

Understanding herd immunity and vaccine hesitancy

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Since the beginning of the pandemic, herd immunity has been portrayed as the holy grail to overcome the COVID-19 pandemic.

Abram Wagner, a research assistant professor of epidemiology at the University of Michigan School of Public Health, explains why reaching herd immunity might not be as simple as we thought, and what vaccine hesitancy and availability have to do with it.

Do you think herd immunity is attainable in the U.S.?

Wagner: Herd immunity is a theoretical concept in infectious disease epidemiology. It refers to what proportion of the population needs to be vaccinated in order to completely eliminate local transmission of disease, to snuff out outbreaks as they occur.

There's a number of things that need to be true for this concept to actually work. There needs to be equal mixing of vaccinated and unvaccinated people in the population. And we know that that's not the case in the U.S. There's going to be some areas where there's a higher percentage of the population vaccinated, in some areas less. And that could be due to access or could be due to a vaccine hesitancy.

The other thing is that children could be transmitting SARS-COV-2, the virus behind COVID-19. We're not vaccinating children, so when we're talking about attaining a certain proportion of the population vaccinated, we need to realize that we're not even able to vaccinate the children at this point in time and it'll be probably a few more months before a vaccine is readily available for all ages of children.

What is vaccine hesitancy?

Wagner: Vaccine hesitancy is when people are rejecting a vaccine or when they are deciding to delay it, even when it is available. When we're talking about vaccine hesitancy, it's really important for us to understand that the vaccine needs to be available and needs to be convenient and

easily accessed. And only when those conditions are met, can we start thinking about whether somebody is vaccine hesitant or not.

Why are people hesitant to get vaccines?

Wagner: There are a number of reasons why people might not want to get a vaccine. This could be due to mistrust in government health officials or in health care providers. There could also be overconcerns about safety and effectiveness.

There are a number of reasons why people might not be vaccinated. People might not have easy access to vaccines and that could depend on the area of the country they're in. If they're in a rural area or in some inner cities where there's lack of access to vaccination centers, vaccine access may be more difficult. Any of those reasons might be behind why they don't get the vaccine and that's different from vaccine hesitancy.

Is it frustrating that we have this vaccine that is proven safe, is more available but not everyone will take it?

Wagner: As an infectious disease epidemiologist, I'm so excited to see so many people—over 100 million Americans—have gotten COVID-19 vaccine shots so far. There's also definitely space to go. We want as much of the general population to get this vaccine. We're entering a key phase here where the vaccine is starting to be distributed to more and more locations, and it's more easily accessed now and more convenient to get.

But there's been a bit of a slowdown in the momentum in the uptake of the vaccine. Some of that can be tied to vaccine hesitancy but some of it still is from convenience of access.

The people who have already been vaccinated are ones who are very eager. But there's a lot of people who would be considered more of the fence sitters, who could be pushed into getting a vaccine or pushed into not getting a vaccine. And for these individuals, it'll take a bit more time to get them vaccinated.

These fence sitters are not going to be looking at all these different pharmacy websites just to see where it's the best place to get a vaccine. The vaccine needs to be convenient for them. So it'll be a bit slower of a push through these individuals to get them vaccinated. But it's also important to note that these individuals are seeing their friends, family members and co-workers get vaccinated, and as they see that the vaccine is safe and effective, they will be more likely to get it to.

How do you try to convince people to get vaccinated?

Wagner: Throughout this epidemic we've seen a failure in messaging. For example, the idea to wear a mask because it'll protect other individuals is not concrete enough. You need to say who you are protecting. And I think for the average person, who they want to protect includes their mother and father or their grandparents. So that's really powerful messaging to talk about protecting concrete people, tangible people.

Another thing that can be really helpful is to reach people, by texting them or emailing them, "We have a vaccine available for you. We reserved a vaccine, reply to us and we'll set up a time for you." That is really powerful messaging because it puts the onus on the individual to think, "I have a reserved vaccine just for me, I should go get it." And studies have found that that has been significantly linked to higher uptake of a vaccine.

One thing that's been really interesting about the COVID-19 vaccine

rollout is that we've been using mass vaccination centers, which are not very easy to get to, especially if you don't have your own car. If you're relying on public transportation and then you wait in long lines, you need to take a long time off work. We should be thinking about the time costs for getting a COVID-19 vaccine.

It's supposed to be free but if you're going to have to take off one, two, three, four hours from your job to get COVID-19 vaccine, that's a lot of time. And not everybody can afford that. But as we've continued in the rollout of this vaccine, it's been offered at more and more locations. There's more and more primary care physicians and pharmacies that now have the vaccine. And I'm hoping that that leads to more accessibility to harder to reach populations.

Have we seen more hesitancy in minority communities?

Wagner: There's been a few groups in the United States which over the past year have shown higher rates of vaccine hesitancy. One is Republican voters, which have had pretty high rates of vaccine hesitancy. Another group would be the Black community.

There has been some controversy over the use of the word vaccine hesitancy in the Black community. One of the reasons why is that they may be hesitant about this vaccine because of their trust in health care providers or their confidence in the government, which relates, of course, to their lived experiences of racism, of mistreatment, things that they themselves or certainly members of their family have had to deal with for generations, and even now.

We've also seen this problem of vaccine refusal as being highly prevalent among Republican voters. I think that has to do with larger mistrust of

the government or this idea that the COVID-19 pandemic was overblown or wasn't as large of an issue as scientists said it was. There certainly has been some outreach by Republican politicians who've been commenting on how they've gotten the [vaccine](#). More visibility of vaccination from prominent Republican politicians and commentators will be a really important way to promote vaccination in this group.

Provided by University of Michigan

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