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Compliance of the Influenza Vaccination amongst Healthcare Personnel

by

Elaina Parlapanis FNP-C

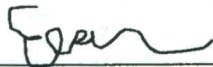
A DNP PROJECT

**Submitted in partial fulfillment of the requirements for the
Degree of Doctor of Nursing Practice
to
The School of Graduate Studies
of
The University of Alabama in Huntsville**

**HUNTSVILLE, ALABAMA
2018**

Dr. Ann Bianchi

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Student Signature

7/2/2018

Date

DNP PROJECT APPROVAL FORM

Submitted by Elaina Parlapanis in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice and accepted on behalf of the Faculty of the School of Graduate Studies by the DNP project committee.

We, the undersigned members of the Graduate Faculty of The University of Alabama in Huntsville, certify that we have advised and/or supervised the candidate on the work described in this DNP project. We further certify that we have reviewed the DNP project manuscript and approve it in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice.

5 July 2018 Ann L. Branchi Committee Chair

(Date)

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ABSTRACT
The School of Graduate Studies
The University of Alabama in Huntsville

Degree: Doctor of Nursing Practice College: Nursing

Name of Candidate: Elaina Parlapanis

Title: Compliance of the Influenza Vaccination amongst Healthcare Personnel

Introduction: In today's present day of health concerns, the influenza virus is stated to be a serious issue that affects all individuals throughout the world. The influenza virus is stated to have numerous possibilities of complications that may occur depending upon the severity of the case and the health state of the individual (Kimura et al., 2007).

Objective: The purpose of the DNP project is to increase compliance rates amongst healthcare personnel with the uptake of the annual influenza vaccination through attending mandatory influenza vaccination educational in-services. *Methods:* This is a quasi-experimental design using descriptive data in order to assess the uptake of the influenza vaccination amongst healthcare personnel at a southwest suburban facility in Illinois between the time frame of April 2018 and May 2018. *Results:* One hundred percent of healthcare personnel and office staff attended an in-service regarding the annual influenza vaccination. This objective was met. One hundred percent of participants received the annual influenza vaccination. Objective met.

Conclusion: Incorporating mandatory influenza vaccination educational in-services increase compliance rates amongst healthcare personnel with the uptake of the annual influenza vaccination.

Keywords: Influenza vaccine compliance in workplace, education in-services, influenza vaccine, mandatory influenza vaccination amongst health care personnel; educational influence on influenza vaccine amongst healthcare personnel; mandating influenza vaccine; influenza vaccine compliance rates,

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Identification of the Problem

The influenza virus is stated to be a serious issue that affects all individuals throughout the world. The influenza virus is known for having the potential of leading to serious complications, hospitalizations, even demise in the world population. The virus is easily transmissible from one person to another, making it difficult to control it (Tosh, Boyce, & Poland, 2008).

Prevalence

In today's present day of health concerns, the influenza virus is stated to be a serious issue that affects all individuals throughout the world (Kimura et al., 2007). "Despite the colloquial use of the term *flu* for wintertime infections, influenza is a serious infection causing substantial morbidity and mortality worldwide and resulting in approximately 250,000 to 500,000 deaths per year" (Tosh, Boyce, & Poland, 2008, p. 77). According to the CDC, the influenza virus causes more than 200,000 people to be hospitalized each year in the United States (CDC, 2011).

Influenza complications

The influenza virus is known for having the potential of leading to serious complications, hospitalizations, even demise in the world population. The virus is easily transmissible from one person to another, making it difficult to control it (Tosh, Boyce, & Poland, 2008). The influenza virus is stated to have numerous possibilities of complications that may occur depending upon the severity of the case and the health state of the individual. Understanding the influenza virus and the nature of how it is transmitted from one person to another is of great importance. For this reason, the influenza vaccine is necessary amongst healthcare personnel in order to help keep the

virus from spreading from one individual to another. The influenza virus is known to have caused many complications and even deaths to a vast majority of individuals throughout the world. It is for this reason the influenza vaccine is of utmost importance when it comes to significantly impacting the individuals of the world in preventing the spread of the virus. Evaluating the potential benefit to mandating an influenza vaccination educational in-service amongst healthcare personnel is crucial in understanding the necessity of incorporating this within the healthcare organization. The influenza vaccine is the best way to prevent the influenza virus and it is of great importance for all healthcare personnel to understand the benefits for the sole promotion of increasing compliance rates (Tosh, Boyce, & Poland, 2008). Conducting an evaluation in incorporating mandatory educational in-services amongst office staff is necessary to understand if this will help increase compliance rates. The mandate of the influenza vaccination educational in-service would help promote higher compliance rates amongst healthcare personnel and office staff (Booy et al., 2011). Mandating the influenza vaccination educational in-service amongst all employees is imperative and substantial when needing all healthcare personnel/office staff to fully comply with the urgency of increasing compliance rates (Booy et al., 2011).

Review of Evidence

A literature search was conducted using CINAHL, EBSCO, and MEDLINE. Key words and phrases utilized included: mandatory influenza vaccination amongst health care personnel; educational influence on influenza vaccine amongst healthcare personnel; mandating influenza vaccine; influenza vaccine compliance rates, influenza vaccine amongst health care personnel; influenza vaccine; and healthcare employees and

influenza vaccine. Articles in the English language were indicated. The articles were observed for material and information pertaining to the influenza vaccination and how it impacts health care personnel. Articles were scrutinized based on viable material focused solely on mandating the influenza vaccination amongst healthcare employees and what impacts compliance rates.

According to the Hubble et al., (2011), a study was conducted to assess the uptake of the influenza vaccination amongst healthcare personnel. The study tested the knowledge, attitudes, beliefs, vaccination status, illness history, and work patterns were noted amongst the healthcare personnel. A cross-sectional survey of North Carolina EMS professionals was conducted after the influenza season of 2007-2008. A total of 601 EMS professionals participated in the study and completed the survey. Findings indicated 47.9% received the influenza vaccination. Only 9.1% supported the mandate of the influenza vaccination. This study revealed a very low uptake of the influenza vaccination due to perceptions of the influenza vaccination amongst EMS professionals. Further education was recommended pertaining to the influenza vaccination (Hubble et al., 2011).

According to Kimura et al., (2007), a study was conducted investigating the barriers to the influenza vaccination among employees located at a long-term care facility in Southern California. Within the study, effective interventions were developed to increase the uptake of the influenza vaccination amongst healthcare personnel. Healthcare personnel took a survey pertaining to their attitude and knowledge in regards to the influenza vaccination and influenza virus. Seventy facilities were recruited to partake in the study and were randomly assigned to four groups. An educational campaign and

Vaccine Day were established to help combat any misconceptions and barriers to receiving the influenza vaccination. The study resulted in a positive outcome when using the combination of both the educational campaign and the Vaccine Day. According to the study, 53% of participants adhered to the influenza vaccination after participating in both services compared to a 27% control group. In conclusion, incorporating both educational campaign and Vaccine Day improved the compliance rates of receiving the influenza vaccination. There was indeed a direct correlation amongst informing the healthcare staff regarding the importance of receiving the influenza vaccine and compliance with partaking in receiving the influenza vaccine. The educational factors regarding the vigilance of receiving the influenza vaccine play a tremendous role in keeping the members of the healthcare compliant with current guidelines (Kimura et al., 2007).

According to Cohen and Casken (2012), further evaluation is necessary in order to assess if mandating educational in-services regarding the influenza vaccination will help increase compliance rates amongst healthcare personnel in order to decrease viral transmission rates and increase herd immunity. This study was conducted to develop a deeper understanding as to why there is such a low compliance rate of the influenza vaccination amongst healthcare personnel. The purpose of this evaluation is to assess for methods that encourage the uptake of the influenza vaccination amongst healthcare personnel, assess the knowledge and perception of the influenza vaccination amongst healthcare personnel, and to acknowledge the gaps in research to distinguish the development of interventions to increase compliance rates amongst healthcare personnel. Within this study, forty studies were collected and evaluated. The studies took place in a

variety of settings ranging from hospitals, clinics, and long-term care facilities. Thirty-eight studies utilized questionnaire surveys were utilized to attain results and two studies used group interviews with nurses only. In a study in 1989-1990, less than 20% of employees received the influenza vaccination. In 2005, a study conducted in the United Kingdom revealed only 19% of participants received the annual influenza vaccination. Another study was conducted in the United States in 1986-1987 revealing only a 2.1% compliance rate amongst healthcare personnel. Within the study, the most common barrier was the misconception of the influenza vaccination amongst healthcare personnel. The nursing profession was noted to have the highest number of participants stating the influenza vaccination causes the influenza virus and severe side effects. There is a gap in the research pertaining to the education amongst healthcare personnel regarding the understanding the need to adhere to the annual influenza vaccination. Understandably, healthcare members work in close proximity with patients and other healthcare personnel. The virus is highly transmissible and it is essential for healthcare members to attain immunity through complying with the annual influenza vaccination. Further studies are needed in order to assess resistance some members of the healthcare team exhibit. Benefits and the safety and effectiveness of the vaccine should be discussed to all healthcare personnel to increase compliance rates. It is crucial to distinguish why healthcare members have a high resistance rate in adhering to the annual influenza vaccination (Cohen & Casken, 2012).

According to Booy et al., (2011), the study investigated if mandating influenza vaccination amongst healthcare personnel will increase compliance rates amongst healthcare personnel. Participants included healthcare personnel. Research has shown

that mandating educational in-services regarding the influenza vaccination does impact compliance rates amongst healthcare personnel, thus preventing the spread of the virus from one individual to another. It is absolutely necessary to propose the mandate of the flu vaccination amongst healthcare personnel in pursuit of increasing compliance rates. The purpose is to increase awareness of the importance of adhering to the annual flu vaccination through mandating the influenza vaccination within healthcare organizations. Further evaluation is necessary to assess the compliance rates of the members of the healthcare team in order to help reduce transmission rates and help protect oneself, as well as their patients against the virus itself (Booy et al., 2011).

Conceptual Framework

The theoretical framework utilized within the study is the Theory of Planned Behavior (TPB). This theory focuses on health-related behaviors amongst all employees of the healthcare organization. Within this theory, there is a primary focus on the planned behavior and the behavioral intent. Theory of Planned Behavior emphasizes on a health-related concept and distinguishes the intention of the individual in regards to adhering to the new proposed plan of action. Within this project, this is to comply with the annual influenza vaccination. The TPB emphasizes on the individuals' intent on whether to embark in complying with the annual influenza vaccination or to decline the option to do so. The TPB consists of the intention on performing a specific action or behavior. The intention or individual perspective takes precedence within this study in order to develop a deeper understanding as to why an individual has chosen to comply or decline the behavior. The most important aspect with the TPB is to understand the individual's attitude toward the action plan. There are three determinants in predicting behavioral

intentions. According to Agarwal (2014), the three determinants include the following: “Attitude toward the behavior, subjective norms of behaviors, and perceived behavioral control toward the behavior” (p. 417). The TPB expresses the importance of understanding the perspective of the individual towards the behavior itself, whether it be positive or negative belief. This impacts the end result in regards to whether the individual will comply or decline the behavior. A behavior is more likely to be conducted if a positive perspective is noted from the individual regarding the behavior itself. Subjective norms also play a role when impacting the decision of complying or denying partaking in the stated behavior. Family and friends may motivate individuals to either approve or disapprove of the behavior. The individual has a higher probability of adhering to the annual influenza vaccination if one envisions the behavior from a positive perspective. According to Agarwal (2014), “Perceived behavioral control comprises an individual’s beliefs about the presence of factors that may impede or facilitate their ability to perform the behavior” (p. 417). This concept of perceived behavioral control consists of self-efficacy and controllability. The self-efficacy portion consists of understanding the simplicity or difficulty of adhering to the behavior pattern. Controllability emphasizes on the control an individual has on the behavior noted (Agarwal, 2014).

Compliance of the Influenza Vaccination amongst Healthcare Personnel Scholarly Project

The need for increasing compliance to receiving the influenza vaccination is vital. The clinic located in a southwestern suburban facility in Illinois, lacked compliance to receiving the influenza vaccination which indicated a need to offer a mandatory

educational in-service followed by adopting a new influenza vaccination policy.

Approval was given by the IRB (see Appendix A). Approval letter was also received from agency where project was conducted (see Appendix B).

Once consent was given, the participants completed the demographic form (see Table 1) and the Pre-educational Influenza Vaccine In-service Questionnaire (See Appendix C). Each participant attended the education session on the scheduled date. Power points slides were used for the face to face education session. Once they have attended the education session, the participant took a Post-educational Influenza Vaccine In-service Questionnaire (See Appendix D). They were handed a card to take with them when they get the influenza vaccine and the card was signed by the person giving the vaccine once they have received the influenza vaccine. The participant will give the card to the PI. The PI recorded on the tally sheet each participant (using a de identified code number) who has attended the educational in-service and those who have received or declined the annual influenza vaccination. All information collected was de identified and the data was aggregated.

Project Purpose

The purpose of this project was to increase the compliance rate of the influenza vaccination amongst healthcare personnel utilizing mandatory educational in-services and incorporate a policy to mandate all individuals to attend. The purpose of this evaluation was to assess if mandating educational in-services within the healthcare organization regarding the influenza vaccination would promote an increased number of employees who complied with the annual influenza vaccine (Booy et al., 2011). The research question that guided this project was: for all employees of the clinic, will incorporating

mandatory educational in-services help promote an increase in compliance rates in receiving the annual influenza vaccination over a three month period of time? This project helped to understand the reason as to why each member of the health care team either complied or denied the annual influenza vaccination. This project assessed the compliance rate of the uptake of the influenza vaccination amongst healthcare personnel within a healthcare organization. Within the project, an educational in-service was utilized to assess if there is an increased compliance rate of the influenza vaccination within the participants of the study. It also assessed if the participants had a more positive outlook on the influenza vaccination and the likeliness of them receiving the annual vaccination after participating in the educational in-service. For all employees of the clinic, will incorporating mandatory educational in-services help promote an increase in compliance rates in receiving the annual influenza vaccination over a one month period of time?

In-Service Objectives

Immunocompromised individuals enter the clinic and were in need of having protection against the influenza virus. Having the healthcare personnel within the clinic vaccinated by the influenza vaccination helped deter the rate of transmission to their patients, as well as to one another. One objective was to have a 100% compliance rate of the uptake of the influenza vaccination amongst members of the healthcare team/office staff. Another objective was to increase awareness of the importance of the influenza vaccination through information packets and mandatory educational in-services. It was important for healthcare personnel to adhere to the annual influenza vaccination in order to prevent contracting and spreading the virus onto other individuals. This project

contributed positively to addressing the problem by increasing the compliance rate amongst healthcare personnel/office staff in attending mandatory educational in-services pertaining to the influenza vaccination and receiving the vaccine itself.

Instruments

Pre and Post-educational Influenza Vaccine In-Service Questionnaire

The Pre-Educational Influenza Vaccine In-Service Questionnaire (See Appendix C) and the Post-educational Influenza Vaccine In-Service Questionnaire (See Appendix D) included the same 10 questions relating to the participant's perspective pertaining to the influenza vaccination. The questionnaires were investigator derived. Six of the questions required a response of Yes or No answers. One question required a response of what job title they hold, ranging from registered nurses, medical assistants, healthcare staff, doctors, secretarial/office staff, and janitorial staff. One question required a response of very likely, likely, and not likely. One question required a response of yes, no, or maybe. Also, one question required a response pertaining to contraindications listing allergy, religious/personal beliefs, or other.

A tally sheet will be utilized in order to assess compliance rates amongst the healthcare personnel within the clinic. It will also help distinguish the number of healthcare personnel that attend the education in-services pertaining to the influenza vaccination. Tally sheets once again will be used to assess the number of members of the healthcare team that have attended the mandatory educational in-service regarding the need to adhere to the annual influenza vaccination and the uptake of the influenza vaccination as well (Grove, Burns, & Gray, 2013).

Influenza Education In-Service

The educational in-service consisted of a power point presentation (See Appendix E) that explained the importance of receiving the annual influenza vaccination. It further discussed the prominence for healthcare personnel to adhere to the annual influenza vaccination in order prevent contraction and transmission. The influenza educational in-service provided information on the severity of the influenza virus itself, as well as, how the influenza vaccination will help provide protection. Educating all individuals on the importance of receiving the annual influenza vaccine helped achieve adherence to receiving the influenza vaccination

Influenza Vaccination Process

Once they attended the education session, the participant took a Post-educational Influenza Vaccine In-service Questionnaire that took about 5 minutes. They were handed a card (See Appendix F) to take with them when they get the influenza vaccine and had this card signed by the person giving the vaccine once they have received the influenza vaccine. The participant gave the card to the PI. The PI recorded on the tally sheet each participant (using a de identified code number) who has attended the educational in-service and those who have received or declined the annual influenza vaccination. All information collected was de identified and the data was aggregated.

Development of Influenza Vaccination Protocol

The protocol consisted of mandating educational in-services pertaining to the influenza vaccine amongst all healthcare and non-healthcare employees of the clinic. The protocol ensured all employees attend the annual influenza educational in-service in order to promote increased compliance rates of the influenza vaccination. Failure to

comply with attending the mandatory educational in-service would result in disciplinary action (See Appendix G for the protocol).

SECTION II: DNP PROJECT PRODUCT

Professional Journal Selection

Aim of Journal

The main aim of the *Journal of Vaccines & Vaccination* (JVV) is to publish high quality research works and provide Open Access to the articles using this platform. The Journal offers a rapid and time bound review and publication that freely disseminates research findings related to Vaccines & Vaccination. The *Journal of Vaccines & Vaccination* caters to the requirements of the medical practitioners, researchers, lab professionals, students, academicians, and industry that is involved in Medical and clinical studies. No matter how prestigious or popular; it increases the visibility and impact of published work. It increases convenience, reach, and retrieval power. Free online literature software facilitates full-text searching, indexing, mining, summarizing, translating, querying, linking, recommending, alerting, "mash-ups" and other forms of processing and analysis.

All works published by OMICS Group are under the terms of the Creative Commons Attribution License. This permits anyone to copy, distribute, transmit and adapt the work provided the original work and source is appropriately cited. The *Journal of Vaccines & Vaccination* strongly supports the Open Access initiative. All published articles will be assigned DOI provided by Cross Ref. JVV will keep up-to-date with latest advances in the field of Vaccines & Vaccination. Abstracts and full texts (HTML, PDF and XML format) of all articles published by JVV are freely accessible to everyone immediately after publication. JVV supports the Bethesda Statement on Open Access Publishing. (See Appendix H for Author Instructions).

Compliance of the Influenza Vaccination amongst Healthcare Personnel

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Abstract

Introduction: In today's present day of health concerns, the influenza virus is stated to be a serious issue that affects all individuals throughout the world. The influenza virus is stated to have numerous possibilities of complications that may occur depending upon the severity of the case and the health state of the individual (Kimura et al., 2007).

Objective: The purpose of the DNP project is to increase compliance rates amongst healthcare personnel with the uptake of the annual influenza vaccination through attending mandatory influenza vaccination educational in-services. *Methods:* This is a quasi-experimental design using descriptive data in order to assess the uptake of the influenza vaccination amongst healthcare personnel at a southwest suburban facility in Illinois between the time frame of April 2018 and May 2018. *Results:* One hundred percent of healthcare personnel and office staff attended an in-service regarding the annual influenza vaccination. This objective was met. One hundred percent of participants received the annual influenza vaccination. Objective met.

Conclusion: Incorporating mandatory influenza vaccination educational in-services increase compliance rates amongst healthcare personnel with the uptake of the annual influenza vaccination.

Keywords: Influenza vaccine compliance in workplace, education in-services, influenza vaccine, mandatory influenza vaccination amongst health care personnel; educational influence on influenza vaccine amongst healthcare personnel; mandating influenza vaccine; influenza vaccine compliance rates.

Introduction

In today's present day of health concerns, the influenza virus is stated to be a serious issue that affects all individuals throughout the world (Kimura et al., 2007). "Despite the colloquial use of the term flu for wintertime infections, influenza is a serious infection causing substantial morbidity and mortality worldwide and resulting in approximately 250,000 to 500,000 deaths per year" (Tosh, Boyce, & Poland, 2008, p. 77). According to the CDC, the influenza virus causes more than 200,000 people to be hospitalized each year in the United States (CDC, 2011). The influenza virus is known for having the potential of leading to serious complications, hospitalizations, even demise in the world population. The virus is easily transmissible from one person to another, making it difficult to control it (Tosh, Boyce, & Poland, 2008). The influenza virus is stated to have numerous possibilities of complications that may occur depending upon the severity of the case and the health state of the individual. Understanding the influenza virus and the nature of how it is transmitted from one person to another is of great importance. For this reason, the influenza vaccine is necessary amongst healthcare personnel in order to help keep the virus from spreading from one individual to another. The influenza virus is known to have caused many complications and even deaths to a vast majority of individuals throughout the world. It is for this reason the influenza vaccine is of utmost importance when it comes to significantly impacting the individuals of the world in preventing the spread of the virus. Evaluating the potential benefit to mandating an influenza vaccination educational in-service amongst healthcare personnel is crucial in understanding the necessity of incorporating this within the healthcare organization. The influenza vaccine is the best way to prevent the influenza virus and it

is of great importance for all healthcare personnel to understand the benefits for the sole promotion of increasing compliance rates (Tosh, Boyce, & Poland, 2008). Conducting an evaluation in incorporating mandatory educational in-services amongst office staff is necessary to understand if this will help increase compliance rates. The mandate of the influenza vaccination educational in-service would help promote higher compliance rates amongst healthcare personnel and office staff (Booy et al., 2011). Mandating the influenza vaccination educational in-service amongst all employees is imperative and substantial when needing all healthcare personnel/office staff to fully comply with the urgency of increasing compliance rates (Booy et al., 2011).

Literature

According to the Hubble et al., (2011), a study was conducted to assess the uptake of the influenza vaccination amongst healthcare personnel. The study tested the knowledge, attitudes, beliefs, vaccination status, illness history, and work patterns were noted amongst the healthcare personnel. A cross-sectional survey of North Carolina EMS professionals was conducted after the influenza season of 2007-2008. A total of 601 EMS professionals participated in the study and completed the survey. Findings indicated 47.9% received the influenza vaccination. Only 9.1% supported the mandate of the influenza vaccination. This study revealed a very low uptake of the influenza vaccination due to perceptions of the influenza vaccination amongst EMS professionals. Further education was recommended pertaining to the influenza vaccination (Hubble et al., 2011).

According to Kimura et al., (2007), a study was conducted investigating the barriers to the influenza vaccination among employees located at a long-term care facility in

Southern California. Within the study, effective interventions were developed to increase the uptake of the influenza vaccination amongst healthcare personnel. Healthcare personnel took a survey pertaining to their attitude and knowledge in regards to the influenza vaccination and influenza virus. Seventy facilities were recruited to partake in the study and were randomly assigned to four groups. An educational campaign and Vaccine Day were established to help combat any misconceptions and barriers to receiving the influenza vaccination. The study resulted in a positive outcome when using the combination of both the educational campaign and the Vaccine Day. According to the study, 53% of participants adhered to the influenza vaccination after participating in both services compared to a 27% control group. In conclusion, incorporating both educational campaign and Vaccine Day improved the compliance rates of receiving the influenza vaccination. There was indeed a direct correlation amongst informing the healthcare staff regarding the importance of receiving the influenza vaccine and compliance with partaking in receiving the influenza vaccine. The educational factors regarding the vigilance of receiving the influenza vaccine play a tremendous role in keeping the members of the healthcare compliant with current guidelines (Kimura et al., 2007).

Methodology

Design and Sample

This was a quasi-experimental design using descriptive statistics in order to assess the uptake of the influenza vaccination amongst healthcare personnel. All races and ethnicities were included in the sample. The sample included registered nurses, medical

assistants, healthcare staff, doctors, secretarial/office staff, and janitorial staff 18 years of age and above.

Location

The location of the project was held at a southwest suburban healthcare clinic in Illinois from April 2018 to May 2018. The name of the clinic the project was conducted was Premier Medical Care LTD.

Procedure

Once prospective participants have agreed to participate, they were asked to complete the informed consent form. Once consent was given, the participants completed the demographic form and the Pre-educational Influenza Vaccine In-service Questionnaire. Each participant attended the education session on the scheduled date. Power points slides were used for the face to face education session. Once they have attended the education session, the participant took a Post-educational Influenza Vaccine In-service Questionnaire. They were handed a card to take with them when they get the influenza vaccine and the card was signed by the person giving the vaccine once they have received the influenza vaccine. The participant will give the card to the PI. The PI recorded on the tally sheet each participant (using a de identified code number) who has attended the educational in-service and those who have received or declined the annual influenza vaccination.

Data Collection

The Pre-Educational Influenza Vaccine In-Service Questionnaire (See Appendix B) and the Post-educational Influenza Vaccine In-Service Questionnaire (See Appendix C) included the same 10 questions relating to the participant's perspective pertaining to

the influenza vaccination. The questionnaires were investigator derived. Six of the questions required a response of Yes or No answers. One question required a response of what job title they hold, ranging from registered nurses, medical assistants, healthcare staff, doctors, secretarial/office staff, and janitorial staff. One question required a response of very likely, likely, and not likely. One question required a response of yes, no, or maybe. Also, one question required a response pertaining to contraindications listing allergy, religious/personal beliefs, or other.

Results

Five participants (24.5%) of the sample ranged in age from 36 years of age to 45 years of age. Twelve participants (70.6%) of the sample ranged in age from 46 years of age to 55 years of age. All participants were Caucasian and female. Sixteen participants (94.1%) were registered nurses, medical assistants, or healthcare staff. One participant was secretarial staff 5.9% (n=1). No participants reported any disabilities.

Prior to the educational in-service, 58.8% of participants believed in receiving the annual influenza vaccination for prevention. However, after the in-service, 100% of participants believed the annual influenza vaccination prevented the influenza virus. Prior to the in-service, 41.2% of participants stated they were not likely to receive the influenza vaccination. After the educational in-service, 0% of participants stated they will be not likely to receive the influenza vaccination, thus, leaving for 100% of participants who were very likely and likely to receive the annual influenza vaccine. The educational in-service regarding the influenza vaccine was helpful to 100% of the participants. One hundred percent of participants in this project recommended the influenza vaccination to family and friends.

Discussion

This project demonstrated that an in-service has the potential to increase compliance. Prior studies have reported a very low uptake of the influenza vaccination due to perceptions of the influenza vaccination amongst EMS professionals. Further education was recommended pertaining to the influenza vaccination (Hubble et al., 2011). The project showed a 100% compliance rate of healthcare personnel receiving the influenza vaccination. According to Hubble et al. (2011), findings indicated 47.9% received the influenza vaccination. The study tested the knowledge, attitudes, beliefs, vaccination status, illness history, and work patterns were noted amongst the healthcare personnel. This revealed how providing educational insight provided clarity amongst healthcare personnel, thus increasing the uptake of the influenza vaccination (Hubble et al., 2011).

According to Kimura et al., (2007), a study was conducted incorporating effective interventions to increase the uptake of the influenza vaccination amongst healthcare personnel. The study resulted in a positive outcome when using the combination of both the educational campaign and the Vaccine Day. According to the study, 53% of participants adhered to the influenza vaccination after participating in both services compared to a 27% control group. The project conducted also shown a significant increase in the amount of healthcare personnel receiving the annual influenza vaccination after incorporating an educational in-service. According to Kimura (2007), incorporating both educational campaign and Vaccine Day improved the compliance rates of receiving the influenza vaccination. There was indeed a direct correlation amongst informing the healthcare staff regarding the importance of receiving the influenza vaccine and

compliance with partaking in receiving the influenza vaccine. The educational factors regarding the vigilance of receiving the influenza vaccine play a tremendous role in keeping the members of the healthcare compliant with current guidelines (Kimura et al., 2007).

Overall, the educational in-service proved to show a 100% uptake of the influenza vaccination amongst all participants of the study. Providing insight and educational in-services has shown to positively impact healthcare personnel in adhering to the influenza vaccination. Incorporating educational in-services helps promote clarity and understanding of the content being addressed, thus causing an increased compliance rate amongst healthcare personnel.

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Table 1
Demographics (n=17)

Demographic Headings	Results
Age	Age range 36-45 = 29.4% (n=5) Age range 46-55 = 70.6% (n=12)
Race/Ethnicity	Caucasian 100%
Gender	Female 100%
Job Title	Registered Nurses/Medical assistants/Healthcare staff 94.1% (n=16) Secretarial staff 5.9% (n=1)
Disability	No disability 100%

Table 2

Pre Questionnaire and Post Questionnaire

Question	Pre Test % (n)	Post Test % (n)
2. Do you believe in receiving the annual influenza vaccination for prevention?	Yes 58.8% (n=10) No 41.2% (n=7)	Yes 100% (n=17) No 0% (n=0)
3. Does the influenza vaccination cause the influenza virus?	Yes 17.6% (n=3) No 82.4% (n=14)	Yes 11.8% (n=2) No 88.2% (n=15)
4. Do you believe the influenza virus is a serious issue?	Yes 58.8% (n=10) No 41.2% (n=7)	Yes 94.1% (n=16) No 5.9% (n=1)
5. Have you attended educational seminars pertaining to the influenza vaccination?	Yes 64.7% (n=11) No 35.3% (n=6)	Yes 100% (n=17) No 0% (n=0)
6. How likely are you to receive the influenza vaccination annually?	Very Likely 5.9% (n=1) Likely 58.8% (n=9) Not Likely 41.2% (n=7)	Very Likely 52.9% (n=9) Likely 47.9% (n=8) Not Likely 0% (n=0)
7. Do you receive the annual influenza vaccination every year?	Yes 47.1% (n=8) No 52.9% (n=9)	Yes 47.1% (n=8) No 52.9% (n=9)
8. Are there any contraindications that would cause you to not be a candidate to receive the annual influenza vaccination?	Yes 5.9% (n=16) No 94.1% (n=1)	Yes 11.8% (n=2) No 88.2% (n=15)
9. If yes, what are the contraindications?	100% no contraindications (n=17)	100% no contraindications (n=17)
10. Would you recommend family and friends to receive the annual influenza vaccination?	Yes 47.1% (n=8) No 35.4% (n=6) Maybe 17.6% (n=3)	Yes 100% (n=17) No 0% (n=0) Maybe 0% (n=0)

APPENDIX A



March 28th 2018

Elaina Parlapanis
College of Nursing
University of Alabama in Huntsville

<input type="checkbox"/> Expedited (see pg 2)
<input checked="" type="checkbox"/> Exempted (see pg 3)
<input type="checkbox"/> Full Review
<input type="checkbox"/> Extension of Approval

Dear Ms. Parlapanis,

The UAH Institutional Review Board of Human Subjects Committee has reviewed your proposal, *Policy Development to Increase Compliance of the Influenza Vaccination amongst Healthcare Personnel*, and found it meets the necessary criteria for approval. Your proposal seems to be in compliance with this institutions Federal Wide Assurance (FWA) 00019998 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Please note that this approval is good for one year from the date on this letter. If data collection continues past this period, you are responsible for processing a renewal application a minimum of 60 days prior to the expiration date.

No changes are to be made to the approved protocol without prior review and approval from the UAH IRB. All changes (e.g. a change in procedure, number of subjects, personnel, study locations, new recruitment materials, study instruments, etc) must be prospectively reviewed and approved by the IRB before they are implemented. You should report any unanticipated problems involving risks to the participants or others to the IRB Chair.

If you have any questions regarding the IRB's decision, please contact me.

Sincerely,



Bruce Stallsmith
IRB Chair
Professor, Biological Sciences

Expedited:

- Clinical studies of drugs and medical devices only when condition (a) or (b) is met. (a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review. (b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.
- Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows: (a) from healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or (b) from other adults and children, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.
- Prospective collection of biological specimens for research purposes by noninvasive means. Examples: (a) hair and nail clippings in a nondisfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.
- Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications).
- Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).
- Collection of data from voice, video, digital, or image recordings made for research purposes.

Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Exempt

Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (a) research on regular and special education instructional strategies, or (b) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods. The research is not FDA regulated and does not involve prisoners as participants.

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interviews, or observation of public behavior ¹ in which information is obtained in a manner that human subjects cannot be identified directly or through identifiers linked to the subjects and any disclosure of the human subject's responses outside the research would NOT place the subjects at risk of criminal or civil liability or be damaging to the subject's financial standing, employability, or reputation. The research is not FDA regulated and does not involve prisoners as participants.

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement) survey procedures, interview procedures, or observation of public behavior if (a) the human subjects are elected or appointed public officials or candidates for public office, or (b) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter. The research is not FDA regulated and does not involve prisoners as participants.

Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. The research is not FDA regulated and does not involve prisoners as participants.

Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs. The protocol will be conducted pursuant to specific federal statutory authority; has no statutory requirement for IRB review; does not involve significant physical invasions or intrusions upon the privacy interests of the participant; has authorization or concurrent by the funding agency and does not involve prisoners as participants.

Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture. The research does not involve prisoners as participants.

¹ Surveys, interviews, or observation of public behavior involving children cannot be exempt.

Appendix B



550 E. Boughton Rd. #140
Bolingbrook, IL. 60440

630-972-0733

01/22/2018

Re: Clinic Process for Elaina Partapanis

To Whom it may Concern:

I am writing this letter to confirm that Premier Medical Care Limited/ Premier Occupational Health is supporting your project at our facility. One of our providers, Dr. George Pitsilos will assist in the clinic process. We will just need to know the start date. If you have any questions, please feel free to contact me at any time.

Sincerely,

A handwritten signature in black ink, appearing to read "Nuria S. Gean".

Nuria S. Gean
Manager of Occupational Health

Appendix C

Pre-educational Influenza Vaccine In-service Questionnaire

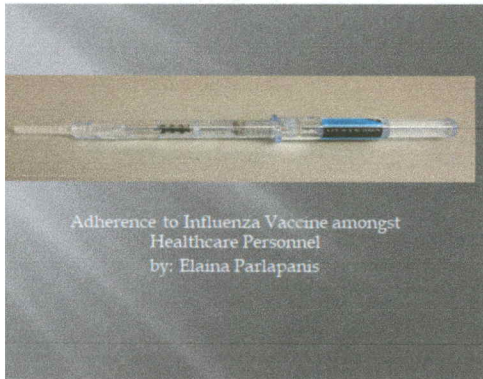
1. What is your job title?
Registered Nurses/Medical assistants/Healthcare staff
Doctors
Secretarial/Office staff
Janitorial staff
2. Do you believe in receiving the annual influenza vaccination for prevention?
Yes
No
3. Does the influenza vaccination cause the influenza virus?
Yes
No
4. Do you believe the influenza virus is a serious issue?
Yes
No
5. Have you attended educational seminars pertaining to the influenza vaccination?
Yes
No
6. How likely are you to receive the influenza vaccination annually?
Very Likely
Likely
Not Likely
7. Do you receive the annual influenza vaccination every year?
Yes
No
8. Are there any contraindications that would cause you to not be a candidate to receive the annual influenza vaccination?
Yes
No
9. If yes, what are the contraindications?
Allergy
Religious/Personal beliefs
Other
10. Would you recommend family and friends to receive the annual influenza vaccination?
Yes
No
Maybe

Appendix D

Post-educational Influenza Vaccine In-service Questionnaire



1. What is your job title?
Registered Nurses/Medical assistants/Healthcare staff
Doctors
Secretarial/Office staff
Janitorial staff
2. Do you believe in receiving the annual influenza vaccination for prevention?
Yes
No
3. Does the influenza vaccination cause the influenza virus?
Yes
No
4. Do you believe the influenza virus is a serious issue?
Yes
No
5. Have you attended educational seminars pertaining to the influenza vaccination?
Yes
No
6. How likely are you to receive the influenza vaccination annually?
Very Likely
Likely
Not Likely
7. Do you receive the annual influenza vaccination every year?
Yes
No
8. Are there any contraindications that would cause you to not be a candidate to receive the annual influenza vaccination?
Yes
No
9. If yes, what are the contraindications?
Allergy
Religious/Personal beliefs
Other
10. Would you recommend family and friends to receive the annual influenza vaccination?
Yes
No
Maybe

Appendix E




Discussion of Problem


- Healthcare personnel refusing to adhere to receiving the yearly influenza vaccine due to personal, religion, and other health related issues
- Risk for patients, spread of infection to others including other members of the healthcare team



Introduction




- The influenza virus is a serious issue that has potential to lead to complications, including death (Tosh, Boyce, & Poland, 2008)
- It is for this reason, the influenza vaccine should be mandatory for all healthcare personnel (Ahmed et al., 2010)
- The most vulnerable populations who are at risk of severe complications consist of the elderly, young children, and the immunocompromised (Tosh, Boyce, & Poland, 2008)
- Healthcare personnel who adhere to receiving the influenza vaccine help prevent the spread of the virus and possible morbidities throughout the world (Rebmann et al., 2012)
- Approximately 250,000 to 500,000 deaths per year occur due to complications from the influenza virus (Tosh, Boyce, & Poland, 2008)




Background/History

- According to Tosh, Boyce, & Poland (2008), "The influenza pandemic of 1918 claimed many more lives than World War I" (p. 77).
- "Almost all new influenza viruses originate in China because of that country's particular ecology and lack of standardized farm sanitary standards. Influenzas of all kinds begin as harmless viruses carried by aquatic migratory birds. The viruses do not affect the birds, but they are passed on to humans and other birds through the animals' feces and urine." (Flu Shots for the Elderly May Not Work, 2004, p. 1)
- "Those farm animals are usually housed together, where many territorial fights break out among the birds. These birds spread their own viruses, which in turn can be spread to swine, which act as "viral mixing vessels." The influenza virus percolates inside swine because of their unique genetic makeup. Eventually, the swine may pass the influenza to humans" (Flu Shots for the Elderly May Not Work, 2004, p. 1)
- Due to the severity of the influenza virus, the influenza vaccination came about in 1949 (Immunization Info, 2010)
- In 2009, a monovalent vaccine was introduced separately from the original flu vaccine because the viral strain was recognized later within the flu season, therefore, it was too late for the inclusion of the seasonal vaccines (Immunization Info, 2010)




Discussion of Problem

- In today's society, the influenza virus is known to be a very serious illness and should not be taken lightly.
- "Despite the colloquial use of the term flu for wintertime infections, influenza is a serious infection causing substantial morbidity and mortality worldwide and resulting in approximately 250,000 to 500,000 deaths per year" (Tosh, Boyce, & Poland, 2008, p. 77).
- The influenza virus is known for having the potential of leading to serious complications, hospitalizations, even demise in the world population.
- The virus is easily transmissible from one person to another, making it difficult to control it.



Influenza Virus



- According to Immunization Info (2010), "Influenza A viruses also have remarkable potential for variation, mutating rapidly and also by being able to mix genetic material with influenza viruses from other species of birds and animals." Therefore, the influenza vaccine must adapt to all circulating strains that are constantly changing causing the influenza vaccine to change as well.
- The influenza B virus is known not to change much over time (Immunization Info, 2010).

Types of Influenza Vaccines

- The flu shot is an injectable vaccine (containing killed virus) that is given with a needle, usually in the arm. The nasal-spray flu vaccine is a vaccine made with live weakened flu viruses that do not cause the flu (sometimes called Live Attenuated Influenza Vaccine) (Fact Sheet: Key Facts about Influenza Vaccine, 2007, p. 7).
- The flu vaccine is approved for those who are 6 months of age or older, which includes healthy individuals and those with chronic medical conditions (Fact Sheet: Key Facts about Influenza Vaccine, 2007).
- According to Immunization Info (2010), "in June of 2009, a live, attenuated, cold-adapted, temperature sensitive, trivalent influenza virus vaccine (LAIV) was licensed in the United States. The temperature sensitive type A and B strains of influenza virus contained in LAIV multiply in the nasal passages but not in the lower respiratory tract" (p. 1).
- The nasal-spray influenza vaccine "is approved for use in healthy people 5 years to 49 years of age who are not pregnant" (Fact Sheet: Key Facts about Influenza Vaccine, 2007, p. 7).
- A new trivalent inactivated vaccine became available in 2010 in a high dose formula for those who are 65 years or older (Immunization Info, 2010). This FluZone High-Dose contains four times the amount of influenza antigens than the other TIVs in order to induce a higher immune response in older people who are most susceptible to the complications of seasonal influenza but who respond well to the vaccine (Immunization Info, 2010).



Age and Influenza Vaccine

- In the population, above 65 years of age, the flu vaccine is 30-70% effective in preventing hospital occurrences, unless their residence is a nursing home, which drops the effectiveness to 50-60% (Smith, P., 2004).

Influenza Vaccine's Current Impact on Individuals/Community

- Each year, an influenza vaccine is introduced in order to combat the upcoming flu season.
- According to the CDC, the influenza vaccine is the best way to prevent the influenza virus, however, protection of the virus is not 100% effective (CDC, 2011).
- The influenza vaccine is 70% to 90% effective in young, healthy individuals (CDC, 2011).
- According to a study conducted in 2007-2008 flu season, the influenza vaccine was effective in 7 out of 10 people from the influenza virus (CDC, 2011).
- In the overall population, including all age groups, the effectiveness of the influenza vaccine was about 60% in 2010-2011 influenza season (CDC, 2011).



Solution to Problem

- Increasing compliance rates amongst all healthcare personnel in receiving the influenza vaccine
 - Promote a safe environment for immunocompromised patients
 - Provides immunity against the influenza virus



Factors that Play a Role in Influenza Vaccine Effectiveness

- 1) Age and health of an individual getting vaccinated (CDC, 2011)



- 2) How well the match of the influenza vaccine is to the circulating influenza virus spreading in the (CDC, 2011)

Implications for the Members of the Healthcare Team

- Currently, all health care facilities recommend all health care personnel receive the annual influenza vaccine. As of today, most hospitals and healthcare facilities are mandating influenza vaccines for all healthcare personnel. This is one solution to increase immunity amongst healthcare professionals and prevent transmission of the virus from person to person.
- Having more healthcare employees vaccinated will help deter the transmission of the virus from one person to another. Also, it is important for healthcare personnel to protect the well being of those who are hospitalized. Having healthcare personnel receive the influenza vaccine will help keep the patient's risk from contracting the flu virus to a minimum.
- Being in a hospital/healthcare setting, it is especially important to provide appropriate, quality care for all patients, thus receiving the influenza vaccine plays an important role in doing so. It is an obligation and duty for all healthcare personnel to protect all patients and receiving the influenza vaccination helps accomplish such goals.



Members to Implement Plan

- All members of the healthcare team: To promote a safe environment for all healthcare personnel, patients, etc by decreasing the rate of transmission through immunity

- RNs
- Doctors
- CNAs
- LPNs
- Phlebotomists
- Respiratory Therapists
- Physical/Occupational Therapists, etc.



Steps of Action Plan

- Ongoing educational in-services and flyers will be dispersed on the importance of adhering to influenza vaccine (Jackson-Lee, Barr, & Randall, 2016).
- All educational in-services are mandatory for healthcare personnel to attend
- Provide free influenza vaccine for all members of the healthcare team (Sawyer et al., 2012)



Compliance of Influenza Vaccinated Employees

However, even though the vaccination is mandatory for all employees, there are still gaps within the organization because employees from business were not vaccinated. This study that "The mandatory vaccination rate for health care professionals is only approximately 60%." (Cox, J. A., Brown, J. G., & Palmer, G. A., 2002, p. 11) This can be due to various reasons which begins with each diverse group of individuals. Due to some religious beliefs, the influenza vaccine is declined amongst health care personnel. Thus, decreasing the compliance rate.

According to the article "The Influenza Vaccine Update" (2011), the influenza vaccine should be provided for those with severe allergic reactions. Some of the other developed countries have implemented or those who have developed a reaction to the influenza vaccine on the part.

Also, those who have had a severe reaction to the influenza vaccine prior should not receive the influenza vaccine (Ad Hoc, 2011). For 2011, about 100,000 influenza A vaccine.

Also, some nurses deliver the influenza vaccine but lack of education about the vaccine. Some nurses do the work but believe the flu shot can give them the flu, however, this is simply a false myth and misconception. (2012, p. 9).

The conclusions:

The flu shot cannot get the flu from the flu vaccine. The vaccine itself is a live vaccine, meaning you are not being injected with the flu virus and, thus, there is no way you can contract the flu from the vaccine. If you do get the flu in the few weeks prior to getting the flu shot, it takes time for your immune system to build and you have contracted the flu virus before your body has a chance to respond. It is therefore vital to get the flu shot early, before the flu season is in full swing. The flu shot may get ahead of you on the ground before you're infected. This is reported as that it would help produce the antibodies against the flu, which is the whole point of the vaccination. It is not you developing the flu. (The Vaccine Myths and Misconceptions, 2012, p.9)



Conclusion

- Overall, the influenza vaccine is highly recommended amongst individuals of all ages, especially health care personnel.
- The influenza vaccine is 70% to 90% effective in young, healthy individuals (CDC, 2011).
- If the viruses in the community and vaccine match, there is substantial benefits from the vaccine in preventing the influenza virus (CDC, 2011).
- MAKE SURE TO GET YOUR INFLUENZA VACCINE!!



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Appendix F

#1

Have you received the influenza vaccination this year? Please select one.

Yes

No

If not, please explain why not?

What is your job title?

Registered Nurses/Medical assistants/Healthcare staff

Doctors

Secretarial/Office staff

Janitorial staff

Appendix G

POLICY

PURPOSE:

The purpose of this policy is to increase awareness of the seriousness of the influenza virus and increase the compliance rate of the influenza vaccination amongst healthcare personnel utilizing mandatory educational in-services and incorporating a policy to mandate all individuals to attend.

POLICY:

Employees (full time, part time, per diem, PRN, seasonal, occasional), employed physicians, nurses, office staff, and janitorial staff will be required to attend a mandatory educational in-service regarding the influenza vaccination in order to promote increased compliance rates amongst healthcare personnel.

Appendix H

Journal of Vaccines & Vaccinations

Article Preparation Guidelines

Authors are expected to attach an electronic covering letter completely mentioning the type of manuscript (e.g, Research article, Review articles, Brief Reports, Case study etc.) Unless invited on a special case, authors cannot classify a particular manuscript as Editorials or Letters to the editor or concise communications.

Confirm that each individual named as an author meets the uniform requirements of the Journal of Vaccines & Vaccines criteria for authorship.

Please make sure that the article submitted for review/publication is not under consideration elsewhere simultaneously.

Clearly mention financial support or benefits if any from commercial sources for the work reported in the manuscript, or any other financial interests that any of the authors may have, which could create a potential conflict of interest or the appearance of a conflict of interest with regard to the work.

A clear title of the article along with complete details of the author/s (professional/institutional affiliation, educational qualifications and contact information) must be provided in the title page.

Corresponding author should include address, telephone number, fax number, and e-mail address in the first page of the manuscript and authors must address any conflict of interest with others once the article is published.

Number all sheets in succession, including references, tables, and figure legends.

Title page is page 1. On the first page, type the running head (short title for top of each page), title (which cannot include any acronyms), names of the authors and their academic degrees, grants or other financial supporters of the study, address for correspondence and reprint requests, and corresponding author's telephone and fax numbers and e-mail address.

Guidelines for Research Articles

Research articles are articles written based on the empirical/secondary data collected using a clearly defined research methodology, where conclusion/s is drawn from the analysis of the data collected.

The information must be based on original research that adds to the body of knowledge in Vaccines & Vaccination.

Article/s should provide a critical description or analysis of the data presented while adding new and rapidly evolving areas in the field.

Include an abstract of at least 300 words with 7 to 10 important keywords.

The abstract should be divided into Objective, Methods, Results, and Conclusion.

Research articles must adhere to a format constituting the introduction followed by a brief review of relevant literature, methodology applied (to collect the data), discussion and References, Tables, and Figure Legends (JVV, 2017).