INCREASING VACCINE UPTAKE AMONG SENIORS

Sending postcard reminders increases vaccination rates among elderly

Target a Priority Outcome The Centers for Disease Control and Prevention identify adults over age 65 as higher-risk for vaccine preventable diseases, and recommends a series of vaccinations for the elderly, including influenza, tetanus, pneumococcal, and herpes zoster (shingles). Healthy People 2020 identifies goals around increasing immunization rates to 30 percent of adults over age 60 receiving a shingles vaccine, 90 percent of adults over age 65 receiving a pneumococcal vaccine and a seasonal influenza vaccine.[1] The Louisiana Department of Health (LDH) identified increasing the number of vaccinated elderly as a priority, as well as interest in testing the impact of outreach efforts.

Translate Evidence-Based Insights LDH engages the elderly in a number of initiatives to increase vaccination rates, including sending a postcard reminder on recommended vaccines. Reminder-based interventions can improve healthcare-related compliance, including medication adherence and healthy behaviors.[2] They are also an effective way to increase compliance with vaccine schedules, as these initiatives aim to reduce rates of forgetfulness and complacency.[3] Research shows that reminders may be particularly helpful in encouraging the elderly to vaccinate; while children maintain well-recorded vaccination schedules, adults often do not and thus miss important vaccinations.

Embed Tests The postcards were tested with an individual level randomized control trial between October 2017 – January 2018. LDH mailed postcard reminders to 208,867[4] Louisiana residents aged 65-70 who were listed as overdue for receiving at least one of four vaccines as of September 2017. All individuals needed to receive the vaccine; therefore, individuals were randomly assigned to a month in which they received the postcard reminder (October, November, December, and January). In addition, the individuals were randomized within blocks created from his or her vaccination records (number of missing vaccines).

This study has three treatment arms: October, November, and December. Individuals randomized to receive the postcard reminder in January were considered the control group. Though individuals in January did receive the postcard, the vaccination outcomes after January are not included in this study to ensure that outcomes from individuals treated in January reflect their behavior before receiving the postcard reminder.

Analyze Using Existing Data The Louisiana Immunization Information System (LIIS) records the most recent vaccination dates of all residents of Louisiana, as reported by doctors and pharmacists in Louisiana. The dates used for this study are the vaccination dates recorded by January 2018.

At the time of the study, reporting to LIIS was voluntary; thus, it is unclear whether individuals without vaccination records on file did not receive the vaccination or received the vaccination from a facility that did not report to LIIS. This study treats missing vaccination records as if the individual did not receive a vaccination. Thus, the average treatment effect refers to the effect of individuals

[1] U.S. Department of Health and Human Services (HHS), Office of Disease Prevention and Health Promotion. Healthy People 2020. Updated February 16, 2018; https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives. Accessed February 16, 2018.

[2] Fenerty, Sarah D , et al. "The effect of reminder systems on patient's adherence to treatment." Patient Preference and Adherence, 2012: 6, 20 Feb. 2012, pp. 127–135.

[3] Stone, Erin G., et al. ."Interventions That Increase Use of Adult Immunization and Cancer Screening Services: A Meta-Analysis,"Annals of Internal Medicine, 136:641-651. 2002.

[4] While 208,867 individuals were in the initial study, the final sample and data set used for the analysis was 208,511 individuals.

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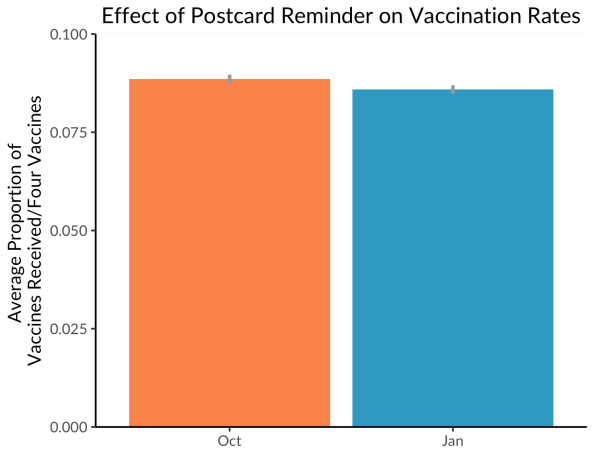
who take up the vaccine in a LIIS-records vs. individuals who do not take up the vaccine or where it is not recorded in LIIS.

Reanalyzed Results The main result of interest is the proportion of vaccinations received out of all four vaccinations: influenza, tetanus, pneumococcal, and shingles[5] from September 2017 - January 2018.

October outcomes are considered as representing the effect of the treatment because they reflect the full effect of the postcard reminder during the study period. The postcard reminder had a small but detectable effect among individuals who received the postcard in October. On average among the control group, individuals had received 8.58 percent of their vaccinations by January. The results estimate that individuals who received the postcard reminder in October had received 0.27 percent ($p < 0.01$, CI[0.12 percent, 0.42 percent]), more vaccinations (563 vaccinations) than individuals in the control group. November postcard recipients had received 0.15 percent ($p > 0.05$, CI[-0.008 percent, 0.3 percent]) more vaccinations (313 vaccinations) than the control group. December postcard recipients had received 0.06 percent ($p < 0.05$, CI[-0.1 percent, 0.2 percent]) more vaccinations (125 vaccinations) than the control group.

Flu shots were the main shots that individuals received during this period of time. In the study, 30.5 percent (15,926) of individuals who received the postcard in October received a flu shot by the end of the study, 30.2 percent (15,782) of the November postcard recipients, 30.1 percent (15,702) of the December postcard recipients, and 29.8 percent (15,542) of the control group received flu shots by the end of the study.



Build Evidence Though the effects are small, this study showed that a postcard reminder can encourage elderly to vaccinate. This result is meaningful for LDH's outreach efforts and LDH will continue to send out postcard reminders. The study also showed that immunization registry data can be used effectively to send and analyze the impact of targeted and time-sensitive information to individuals. Future studies may target ways to increase non-flu vaccinations among the elderly or test different messages to further increase flu vaccinations.

[5]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.