarios for COVID-19 transmission and vaccine efficacy, vaccinating essential workers earlier gives large reductions in infections, hospitalizations, deaths, and instances of Long COVID (with symptoms lasting longer than 28 days). In a simulated region with limited vaccine supply and a population of 5 million, vaccinating essential workers earlier leads to an estimated 200,000 fewer infections, 600 fewer deaths, and produces a net monetary benefit of more than $500 million USD. The authors conclude that vaccination strategies that explicitly target high-contact essential workers may be key to minimizing negative outcomes of COVID-19

during the rollout of vaccination.

Author Paul Tupper notes: "The COVID-19 pandemic has disproportionately impacted essential workers, who often have lower incomes and no option to work from home. Our findings suggest that prioritizing them for vaccination not only would help to reduce this substantial disparity, but it does not even come at the cost of increased adverse outcomes in others; rather, it is better for everyone."

More information: Mulberry N, Tupper P, Kirwin E, McCabe C, Colijn C (2021) Vaccine rollout strategies: The case for vaccinating essential workers early. *PLOS Glob Public Health* 1(10): e0000020. doi.org/10.1371/journal.pgph.0000020

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