

## **COVID-19 Vaccine Delivery by Age May Mitigate Deaths and Severe Health Impacts**

*Study suggests that prioritizing the elderly ahead of younger people may be most effective in reducing disease impacts*

Strategic vaccine delivery is critical to reducing COVID-19 transmission, mortality and long-term health impacts. A study published in *PLOS Computational Biology* by Samuel Moore at University of Warwick, United Kingdom and colleagues suggests that prioritizing vaccine delivery to older age groups and the medically vulnerable has the greatest impact in minimizing loss of life.

While older people are more likely to experience serious health outcomes related to COVID-19 infections, younger age groups contribute significantly to disease transmission and spread. In order to test the efficacy of different vaccination strategies on minimizing deaths and hospitalisations, researchers built an age-structured model that simulated the spread of SARS-CoV-2 within different regions in the United Kingdom. The authors built different scenarios into the model, including variations in vaccine efficacy, and performed 100 separate simulations for each scenario using observational data on comorbidities and social-distancing measures in the United Kingdom.

The models showed that vaccine strategies prioritizing older age groups first most effectively mitigated deaths and lost quality of life years, despite the significant role of younger groups in disease spread. The study did have some limitations, such as the assumption of a 70% vaccine uptake rate and a lack of data on specific vaccine characteristics. However, the research has already helped guide UK policy makers in creating priority groups for vaccine delivery and may contribute to the development of effective COVID-19 vaccination programs.

According to the authors, "As vaccines are developed which mitigate the disease, it is of great importance that they are delivered in an optimal manner - reducing mortality and healthcare demands. In all scenarios we find vaccinating the most elderly and vulnerable first to have the greatest impact, though the ultimate success of any vaccination scheme will be highly contingent on the characteristics of the vaccine itself and the level of population uptake".

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