



# Encouraging Flu Vaccine Uptake Among Medicare Beneficiaries

*Letters sent to Medicare beneficiaries increased uptake of the flu vaccine*

**Target a Priority Outcome** Influenza (the “flu”) results in more than 200,000 hospitalizations and up to 48,000 deaths annually.<sup>1</sup> The flu vaccine reduces the likelihood of infection by more than 60 percent and is fully covered by Medicare, yet only 6 in 10 Americans 65 and over actually receive the vaccination.<sup>2</sup> Increasing vaccination rates offers the opportunity to substantially reduce the burden of this disease. The Centers for Medicare and Medicaid Services (CMS) and the National Vaccine Program Office (NVPO) in the Department of Health and Human Services (HHS) looked to increase influenza vaccination rates (and ultimately reduce influenza-related morbidity and mortality) among Medicare beneficiaries.

**Translate Evidence-Based Insights** CMS, NVPO, and OES co-designed four variations of behaviorally-informed letters to encourage flu vaccination uptake, based on promising evidence of using communication elements like implementation prompts<sup>3</sup> and enhanced choice prompts<sup>4</sup> to encourage immunization<sup>5</sup>. All letters emphasized the risks of flu, encouraged the recipient to get vaccinated, and included the sender’s signature and picture. The letter variations were: 1) Letter signed by the Surgeon General; 2) Letter signed by the Director of the NVPO; 3) Letter 1 with an implementation prompt encouraging the recipient to make a plan for when and where they will get the flu vaccine; 4) Letter 1 with an implementation prompt and an “enhanced choice” prompt making the consequences of not getting the vaccine more

salient.

**Embed Tests** OES randomly sampled 228,000 Medicare fee-for-service beneficiaries 66 and older in the fall of 2014. One half of the sample served as the control group and received no letter. The remaining participants were randomly assigned to receive one of four letters in October 2014. At the end of the 2014-15 flu season, we compared the rates of flu vaccination uptake between the control and treatment groups.

**Analyze Using Existing Data** Vaccination receipt was assessed on the individual level using a HIPAA-limited data set containing administrative claims data from Medicare Parts A, B, and D from the Research Data Assistance Center (ResDac) at CMS. The data set containing patient-level information on beneficiary enrollment and claims for all procedures, physician encounters, hospitalizations and outpatient prescriptions. Hospitalizations were measured using validated or commonly-used procedure codes in the inpatient Medicare claims data.

**Results** Receiving any of the four letters increased flu vaccination uptake by 0.59 percentage points, from 25.9 percent in the control group to 26.5 percent in the treatment group ( $p < 0.01$ , 95% CI [0.23, 0.95]). The increase is equivalent to 673 additional Medicare beneficiaries receiving their flu vaccination. Each variation of the letter produced positive (though not significant) increases in flu vaccination uptake relative to no letter—ranging from 0.40 percentage points ( $p = 0.07$ , 95% CI [-0.93, 0.13]) in the enhanced choice condition, to 0.90 percentage points ( $p = 0.00$ , 95% CI [-1.52, 1.12]) in the Surgeon General condition. We did not observe any statistically significant effect of the increased vaccination rates on hospitalizations for respiratory conditions ( $p = 0.09$ , 95% CI [-0.05, 0.27]) or all-cause hospitalizations ( $p = 0.09$ , 95% CI [-0.04, 0.12]).<sup>6</sup>

<sup>1</sup> Centers for Disease Control (CDC) “Prevention and Control of Seasonal Influenza with Vaccines Recommendations of the Advisory Committee on Immunization Practices – United States, 2016–17 Influenza Season” Morbidity and Mortality Weekly Report; 2016;65(5);1-54.

<sup>2</sup> Centers for Disease Control (CDC) “Flu Vaccination Coverage, United States, 2013-2014 Influenza Season.” 2016.

<sup>3</sup> Katherine L. Milkman et al., “Using Implementation Intentions Prompts to Enhance Influenza Vaccination Rates,” Proceedings of the National Academy of Sciences, 108 (2011): 10415–10420.

<sup>4</sup> Punam Anand Keller et al., “Enhanced Active Choice: A new Method to Motivate Behavior Change,” Journal of Consumer Psychology 21 (2011): 376–383.

<sup>5</sup> For a full report, see: David Yokum, Julie C. Lauffenburger, Roya Ghazinouri and Niteesh K. Choudhry. “Letters designed with behavioural science increase influenza vaccination in Medicare beneficiaries.” Nature Human Behaviour; 2(2018): 743-749

<sup>6</sup> This project was designed and fielded before OES formalized the [OES Evaluation Policy](#) and standardized the six steps we now use to ensure our findings are relevant and reliable. The trial is registered with clinicaltrials.gov (NCT02243774).

**Build Evidence** Sending reminder letters to Medicare beneficiaries increased rates of flu vaccination. Unlike prior studies which suggest added effects of implementation prompts and active choice dynamics on patient behavior, we did not observe meaningful effects between the different intervention types of using these strategies compared to information letters alone. Medicare fully covers the cost of certain preventive healthcare services including flu vaccines and cancer screenings; letters to Medicare beneficiaries can further encourage uptake of these essential services at relatively low cost. Still, experimental testing is likely to be a required step in refining a communication strategy, especially when generalizing to new settings and behaviors.