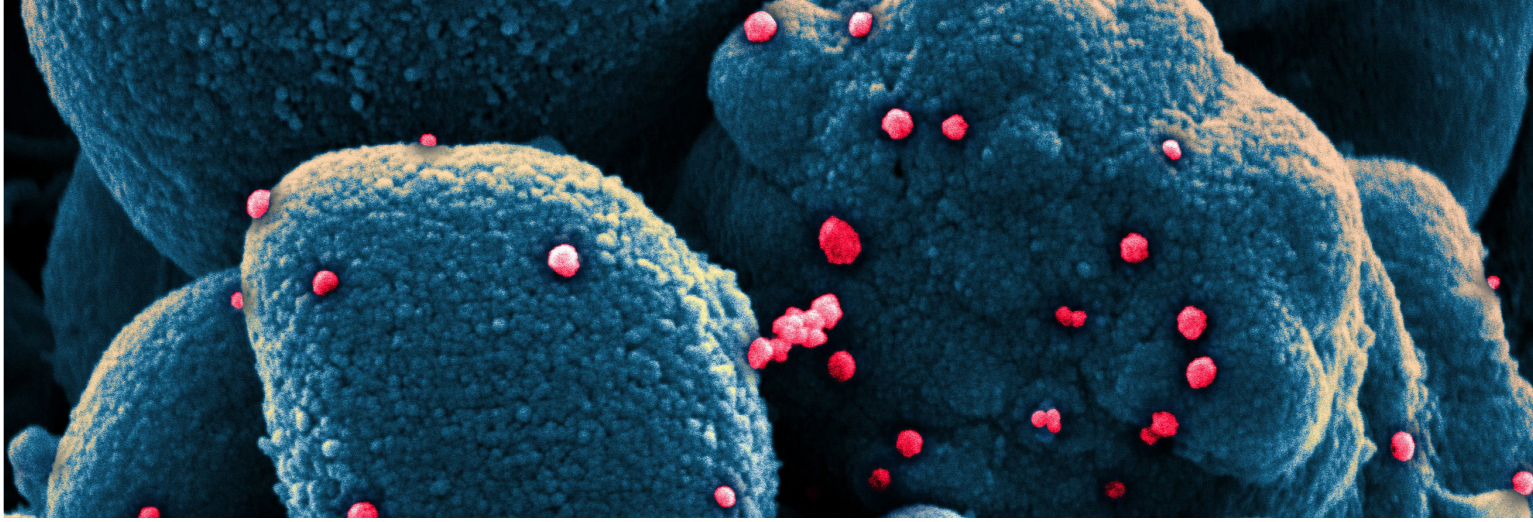

# COVID-19:
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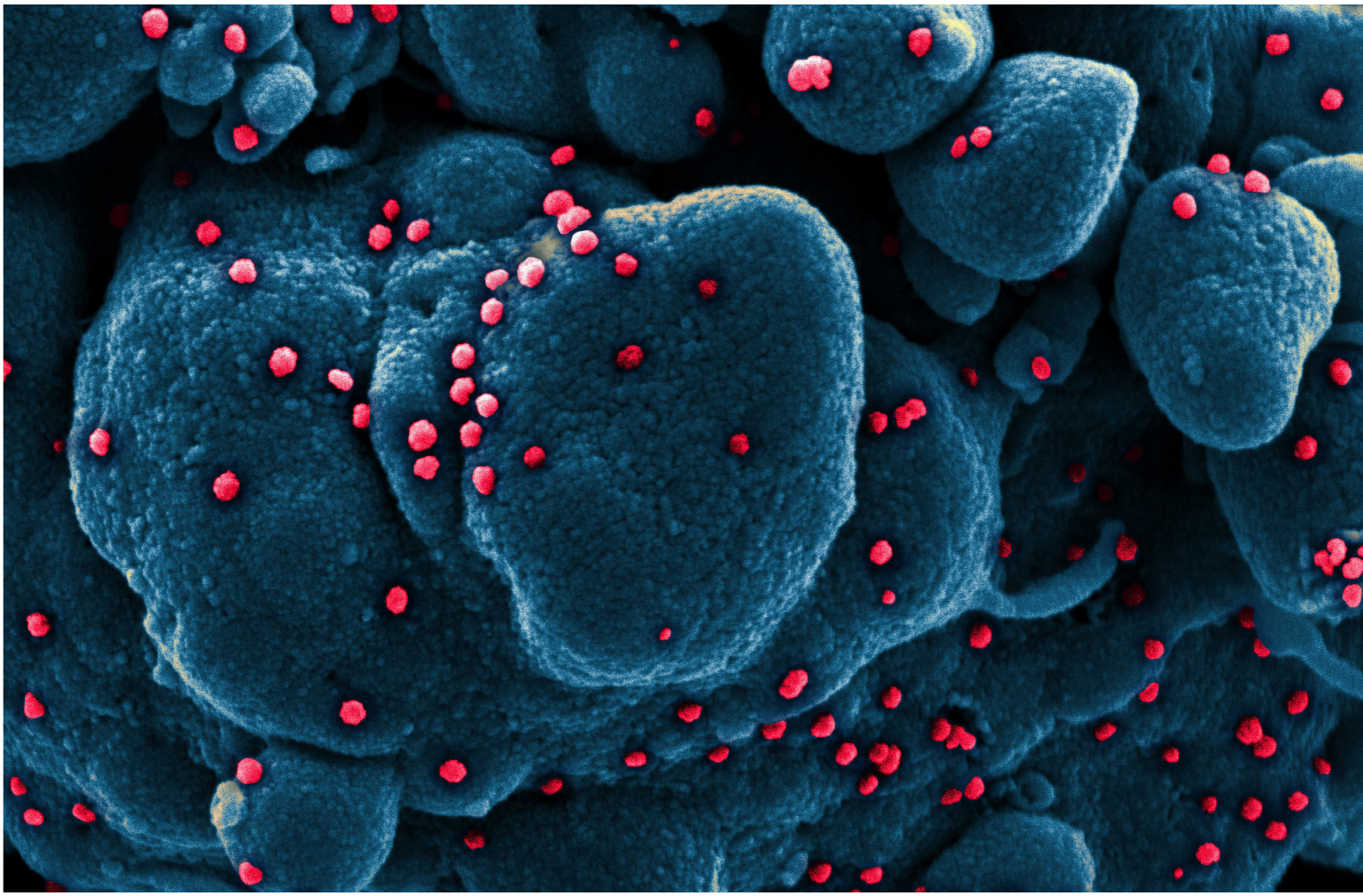

CIDRAP

COVID-19: The CIDRAP Viewpoint

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# Report 7: Reassessing COVID-19 Vaccine Deployment in Anticipation of a US B.1.1.7 Surge: Stay the Course or Pivot?

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CIDRAP, founded in 2001, is a global leader in addressing public health preparedness and emerging infectious disease response. Part of the Office of the Vice President for Research (OVPR) at the University of Minnesota, CIDRAP works to prevent illness and death from targeted infectious disease threats through research and the translation of scientific information into real-world, practical applications, policies, and solutions. For more information, visit: www.cidrap.umn.edu.

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# Report 7: Reassessing COVID-19 Vaccine Deployment in Anticipation of a US B.1.1.7 Surge: Stay the Course or Pivot?

## Preface

Welcome to "COVID-19: The CIDRAP Viewpoint," our series of reports that add key information, address issues that haven't garnered the attention they deserve, and reflect the unique expertise among the CIDRAP team and our expert consultants. In our reports we address timely issues with straight talk and clarity. The steps we recommend are based on our current reality and the best available data. Our goal is to help planners envision some of the situations that might present themselves later this year or next year so that they can take key steps now, while there's still time.

Our first report laid out potential pandemic scenarios, our second report covered crisis communication, our third report described "smart testing," our fourth report was on contact tracing, our fifth report covered surveillance, and our sixth report focused on ensuring a resilient prescription drug supply.

Our hope is that these efforts can help you plan more effectively and understand the many aspects of this pandemic more clearly—and for you and your family, friends, and colleagues to be safer. Thank you.

*– Michael T. Osterholm, PhD, MPH, CIDRAP Director*

***"Generally you should act somewhere between P40 and P70, as I call it. Sometime after you have obtained 40% of all the information you are liable to get, start thinking in terms of making a decision. When you have about 70% of all the information, you probably ought to decide, because you may lose an opportunity in losing time."***

*– Colin Powell*

## Introduction

The SARS-CoV-2 B.1.1.7 variant, which is more transmissible and virulent than previously circulating strains, threatens to reverse the current downward COVID-19 trends in the United States (US) and could lead to a significant surge in cases in the next 4 to 12 weeks (CDC 2021a)(PHE 2021a)(Walensky et al 2021). Whether the surge will occur in the US remains uncertain; however, evidence from countries such as Ireland, Israel, Portugal, and the United Kingdom (UK) suggest surges driven by the B.1.1.7 variant occur when initial widespread transmission of the variant is documented throughout a country. Since the B.1.1.7 variant is now widespread in the US and the proportion of COVID-19 cases caused by this variant are increasing rapidly in areas such as Florida and California, a major peak in cases, hospitalizations, and deaths in the near future remains a strong possibility. In the US, the variant is 35% to 45% more transmissible, and its frequency is doubling every week and a half (Washington et al 2021). According to a model from the Centers for Disease Control and Prevention (CDC), B.1.1.7 is expected to become the dominant variant in many states in March 2021 (Galloway et al 2021). If the US experiences a surge similar to that seen in the UK, one could expect to see unprecedented healthcare demand of 175,000 to 193,000 hospitalizations per day (COVID Tracking Project 2021)(PHE 2021b)—far surpassing the US peak of 132,474 individuals hospitalized with COVID-19 set in early January.

Thus, the immediate goal of public health policy should be to reduce the likelihood of a significant escalation in severe COVID-19 infections, hospitalizations, and intensive care that could compromise the ability of the healthcare system to provide adequate healthcare services and to minimize preventable suffering and deaths.

While we need to continue to strive for equity in our vaccination program, we also recognize that above all, age is the strongest risk factor for COVID-19–related severe disease, hospitalization, and death. Adults 65 years

and older constitute a risk group with significant morbidity and mortality and produce the greatest COVID-19 burden on the healthcare system. In the event of a surge in cases, the vast majority of hospitalizations and deaths will occur in this age-group. In the US, nearly half of all COVID-19 hospitalizations and 80% of COVID-19 deaths are among those 65 and older (CDC 2021b)(CDC 2021c). Compared with 5- to 17-year-olds, older individuals had a 35-fold, 55-fold, and 80-fold increase in hospitalizations among individuals ranging from 65 to 74 years, 75 to 84 years, and 85 years and older, respectively, and a 1,100-fold, 2,800-fold, and 7,900-fold increase in deaths (CDC 2021d).

While the current US distribution of vaccines is a critical development in preventing and controlling COVID-19, doses will be limited for the next several months. Supply will likely remain limited throughout some, if not all, of a B.1.1.7-related surge. To date, approximately 43 million people in the US have received at least one dose of vaccine (CDC 2021e). Even with the nearly 84 million Americans who have had COVID-19 (CDC 2021b), we are far short from reaching a herd immunity threshold, with an estimated 65% of the US population remaining susceptible to infection. To maintain healthcare capacity during a B.1.1.7 surge, we have a time-limited period to strategically target vaccination to those at highest risk of hospitalization and death before the surge arrives.

### *Pressing Issues*

1. The more transmissible SARS-CoV-2 B.1.1.7 variant could lead to a significant surge in US cases in the next 4 to 12 weeks. If the B.1.1.7 surge overlaps with low vaccine coverage, it will cause immense strain on an already burdened healthcare system, threatening the level and quality of care available to all patients.
2. The immediate goal of public health agencies should be to reduce hospitalizations and deaths as well as maintain the ability of the healthcare system to provide adequate healthcare services and minimize preventable suffering and deaths.
3. Age is the strongest risk factors for severe disease, hospitalization, and death from COVID-19. In the event of a case surge, the vast majority of hospitalizations and deaths would occur in adults 65 years and older.
4. Compared to when the mRNA vaccines were authorized, we now have more complete data regarding the B.1.1.7 variants, including how they led to surges in other countries and their currently rapidly increasing incidence in the US.
5. We have a short period to relieve the strain on healthcare systems and save lives by strategically targeting vaccination to those at highest risk of hospitalization and death.

## Strategic Vaccine Deployment in the Short Term

The US needs to strategically deploy vaccine supply in the short term to prevent deaths and maintain hospital capacity during the anticipated B.1.1.7 surge. There is a narrow and rapidly closing window of opportunity to more effectively use vaccines and potentially prevent thousands of severe cases, hospitalizations, and deaths in the next weeks and months.

The Food and Drug Administration (FDA) Vaccines and Related Biological Products Advisory Committee (VRBPAC) and the CDC Advisory Committee on Immunization Practices (ACIP) should address this issue in emergency sessions. An urgent review of all existing data (e.g., epidemiology, virology, immunology, modeling) should be conducted to determine how best to use the current vaccine supply and the supply that will be available during the next few months. Based on the data, strategic deployment of the current vaccine supply could be

achieved by the following changes in vaccine emergency use authorization (EUA) approval and in vaccine deployment:

- **Allocating vaccine with people ≥65 years given highest priority.** Vaccinating as many people 65 years and older could strategically increase protection among people who are at highest risk of hospitalization and death from COVID-19, alleviating much of the burden that healthcare systems will bear if faced with a rapid increase of cases due to the B.1.1.7 variant.
- **Deferring second doses of mRNA vaccines until after the surge.** If existing data support vaccine efficacy and short-term durable protection following one dose, official should consider a strategy that defers the second dose—for all age-groups, including those 65 and older—until after the surge to maximize the number of individuals receiving at least one dose. People who are scheduled to receive a second dose prior to any policy change should still be allowed to receive that dose if they so choose. A deferral of the second dose is not a cancellation of that dose, and second doses must be available following the surge or when the vaccine supply has adequately increased (Kadire et al 2021)(Plotkin & Halsey 2021).
- **Deferring the second dose of mRNA vaccines in people with confirmed COVID-19 infections.** New evidence suggests that one dose may rapidly generate high levels of antibodies among individuals who have previously had a confirmed COVID-19 infection (Kontopoulou et al 2021)(Krammer et al 2021)(Saadat et al 2021)(Samanovic et al 2021)(Stamatatos et al 2021).
- **Authorization and use of half-dose regimen for Moderna vaccine.** A 50-microgram (µg) dose of the Moderna mRNA vaccine in healthy adults resulted in similar robust immune responses and correlates of protection compared with a 100-µg dose. This approach would allow vaccinating twice as many people (Chu et al 2021).

The remainder of this Viewpoint document will focus on the potential public health impact of allocating vaccine with people 65 and older given highest priority and deferring second doses of mRNA vaccines until after the possible B.1.1.7 surge.

## Weighing the Evidence for a Deferred-Second-Dose Strategy

The two vaccines currently granted an EUA in the US are both mRNA vaccines that were administered in clinical trials as a two-dose series, with the second dose administered within 3 or 4 weeks after the first. The two randomized control trials found that both vaccines are safe and highly efficacious, with over 94% efficacy after two doses (Baden et al 2021)(Polack et al 2020). High levels of protection, however, were measured even after the first dose, with a vaccine efficacy over 92% for both vaccines beginning at 14 days post–dose one (Plotkin & Halsey 2021) (Skowronski & De Serres 2021). Even among older adults, vaccine efficacy remained high following both dose one and dose two, though the studies were not powered for subgroup analyses because of a relatively small number of participants (Vergnes 2021).

It is important to note that vaccine trials were not designed to robustly establish the efficacy of a single dose or the efficacy in sub-populations (such as older adults). Analyses across vaccines and data from effectiveness studies, however, are consistently showing that a single dose is likely to provide very high protection against severe disease and hospitalizations for at the least the duration of a B.1.1.7 surge.

It is difficult to assess the incremental value of the second dose, since nearly all participants in the clinical trials received it 3 or 4 weeks following the first, providing a brief temporal window to assess efficacy. Furthermore, clinical trials are limited in their ability to assess long-term duration or the efficacy in subpopulations, but this limitation applies to both one- and two-dose regimens. Thus, the second dose should be administered as soon as vaccine supply has increased sufficiently or after the surge has passed. Furthermore, evidence from other vaccines suggests that an extended time between vaccine doses does not generally compromise—and indeed

may increase—the antibody response to a vaccine boost (Plotkin & Halsey 2021). An exploratory analysis just last week by University of Oxford investigators supports a stronger immune response with delay of the second dose of their adenovirus-vectored vaccine out to 3 months as opposed to 6 weeks (Voysey et al 2021).

## Potential Public Health Benefit of Deferring the 2nd Vaccine Dose

We assessed the public health benefit that could occur following changes in deployment to strategically target all people 65 and older and changes in vaccine EUA approval to defer the second doses of mRNA vaccines until after a possible B.1.1.7 surge. We estimated the proportion of people 65 and older who would remain unvaccinated and the number of cases, hospitalizations, and deaths among this age-group under various vaccine deployment strategies. Our key assumptions are noted in **Table 1**.

We assumed that 2 million doses of vaccine would be administered per day from now until the end of March. To date, an estimated 30% of vaccine doses have been administered to people 65 and older (Freed et al 2021). We assumed that 90% of seniors who are offered the vaccine will accept vaccination based on a Kaiser Family Foundation report that found, in late 2020, 15% of people 65 years and older were hesitant to receive the vaccine, and that this number has decreased over time (Hamel et al 2020)(Hamel et al 2021). We estimated that one dose of the mRNA vaccine is 90% effective at preventing symptomatic disease and that two doses are 94% effective at preventing symptomatic disease, based on data provided by Pfizer-BioNTech and Moderna (Baden et al 2021)(Polack et al 2020)(Skowronski & De Serres 2021). We conservatively assumed that 2.5% of susceptible seniors would have a COVID-19 infection detected in the month-long period between April 15 and May 15, 2021, based on comparable rates observed in the UK and Israel when the B.1.1.7 variant became dominant in these countries. We assumed that 20% of people 65 and older with a COVID-19 infection are hospitalized (CDC 2021b). The crude case-fatality rate (CFR) in this age-group is about 9.6%; we used a conservative CFR of 7.0% in our calculations to reflect the declining CFRs observed over time (CDC 2021f). We recognize that these numbers will need to be updated as each day passes, as new data become available, and as assumptions are revised.

### *Recommendations*

1. An emergency meeting of VRBPAC and ACIP should be convened to urgently review the existing data (e.g., epidemiology, virology, immunology, modeling) to determine how best to use the current vaccine supply and the supply that will be available in the coming months. This should include all published and unpublished data available for all of the vaccine clinical trials for vaccines authorized for emergency use by the FDA or vaccines that may be authorized in the next 2 to 6 weeks.
2. To optimize the current vaccine supply in preparation of a possible B.1.1.7 surge, VRBPAC and ACIP should consider whether existing data support age-based allocation with highest priority given to adults 65 and older, deferring second doses of mRNA vaccines to after the surge, deferring the second dose of mRNA vaccines in individuals with confirmed previous COVID-19 infections, and/or the authorization and use of a half-dose regimen for the Moderna vaccine.
3. If the data review supports a change of current authorizations or recommendations, the FDA should revise its authorization determination as soon as possible.
4. A coordinated public communications campaign must be undertaken to provide clear and consistent messaging to the public regarding any change in the vaccine schedule or prioritization groups due to the deferment of second doses of vaccines.

| **Table 1. Key assumptions used to estimate the hypothetical number of cases, hospitalizations, and deaths under different vaccine deployment strategies. Estimates will change as new data become available and as assumptions are revised.** | |
|---|---|
| US Population ≥65 | 54.0 Million |
| Total doses administered by Feb 19, 2021 | 57.7 Million |
| Number of people receiving ≥1 dose by Feb 19 | 41.0 Million |
| Number of people receiving 2 doses by Feb 19 | 16.2 Million |
| Number of people receiving only 1 dose by Feb 19[a] | 24.8 Million |
| Doses per day | 2.0 Million |
| Vaccine acceptance proportion among ≥65 year olds | 0.9 |
| Vaccine Efficacy - 1 dose | 0.90 |
| Vaccine Efficacy - 2 doses | 0.94 |
| Proportion of unvaccinated ≥65 year olds with a diagnosed COVID-19 infection between April 15 - May 15[b] | 0.025 |
| Proportion of ≥65 year olds hospitalized among infected | 0.20 |
| Case-fatality rate | 0.07 |

[a]*We assumed that all people administered their first dose before Feb 19 would be given 2nd doses.*

[b]*Based on protection provided by vaccine delivered and administered to people ≥65 years of age, prior to April 1.*

We considered the current strategy (two doses administered, with 30% of the supply given to those 65 and older) and five alternative strategies for strategic vaccine deployment:

1. Two doses administered, with 50% of the supply given to those ≥65 years of age
2. Two doses administered, with 100% of the supply given to those ≥65 years of age
3. Deferred second dose, with 30% of the supply given to those ≥65 years of age
4. Deferred second dose, with 50% of the supply given to those ≥65 years of age
5. Deferred second dose, with 100% of the supply given to those ≥65 years of age

We estimate that, by the end of March, when B.1.1.7 is projected to be the dominant variant in the US, nearly 138 million doses of vaccine will have been administered in the United States. Should an increase in daily mRNA vaccine doses occur, this would alter our estimates regarding the number of unvaccinated individuals, cases, hospitalizations, and deaths. If we maintain the current two-dose strategy and the proportion of the vaccine supply administered to those 65 years and older remains at 30%, 30 million adults in that age range will remain unvaccinated by the end of March (**Figure 1**). If we transition to prioritizing first doses for as many people as possible by deferring the second dose, and increase the proportion of the vaccine supply administered to those 65 and older to 50%, only 13.7 million in that age-group would remain unvaccinated by the end of March. If we maintain the current two-dose strategy but increase the proportion of the vaccine supply administered to those 65 and older to 50%, 22 million people in this age-group would remain unvaccinated by the end of March. If we transitioned to a strategy in which we prioritized all adults 65 and older, we could offer at least one dose of vaccine to everyone in this group in both the two-dose and the deferred-second-dose strategy. Of note, the deferred-second-dose strategy would allow nearly 20 million additional doses to be administered to high-risk individuals in other age-groups.

Based on our assumptions—the occurrence of the B.1.1.7-driven surge, the number of doses available, vaccine acceptance rates, vaccine efficacy after one and two doses, hospitalization and CFR among people 65 years and

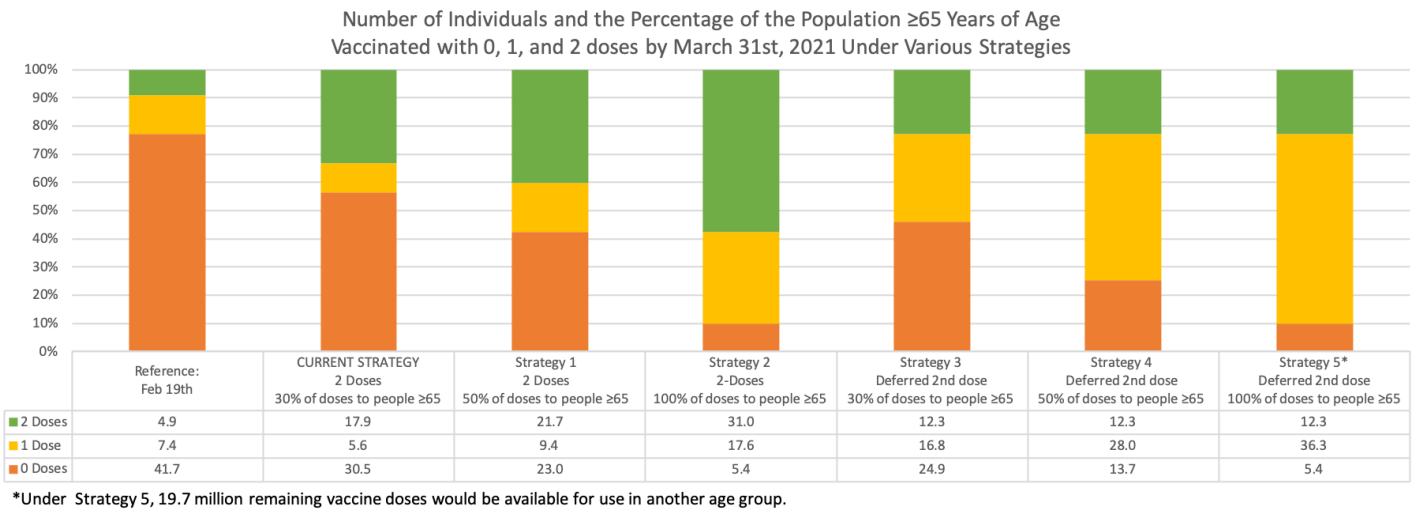


**Figure 1.** Number of individuals and the percentage of the population ≥65 years of age vaccinated with 0, 1, and 2 doses by March 31, 2021, under various strategies. Strategy 1: 2 doses administered, 50% of the vaccine supply administered to those ≥65 years of age; Strategy 2: 2 doses administered, 100% of the vaccine supply administered to those ≥65 years of age; Strategy 3: deferred second dose, 30% of the vaccine supply administered to those ≥65 years of age; Strategy 4: deferred second dose, 50% of the vaccine supply administered to those ≥65 years of age; and Strategy 5: deferred second dose, 100% of the vaccine supply administered to those ≥65 years of age.

older who are infected with SARS-CoV-2—we estimated the hypothetical number of cases, hospitalizations, and deaths in older adults under different vaccine deployment strategies. Under the current strategy, we could expect with a B.1.1.7 surge 803,000 detected cases, 161,000 hospitalizations, and 56,000 deaths in people in this age-group. With a strategy that maintains the two-dose approach and offers vaccines only to those 65 and older (**Figure 2, Strategy 2**), we could expect 225,000 detected cases, 45,000 hospitalizations, and 16,000 deaths. Under a strategy that defers second doses and offers one dose of vaccine to everyone 65 and older (**Figure 2, Strategy 5**), we could expect 244,000 cases, 49,000 hospitalizations, and 17,000 deaths. We did not consider in our calculations the number of cases, hospitalizations, and deaths in other age-groups due to a lack of vaccine availability, but given the substantially increased risk of adverse outcomes in adults 65 and older, they are expected to be far fewer. Furthermore, a strategy that defers second doses would allow administration of doses to high-risk individuals in other age-groups.

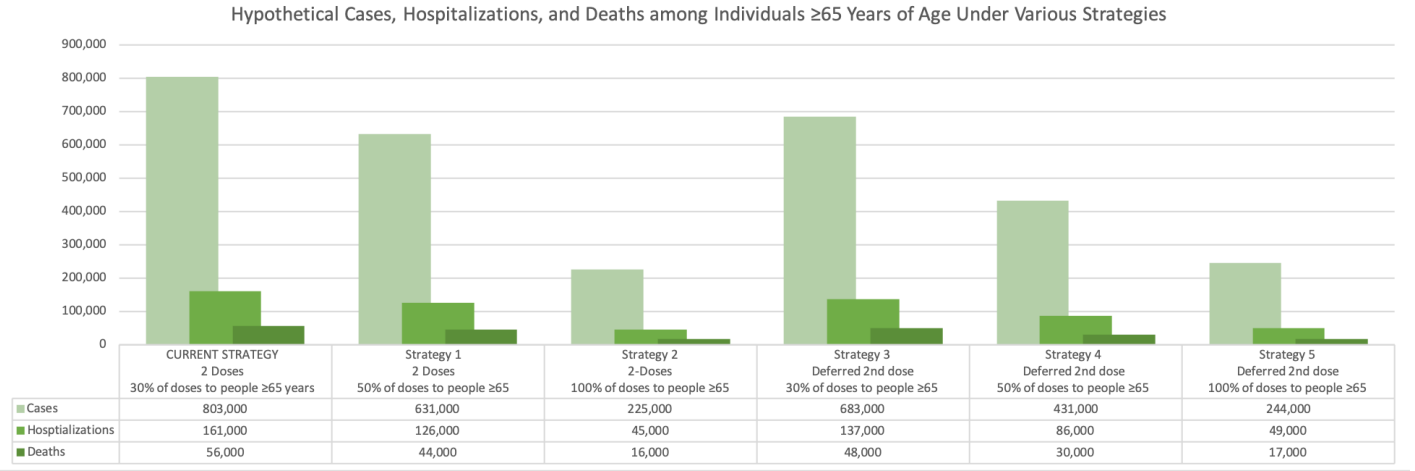


**Figure 2.** Hypothetical cases, hospitalizations, and deaths among individuals ≥65 years of age under various vaccination strategies. Strategy 1: 2 doses administered, 50% of the vaccine supply administered to those ≥65 years of age; Strategy 2: 2 doses administered, 100% of the vaccine supply administered to those ≥65 years of age; Strategy 3: deferred second dose, 30% of the vaccine supply administered to those ≥65 years of age; Strategy 4: deferred second dose, 50% of the vaccine supply administered to those ≥65 years of age; and Strategy 5: deferred second dose, 100% of the vaccine supply administered to those ≥65 years of age. Under Strategy 5, 19.7 million remaining vaccine doses would be available for use in another age-group.

Based on our assumptions and considering various vaccination strategies, deferring the second dose through a possible B.1.1.7 surge could save thousands of lives. We estimate that nearly 40,000 lives could be saved by switching from the current strategy to one in which second doses are deferred and everyone 65 and older is offered at least one dose of vaccine.

## Vaccine Supply

Faced with the need to consider how best to optimize available vaccines, clarity on the available weekly US vaccine supply over the coming months is critical, and full transparency is needed. Both Pfizer-BioNTech and Moderna must provide near-term projections of vaccine production and availability, and this should be verified independently by the FDA and/or the Biomedical Advanced Research and Development Authority (BARDA). Janssen Biotech, Inc, has submitted an EUA application to the FDA (Johnson & Johnson 2021). It's unclear whether this vaccine will be granted an EUA, and if so, what this means for the vaccine supply. The existing supply and week-by-week supply estimates should be part of the company's presentation to VRBPAC on February 26, 2021. Any vaccine that becomes available before or during the possible B.1.1.7 surge should be considered within the context of an age-based prioritization strategy.

## Variants in a Context of Natural Infection or Vaccination

RNA viruses have high mutation rates. SARS-CoV-2 variants will continue to occur in settings with and without vaccines. The variants of concern that have arisen to date, including B.1.1.7, B.1.351, and P.1, have done so in a human population that has largely been without any vaccine-derived protection. Variants will continue to mutate wherever ongoing transmission occurs.

Some have expressed concern about the potential for added selective pressure due to "partial immunity" provided by incomplete vaccination and that deferring second doses of currently authorized mRNA vaccines may drive the emergence of escape variants (Baraniuk 2021)(Broadfoot 2021)(PHE 2021c). Although the duration of protection following the first dose of Pfizer-BioNTech and Moderna's two-dose schedules is unknown, reported efficacy of more than 90% in the weeks following the first dose should bolster confidence that the potential for escape variants would be minimal in the relatively short timeframe of a potential B.1.1.7 surge, as second doses would be administered after the surge passes and vaccine supply is improved. The 21-day and 28-day intervals between dose 1 and dose 2 of Pfizer-BioNTech and Moderna's vaccine, respectively, was set based on their clinical trials as part of their EUA. The CDC recommends that the second dose should be administered as close to the recommended interval as possible, up to a maximum of 6 weeks (42 days) after the first dose (CDC 2021g). Other countries, agencies, and organizations have recommended options for extending the interval between doses. This includes up to 42 days based on limited vaccine supply and local epidemiology of SARS-CoV-2 and to up to 84 days (12 weeks) in the UK (Iacobucci & Mahase 2021) (NACI 2021)(WHO 2021). Intensified surveillance for breakthrough cases (i.e., documented SARS-CoV-2 infection following either dose of COVID-19 vaccine) is needed to determine the duration of single dose immunity and/or to genotype the viruses that infect following vaccination. Continued genomic surveillance is essential to detecting new variants of concern and their public health implications regardless of vaccination strategy.

> Consideration of vaccinating the maximum number of older adults possible, deferring second doses, and using a reduced dosage approach for the Moderna vaccine could possibly save thousands of lives in the upcoming months.

## Making Vaccine Recommendations with Promising but Incomplete Information

The ACIP has outlined the ethical principles of the initial allocation of COVID-19 vaccines, which include a commitment to maximize benefits and minimize harms, promote justice, mitigate health inequities and promote transparency (McClung et al 2020). In a setting of limited vaccine availability, ethical arguments can be made that support vaccinating those who are at highest risk of exposure, those at highest risk of severe outcomes of disease or death, those responsible for maintaining critical infrastructure, essential workers, or those at highest risk of transmitting to the most vulnerable who cannot themselves be vaccinated. If a strict age-based criterion is implemented in anticipation of a surge, we must acknowledge that this could increase disparities in vaccine distribution due to racial and social inequities, such as occupation, income, access to health care. Because early death correlates with disadvantage, prioritizing all patients 65 years and older may exacerbate disadvantage (McClung et al 2020). These individuals should be prioritized when vaccine supply is increased.

The ACIP principles and the FDA EUA approval for vaccine use came just as data on the variants were beginning to emerge. Now, we have two important pieces of information on the variants that we didn't have then: first, we have a more complete picture of how the UK variant evolved and surged; and second, increased sequencing data in the US shows that the early evolution here mirrors that of Europe. The modeling that comes from these data strongly suggests that we need to act on this new information now and urgently prepare for the worst. We can prepare for the worst by prioritizing those ≥ 65 years of age and delaying by some small interval second doses for those not already in the queue before the policy shift. Time is of the essence to provide a first dose of vaccine to as many individuals who are at risk of severe disease, hospitalization, or death as possible.

## From Immunology to Implementation

If the data support that deferring the second dose of vaccine still provides adequate protection to the individual through the duration of a potential B.1.1.7 surge and could maximize the public health benefit, a number of challenges must be anticipated toward implementing that policy change. First, this change would disrupt the current vaccine programs and logistics. Can local vaccination programs accommodate this change to the vaccine strategy? What is the ability of local health systems to make this happen? Second, the change will cause confusion among the public and will require careful, clear, and consistent public messaging campaigns about the new, time-limited approach to single-dose vaccination to minimize the number of serious illnesses, hospitalizations and deaths. And will the public accept the change?

During a public health crisis, decisions often need to be made with incomplete data, and we must balance what is known and what is unknown with the anticipated public health risk. Currently, we know older people are at highest risk of hospitalization and death and there is a potential for a B.1.1.7 surge. We also know that there is evidence of at least short-term protection following one dose of vaccine. In the limited period before the anticipated surge, strategic vaccination efforts can maximize benefits and minimize harm by reducing the number of infected individuals and decreasing disease severity, thereby easing the burden on the healthcare system. One of the primary goals of vaccination is to prevent deaths and reduce hospitalizations to maintain the ability of the healthcare system to care for those who are infected or in need of live-saving services.

## No Time to Waste in Considering a Pivot

To address the possible surge in COVID-19 cases in the US due to the B.1.1.7 variant, officials need to consider now a strategic shift in deployment of vaccines. It will likely take a minimum of 3 weeks to initiate any change in the vaccine program, and the B.1.1.7 variant is well on its way to becoming the dominant strain in the US.

Public health officials and agencies hold the responsibility for strategic vaccine deployment for authorized vaccines. Now is the time to make critical decisions with imperfect data. However, compared to when the mRNA vaccines were authorized, we have more complete data regarding the B.1.17 variants. We know how the B.1.1.7 variant evolved and led to surges in other countries, and we know that the early evolution of B.1.1.7 in the US mirrors that of Europe. An emergency joint session of VRBPAC and the ACIP should be conducted to review all existing data and determine how to optimize the current supply.

Consideration of vaccinating the maximum number of older adults possible, deferring second doses, and using a reduced dosage approach for the Moderna vaccine could possibly save thousands of lives in the upcoming months. Preparing for a potential B.1.1.7 surge will require public health agencies to act urgently based on the best science and with the intent to save as many lives as possible from COVID-19.

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