



Increasing Flu Shot Uptake Among New York Harbor Veterans

Emails incorporating behavioral insights were not effective in increasing flu shot uptake

Target a Priority Outcome Influenza (flu) causes more than 9 million illnesses and more than 12,000 deaths in the United States annually.¹ The Veteran population, being older on average than the general population, is at greater risk of serious complications from the flu. The VA provides free flu shots to enrolled Veterans and aims to increase flu vaccination rates nationwide.

Translate Evidence-Based Insights Despite the seriousness of the flu, many people do not get the annual flu shot. Reasons may include motivational barriers (for example, hesitancy about vaccines or belief that the shot can make you sick) and implementational barriers (failure to follow through and get the shot, despite intending to do so).² In collaboration with the New York Harbor VA Health Care System (New York, NY), the Office of Evaluation Sciences (OES) designed email messages to send to enrolled Veterans. These included detailed information about how to get a flu shot in the New York Harbor system, as well as elements based on evidence from the behavioral sciences, including (a) framing getting a flu shot as a default course of action, (b) an implementation prompt (a prompt to make a plan for getting a flu shot at a specific time and place), and (c) presenting the benefits of a flu shot as concrete and near term (immunity beginning within two weeks).³

¹ Centers for Disease Control and Prevention (CDC), "Disease Burden of Influenza," accessed July 18, 2018, <https://www.cdc.gov/flu/about/disease/burden.htm>.

² CDC, "Surveillance of Influenza Vaccination Coverage," accessed March 24, 2017, <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm>. Ezequiel M. Galarce, Sara Minsky, and K. Viswanath, "Socioeconomic Status, Demographics, Beliefs and A(H1N1) Vaccine Uptake in the United States," *Vaccine* 29 (2011): 5284-5289.

³ Implementation prompts have been found to be effective in increasing flu shot uptake: Katherine L. Milkman, John Beshears, James J. Choi, David Laibson, and Brigitte C. Madrian, "Using Implementation Intentions Prompts to Enhance Influenza

Embed Tests 28,961 patients of the New York Harbor VA with email addresses on file were assigned at random, in equal numbers, to an email (treatment) group and a no-email (control or status quo) group. A series of email messages were sent to the email group via the GovDelivery platform on three dates: mid-October 2017 (while walk-in flu shot clinics were operating in three New York Harbor facilities), late November 2017, and early February 2018.

Analyze Using Existing Data Data from VA electronic health records were used to compare flu shot uptake between the two groups between October 1, 2017, and May 24, 2018. The data included whether a patient received a flu shot, and also the date of the flu shot, which enabled an analysis of whether different postcards might prompt individuals to get shots earlier in the season. The data also included information about individual characteristics — including age, rurality, and prior flu shots — that enabled a more precise estimate of the emails' effectiveness.⁴

Results There was no significant effect of the emails on either uptake or timing of flu shots. In both groups, flu shot uptake was about 20 percent. After a pre-specified adjustment for individual characteristics including age, rurality, and prior flu shots, the difference between the email and

Vaccination Rates," *Proceedings of the National Academy of Sciences* 108 (2011): 10415–10420. People are more likely to get vaccines when presented as a default (opt-out) course of action: Gretchen B. Chapman, Meng Li, Helen Colby, and Haewon Yoon, "Opting In vs Opting Out of Influenza Vaccination," *JAMA* 304 (2010): 43-44. People tend to assign greater value to benefits accruing nearer in time: Shane Frederick, George Loewenstein, and Ted O'Donoghue, "Time Discounting and Time Preference: A Critical Review," *Journal of Economic Literature* 40 (2002): 351-501.

⁴ Unless noted otherwise, all of the analysis reported in this abstract was prespecified in an analysis plan, which can be found at <https://oes.gsa.gov>.



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no-email groups was not statistically significant ($p = .36$, 95% CI = $[-.005, .013]$), and the precision in this estimate rules out an effect as small as 0.9 percentage points. The two groups were also similar in timing. For those who got flu shots in both groups, the average days elapsed from the start of flu vaccine season (October 1) to an individual's getting the flu shot was about 49 days, and there was no statistically significant difference between the groups ($p = .93$, 95% CI = $[-2.39, 2.18]$).

Build Evidence This study demonstrates the feasibility of rapidly testing a flu shot promotion effort, with results available in time to inform efforts in the next flu season. This particular email outreach effort was not effective in promoting enrolled Veterans to get flu shots or to get them earlier. There are many possible reasons for this. It is possible, of course, that the behavioral barriers targeted by these emails (including simple lack of information about flu shot availability) were not actually significant barriers for Veterans enrolled with the New York Harbor VA Health Care System. However, operational data revealed an important practical limitation on any impact the email might have had: Each of the three emails was opened by only about 20 to 25 percent of intended recipients. Future work might be directed at discovering the reasons for these low open rates and possible ways of increasing them.

