

**U.S. House of Representatives Select Subcommittee on the Coronavirus Crisis  
“Building Trust and Battling Barriers: The Urgent Need to Overcome Vaccine Hesitancy”**

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Chairman Clyburn, Ranking Member Scalise, and distinguished members of the House Select Subcommittee on the Coronavirus Crisis: thank you for convening this important conversation about how to overcome the barriers to vaccination against COVID-19.

First, I want to say that I wish we’d done more to prepare for the challenge of encouraging vaccination against COVID-19. In June of 2020, I co-authored an op-ed in *USA Today* with fellow behavioral scientists that urged for major investments to prepare for this foreseeable crisis.<sup>1</sup> Those of us who study health decision making knew it would be necessary not only to develop vaccines and optimize distribution networks, but also to ensure we were prepared to effectively encourage vaccine adoption. Unfortunately, limited attention was paid to this challenge until it was upon us.

Thankfully, we do have some valuable knowledge about what it takes to change health decisions for the better by changing the cost-benefit calculus. I’ll focus my remarks there.

### **Radical Convenience**

An efficient way to encourage the adoption of vaccines is to make vaccination radically convenient, thereby reducing the costs associated with vaccination. People are busy, forgetful, nervous about needles, and generally far more dissuaded by hassle factors than we appreciate.<sup>2</sup>

***Pre-Arranged Vaccination Appointments:*** One thing that can overcome these barriers is pre-arranging vaccination appointments for individuals. Automatically scheduling someone for a flu shot at an on-site workplace clinic while making it trivially easy to reschedule that appointment leads to a 36% increase in vaccination over simply telling them how to schedule an appointment.<sup>3</sup> Ideally, we should have given every American an appointment to get a vaccine at a convenient location as soon as they became eligible (making the appointment easy to cancel or reschedule). It’s not too late to do this for unvaccinated Americans. And reminding people of the free Uber or Lyft they could take to their appointment wouldn’t hurt.

***Repeated Reminders That A Vaccine is “Reserved for You”:*** If we can’t give every American an appointment to get a vaccine, we can still remind them to schedule one (explaining how) and convey that the government’s investment ensured a vaccine was reserved for them. In two studies conducted last fall that included over 700,000 Americans and tested dozens of different text reminder messages encouraging flu vaccination, my collaborators and I found that telling people a vaccine was “reserved for them” or “waiting for them” boosted vaccine take-up by 7-10%.<sup>4</sup> These messages rose to the top of the heap in a test including a wide range of reminders deployed to encourage 50,000 patients to accept a vaccine at an upcoming healthy visit to their primary care doctor.<sup>5</sup> They were also the top-performing messages when we encouraged nearly 700,000 Walmart pharmacy customers to go to their local Walmart and request a vaccine.<sup>6</sup> A recent study at the University of California at Los Angeles’ Health System showed that this same type of message outperformed others when people were encouraged to get a COVID-19 vaccine.<sup>7</sup> We suspect these types of messages are so effective because when a health care provider reminds someone to get a vaccine and conveys that it’s “waiting for you” or “reserved for you,” it communicates that they’re recommending vaccination, that there will be limited hassle involved in getting the vaccine, and that the vaccine is yours already. And research shows we strongly dislike giving things up to others that have been allocated to us (this is called the “endowment effect”).<sup>8</sup>

We also know from past research that repeated reminders to follow through on recommended health behaviors are useful and cost-effective.<sup>9</sup> So repeatedly reminding people that a vaccine is “reserved” for them at their pharmacy or doctor’s office and encouraging them to come to claim it would likely add value.

### **Cash Incentives**

Past research has proven that financial rewards can spur weight loss,<sup>10</sup> medication adherence,<sup>11</sup> smoking cessation,<sup>12</sup> and flu vaccination.<sup>13</sup> We have good reason to expect cash payments should also motivate people to get a COVID-19 vaccine. Financial rewards change the cost-benefit calculus for a decision about vaccination. For someone who doesn’t think vaccination is worth their while, perhaps because they are young and healthy and don’t fear infection, incentives increase the immediate benefits of vaccination and can therefore change decisions. They can also offset some of the indirect costs of getting a COVID-19 shot, such as lost income and childcare expenses.<sup>14</sup>

We already have some evidence that cash rewards can boost COVID-19 vaccination. Thirty-four percent of respondents in a sample of over 7,000 unvaccinated Americans reported they would be more likely to get vaccinated if they were paid \$100 to do so.<sup>15</sup> So offering large cash payments is likely to work. However, a recent study of unvaccinated Medicaid patients in California found that cash payments for vaccines only actually compelled more vaccination among people who already intended to get their COVID-19 shot.<sup>16</sup> This suggests that direct

payments may work by closing what behavioral scientists call the intention-action gap for unvaccinated people who want their vaccine but may have been dissuaded from acting quickly by hassle factors.

***Is it Risky? The Unintended Message Conveyed by Cash Rewards:*** While large direct payments for vaccination can be effective, small payments should be deployed with caution. Recent research suggests paying people a small amount to get their COVID-19 shot might unintentionally convey that there is a health risk associated with vaccination,<sup>17</sup> even though greater risks accrue to those who decline a vaccine. While larger payments can also imply vaccination is risky, high compensation tends to override the small cost induced by raising concerns about risk. In one survey experiment conducted at the University of California at San Diego in early 2021, researchers found that people offered hypothetical payments of \$100 or more increased their intentions to get vaccinated against COVID-19 while offering hypothetical payments of \$20 or less reduced people's stated vaccine intentions.<sup>18</sup>

### **Lottery Incentives**

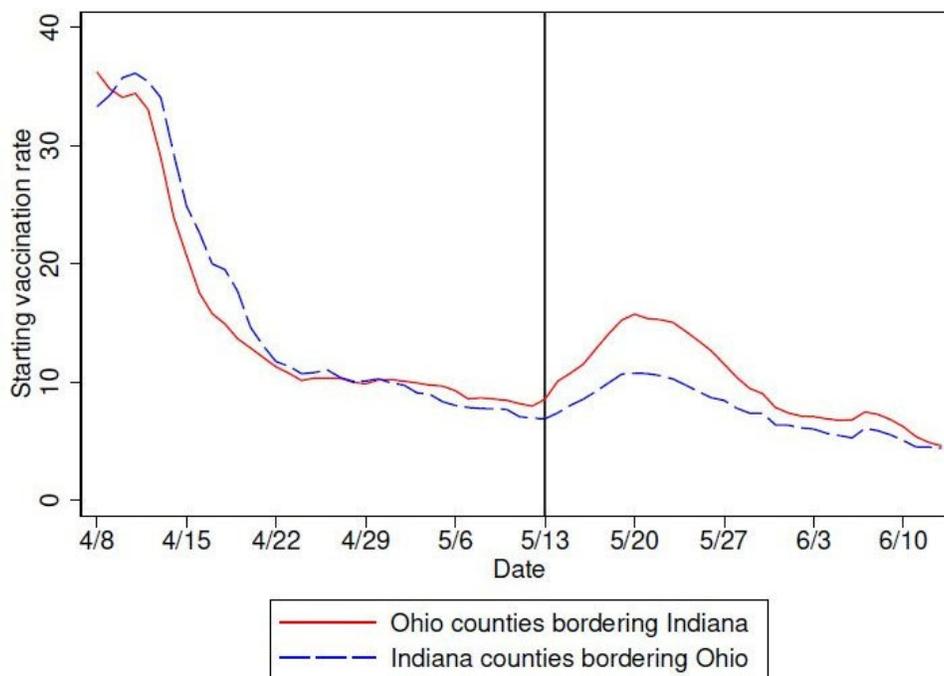
Another way to encourage vaccination is through a lottery in which vaccinated individuals are eligible for large prizes, and roughly a dozen states are deploying such lotteries.<sup>19</sup> Research suggests these lotteries may be highly effective, as lotteries have been shown to motivate other health behaviors.<sup>20,21</sup> Lotteries are a cost-effective way to inspire behavior change, in part because people tend to overestimate the chances of low probability events.<sup>22</sup> For example, we behave as if a one in a million chance of an event is more like a one in ten thousand chance.<sup>23</sup> So when someone is entered in a lottery, they overestimate their chances of winning. A lottery may also be preferable to guaranteed cash payments since a low probability chance of a very large cash reward can offset the potential for a promised payment to (incorrectly) convey that vaccination is risky and undesirable.

One kind of lottery in particular - a so-called "regret lottery" - can be particularly effective.<sup>24</sup> Regret lotteries have eligibility requirements to win just like other lotteries. So you can be required to get a vaccine to receive a prize, for example. However, in regret lotteries, someone who does not meet the eligibility requirements to win can still be notified that they were selected as a winner - they will simply learn simultaneously that they will not be able to accept their prize. Because people imagine the regret they would feel if they received that notification and weren't eligible to win, regret lotteries can be even more motivating than standard lotteries and may therefore be a useful tool for motivating COVID-19 vaccination.<sup>25</sup>

***Early Evidence That COVID-19 Lottery Incentives Work:*** In May, Ohio launched a vaccine lottery with five drawings, each for a \$1 million prize and a full college scholarship. Only vaccinated registrants could win. In the week after the lottery was announced, Ohio's vaccination rate increased by 28% among Ohioans 16 and older,<sup>26</sup> and Figure 1 below depicts the estimated impact of the Ohio lottery on vaccinations over a roughly one-month period.<sup>27</sup>

The team of Oberlin economists who created **Figure 1** estimated that Ohio’s “Vax-a-Million” lottery caused an additional 50,000 to 80,000 Ohio residents to get the COVID-19 vaccine in the first two weeks following its launch (red line) compared to the adjacent counties in Indiana (blue line). That implies a cost of about \$85 for each additional dose of vaccine delivered.<sup>28</sup>

**Figure 1.** Vaccination Rates in Ohio and Indiana Border Counties Before vs. After Ohio’s Vax-A-Million Sweepstakes Began



Source: Brehm, Margaret and Brehm, Paul and Saavedra, and Martin Hugo. “The Ohio Vaccine Lottery and Starting Vaccination Rate.” (June 27, 2021) *SSRN Working Paper Abstract #3875021*: <https://ssrn.com/abstract=3875021>

**The Philly Vax Sweepstakes:** My collaborators and I are putting regret lottery incentives to the test as a means of boosting COVID-19 vaccination with a newly launched series of three local vaccine sweepstakes in the City of Philadelphia.<sup>29</sup> We are drawing names from a Philadelphia residential database but requiring those we contact to prove they were previously vaccinated to accept their prize. Half of the winners in each drawing will come from a randomly selected, pre-announced zip code with a particularly low vaccination rate. Since all residents are entered into the lottery, some unvaccinated Philadelphians will be notified that they would have won a prize if only they had received their vaccine. We are also offering grand prizes of \$50,000 rather than \$1 million+ to determine whether such jackpots can still motivate behavior change in this context. It is still too early to measure the impact of the program, but we hope to have results by August, and the Philly Vax Sweepstakes could be a model program for micro-targeted lotteries at the zip code level.

## **Non-Monetary Incentives**

It's also worth noting that non-monetary incentives can exert a powerful influence on decisions. One survey found that offering Americans the opportunity to stop wearing masks after vaccination was important.<sup>30</sup> Unvaccinated Republicans reported being 18 percentage points more likely to get a COVID-19 vaccine when this non-monetary incentive was dangled, while Democrats reported being 6 percentage points more likely to get a vaccine if they could unmask afterward.

Another non-monetary incentive that can be powerful is restricting access to certain opportunities to those who are vaccinated (e.g., in-person education or employment).<sup>31</sup> Over 500 colleges and universities across the country are requiring students to be vaccinated to return in the fall,<sup>32</sup> and many employers are setting similar mandates.<sup>33</sup> While mandates can be controversial, a recent literature review found that they tend to be more powerful than financial incentives. Specifically, this review determined that workplace policies such as vaccine mandates increased flu vaccine coverage by an average of 25 percent, whereas the incentive programs surveyed only increased flu vaccination rates by 9 percent.<sup>34</sup> Encouraging mandates that allow for medical and religious exemptions is likely to help increase vaccination rates.

## **Conclusion**

I'll end my testimony by noting that there are many other approaches we could take to encouraging vaccination besides changing the costs and benefits associated with vaccination. Facilitating in-depth conversations with trusted medical professionals and deploying effective marketing campaigns are just two examples of the kinds of tactics that can add value and that I haven't covered in my testimony.<sup>35,36</sup> There is also still a great deal we don't know about how to best encourage vaccination because gaining such knowledge hasn't been a major priority until very recently.

I hope my comments have provided insights about what more we can and should be doing now to encourage vaccination against COVID-19. But I also hope that significant future investments will be made to ensure we have a better understanding of what influences vaccination decisions before we reach this phase in a future pandemic.

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