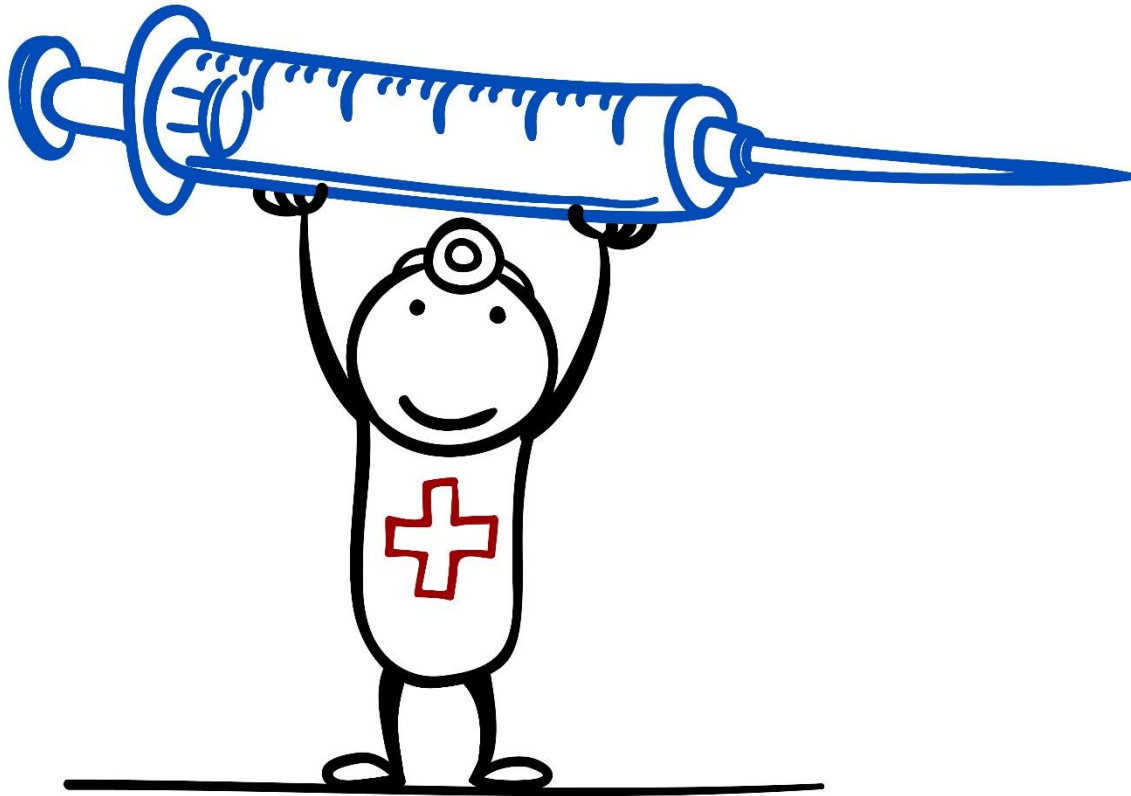


A RECOMMENDATION REPORT TO INCREASE THE RATE OF INFLUENZA VACCINES ON COLLEGE CAMPUSES



**Prepared for: Pete Grogg, Executive Director, Indiana University Health
Center, Indiana University Bloomington**

**Prepared By: Kaitlyn Baney, Sydney Halfeldt, & Breanna Tucker, W231
Students, Indiana University Bloomington**

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Executive Summary

As college students ourselves, we are greatly concerned with the wellbeing and overall health of not only our peers, but ourselves as well. For this reason, we combined our efforts in attempt to target a major health concern amongst college students, the flu. It is well known, that college students have the some of the highest rates of flu in comparison to any other group of individuals. This is due to the fact that the virus spreads easily, and students are living in close quarters, have daily interactions with many people, and the fact that students will still go to class, even when they are sick, so that they will not miss important lectures. What is perhaps more unknown is that only 8% to 39% of college students receive a flu shot annually.

In order to come up with a feasible solution to increase flu shot vaccination on campus, we used multiple methods of research. First, we conducted a survey for undergraduate students at the university and asked them if they had received a flu shot for the 2018-2019 school year and their reasoning behind their answer. Additionally, we asked them what they think could be done to reduce the rates of flu on the Bloomington campus. Furthermore, we emailed the executive director, assistant director, and medical director of the Indiana University Health Center, and asked if they could share their data for the number of flu-like illness cases that they have seen this school year in addition to the number of flu vaccines that they have administered this school year.

While researching the topic of increasing flu vaccinations on college campuses, we came up with three ideas that can be implemented easily on not only Indiana University Bloomington's campus, but all college campuses. These solutions were to set up mobile clinics on campus, make the health center's operational hours more accommodating to college students, and the third solution was to increase awareness and knowledge on campus. Of these solutions, we recommend that the mobile clinics be the solution to be implemented. This solution makes the flu shot accessible to students and has no cost to them. These clinics would appear in buildings with high foot-traffic and would occur twice in every residence hall with a morning and evening clinic. To make this solution even more applicable to a college campus, this solution utilizes nursing students, having them administer the injections, while also receiving class credit and clinical hours. This solution has proven successful at other universities and can easily be implemented.

Introduction

As both current students, and health related majors at Indiana University (IU) we are passionate about the health and wellbeing of our peers on campus. As such individuals, we hope to coordinate efforts with the Indiana University Health Center (IUHC) and their executive staff to implement a solution to increase the number of college students who receive the flu shot, and thus to reduce the number of influenza cases seen on campus. With guided efforts from the IU health center, we can implement a feasible solution that will be well received by the University, the health center, and the students. Strategic implementation is key to the long term success of a solution, and is attainable with the help of the IUHC. Our goal with this report is to prove the efficacy of potential solutions to combat this issue of increasing cases of influenza (flu).

In addition to copious research, we also conducted a survey amongst the students at IU, and asked them about their opinions on the flu. The findings, of which will be outlined later in this proposal. While conducting our research, we found that only a small number of college students opt to receive the flu vaccine annually, while many others decide to not receive the flu vaccine, for a variety of reasons. In our research, we looked at what other universities have done in the past to implement flu vaccination on a large scale, and how their efforts were successful in reducing the number of flu incidents on their campuses. Furthermore, we have come up with replicable solutions that could be implemented on our Indiana University campus. Additionally, we got into contact with members of the IUHC and received specific facts pertaining to Indiana University Bloomington campus.

In this proposal, we will outline the problem in greater detail, our research methods and scope of practice regarding vaccines on college campuses. Additionally, we will outline three solutions and discuss them in more detail in a conclusion and discussion section. Finally, we will discuss our recommendations for program implementation, and the crucial steps necessary for a successful program.

Problem in Great Detail

At present, the rate of flu is rampant on college campuses due to many factors. These factors include but are not limited to the close living quarters in residence halls, stress and sleep deprivation, daily interaction with other people and food, and inconvenient clinic hours. Students living in residence halls share most of their living space with other people, that includes the dorm room, shared lounge spaces, dining halls, and restrooms. Additionally, in regard to the dining halls, it is sometimes difficult to find healthy food that is both easily accessed and affordable to students. Stress and sleep deprivation are also an issue because it takes a toll on the personal health of the students and can weaken their immune system making them more susceptible to the flu virus. Another major issue is that the Indiana University Health Center has hours that are inconvenient for students because they take place during typical class times. It is difficult for students to make it to the health center between 8:00 AM and 4:30 PM when they are in class or at work. Aside from these physical and daily living issues, there is also a general lack of knowledge about the flu shot, especially in college campuses. In short, the flu can spread rapidly on campuses because of the high-density living conditions and frequent social interactions (Bahr & Benjamin, 2016).

Research shows that the flu is very prevalent on college campuses. An estimated 8-39% of students get the flu each school year. (NFID, 2016) During the 2016-2017 flu season, the flu vaccine prevented 5.3 million cases of the flu. Studies show that even if you receive the vaccine and still get ill, the severity of your illness will be greatly reduced and the chances of having to go to the hospital to treat it are minimal.(CDC, 2018) In another survey conducted during the 2014-2015 influenza season, the respondents that did not receive the flu shot had many reasons for forgoing the vaccination. Of those that opted to not receive the flu shot, the top answer, at 43%, said they were not worried about getting the flu, the next prevailing responses were that the students were either “too busy, or forgot” (Franks, Jandu, 2016). This survey shows that there is a lack of time for students to go and receive a flu shot, so implementing a solution that makes the flu shot more accessible to the students would be beneficial, for long term results. Furthermore, providing more information on the importance of the flu shot, and how beneficial receiving one can be.

The benefits outweigh the risks of receiving the flu shot, in that there is minimal risk of any harm coming from a flu shot. The most common problem associated with the flu shot is allergic reaction. In addition, there is a potential for some side effects such as, injection site pain and soreness, redness, tenderness, or swelling, and low-grade fever, headaches and muscle aches to occur. The benefits, however, include flu prevention, reduction in the



risks of flu-associated hospitalization, prevention of serious medical events associated with some chronic conditions, helps to protect women during and after pregnancy, has been proven to be life-saving in children, in addition to other benefits especially regarding the elderly and young children (CDC, 2018).

In addition to conducting library research, we distributed a survey to undergraduate students at IU. In the survey, we asked their grade, gender if they felt comfortable, if they received the flu shot in the past school year, their reasoning behind their choice, and their opinion on what can be done to address the number flu cases on college campuses. The survey compiled responses from 69 undergraduate IU students, and the results were, as expected, not as hopeful as we had expected. The bar chart below, Figure 1, depicts the number of students who have and have not received the flu vaccine, categorized by their class standing.

From the data we compiled, we observed that the responses were comparable for both

having received the flu vaccine, and having not received the

vaccine, with the higher percentage of responses at 50.7% going to not having received the flu vaccine. We also asked students if they knew that they could receive a free flu shot at the health center. The results from this were also fairly similar, again with the negative response prevailing at 52.2%. With this data, we can learn and appreciate that there is a general lack of knowledge about the importance of the flu shot, as well as lack of representation and advertising on college campuses.

Furthermore, in efforts to have an idea about how widespread flu incidences are on Indiana University Bloomington campus, we got into contact with the Executive Director, Associate Director, and Medical Director of the health center, to get some outside, and professional insight from an administrative point of view. They graciously provided their statistics of flu cases that came into the clinic, and the number of flu vaccinations the IUHC has provided annually for the last three school years. The data represented below in Figure 2 was recorded from August 20th to March 27th for all of the academic years listed.

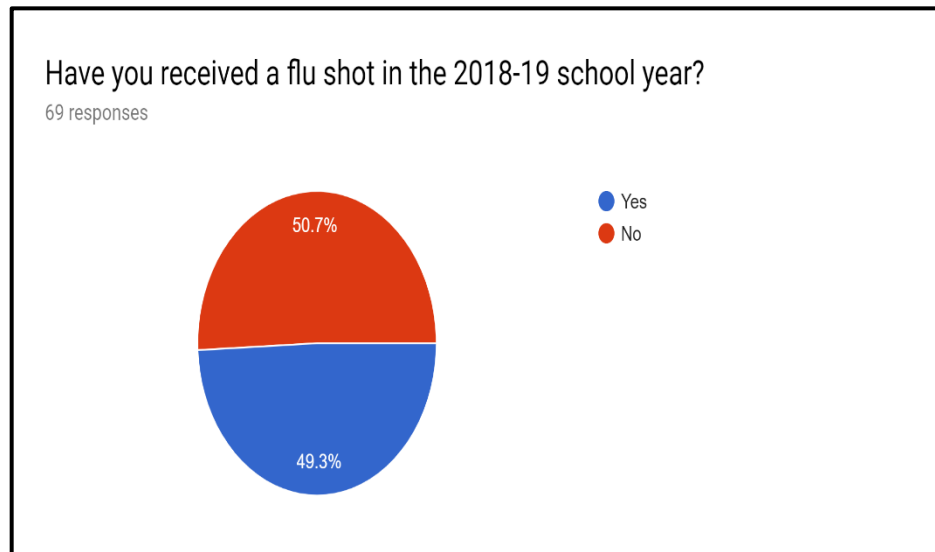


Figure 1: Survey Response for Annual Flu Shot

Academic Year	Influenza-Like Illnesses	Flu Vaccines Administered
2016-17	529	3033
2017-2018	686	2878
2018-2019	443	3533

Figure 2: Indiana Health Center Statistics on Flu Cases & Vaccines

For reference, there were 32,991 undergraduate students enrolled in 2018, while the health center gave out 3533 flu shots. This correlates to 10.7% of the undergraduate population receiving a flu shot from the IUHC. While this falls into the number of percentage of students that receive the flu shot, 8%-39%, as recorded by the National Foundation of Infectious Diseases, it is still a very low percentage given the number of current undergraduate students currently enrolled at IU. For this reason, new solutions need to be implemented to address this issue and increase the vaccination rates among college campuses.

Method and Scope

The influenza outbreak among college campuses is a serious problem that needs to be addressed. A college campus is a cesspool for the spreading of the influenza virus. As Indiana University students, we have noticed several outbreaks of the influenza virus and the drop in class attendance when flu season starts. This topic was chosen so that the rates of influenza among Indiana University students, and college students in general, can be decreased. The health and well-being of Indiana University students should be a priority to IU officials and faculty.

In order to obtain accurate data for this proposal, we chose a variety of research strategies. One thing that we did was library research. We obtained several research articles on the topic of flu outbreaks on college campuses. Next, we put together a survey asking questions relevant to our research. These questions included things like “Did you receive the flu shot this year” and also “Did you know about the free flu shots on campus?” Conducting these surveys on our peers allowed for us to see how relevant the problem is on Indiana University Bloomington's campus. The results of the student survey can be located in Appendix C. Lastly, we directly emailed the IU Health Center and asked for their current stats and what they think of the issue. We received their data from the past three years on the issue and interpreted it to the best of our abilities.

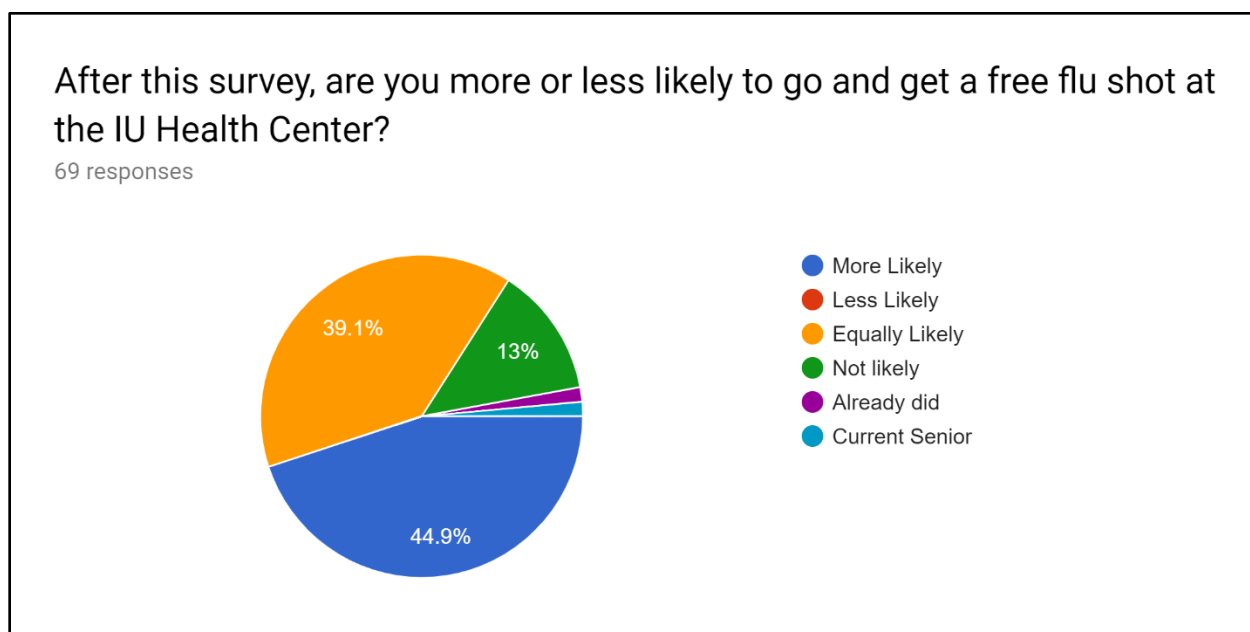


Figure 3: Survey Response on Likelihood to Receive a Flu Shot

Solutions

Using specific methods to conduct our research we came up with three possible solutions that can solve the influenza crisis on college campuses, specifically the Indiana University Bloomington campus. We came up with our three solutions based on specific criteria that students, staff, and faculty would find important, such as the time, cost, and ease of implementation of each different solution.

1.SETTING UP MOBILE CLINICS ON CAMPUS

As shown in Figure 2, there is clearly a lack of students receiving the flu shot each year and numbers are continuing to fall. This problem is due partly to the fact that the IU Health Center's hours are inconvenient for most students to attend and is located further away from most educational buildings. Countless students on campus have heavy schedules and extracurricular obligations which may make it hard for them to receive their flu shot.

One possible solution to this issue would entail making the flu shot more accessible to students around campus. We plan on implementing mobile clinics around campus in convenient locations and with favorable hours. Some locations would include dorms, the Indiana Memorial Union, and educational facilities located in the heart of campus. We would host two time slots per location that run from 8AM to 10AM and another one from 5PM-7PM. These time slots are intended to give students enough time to attend their classes and meetings throughout the day, while also making it easier on them to improve their health status.

The implementation of this solution is simple, quick and effective. We suggest nursing students who are seeking clinical hours, course credit, and those who are also certified to give out flu vaccinations to interested students. Since they are student volunteers, we will not have to pay them, making the cost of this solution much more affordable. Not only are we providing free flu shots in convenient locations, we are also providing hands on experience for the nursing students of IU.



Indiana University Student administering a flu shot

2. PROVIDING MORE ADVERTISEMENT AND AWARENESS

There are many different techniques to reach students on IU's campus and some are more effective than others. When it comes to advertising the benefits and advantages the flu shot can have on your health, there is a lack of it seen on campus that can be provided to students efficiently. Fortunately, the flu shot is offered for free and is provided to students occasionally on IU's campus. The downside of this scenario, is the inadequate amount of advertisement and awareness of these opportunities on campus.

Our next solution is to amplify the amount of advertisement that can reach all the diverse student bodies on campus while also providing awareness about the all the benefits the flu vaccination can provide for one's health. We plan on reaching out to the IDS student body newspaper, WIUX student radio, and dorms on campus to make sure we are reaching and educating as many students as possible. Social media is also a great way to gain positive attention on this subject. By frequently posting on platforms such as Snapchat, Instagram, and Twitter, we will be able to make a larger impact. In our survey, we asked students if they knew about the free flu shots offered at the health center, and for the most part, the answer was no. Figure three comes from our survey data comparing if students knew about the flu shots available to them on campus.

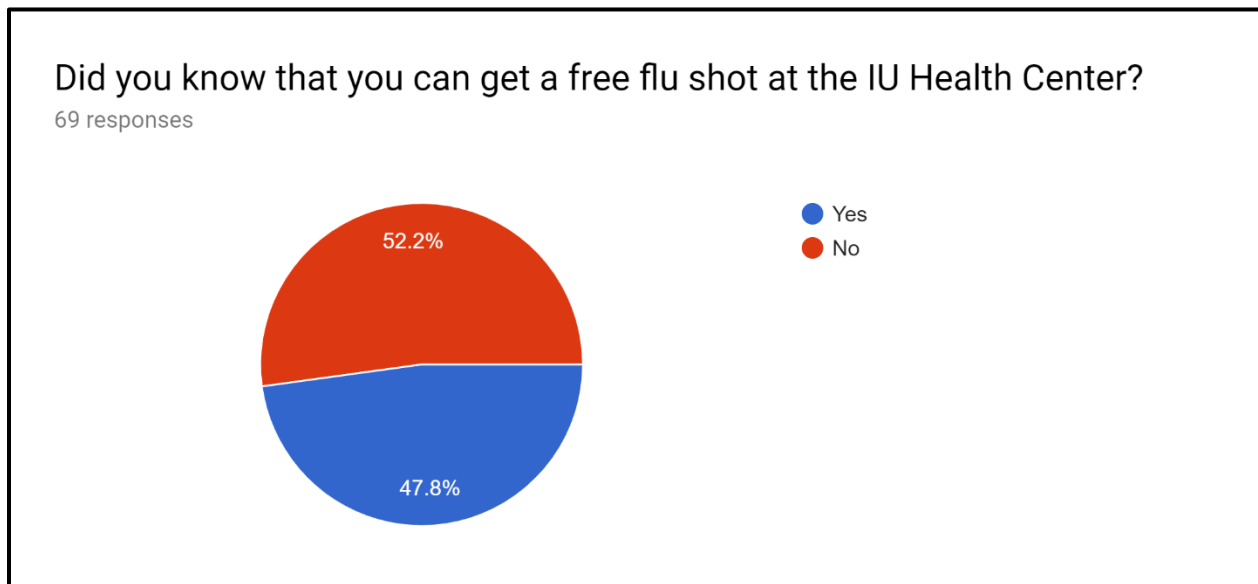


Figure 4: Knowledge of Flu Shot Availability on Campus

This solution is straightforward, cost effective, and can be easily translated to the student body. By reaching out and emailing different organizations around campus to post about the hazards of not getting the flu shot and also where they can receive it will make a positive change on campus.

3.ADJUSTING THE HEALTH CENTER'S HOURS TO BE MORE ACCOMMODATING

By extending the hours at the IUHC, more students would be able to be seen for the flu, amongst other illnesses and ailments. Currently the health center is only open from 8am to 4:30 pm Monday through Friday. Looking through a practical scope, the IUHC, does not bode well with students' schedules. Classes are typically held during these hours and for classes where student attendance is mandatory, it is simply unattainable for the student to go to the health center because their schedule does not allow it. Even in the midst of these barriers, a solution to this is rather simple, extend the hours of the IUHC. It would be preferable for the health center to be open earlier in the morning and later in the evening, to accommodate busy schedules. Extending operating hours to 7 am to 7 pm would allow for many more students to be able to get treated for the flu and other illnesses.

From a practical standpoint, this solution is very simple to implement and, could easily be replicated on all college campuses. This solution is generally low cost and low risk, with the benefits outweighing the cost of implementation. Extending the hours of the health center is an easy way to reach more students and prevent the spread of illness throughout the campus in a safe and reliable manner. This quick and effective solution can easily benefit many more students than the current hours allow. This solution also has the potential for long-term reliability if implemented correctly.



Conclusion & Discussion

We have deemed Solution 1 to be the most feasible because of the efficacy and long-standing potential for success on Indiana University's campus. Other colleges have implemented this solution and have had high turnout and continues success with the mobile shot clinic program. This solution would be the most accessible and produce the best response from current and future undergraduate students. This solution would eliminate the problem of going to get a flu shot a hassle, because the flu shot are brought directly to the students. It would ensure getting the vaccine is quick and easy, no appointment needed and done in less than 10 minutes. Students would just have to go to the location where the vaccine is being given, for example, a lounge in a residence hall, and present their student ID. They would receive their flu shot and be on their way. Furthermore, this solution is cost-effective in the long run, and is the most receptive, and easiest for the students. Even more, this solution has an added educational benefit by using nursing students in return for credit and clinical hours.

Solution 2 is a good approach to solving the influenza epidemic on college campuses. Unfortunately, this solution relies heavily on other people and organizations, such as WIUX, residence hall staff and building managers. In order for this to work, campus organizations would have to be willing to put out awareness on why the flu vaccine is important. It would not be correct to assume that all people are for vaccines, whether for religious reasons or other. Furthermore, it is unrealistic to assume that students will prioritize their health and take the initiative to make a trip to the IUHC to receive the flu vaccine. Another downside to this approach is the fact that the IUHC hours would still be inconvenient for students. While there would still be an increase in flu vaccine numbers, this solution would not make the impact we are hoping for.

While solution 3 is practical, there are still costs that arise with its implementation. The IUHC, would have to employ more staff to be able to remain open for these extended hours, in addition to providing adequate compensation and benefits to those employees. Furthermore, there would be higher bills in regards to utilities utilized by the IUHC due to the additional open hours. Another risk associated with the extended hours of the health center is that there would be a higher frequency of students coming in for treatment, and thus the wait time could increase.

Recommendations

We firmly believe that in order for the student body of Indiana University to remain as healthy and educated on flu vaccinations as possible, our solution of creating convenient and efficient mobile clinics should be implemented. In order for all students gain the full IU experience, they need to sustain a proper health status which can be difficult without having the flu shot. Our extensive research and student survey have all led us to this recommendation that will in return be beneficial for all students on IU's campus.

PRELIMINARY STEPS TOWARD IMPLEMENTATION

1. Reach out to IU Nursing Students and IUHC
 - a. Assess how many volunteers we need to participate per shift
 - b. Approach IUHC for free supplies
2. Secure Funding
 - a. Determine how much money to provide free flu host to all undergraduate students
 - b. Approach the University about allocating adequate funding for proper implementation
3. Implementing vaccines into the IMU and educational facilities
 - a. Set up time slots at the IMU to have a room setup with tables for flu shot clinic
 - b. Set up mobile clinic locations at high-trafficked education buildings:
 - i. O'Neil School of Public and Environmental Affairs
 - ii. Wright Educational Building
 - iii. Ballentine
4. Implementing vaccines into the residential halls
 - a. Set up multiple mobile flu shot clinics in residential living facilities
 - i. Morning clinic for each residence hall
 - ii. Afternoon and Evening clinic for each residence hall
5. Spread the word out to all undergraduate students about the new flu shot program
 - a. Only need an IU student ID
 - b. The clinics are quick and are very accessible.

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Appendix A

Visuals

Cover Page Image

- *Figure Holding Syringe*

Introduction Visual

- *Flu Shot Vaccine Vial*

Solution 1 Visual

- *IU Nursing Student Administering Flu Shot*

Solution 3 Visual

- *IU Health Center*

Figure 1: Survey Data Categorized by Class Standing

- *This graph depicts the number of student survey respondents who have and have not received a flu shot organized by grade.*

Figure 2: Indiana Health Center Statistics on Flu Cases and Vaccines

- *This table shows the number of flu-like illness cases that the IUHC has treated in the last three years in addition to the number of flu shots that were administered those same years.*

Figure 3: Survey Response on Likelihood to Receive a Flu Shot

- *This pie chart represents the respondent's likelihood to receive a flu shot after completing the survey and receiving a small amount of information about the importance of the flu shot.*

Figure 4: Survey Response on Knowledge of Flu Shot

- *This pie chart depicts the total number of respondents and their knowledge of the availability of a free flu shot available to them at the IUHC.*

Appendix B

Email exchange with Pete Grogg, Executive Director, Indiana University Health Center

Our email:

My name is Kaitlyn Baney, and I am a Healthcare Management & Policy major through the O'Neil School of Public and Environmental Affairs here at Indiana University. I am writing to you because I am conducting research about influenza vaccine rates on our campus and am trying to raise awareness of the importance of the vaccine. In my efforts, I am aiming to create a rise in the number of students who receive a flu shot on campus, and ultimately decreases the number of flu cases seen on college campus. I am in the process of writing a proposal that would give possible solutions to combat this issue and create more outreach and availability of flu shots to the student population. As I understand, flu shots are available to students at the health center, but from a survey I have conducted, many students are unaware of this. I was wondering, as the directors of the health center, what you believe can be done to increase the number of students who receive the flu shot, and how can we, as like-minded individuals, raise more awareness of the importance of the flu shot to students. Additionally, I was wondering if it would be possible to set up an interview either in person or by phone call about flu statistics on campus. Please feel free to reach out to me by phone at (260) 570-3622, or by email at kebaney@iu.edu. Thank you for your time, in reading this email, and I hope to hear from you.

Response:

Tamir Hussain will be able to give you statistics regarding cases of students presenting with flu-like illnesses at our clinic. He can also give you the number of flu vaccines that were given this year and last year by our staff.

We advertise our flu clinics on our website and social media accounts, which are often shared by other IU media accounts. We also offer flu shots to every student who presents to the clinic from mid fall through winter. We also usually have information placed in articles in the IDS regarding our flu shot availability. Our nursing staff also go out to many different locations on campus in late September and October to administer flu shot clinics. Some students get their flu shots from their home medical clinics and outside pharmacies. Many students just don't want a flu shot.

I'd appreciate any more advice you can give to increase the number of students getting flu shots each year.

Date range 8/20 – 3/27 for all academic years listed below.

Acad Year	ILI Cases	Flu Vaccines Administered
2018-19	443	3533
2017-18	686	2878
2016-18	529	3033

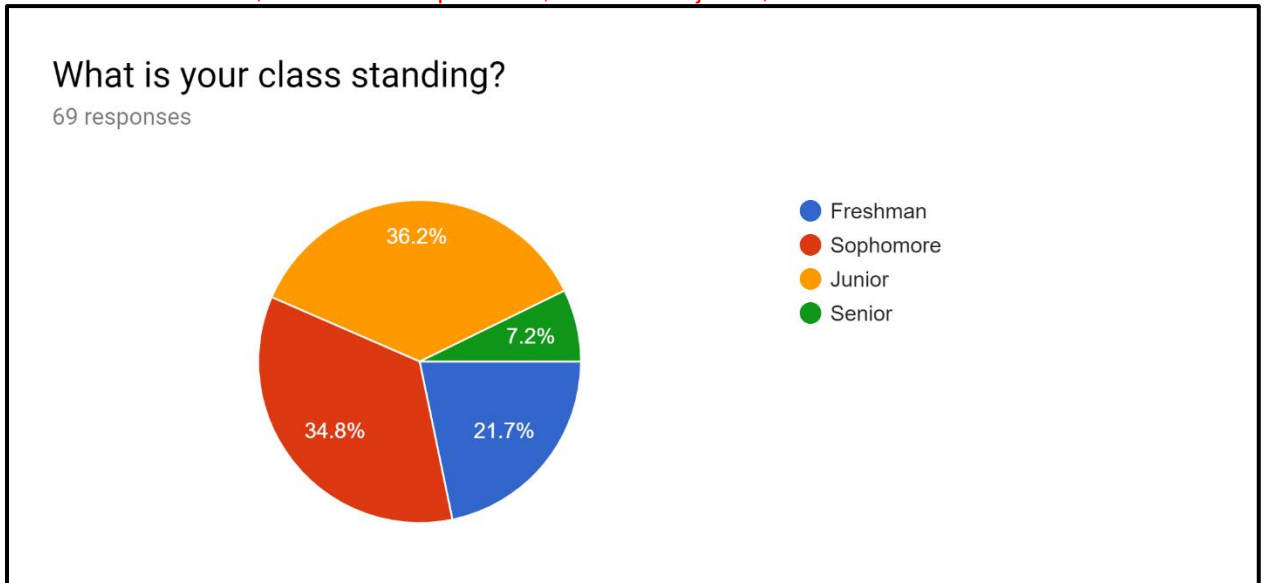
Appendix C

Indiana University student survey regarding flu vaccines

- 1. What is your class standing?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior

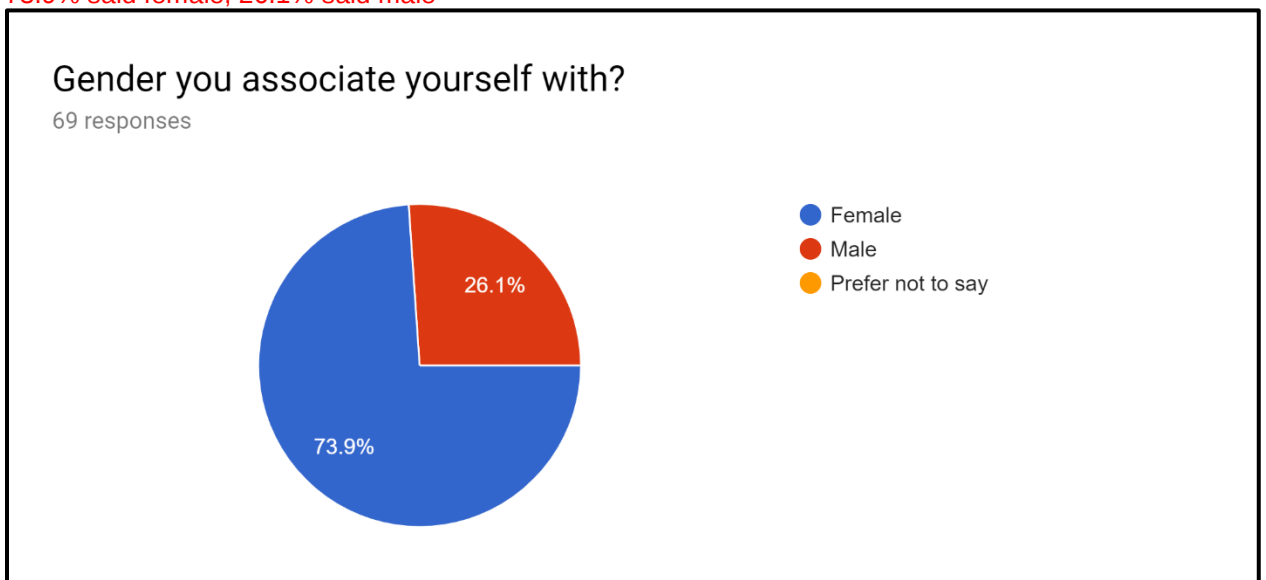
- 21.7% said freshman, 34.8% said sophomore, 36.2% said junior, 7.2% said senior



- 2. Gender you associate yourself with?

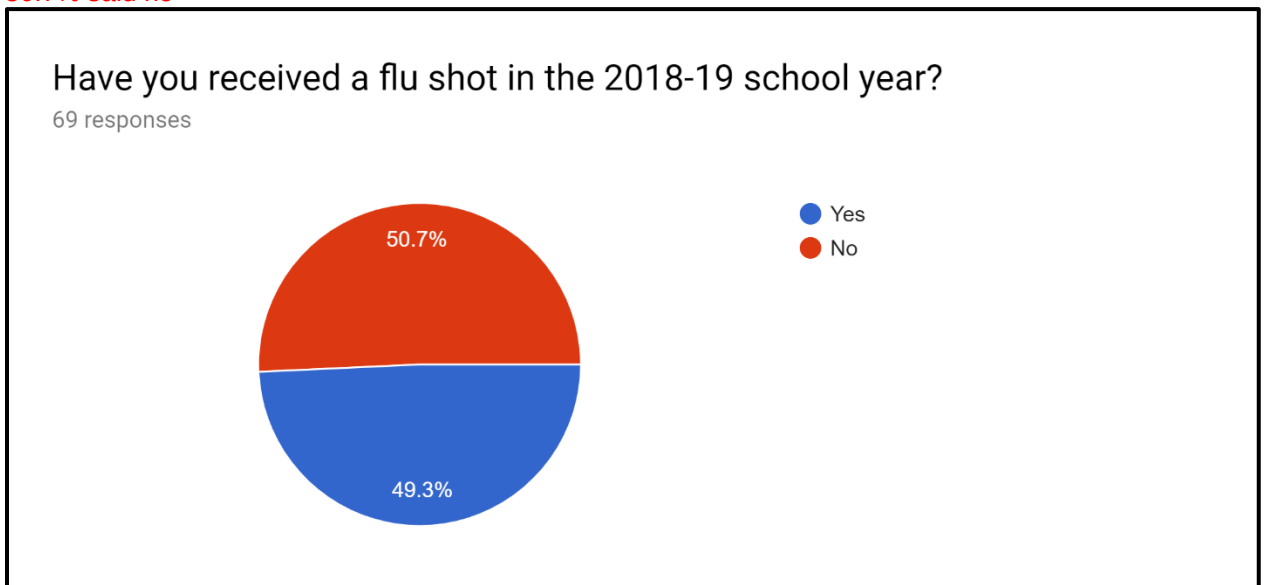
- ☐ Female
- ☐ Male
- ☐ Prefer not to say
- ☐ Other:

- 73.9% said female, 26.1% said male



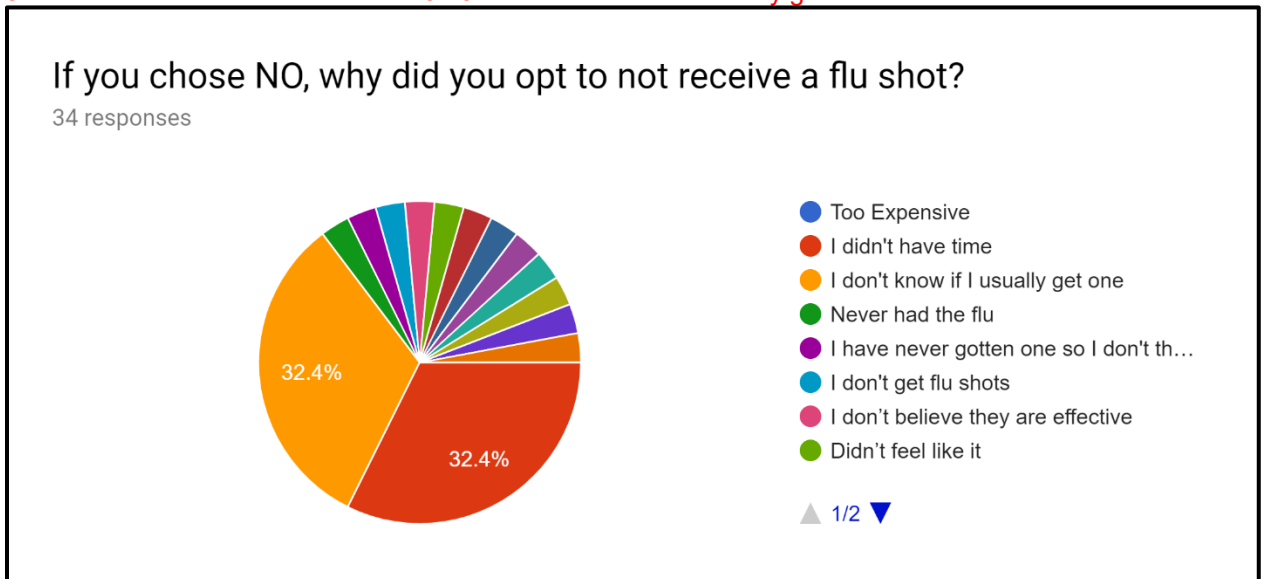
- **3. Have you received a flu shot in the 2018-19 school year?**
 - Yes
 - No

- **50.7% said no**



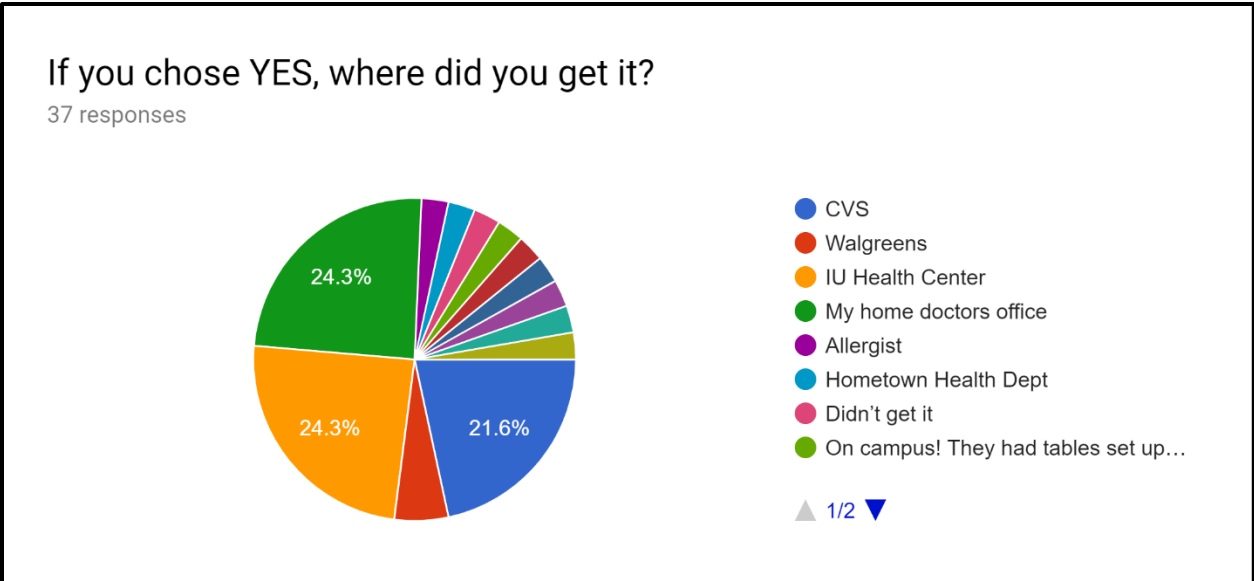
- **4. If you chose NO, why did you opt to not receive a flu shot?**
 - Too Expensive
 - I didn't have time
 - I don't know if I usually get one
 - Other:

- **32.4% said "I didn't have time" and 32.5% "I don't know if I usually get one"**

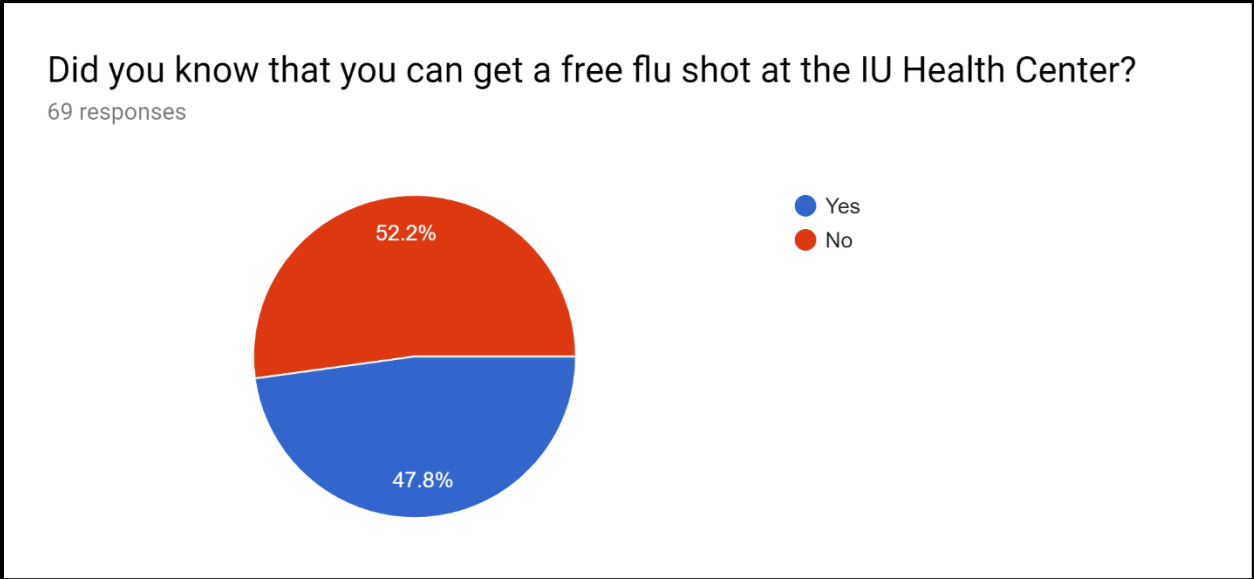


- **5. If you chose YES, where did you get it?**
 - CVS
 - Walgreens
 - IU Health Center
 - My home doctor's office
 - Other:

- **24.3% said IU Health Center**



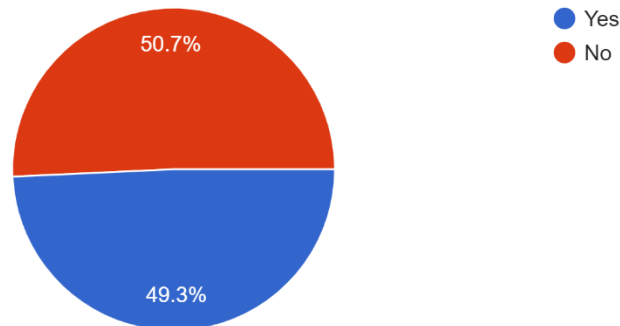
- 6. Did you know that you can get a free flu shot at the IU Health Center?
 - ☐ Yes
 - ☐ No
- 52.2% said no



- 7. Did you know that college campuses have one of the highest rates of the flu among any other groups?
 - ☐ Yes
 - ☐ No
- 50.7% said no

Did you know that college campuses have one of the highest rates of the flu among any other groups?

69 responses



- **8. What do you think is the best way to be able to change the number of flu breakouts on campus?**
- **Answers varied.**
- **9. After this survey, are you more or less likely to go and get a free flu shot at the IU Health Center?**
 - More Likely
 - Less Likely
 - Equally Likely
 - Not likely
 - Other:
- **44.9% said more likely**

After this survey, are you more or less likely to go and get a free flu shot at the IU Health Center?

69 responses

