Increasing Vaccination Without Changing Beliefs

Gretchen Chapman, PhD, Rutgers University

Published October 5, 2016 in NEJM Catalyst

Educational interventions that affirm the safety and efficacy of vaccines are not very successful at increasing vaccination rates. Find out what kind of interventions really do work to encourage immunization.

What makes the difference between whether you eat a piece of fruit or a candy bar for a snack? Bike to work or drive? Get a flu shot or forgo the vaccination? Would reading a persuasive message filled with facts about the nutritional benefits of fruit, the health consequences of exercise, or the safety and efficacy of the flu shot change your behavior? Research has shown that behavior is less influenced by attempts to change beliefs and more influenced by changes in the environment that facilitate the choice of the healthy option: for example, putting an attractive bowl of fruit on the kitchen table and keeping the candy in the back of the cabinet, providing bike lanes and easy access to bike shares, and offering conveniently available flu shots.

During the past decade, vaccinations have become increasingly convenient. For example, adults can now receive influenza, shingles, pneumococcal, and other vaccinations without an appointment at local retail pharmacies, many of which are open extended hours and on weekends. Expanding convenient access to vaccinations does not target patients' beliefs or provide education. Instead, it directly influences vaccination behavior. Interventions that increase vaccination are important because vaccine coverage remains too low for many diseases, and a single behavioral act of vaccination can provide long-term protection against an infectious disease.

Education is Not the Best Solution

Education often is not the best way to boost vaccination rates. Although it may seem logical that changing beliefs and attitudes about the safety and efficacy of vaccines will convince individuals to get vaccinated, educational efforts have a mixed track

record—sometimes achieving desired effects, sometimes backfiring, and more often doing nothing at all.

Education is particularly ineffective for changing the resolute beliefs of individuals in the anti-vaccination movement. Effective responses to anti-vaccinators are certainly an important component to a public health strategy for infectious-disease control; however, anti-vaccinators make up a small fraction of the population and are far outnumbered by those who miss vaccinations for less-principled reasons. Interventions directed at other segments of the population, such as fence-sitters, may be more cost effective in terms of the number of additional vaccinations administered per unit cost.

Structuring the Environment to Facilitate Vaccination

Rather than attempting to change beliefs or educate patients, an alternative approach is to facilitate action directly by making vaccination more convenient or by using other techniques to cue the desired behavior. Structuring the environment to make vaccination the easily executed behavior is consistent with behavioral insight-driven policy work, which received recent attention with the 2015 announcement of White House Executive Order 13707, authorizing the first-ever Social and Behavioral Sciences Team in the U.S.

Behavioral insight interventions are most likely to work for patients who are already familiar with the vaccine and have a neutral or somewhat favorable attitude toward it but have not made getting vaccinated their top priority. Although these interventions have some boundary conditions, their untapped potential for increasing vaccination rates is substantial and often carries little or no cost.

Recent evidence supports the efficacy of the behavioral insight strategy. A meta-analysis of 29 clinical trials investigating interventions designed to encourage vaccination demonstrated that those that focused on organizational change (e.g., offering vaccinations to patients at convenient times) were most effective, whereas more traditional interventions (e.g., reminders and patient incentives) were moderately

effective and patient education was least effective. Thus, although the studies in this meta-analysis predate the behavioral insights movement by a decade or more, they support the conclusion that organizational change to facilitate more effective vaccination delivery yields better results than patient education.

Harnessing the Default Effect

A powerful method for changing behavior is to make the desired behavior the default—that is, harnessing the tendency of individuals to stick with the option that will be selected by default if they do not specify otherwise. In a study demonstrating that the default effect increases vaccination rates, university employees received an email telling them that they could make an appointment for a flu shot (default = no appointment) or that they had been automatically scheduled for an appointment that they could cancel (default = appointment). All patients with a scheduled appointment (including the opt-in patients in the first group who made an appointment and the opt-out patients in the second group who did not cancel their appointment) received an automatic reminder email a few days prior to the appointment date. Vaccination rates were higher in the second group (i.e., those who had an appointment by default). Although automatically scheduling patients for an appointment does not provide them with any additional information about the safety or efficacy of the vaccine, it does make getting vaccinated slightly easier because the appointment is already scheduled. In addition, choosing not to get vaccinated is now more difficult because it entails either cancelling the appointment or not showing up for a scheduled appointment (which some people are reluctant to do).

Planning Prompts

Influenza vaccination rates are also higher when employees are prompted to form implementation intentions (i.e., “if-then” plans that can lead to behavioral modification). In a recent study, corporate employees received postcards informing them about the availability of free on-site flu shots that either did or did not include a suggestion to write down the day and time when they planned to get vaccinated. Those who received the planning prompt were more likely to get

vaccinated. As in the previous examples, this type of intervention does not target a change in beliefs or attitudes about the vaccine. Instead, once formed, implementation intentions work by letting the environment control the behavior. For example, if someone plans to stop by the Occupational Health Department for a flu shot on Thursday afternoon right after yoga class, then the act of leaving yoga class serves as the cue to walk over to the Occupational Health Department.

Simple Steps Can Encourage Healthy Behavior

If you want to convince your spouse, sister, or friend to get a flu shot, you could tell them how safe, effective, and pain-free it is. But you will likely be more successful if you schedule an appointment for them or if, when you are out doing errands together, you simply stop by a pharmacy that offers flu shots. Environmental designs that increase the convenience of healthy behaviors such as vaccination are often more effective than educational efforts that target beliefs.