



Testing Variations of Maternal Immunization Messages

Variations in social media ad messages did not affect click-through rates

Target a Priority Outcome Influenza (flu) and pertussis (Tdap) vaccines are recommended for pregnant women during each pregnancy, yet coverage remains low, with around only half of pregnant women receiving the flu vaccine in the 2015-16 season¹ and an estimated 42 percent receiving Tdap in 2015.² As part of developing a national maternal immunization program, the National Vaccine Advisory Committee (NVAC) identified areas to strengthen maternal immunization programs and increase uptake of recommended vaccines among pregnant women, including through utilizing “current and newly emerging communication tools” to better communicate the clinical benefits of maternal immunization.³

Translate Evidence-Based Insights The National Vaccine Program Office (NVPO) in the Department of Health and Human Services partnered with the Office of Evaluation Sciences (OES) to raise awareness of maternal immunizations. While research is needed to further understand effective messaging strategies to improve maternal vaccination, evidence suggests that for pregnant women, decisions around vaccination often require assessment of the benefits and risks for both her and her baby. Additionally, the study notes that success of pertussis campaigns in some countries may be largely due to the emphasis on protection for the baby rather than the mother.⁴

OES and NVPO developed digital ads aimed at increasing site visits to the pregnancy page on Vaccines.gov, a leading federal website for consumer-focused immunization information run by NVPO. The ads informed users that getting

vaccines during pregnancy is the best way to protect expecting moms and their babies from getting the flu and whooping cough. The ad also provided a link to a Vaccines.gov page that provides information about the types of vaccines recommended for pregnant women and when each vaccine is recommended during the pregnancy, and provided a calendar reminder of when to get vaccinated.

Embed Tests Four variations of the ad were tested in an individual level randomized test, whereby zip codes, blocked by state, were randomly assigned to one of the four conditions. The text and image varied to focus on either benefits of vaccination for the baby only, or the baby and expecting mom. The four conditions were: (1) Baby-only message with baby-only image (pictured), (2) Baby-and- mom message with baby-only image, (3) Baby-only message with baby-and-mom image, and (4) Baby-and-mom message with baby-and-mom image.

The ads targeted women ages 20-34 interested in certain pregnancy-related groups, businesses, or purchasing behaviors. The digital ads were targeted toward ad impressions, with each ad condition running until it reached 250,000 impressions.⁵ The campaign reached over 1,000,000 impressions across four conditions across an 18 day period in November 2017.

Analyze Using Existing Data The primary outcome is the click-through rate (clicks per impression) and unique click-through rate (clicks per individual) between the two congruent conditions: baby-only messaging and image, and baby-and-mom message and image. Click-through rates were provided by the marketing vendor.

Results The campaign reached more than 550,000 women ages 20-34 in the United States. While we did not measure the impact of the ads compared to no ads, we did not observe any statistically significant differences between the ad variations. The difference between click-through

¹ Centers for Disease Control (CDC) “[Flu Vaccination Coverage Among Pregnant Women - United States, 2015-16 Flu Season.](#)” 2017.

² Centers for Disease Control (CDC) “[Pregnant Women and Tdap Vaccination, Internet Panel Surveys, United States, April 2014 and April 2015.](#)” 2016.

³ [The National Vaccine Advisory Committee: Reducing Patient and Provider Barriers to Maternal Immunizations](#): Approved by the National Vaccine Advisory Committee on June 11, 2014. (2015). *Public Health Reports*, 130(1), 10–42.

⁴ Marshall et al. 2016. *Human Vaccines & Immunotherapeutics* (2016) 12:4; 848–856

⁵ Impressions are the point in which an ad is viewed once by a visitor, or displayed once on a web page.

rates for baby-only and baby-and-mom congruent ads is not statistically significant ($p=0.78$, 95% CI [-0.0002, 0.0003]). Similarly, the difference between unique click-through rates is not statistically significant ($p=1.00$, 95% CI [-0.0004, 0.0004]). The baby-only condition had a click-through rate of 0.15 percent and the baby-and-mom condition had a click-through rate of 0.16 percent.



Build Evidence In this study, the ads were optimized to receive a target number of impressions or ad views, rather than click-throughs. This may have contributed to lower click-through rates than expected, which made it difficult to detect differences between ad variations. Future campaigns should focus on the goal of click-through rates, and ad images and text should be optimized for this goal.