

# An Evidence-based Project to Improve Influenza Immunization Uptake

Jenny L. Monn, DNP, FNP-BC

## ABSTRACT

Influenza, a severe acute respiratory illness, infects between 5% and 20% of the United States population annually. Immunization is recognized as the best protection against influenza. The US Centers for Disease Control and Prevention has recommended annual immunization (> 6 months); however, < 42% of the population and < 20% of college students receive an annual vaccination. An evidence-based awareness project was implemented in a college health setting to increase the number of influenza vaccinations administered. The number of students vaccinated at the college increased by 226%. The use of evidence-based strategies by college health practitioners can target health messages to increase student awareness.

**Keywords:** college students, evidence-based practice, health promotion, influenza, influenza immunization

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Every year in the United States, approximately 5%–20% of the population contracts influenza.<sup>1</sup> In comparison to previous seasons, the 2012–2013 influenza strain was considered to be moderately severe with more outpatient visits for influenza-like illnesses, higher rates of hospitalizations, and more reported deaths from influenza complications.<sup>2</sup> Immunization has been shown to provide the best prevention against seasonal influenza; however, a relatively low percentage (41.8%) of the adult population receives the immunization annually.<sup>1</sup> This is well below the Healthy People 2020 goal of 70% immunized for individuals  $\geq 18$  years of age<sup>3</sup> and the Healthy Campus 2020 goal of 43.9%.<sup>4</sup>

There are approximately 20 million students in US colleges and universities<sup>5</sup> and, although this population is considered healthy, acute community-acquired upper respiratory infections are a major source of illness among college students.<sup>6</sup> Among college students, influenza-like illnesses have been associated with negative impacts on academic functioning, participation in extracurricular activities, and work performance.<sup>7,8</sup> Communal living, shared classroom spaces, and the close networks experienced by college students further increase risks and facilitate transmission of respiratory viruses.

Review of the available literature provided support for the use of various modalities to increase influenza

vaccination uptake among college-age individuals. These modalities include provider education,<sup>9,10</sup> media initiatives,<sup>9,11–15</sup> immunization clinics,<sup>9,11,16–19</sup> and provider recommendations.<sup>9–11,16,19–22</sup> These evidence-based recommendations were incorporated into a multimodal, campus-wide awareness project. The Ottawa Model of Research Use<sup>23</sup> was used as the translation model for this project. The purpose of this report is to describe an evidence-based project and the impact of this project upon influenza vaccination uptake at a midsized private college.

## LOCAL PROBLEM

The American College Health Association<sup>4</sup> and the Office of Disease Prevention and Health Promotion<sup>3</sup> have established vaccination goals that include the college population, at 43.9%, and 70%, respectively. Analysis of the recent influenza vaccination rates at the project location demonstrated vaccination rates well below the established goals: 0.03% ( $n = 170$  of 5,272 students) in 2012, and 0.02% ( $n = 92$  of 5,086 students) in 2013.

## INTENDED IMPROVEMENT

Using previously available influenza vaccination rates as a baseline, a goal was set to increase the number of influenza vaccinations administered to students through the student health center by 50%, from 92 vaccinations during the 2012–2013 influenza season

to 138 vaccinations during the 2014–2015 influenza season. This project was time-limited to 3 months and was conducted from September 1, 2014 to December 1, 2014.

## METHODS

### Ethical Issues

As an evidence-based initiative this project did not require institutional review board approval; thus, exemption approval was requested and granted from the college's institutional review board. To protect confidentiality, no identifying information was collected about the project participants by the author. After receiving the influenza vaccination, participants completed an exit survey designed to collect demographic data; willingness to complete the survey was considered consent.

### Setting

This evidence-based project was conducted at a private, residential college located in south-central Pennsylvania with an enrollment of approximately 240 graduate and 5,008 undergraduate students. The student population is largely white (83%), female (55%), and  $\leq 24$  years of age (91%).

Sixty-five percent of undergraduate students live in college residential housing. The majority of student housing arrangements, both on- and off-campus, require students to share living quarters (bathrooms and bedrooms). There are two common cafeterias. These living arrangements facilitate student interaction but also limit the ability of an ill student to isolate him- or herself from others.

### Intervention

Implementation of this project included four main strategies: (1) provider education; (2) media (Facebook, college web portal, wellness newsletter, posters); (3) immunization clinics; and (4) provider recommendations. Provider education consisted of a 1-hour educational in-service for the student health center staff to provide information regarding the details of the project. In addition, the risks of influenza, the vulnerability of the college population, and the importance of promoting influenza immunization were discussed. Influenza informational links, reminders for immunization clinics, and

attention grabbers were posted on the student health center Facebook page by the author. Permission was granted to display 75 posters throughout campus in academic and residential buildings, announcing time and location of the vaccination clinics and health tips for preventing influenza. The posters were displayed for 4 months. The college web portal was also used to announce the vaccination clinics and distribute three wellness articles. These articles were available to all participants and addressed issues such as vaccine safety, influenza facts, and influenza signs and symptoms. To increase vaccine access, three immunization clinics were held at various locations on campus. The immunization clinics were held on various days of the week, from 10:00 AM to 2:00 PM, in an effort to accommodate student schedules. The vaccines were administered by senior nursing students from the college's Department of Nursing. A total of 16 nursing students, all from the college's traditional baccalaureate nursing program and the registered nurse-to-baccalaureate nursing program, participated as part of their required clinical hours. Throughout the length of the project, as participants presented for care at the student health center, providers and staff recommended receipt of the influenza vaccine regardless of the presenting symptom.

### Analysis

Descriptive statistics were used to profile the demographic characteristics of the pre- and post-intervention groups and evaluate the campaign strategies. To determine the success of the project, pre- and postintervention group influenza immunization rates were compared. Cross-tabulations, with a Pearson  $\chi^2$  test, of postintervention demographics and campaign strategies were conducted. All data were entered into Microsoft Excel or SPSS (version 21) to perform these analyses.

## RESULTS

A total of 299 students were vaccinated against influenza at the three vaccination clinics ( $n = 149$ , 100, and 50, respectively). All three clinics ended prior to the announced hour, all available vaccine was administered and students desiring to be vaccinated were turned away due to lack of vaccine. The students who were refused were referred to future

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