

World view



By Mitesh Patel

Test behavioural nudges to boost COVID immunization

Studies to promote uptake are as essential as research to develop vaccines.

In many nations, public-health agencies are independently scheduling appointments for COVID-19 vaccinations and setting up delivery sites.

And yet, few vaccination rollouts capture information on what methods are used to encourage people to get their shots, and how they are performing. That means that successful approaches won't spread as quickly as they should, and efforts that perform poorly will remain in place for too long. The COVID-19 pandemic – with its accumulating losses – will last longer. We need to start learning now how best to 'nudge' people to receive their vaccinations.

Nudges are subtle changes in how choices are offered. They don't involve mandates or changes to the price of care; they are usually shifts in how a message is framed. Nudges are everywhere, by design or otherwise. The challenge is not whether to introduce them, but to learn how to do so for the greatest benefits. Think of it as user-experience testing that might save lives and livelihoods. Experiments to test nudges take little time, and almost always fall within the existing standard of care. For example, instead of writing one e-mail that goes out to thousands of people, health-care systems can come up with three ways to frame the message, and how recipients of each respond.

I've seen what a difference tiny changes can make. While I was in medical school, US government initiatives drove use of electronic health records by office-based physicians from 20% to 80%. In the rush to implement, too little attention was given to the user interface. I noticed that default options, such as which test was first on a list, were taken as implicit recommendations even though they had never been intended as such. In fact, they were often poorly aligned with what was best for patients. I studied how to set defaults, and took advantage of a natural experiment that compared groups of practices that had different software settings. One setting for generic prescribing options, which clinicians could change freely, saved US\$32 million over two years. It required an hour's coding to implement, and changed the course of my career.

In 2016, I started the world's first health-system nudge unit, at the University of Pennsylvania. We find ways to embed behavioural change in care. I also consult with other health systems and companies on how to introduce nudges.

Testing nudges might seem moot at this moment, when demand for vaccines is outstripping supply, and supply outstripping delivery capacity. But these studies are still essential. First, many places are already passing over people at high risk (for example, health-care workers and older people) who don't make or attend vaccination appointments,

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and are vaccinating lower-priority populations instead. Second, vaccination rates among minority racial and ethnic groups are already much lower than in majority groups. We need to know what works to get shots into arms.

To be sure, we desperately need interventions beyond nudges: installing clinics in under-served areas, providing transportation and child care, mandating that workers be given paid time off for vaccinations. At the same time, nudges are quick and cost-effective, so it is worth finding out what works. Although some health systems are struggling just to set up appointments, many could readily start simple studies. This should be a government priority.

There are several straightforward nudges that health systems should incorporate into vaccine-rollout plans. First, messaging should frame vaccination as the default. It should also provide peer-comparison feedback: showing vaccination as the norm can activate social tendencies to join others. And making choices active and time-bound (for example, requiring people to accept or reject an appointment by a deadline) can boost acceptance rates. Our work on a previous project required clinicians to accept or cancel orders for routine care such as vaccines or tests, and found that this nudge increased influenza vaccination rates by nearly ten percentage points (R. H. Kim *et al. JAMA Netw. Open* 1, e181770; 2018). It increased ordering of cancer screening tests by up to 22 percentage points (E. Y. Hsiang *et al. JAMA Netw. Open* 2, e1915619; 2019).

A second, often overlooked, insight is that the process has to be easy. Rehab for people who have had heart attacks can reduce their chances of a second heart attack by as much as 30%, but too few enrol. One of our projects found that giving clinicians templated forms and patients lists of nearby rehab centres tailored to their insurance coverage increased referral rates from 15% to 85% (S. Adusumalli *et al. JAMA Netw. Open* 4, e2033472; 2021). Something similar might be needed to ensure people get their follow-up vaccinations.

Third, a single approach will not work for everyone. Nudges can be personalized. For example, health systems could check who has not received an influenza vaccine in the past, which might reveal who is likely to be vaccine hesitant. We need to learn much more about what nudges work best in these and other vulnerable populations.

Each institution should report its vaccination efforts and performance, and conduct rapid experiments on how best to encourage people to get their vaccines – especially their second doses. The slow rollout of the vaccine over many months should be an opportunity to test promotion efforts. If we don't take it, we'll squander opportunities to expand our toolkit of nudges for future health crises.

Now is the time to generate, collect and share evidence on which approaches work and which do not. Let's not miss this opportunity.