

# A Survey on Awareness, Attitudes and Behaviors of University Students Towards Influenza Vaccination

Prajakta H Waghmare, BPharm; Mark V Siracuse, PharmD, PhD; Linda K Ohri, PharmD, MPH; James D Bramble, PhD; Ted K Kaufman, BS

## Background

- For the 2016-17 influenza season, the estimated coverage of influenza vaccination in adults (> 18 years) in the United States was 43.3% (CDC, 2017). Recent studies have shown vaccination rates in the range of 10-40% in college students.
- Universities are appropriate settings where mass vaccinations can be conducted as multiple students are present in one location.
- Psychological theories in behavioral studies address attitudes, self-efficacy, perceived risk/benefit, cues to action, and social norms. Lessons learned can help guide interventions to increase vaccination rates (Corace, 2016).

## Objectives

- To determine the attitudes and the motivational factors of students receiving influenza vaccination
- To examine reasons students provide to decline influenza vaccination

## Methods

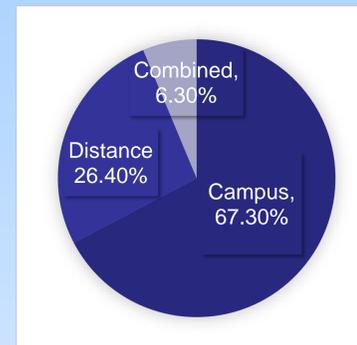
- A 24-item survey was designed through literature review and expert advice with 14 content questions, 10 demographic questions and an optional drawing for two gift cards.
- The electronic survey had a branching feature in which only the relevant questions were featured according to the previous response. The study was approved by the University's Institutional Review Board.
- The survey was pilot tested before final mail out.
- Survey distribution employed a modified Dillman's technique in which an invitation e-mail was sent, with two follow-up emails seven days apart to non-respondents.

## Results

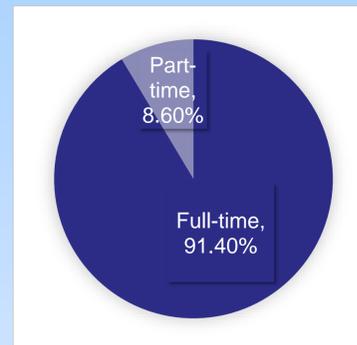
- 3,528 students responded to the survey (39.6% response rate), Data was cleansed and recoded as appropriate to select 3,277 respondents who answered all questions and were included in the analysis

## Results

➤ **Figure 1: Percent of survey respondents in Campus, Distance and Combined programs (n=3277)**



➤ **Figure 2: Percent of survey respondents according to Full-time and Part-time status (n=3277)**



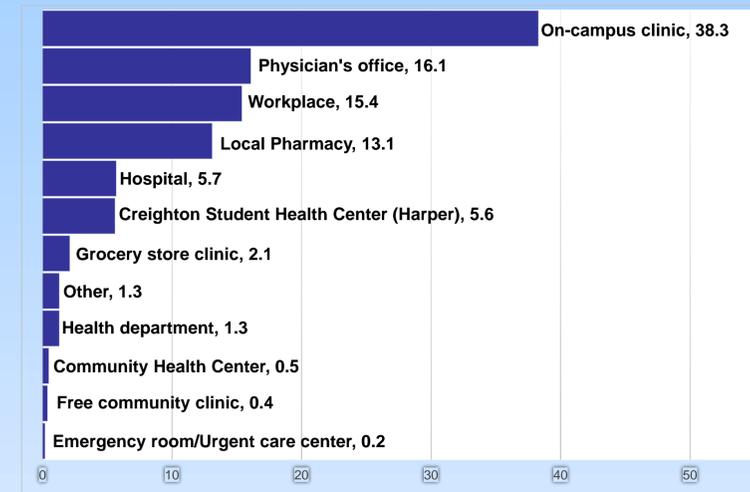
➤ **Table 1: The percent of total respondents in subgroup who reported vaccination in 2016-17 by their academic program**

Academic program	Number of respondents in the subgroup	Percent vaccinated in 2016-17
Health professions program	1122	89.0 %
Graduate program	455	79.8 %
Arts and Sciences	662	65.4 %
Business	184	52.7 %
Law	32	47.1 %

➤ **Table 2: The percentage of respondents receiving vaccination in 2016-17 by their ethnicity and race**

Ethnicity/Race	Number of respondents in the subgroup	Percent vaccinated in 2016-17
Asian	368	79.1 %
Indigenous groups	64	78.0 %
White	2570	75.6 %
Middle-Eastern	36	70.6 %
Hispanic/Latino	134	68.7 %
Black/African American/African	116	57.8 %

➤ **Figure 3: Vaccination location, 2016-17 (n=2469)**



➤ **Table 3: Reasons for not receiving influenza vaccination (n=3277)**

Reasons for not receiving the influenza vaccine (Multiple choices could be selected)	Percent responding
I did not think I need one	33.2 %
I forgot	32.6 %
I did not have the time	19.5 %
I did not believe I was at risk of contracting flu	17.0 %
I do not like needles	16.7 %
I do not like to get vaccinations	15.6 %
I did not think that the vaccine would work	12.3 %
I am concerned about the side effects	10.8 %
I have heard that one can get flu from the vaccine	8.2 %
Flu vaccinations were available at inconvenient times	8.0 %
I had a bad reaction to a prior flu vaccine	7.7 %
Influence of parents/spouse	6.1 %
Influence of peers	0.8 %

## Results

➤ **Table 6: Preferred promotional factors for receiving influenza vaccination (n=3277)**

Promoting factors (Respondents could check more than one factor)	Percent responding
Shoo the flu clinics	40.1 %
E-mail	36.3 %
Posters around campus	34.0 %
Social media	18.3 %
Competition between dorms for a prize to the most vaccinated group	16.2 %
Electronic signs	13.8 %
Text messages	11.4 %

## Discussion

- Mandatory immunization requirements for health professions students were associated with an increased rate of vaccination, but there was resentment expressed about this mandate by some respondents.
- The top four locations to receive influenza vaccination were: on-campus clinics, physician's office, workplace and a local pharmacy. These locations were preferred by the respondents because of the convenience of visiting them.
- Students were receptive to several promotional strategies. Promotional materials tailored to residential status, program of academic enrollment, and stated student preferences may be motivating factors in future vaccination campaigns.

## References & Acknowledgement

- CDC (2017), Retrieved from <https://www.cdc.gov/flu/healthcareworkers.htm> on February 10, 2018.
- Corace, K. M., Srigley, J. A., Hargadon, D. P., Yu, D., MacDonald, T. K., Fabrigar, L. R., & Garber, G. E. (2016). Using behavior change frameworks to improve healthcare worker influenza vaccination rates: A systematic review. *Vaccine*, 34(28), 3235-3242.
- Fact Book 2017-18, Retrieved from <https://www.creighton.edu/aea/institutionalresearch/factbook/creightonuniversity201718factbook/> on November 12, 2017
- Immunization Task Force, Omaha, for funding this study