




Letter to the editor:

WHO SHOULD GET THE VACCINE FIRST? A GLIMPSE AT COVID-19 VACCINATION PRIORITIZATION STRATEGIES

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Dear Editor,

Despite the enormous efforts, novel coronavirus disease 2019 (COVID-19) continues to spread worldwide, infecting individuals and causing health and economic burdens. Preventive measures such as wearing a mask, practicing social distancing, utilizing hand sanitizers, isolating patients and quarantine have been somewhat effective in flattening the pandemic curve, yet, they are not the ultimate solution.

Vaccination as a safe and effective method of stopping the COVID-19 pandemic was initiated in many countries worldwide to reduce transmission, morbidity, and mortality. However, the lack of sufficient supply and distribution to meet the demands in the early stages of vaccine production makes the vaccination process a challenge for communities. As a result, vaccine administration should be done over time with prioritization as the vaccine production and distribution capacity increases. Nevertheless, the question that remains is who to be vaccinated first.

To answer this question, we take a scoping glimpse at the literature. We found no governmental instruction for COVID vaccine prioritization in PubMed, Embase and Web of Science. Since the governmental documents usually are addressed in the gray literature, we searched via Google Scholar and Google search engine using the following terms: (“COVID-19” OR “COVID19” OR “SARS-Cov-2”) AND (“Vaccine” OR “Vaccination”) AND (“Priority” OR “Prioritisation”). Finally, We included and tabulated seven instructions implemented or recommended by global health organizations and countries.

So far, several vaccination strategies have been designed by health ministries and organizations, most of which prioritizing front-line healthcare workers, the residence of long-term care

facilities, elderlies, and those with underlying medical conditions. Moreover, the World Health Organization (WHO) suggested that the specific age cut-off needs to be decided by locals. Some non-healthcare workers who are called front-line workers or essential workers are also found in the high priority groups, encompassing fire fighters, police officers, corrections officers, food and agricultural workers, Postal Service workers, manufacturing workers, grocery store workers, public transit workers, those who work in the educational sector (teachers, support staff, and daycare workers), people who work in transportation and logistics, food service, housing construction and finance, information technology, communications, energy, law, media, public safety, and public health. Some particular populations, such as indigenous communities were spotlighted, which could be exemplary for other countries and districts to pay special attention to these groups. More details are tabulated in Table 1.

It should be mentioned that these strategies may be revised as the vaccination program proceeds if individuals in a targeted group such as those with underlying medical conditions show adverse effects of the vaccine as not all medical conditions have been put in clinical trials in the early phases of vaccine production. Moreover, children under 18 years of age and pregnant women have not been listed as the targeted groups in vaccination strategies due to a lack of information on vaccine administrations' safety and efficacy. Further studies, including these two groups are necessary as these groups can increase the risk of transmission and are vulnerable to contracting the severe form of the disease.

Early vaccine administration strategies have been designed with the goals of protecting those who are more vulnerable to severe illness (reducing the years of life lost and improving the quality of life), reducing the transmission of COVID-19, protecting healthcare capacities, and protecting the critical infrastructures. Thus, in this manner, these targeted groups must be identified in each region before the initiation of vaccination in order to improve the efficacy of the vaccination process.

Conflict of interest

The authors declare no conflict of interest.

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Table 1: An overview of vaccination strategies in the early phases of vaccine production

	Frontline healthcare personnel	Other healthcare personnel	Long-term care facility residents and staff	Frontline essential workers [#]	Elderlies with age	People with underlying medical conditions	Other essential workers [§]	Certain population
WHO (WHO, 2020) (using a 3-stage categorization and 'ab' for stage 1, 'a' and 1 means highest priority)	1a	2-3	2	3	1b ⁺	2	3	1 [*] , 3 [∞]
CDC (CDC, 2021) (using 'abc' categories for the phase1, 'a' means highest priority)	a	a	a	b	≥ 75: b 65-74: c	c	c	-
UK (Public Health England, 2021) (using 1-10 categories, 1 means highest priority, 10 means the rest of population)	2	2	1	-	≥ 80:2 75-80:3 70-75 and clinically extremely vulnerable individuals:4 65-70:5 60-65:7 55-60:8 50-55:9	6	-	-
Australia (Australian Government, Department of Health, 2021) (using a 3-phase strategy with 'ab' categorization, 1a means highest)	1a	1b	1a	1b	≥ 70: 1b 50-69: 2a	1b	-	-
Germany (Knight 2020) (using 3 groups, 1 means highest priority)	1	2	Residents:1 Staff: 2	3	≥ 80: 1 70-80: 2 60-70: 3	2 [*] -3 ^{**}	3	-
France (Brent, 2021) (using a 10-stage strategy, 1 means highest priority, 10 means the rest above 18s)	3	3	Residents:1 Staff:2	7	≥ 70:4 65-70:5 50-65:6	6, 8 ^{&}	9	-

Table 2 (cont.): An overview of vaccination strategies in the early phases of vaccine production

	Frontline healthcare personnel	Other healthcare personnel	Long-term care facility residents and staff	Frontline essential workers [#]	Elderlies with age	People with underlying medical conditions	Other essential workers [§]	Certain population
Canada (Government of Canada, 2020) (using a 2-stage strategy, 1 means highest priority)	1	1	1	2	≥ 70:1	-	2	1 [^]

[#] Such as firefighters, police officers, corrections officers, food and agricultural workers, United States Postal Service workers, manufacturing workers, grocery store workers, public transit workers, and those who work in the educational sector (teachers, support staff, and daycare workers.)

[§] Such as people who work in transportation and logistics, food service, housing construction and finance, information technology, communications, energy, law, media, public safety, and public health.

⁺ Specific age cut-off to be decided at the country level

[×] Essential travellers at risk for acquiring infection in a country with community, Border protection staff screening for imported cases and workers for outbreak management (e.g. isolation and quarantine managers, immunization deployment staff) transmission and reintroducing infection upon return to home country (e.g. students, aid workers)

[∞] Primary and secondary teachers and school staff

^{*} Include those with dementia or a similar mental health issue, those recovering from an organ transplant, and those with Down Syndrome

^{**} Include, but are not limited to, people with diabetes, cancer, chronic kidney or liver conditions, HIV or other immune-deficiency conditions, heart conditions, asthma, and clinical obesity

[&] Homeless, psychiatric patients, prisoners

[^] Adults living in indigenous communities