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National Academies Report Advises on Allocation Priorities for a COVID-19 Vaccine

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When 1 or more of the vaccines targeting coronavirus disease 2019 (COVID-19) first becomes available and the demand inevitably exceeds the initial supply, health care workers in high-risk jobs and first responders should be vaccinated first in a “JumpStart Phase” of the vaccine rollout, according to a new report from the National Academies of Science, Engineering, and Medicine (NASEM).

A COVID-19 vaccine also should be free to everyone—without regard to financial, employment, insurance, or immigration status—the committee advised. Additionally, health authorities should make concerted efforts to provide it to highly vulnerable communities that have been disproportionately affected by the pandemic, with higher transmission, morbidity, and mortality rates. The disproportionate toll on such communities “reflects the impact of systemic racism leading to higher rates of comorbidities that increase the severity of COVID-19 infection and the socio-economic factors that increase likelihood of acquiring the infection, such as having front-line jobs, crowded living conditions, lack of access to personal protective equipment, and inability to work from home,” the committee said in a statement.

Equitable Vaccine Allocation

The NASEM committee that developed the report recommended a 4-phase framework that federal, state, tribal, local, and territorial authors should adopt in developing guidelines for equitable allocation of COVID-19 vaccine. In addition to frontline health care workers in hospitals, nursing homes, or home care settings, the first half of phase 1 (covering approximately 5% of the US population) applies to emergency medical services personnel, police, and firefighters and others whose work is associated with higher risk of transmission, such as individuals who clean areas where patients with COVID-19 are treated or housed.

The second half of phase 1 (covering approximately 10% of the population) includes individuals of all ages with health conditions, such as cancer or serious heart conditions, that put them at significantly higher risk of severe COVID-19 or death. The report committee noted that data from the COVID-19 Associated Hospitalization Surveillance Network indicate that nearly all of those hospitalized for COVID-19 in the US are adults with 2 or more comorbid conditions. This phase also includes seniors living in congregate or overcrowded settings, such as in nursing homes or long-term care facilities, homeless shelters, group homes, or correctional facilities.

Allocation of COVID-19 vaccine under phase 2 (covering 30% to 35% of the population) includes teachers and staff for kindergarten through grade 12, childcare workers, and critical workers in high-risk settings (such as public transportation and the food supply system) who cannot avoid a high risk of COVID-19 exposure. It also encompasses all older adults not included in phase 1, as well as people of all ages in certain circumstances: those with underlying conditions that put them at moderately higher risk of severe COVID-19 disease and individuals housed or working in homeless shelters, group homes for individuals with disabilities, or prisons or jails.

Phase 3 would cover the largest group—40% to 45% of the US population—including young adults, children, and workers in occupations and industries that “are both important to the functioning of society and pose moderately high risk of exposure” but not addressed in earlier phases.
phases. These include, for example, workers at colleges and universities, hotels, banks, health clubs, and factories.

Finally, in phase 4, everyone else in the United States who did not have access to the vaccine in earlier phases would be eligible for vaccination. This would occur once vaccine supplies are more robust.

The committee suggested that in the early stages of vaccine release, the federal government could speed the process of allocating vaccine by allotting each state a portion of the available vaccine doses that reflects the state’s proportion of the national population. “Speed is essential because many difficult choices need to be made at the state and local levels,” they noted.

In addition, the committee suggested that the US Centers for Disease Control and Prevention (CDC) hold back a percentage of the vaccine supply, perhaps 10%, as a reserve for the agency to deploy for epidemiological hotspots or use in areas of special need. Such areas would be identified through the CDC’s Social Vulnerability Index, a tool based on US Census data that was developed for local preparedness for use in public health emergencies, such as hurricanes and other natural disasters.

**Concerns About Vaccine Uptake**

At the same time health experts have concerns about the demand for a COVID-19 vaccine exceeding the initial supply, they are also apprehensive about uptake by the public. The committee said that polling data suggest many US residents would not seek vaccination with a COVID-19 vaccine if it were offered today. A poll last month by the Pew Research Center found that about half of US adults said “they definitely or probably would not get vaccinated at this time.”

Skepticism is even more pronounced among populations including Black and Hispanic communities, fueled by past episodes of exploitative medical research, such as the Tuskegee syphilis study, the report by NASEM noted. Vaccine hesitancy in general, encouraged by antivaccine groups, is increasingly common in the US, the report said, and the unique circumstances associated with COVID-19 vaccines present further challenges. “Concerns about the development and approval of COVID-19 vaccines, including the unprecedented speed of testing for safety and efficacy in clinical trials, and significant concerns of political considerations affecting evaluation of the data from those trials, create a more challenging environment for vaccine hesitancy and reduced acceptance,” the committee wrote.

To help improve the public’s acceptance of a COVID-19 vaccine, the report recommended that the CDC develop and launch a national vaccine promotion campaign. This would encourage acceptance of the vaccine by the public.

The report also recommended that the US government play a leadership role in equitable allocation of a vaccine globally by opting in to the COVAX facility, a vaccine purchasing pool, and deploying a proportion of the US vaccine supply (for example, 10%) for global allocation. “Amid the catastrophic COVID-19 pandemic, the United States should consider it a moral duty, as a leading nation and member of the G7/G20, to embrace its humanitarian legacy by re-engaging and leading on the international stage in support of lower-resourced nations,” said committee noted.