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# Effects of a Multi-Tiered Approach to Impact Immunization Compliance of Students Attending a Medium-Sized Public University

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Effects of a Multi-Tiered Approach to Impact Immunization Compliance  
of Students Attending a Medium-Sized Public University

Stephanie Muertz, Kate Traum, & Emily Watson

## **Introduction**

Missing immunizations in primary care settings leaves unvaccinated persons living in highly-vaccinated communities, such as college campuses, at risk for many preventable diseases (Fefferman & Naumova, 2015). Unfortunately, effective techniques for nurse practitioners to address vaccine compliance are minimal, notably at the collegiate level. To reduce the spread of preventable disease, students attending universities within Illinois must comply with laws regarding proof of immunity for diphtheria, tetanus, pertussis (Tdap), measles, mumps, rubella (MMR), and meningitis (Illinois General Assembly, 2016). The following project focused on the compliance with immunization mandates for college students at Southern Illinois University Edwardsville (SIUE). Immunization compliance for this project was defined as adherence to the aforementioned vaccines. Compliance was measured by fines levied against first-semester students who did not submit proof of required immunizations by the SIUE Health Service deadline.

## **Literature Review**

The obstacle of immunization compliance can be quite a challenge for providers, but it is imperative to reduce morbidity and mortality rates among individuals of all ages. Clinicians must consider any potential barriers for patients to maintain compliance. A substantial amount of education is necessary regarding vaccines for all patients, not only those with compliance concerns. The literature review demonstrates the importance of education when addressing the issue of vaccine awareness and compliance. Providers can guide patients to become more responsible for their own health, especially college-age students who may be learning more about health care independence. Multiple intervention methods can increase rates of immunization compliance in college students. Innovative techniques and reminders can be

particularly useful for busy students to promote awareness and improve attitudes toward vaccination recommendations. As individual beliefs and barriers can vary greatly among college students, additional research regarding this topic should continue to focus on multiple and innovative interventions.

### **Project Methods**

The primary aim of this project was to collaborate with SIUE Health Service to develop and implement multi-tiered interventions to increase college student compliance rates of required immunizations. The target population was first-semester SIUE students, including freshmen, transfer, and international students who must submit proof of required immunizations before the fourth week of fall semester in order to be compliant and avoid a \$25 fine. This project was submitted for approval to the Southern Illinois University Edwardsville Institutional Review Board (SIUE IRB) and fell in the exempt classification.

The project team created a brief YouTube video to educate students about university vaccine requirements. The video was shown during every Springboard to Success session and emailed to all freshmen; Springboard attendance is a requirement for new freshmen. An educational flyer was distributed by academic advisors in the summer of 2017 and displayed at all Kimmel-approved locations around campus. A television ad was derived from the flyer and played on the closed-circuit televisions in the freshmen residence halls and the Morris University Center. Lastly, an ad was created for the freshmen and Cougar Village newsletters. Two short post-intervention surveys were distributed, one for first-semester students and one for the Health Service administrative team.

Stakeholders of this project included students, SIUE Health Service staff, Housing staff, Athletics, academic advisors, and the project team. The only resources used in this project were paper and ink for flyers.

Barriers to the Doctor of Nursing Practice (DNP) project arose during planning, implementation, and data collection. Locations for flyer distribution were limited per the Kimmel Student Involvement Center. The Health Service Director attempted to post a link to the YouTube video on the SIUE Twitter page, but permission was not granted by the page administration. The student surveys were emailed instead of using hard copies as originally planned. The Assistant Director of Academic Advising had a mailing list server which consisted solely of undeclared freshmen, so the survey did not reach all first-semester students. Finally, the Point and Click program was unable to discern compliance data specific to each group (freshmen, transfer, and international students), but rather first-semester students as a whole.

## **Evaluation**

### **Student Compliance Results**

Data was collected from the Health Service administrative team using the program, Point and Click. After the fourth week of the fall 2016 semester, 1,561 (43.6%) of the 3,583 first-semester students were levied the \$25 dollar fine (D. Hicks, personal communication, April 24, 2017). After the fourth week of the fall 2017 semester, 967 (29.2%) of the 3,316 first-semester students were levied the \$25 dollar fine (D. Hicks, personal communication, October 24, 2017).

### **Student Survey Results**

Undeclared first-semester SIUE students were presented with a survey using the software program, Qualtrics. The survey was distributed on September 15, 2017, and students were presented with a maximum of thirteen questions. One-thousand seventy-four students received

the email, and 201 students responded (21.5% response rate). Approximately 43% of students considered the immunizations to be extremely important, 55% considered vaccines as important to slightly important, and only 0.87% of students considered immunizations as not at all important. Fifty percent of students did not know that vaccines were required by SIUE and the state of Illinois. Forty-two percent of students claimed they did not receive any information from SIUE Health Service regarding required vaccines. One-hundred seventy students answered that they had seen promotional materials regarding vaccines. One-hundred six students out of 257 students (41.25%) replied that the Springboard session presentation encouraged them to find out more about required immunizations.

### **Health Service Survey Results**

After the interventions, Health Service noted a decrease in the percentage of students who failed to comply with the required immunizations; Health Service believed the project team interventions had a positive impact upon SIUE immunization compliance rates. Health Service reception felt, however, there was no difference in the number of students who called or visited regarding immunizations. Consistent with previous years, Health Service's efforts to improve immunization compliance in 2017 included the following methods: they updated documentation which was mailed with student admission letters, emailed all Springboard to Success attendees prior to sessions, staffed an informational table during Springboard, and collected proof of immunization compliance during freshmen move-in day. Health Service plans to use all the student project team interventions in the future to improve immunization compliance rates. The Health Service administrative team also verbalized that the department received fewer complaints than in the past regarding the \$25 fine for immunization noncompliance as students were likely aware of the repercussions.

## **Impact on Practice**

It was difficult to prove if the increased immunization compliance rates were a direct and immediate impact of the project interventions. There were other rationales to support increased student compliance, such as parental involvement, fear of being fined, or student awareness of the required vaccines. The Health Service administrative team indicated in their survey that they felt the project interventions had a positive impact on SIUE first-semester student vaccination compliance rates. Additional immediate impacts of the project included fewer registration holds and disruptions to student registration.

Sustainability of the project interventions can be easily achieved in the future. The resources of paper and ink are included in the Health Service department budget. Health Service may recruit student volunteers to assist with campus flyer distribution via collaboration with the Kimmel Student Involvement Center. The YouTube video did not contain a calendar date for submittal of proof of immunizations, so the video may be used again in future Springboard sessions and emailed to future first-semester students. In addition, advertisement via campus closed-circuit televisions and the Cougar Village newsletter may continue through partnership with SIUE Housing.

Long-term impacts of the DNP project include a variety of outcomes. The positive experience has potential to increase collaboration between the Health Service administrative team and SIUE School of Nursing students for future projects in order to improve the health of SIUE students. The YouTube video can be delivered to SIUE students by the Health Service administrative team assuming there are no alterations to Illinois vaccination requirements. The project has also created the opportunity for Health Service to partner with Academic Advising to distribute reminders and flyers, as well as with University Housing to place ads in the closed-

circuit televisions and newsletters. This will help relieve some of the burden placed upon Health Service administration when considering student immunization compliance.

This DNP project has potential to be replicated for promotion of other immunizations. For instance, a video could be made and played in the residence halls if Health Service is interested in increasing influenza vaccination among SIUE students. While the human papillomavirus vaccine is not a state requirement, video advertisement may also influence students to choose vaccination.

### **Conclusions**

This project implemented multi-tiered interventions to positively impact immunization compliance rates of first semester SIUE students, a significant issue identified by the Health Service administrative team. The data showed fewer students in 2017 were fined for immunization noncompliance when compared with rates from 2016. Due to data collection limitations, there was no discernible way to demonstrate that the increased compliance rates were attributed solely to the project interventions. Recommendations for future DNP projects could include additional use of social media advertisement or vaccination education sessions within collegiate classrooms. Future DNP projects may also pertain to improving immunization compliance for vaccines like HPV or influenza, which are currently not required by law. Further studies concerning this topic are recommended to achieve improved immunization compliance in the future.

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