Immunizations Make People and Communities Tougher (IMPACT)

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INTRODUCTION

IMPACT (Immunizations Make People and Communities Tougher) is a project designed to address low immunization rates for influenza and pneumonia (PCV13 and PPSV23) in geriatric patients (≥ 65 years old) at the University Clinical Health Family Medicine residency's clinic in Memphis, TN (UCH). Evidence clearly shows a benefit to immunizing our geriatric citizens.[1-5] However, this population still remains largely non-immunized. In Tennessee, the immunization rates seems to be below the national average.[1-5] The goal of this project was to increase immunization rates within this population at UCH in order to improve their health outcomes.

OBJECTIVES

Among geriatric patients at UCH:

- Increase influenza immunization rates.
- Increase PCV13 immunization rates.
- Increase PPSV23 immunization rates.

METHODS

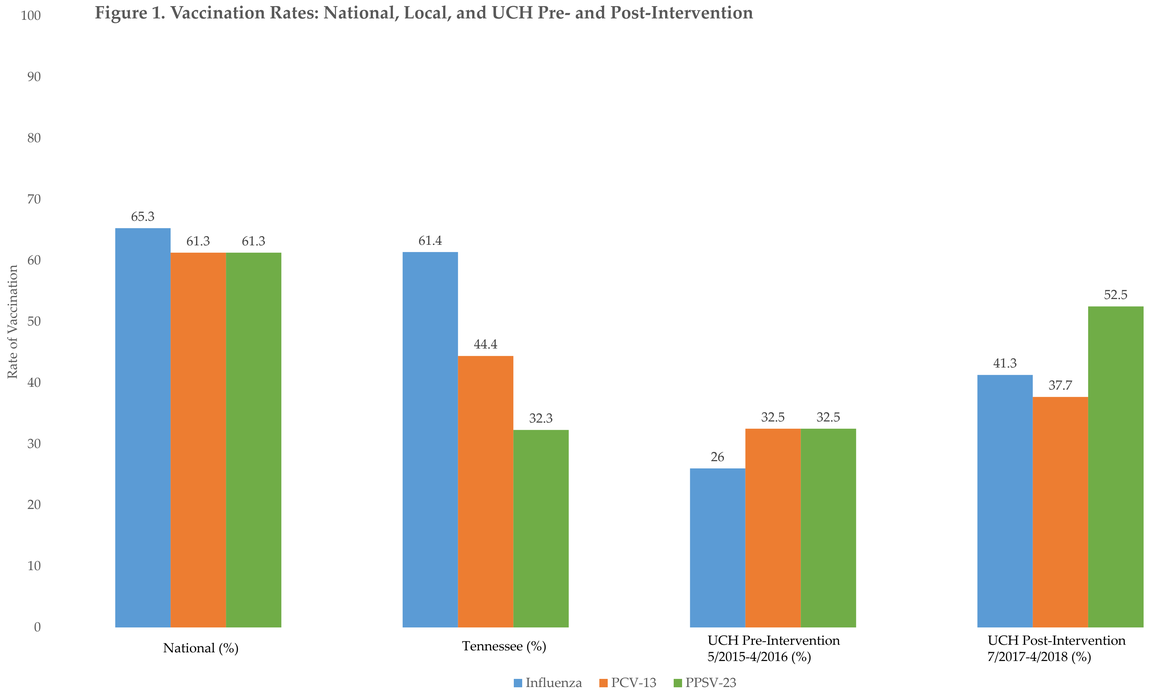
- A number of interventions to increase immunization rates at UCH included:
  - Educational lectures on geriatric immunizations given to physicians.
  - Educational laminated info sheets placed in individual exam rooms.
  - Immunization awareness posters posted in high visibility areas in the clinic.
  - Wallet-sized immunization record cards given to patients.
  - Community outreach via a health fair by the Healthy Tennessee organization with 500 attendees.
  - Immunization t-shirts distributed to clinic staff and patients who received immunizations.
  - Identified all geriatric patients eligible for influenza and pneumonia immunizations.
  - Created EMR alerts to remind physicians of opportunities for immunizations for geriatric eligible patients.
  - Mailed information to eligible geriatric patients with recommendations to follow up their immunization status.
  - Emails and monthly reminders to physicians and staff at clinic-wide meetings.
  - Geriatric immunization education aired on local television.
  - Competition board placed in central clinic area and awards given to high performers.
  - Laminated pneumonia immunization algorithm placed in all physicians' booklets.
  - Physicians re-educated on immunizations based on this study's mid-term results.
- A pre-post statistical analysis was done on all three vaccine rates at UCH in the population of interest by calculating the 95% CIs. The pre-intervention period was May 2015-April 2016 and the post-intervention period was July 2017-April 2018.

RESULTS

The post-intervention statistics at UCH showed a statistically significant improvement in immunization rates for all three immunizations compared to the pre-intervention rates. These numbers are listed below along with Tennessee and national (United States) rates for a wider perspective.

- **The flu immunization rate**
  - **UCH:** The post-intervention rate was 41.3% (95% CI 39.0-43.6), an increase of approx. 15.3% from the pre-intervention rate of 26.0% (95% CI 24.1-27.9). This was a statistically significant increase, $p = .05$.
  - **Tennessee**: In 2016-2017, rate was 61.4%.[3]
  - **National**: In 2017, the rate was 65.3%.[1]
- **The PCV13 immunization rate**
  - **UCH:** The post-intervention rate was 37.7% (95% CI 35.5-39.9), an increase of approx. 5.2% from the pre-intervention rate, which was 32.5% (95% CI 30.5-34.5). This was a statistically significant increase, $p = .05$.
  - **Tennessee**: In 2016, the rate was 44.4%.[4]
  - **National**: In 2014, the rate was 61.3%.[2]
- **The PPSV23 immunization rate**
  - **UCH**: The post-intervention rate was 52.5% (95% CI 50.2-54.8), an increase of approx. 20.0% from the pre-intervention rate, which was 32.5% (95% CI 30.5-34.5). This was a statistically significant increase, $p = .05$.
  - **Tennessee**: In 2016, the rate was 32.3%.[4]
  - **National**: In 2014, the rate was 61.3%.[2]
- Figure 1 provides a summary of national, Tennessee, and UCH pre- and post-intervention immunization rates.

Figure 1. Vaccination Rates: National, Local, and UCH Pre- and Post-Intervention



DISCUSSION

- Influenza: We achieved our goal of increasing the influenza immunization rate, which increased by 15.3% (to 41.3%) at UCH. Our ultimate goal is to meet the Healthy People 2020 goal of 90% influenza immunizations.[5]
- PCV13: We achieved our goal of increasing the PCV13 immunization rate, which increased by 5.2% (to 37.7%) at UCH. Our ultimate goal is to meet the Healthy People 2020 goal of 90% pneumonia immunizations.[5]
- PPSV23: We achieved our goal of increasing the PPSV23 immunization rate, which increased by 20% (to 52.5%) at UCH. Our ultimate goal is to meet the Healthy People 2020 goal of 90% pneumonia immunizations.[5]

LIMITATIONS

- The Tennessee and national rates were obtained from national databases, and cannot be directly compared to UCH rates. However, they provide a preliminary perspective on the local, national, and UCH rates.
- Potentially imprecise documentation due to multiple areas in the EMR that can be used to record immunizations. We believe our project has identified and rectified documentation errors.

RECOMMENDATIONS

- Call patients who received mailed information packets to reinforce importance of receiving immunizations.
- Document number of patients who return to clinic as a result of the interventions.
- For all patients, document how they heard of the immunization in question (i.e. friend, pharmacy, our clinic, other doctor, TV, etc.) to assess impact of interventions.
- Provide physicians with annual didactic lecture on immunization with pre- and post-test to assess knowledge.

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ACKNOWLEDGEMENTS

Support for this immunization award project was made possible by the AAFP Foundation through a grant from Pfizer Inc.