

## Impact of community pharmacy-based interventions on shingles vaccination

**Authors:** Catie Park, PharmD; Adrian Wilson, PharmD; Hunter Sharp

**Practice Site:** Carilion Clinic Pharmacy – New River Valley

**Background:** Herpes zoster (HZ), also known as shingles, is caused by the reactivation of the varicella-zoster virus affecting 1 in 3 Americans in their lifetime. Shingles is a representative example of pain conditions that impact on functioning, reduced quality of life, and losses in productivity. Fortunately, shingles and its complications can be prevented with appropriate vaccinations. Community pharmacists are one of the most accessible healthcare providers and previous studies have shown that pharmacist involvement in immunization results in increased vaccination rates.

**Objective:** The primary objective of this study was to evaluate whether patients who had a pharmacy phone call intervention are more likely to receive shingles vaccine than patients who did not have a pharmacy phone call intervention. The secondary objective was to assess the reasons for vaccine refusal and the source of vaccine information among patients who receive at least one dose of Shingrix.

**Methods:** This study was a prospective interventional and IRB-reviewed quality improvement study performed from September 20<sup>th</sup>, 2021, to December 31<sup>st</sup>, 2021, at CPMS. This study included patients who are 50 years of age or older, have health insurance on the profile, received no or one dose of Shingrix, and have filled at CPMS since January 1<sup>st</sup>, 2018. The list of eligible patients was collected through the pharmacy dispensing system, QS1 NRx. The major intervention was a pharmacy phone call by pharmacists, pharmacy technicians, or cashier. They were provided with a list of eligible, call script, and question-and-answer-sheet. For each call attempt, a call outcome was recorded in the password-protected spreadsheet. The call outcomes were categorized into four groups: spoke to patient and interested, spoke to patient but refused, left a voicemail, and others. When the patient came into the pharmacy for Shingrix, the patient must complete the vaccine screening and consent form and receive a vaccine information statement prior to receiving a dose. The consent form included the survey question asking about the source of vaccine information and the consent for the quality improvement project. The standing order for Shingrix was used to dispense the vaccine. After receipt of the vaccine, the patient was observed for 15 minutes. Pharmacists and pharmacy technicians recorded the vaccine record in the spreadsheet the electronic health record system, Epic. The chi-square test of independence and odds ratios were used to analyze study results.

**Results:** A total of 2,836 patients met the study inclusion criteria and the total number of call attempts made was 451 during the intervention period. In 2021, 33 patients received either first, second, or both of Shingrix during the intervention period. The chi-square test of independence showed that there is sufficient evidence to suggest the number of vaccinated patients is dependent on the year when compared to 2020. In other words, the shingles vaccination rate significantly increased during the intervention period compared to the same period in 2020. Additionally, odds ratios indicated that vaccination rates are 3.81 (95% CI, 1.88 to 7.75; P <0.0001). However, there is no evidence to suggest the number of vaccinated patients is dependent on the year when compared to 2018 and 2019.

Of 33 patients who received at least one dose of Shingrix during the intervention period, 16 (47%) of patients responded that they received the vaccine as a result of the pharmacy/pharmacy intervention, followed by primary care provider intervention. Of the 110 patients who refused to get vaccinated, the most common reason for refusal was “already completed the 2-dose series (20%).” The second and third common reasons for refusal were “do not believe I need the vaccine (18%)” and “no reason (15%).” These patients were unable to or declined to elaborate on specific reasons for refusing vaccines. Another common reason for refusal was “want to discuss with a doctor first (10%).”

**Conclusion:** In conclusion, a pharmacy phone call may have led to an increase in the shingles vaccination rate. The significant increase in shingles vaccination rates encourages further study to investigate the long-term effect of a pharmacy phone call on shingles vaccination rate and the impact of other pharmacy-based interventions on vaccination rates. However, additional research is needed to confirm the relationship between a pharmacy phone call and shingles vaccination rate due to several limitations in this study.