

Letter to the Editor

Cite this article: Fifolt M, McCormick LC, Crosby JC, Gaghen MG, Nafziger S. Priority distribution of COVID-19 vaccine to health care workers in Phase 1a of Emergency Use Authorization. *Disaster Med Public Health Prep.* 17(e529), 1–2. doi: <https://doi.org/10.1017/dmp.2023.196>.


Keywords:

communicable diseases; disease outbreaks; epidemics; infectious disease medicine

Corresponding author:

Matthew Fifolt; Email: mfifolt@uab.edu.

Priority Distribution of COVID-19 Vaccine to Health Care Workers in Phase 1a of Emergency Use Authorization

Matthew Fifolt PhD¹ , Lisa C. McCormick DrPH², James Cameron Crosby MD³, Morgan G. Gaghen MSHA⁴ and Sarah Nafziger MD⁵

¹University of Alabama at Birmingham, Health Policy and Organization, Birmingham, United States, US, Alabama;

²University of Alabama at Birmingham, Department of Health Policy and Organization, Birmingham, United States, US, Alabama; ³UAB Medicine, Department of Emergency Medicine, Birmingham, United States, US, Alabama; ⁴UAB Highlands, University of Alabama at Birmingham, Birmingham, United States, US, Alabama and ⁵University of Alabama at Birmingham, Department of Emergency Medicine, Birmingham, United States, US, Alabama

As reported in an Morbidity and Mortality Weekly Report Early Release,¹ demand for the coronavirus disease (COVID-19) vaccine was expected to exceed supply during the first months of the national COVID-19 vaccination program in the United States. Therefore, the Advisory Committee on Immunization Practices (ACIP) informed the Centers for Disease Control and Prevention (CDC) of population groups and circumstances for vaccine use. The CDC identified individuals in Phase 1a of vaccine distribution under Emergency Use Authorization (EUA) as *mission-critical* to ensure the continuity of critical functions in the United States. However, there were not enough doses for everyone in Phase 1a to receive vaccine on the first day of availability. Moreover, there was no guidance regarding how to prioritize health care workers (HCWs) within Phase 1a.

The National Academy of Medicine² recommended establishing tiers based on an individual's work setting, responsibilities, and personal risks to promote equity and efficacy of allocation. To operationalize this guidance within an ethical framework, leaders at the University of Alabama at Birmingham (UAB) developed a sequencing schedule to attempt to capture HCWs' potential for exposure to COVID-19 as well as their contribution to the essential mission of delivering health care during this unique public health emergency. Using the best available evidence, team leaders identified 7 categories of risk. These 7 criteria were rated on a 3-point scale (1 = low risk, 2 = medium risk, 3 = high risk) to calculate a composite score for each job classification. We illustrate priority ranking as well as criteria definitions in [Figure 1](#).

The strategy of priority ranking provided a method of differentiating job classifications along a continuum, although the differences between categories were quite small. Nevertheless, composite scores provided a clear pathway for distributing vaccine doses as they arrived. In total, UAB Health System administered approximately 30 000 doses to HCWs during Phase 1a of the COVID-19 vaccine distribution under EUA. Emergency vaccine supply and distribution efficiency allowed all HCWs in Phase 1a who wanted vaccine to receive their first dose within the first 4 weeks of availability.

Looking Ahead

Results of a recent study indicated that the annual probability of extreme epidemics occurring could increase threefold in the coming decades.³ This projection of future infectious disease outbreaks may be attributed to global travel, increased antibiotic resistance, and vaccine hesitancy of common viruses based on attitudes toward the COVID-19 vaccine.⁴ Based on the potential for future novel diseases, it is expected that forthcoming vaccines will be developed using mRNA technology, and mass vaccine distribution will once again be under a time constraint.

While each virus may behave differently, expert input can guide the unique criteria used to determine prioritization. Ultimately, the tool is limited as it requires subjective input by experts for each unique criterion and group; however, this method minimizes subjectivity and attempts to provide a level of objectivity to a process in which difficult decisions must be made under time constraints. We suggest that the prioritizing tool described in this article can be easily adapted for future disease outbreaks that require rapid deployment of limited resources to HCWs and others exposed to infections of unknown origin.

| Hospital unit | A | B | C | D | E | F | G | Composite score |
|-----------------------|---|---|---|---|---|---|---|-----------------|
| Ex. 1: NICU | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 18 |
| Ex. 2: Anesthesia | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 16 |
| Ex. 3: ER | 2 | 2 | 3 | 3 | 3 | 1 | 0 | 14 |
| Ex. 4: Trauma surgery | 1 | 1 | 2 | 3 | 3 | 3 | 0 | 13 |
| Ex. 5: Pulmonary | 2 | 2 | 2 | 2 | 3 | 1 | 0 | 12 |
| Ex. 6: OB/GYN | 1 | 2 | 2 | 2 | 3 | 1 | 0 | 11 |
| Ex. 7: ENT | 2 | 2 | 1 | 2 | 2 | 1 | 0 | 10 |

Units listed solely as examples.

Legend:

| Sequence | | Scoring | |
|------------|--|---------|---|
| 1a Round 1 | | Low | 1 |
| 1a Round 2 | | Medium | 2 |
| 1a Round 3 | | High | 3 |

Figure 1. Sequencing of COVID-19 vaccinations, Phase 1a.

Definitions:

- A. **Surge plan.** Characterized health workers who were critical to the COVID-19 response and those who were most likely to encounter patients exhibiting COVID-19 symptoms, such as health workers at the testing and vaccine site, in portals of entry for patients presenting with symptoms, and health care workers in designated COVID-19 patient care areas.
- B. **Positive patients.** Represented an individual's likelihood of being exposed to COVID-19-positive patients based on their job role.
- C. **Uncontrolled exposure.** Described the potential for a health worker to be exposed to a COVID-19-positive patient in a setting without proper infection control precautions such as ventilatory and air filtration controls or areas where full personal protective equipment (PPE) was not employed for routine patient care.
- D. **Aerosolizing procedures.** Denoted the likelihood of a health worker caring for a COVID-19-positive patient in a situation where the patient would undergo an aerosol-generating procedure, such as endotracheal intubation, which is thought to contribute to more efficient spread of the virus.
- E. **Body fluid.** Referenced the likelihood of health workers being in a situation in which they would be exposed to the body fluid of a patient with COVID-19. Notably, when this rubric was developed, there was significant concern but with equivocal data regarding surface transmission of the disease.
- F. **Staff-to-patient risk.** Described risk of infection to patients, such as individuals whose immune systems are severely compromised. These patients would be a high risk to be treated by a health worker with COVID-19.
- G. **Distributing vaccine.** Denoted health workers who were critical to vaccine distribution.

Competing interests. The authors have no conflicts of interest to report.

References

1. **Dooling K, Marin M, Wallace M, et al.** The Advisory Committee on Immunization Practices updated interim recommendations for allocation of COVID-19 vaccine—United States, December 2020. *MMWR*. 2021;69(51-52):1657-1660.
2. **Crisis Standards of Care: COVID-19 Issue Summary.** National Academy of Medicine. Published December 2020. Accessed January 25, 2023. https://nam.edu/wp-content/uploads/2020/12/csc-issue-summary_updated.pdf
3. **Marani M, Katul GG, Pan WK, et al.** Intensity and frequency of extreme novel epidemics. *PNAS*. 2021;118(35):e2105482118.
4. **Parimi K, Gilkeson K, Creamer BA.** COVID-19 vaccine hesitancy: considerations for reluctance and improving vaccine uptake. *Hum Vaccin Immunother*. 2022;18(5):e2062972. <https://doi.org/10.1080/21645515.2022.2062972>