UNIVERSITY OF CALIFORNIA,
IRVINE

Influenza Vaccination Education Strategy in the Emergency Department

DNP Scholarly Project Paper

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF NURSING PRACTICE

in Nursing Science

by

Paola H. German

DNP Project Team:
Professor Mark Lazenby, Chair
Clinical Professor Susanne Phillips
Clinical Assistant Professor Angela Jun

2022

DEDICATION

To

my parents and friends

for their endless love, support, and encouragement throughout this journey.

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

I would like to express my profound appreciation to the following people, all of whom were instrumental in the success of my project:

My committee chair, Dean and Professor Mark Lazenby, for his enlightening encouragement, enthusiasm, and insightful feedback about my project.

My Prior Chair, Associate Dean and Clinical Professor Susanne Phillips, for her guidance and support in the development and implementation of my project, and for being an inspirational role model.

My Committee Member, Clinical Assistant Professor Angela Jun, for her tireless support, which she always offered with grace and compassion.

My Site Mentor, Isabel Algaze-Gonzalez, MD, for her support and engagement since the very first day we discussed the project topic.

I would also like to recognize the University of California, Irvine Medical Center Emergency Department for their support, including the UCI ED management, the ED educator, the ED pharmacists, the Registered Nurses, and the Nurse Practitioners who gracefully supported this project despite the challenges faced due to the COVID-19 pandemic.

VITA

Paola H. German

2005-11	Surgical Technician, United States Army Reserve, Los Angeles, CA
2006-2009	Instrument Technician, Hoag Memorial Hospital, Newport Beach, CA
2009	Associate Degree in Nursing, Santa Ana College, Santa Ana, CA
2009-12	Emergency Department Registered Nurse, St. Joseph Hospital, Orange, CA
2011	Bachelor of Science in Nursing, Azusa Pacific University, Azusa, CA
2012-22	Trauma/Emergency Department Registered Nurse
	University of California Medical Center, Irvine, CA
2022	Doctor of Nursing Practice, Family Nurse Practitioner
	University of California, Irvine, CA

FIELD OF STUDY

Doctor of Nursing Practice, Family Nurse Practitioner in Nursing Science

ABSTRACT OF THE DNP SCHOLARLY PROJECT PAPER

Influenza Vaccination Education Strategy in the Emergency Department

by

Paola H. German

Doctor of Nursing Practice, Family Nurse Practitioner in Nursing Science

University of California, Irvine, 2022

Professor Mark Lazenby, Chair

The influenza virus can cause severe illness and create a significant economic burden. Despite efforts to promote influenza vaccinations in the United States (U.S.), vaccination rates remain below the 70% target established by Healthy People 2030, a national effort that sets objectives for improving the health of the people living in the U.S. Lack of awareness, misperceptions and limited accessibility to influenza vaccination have been proposed as contributors to the underachievement of ideal influenza vaccination rates. The Emergency Department (ED) serves many people with public health or no insurance, with limited healthcare access and unmet medical needs, making it the only point of contact for healthcare needs for many. An opportunity to educate this population about the importance of vaccinations may lie in the ED. However, EDs are missing efficient strategies to enhance vaccination awareness. This project deployed a novel influenza vaccine educational strategy in a Level I trauma center that is also an academic ED. The simple, cost-effective educational strategy aimed to increase patient willingness to become vaccinated without disrupting the clinical flow. Provider education, recommendation and a written handout were used to reach out to this population. Patients' willingness to receive an influenza vaccination increased to 72% post-intervention from 29% pre-intervention. The same vaccine educational strategy can be applied to other vaccines and in other EDs to increase vaccination willingness in underserved populations.

CHAPTER 1: INTRODUCTION

Influenza Vaccination Education Strategy in the Emergency Department

The influenza virus can cause severe illness and create significant economic burden (Centers for Disease Control and Prevention [CDC], 2021). Despite efforts to promote influenza vaccinations, the rate for influenza vaccination during season 2020-2021 was 52.1% in the U.S., considerably below the 70% target established by Healthy People 2030 (ODPHP, n.d.). Lack of awareness, misperceptions and limited accessibility to influenza vaccinations are contributors to the underachievement of ideal influenza vaccination rates (Nowak et al., 2015). Since Emergency Departments (ED) serve a higher number of patients with limited access to daily, routine healthcare, an opportunity to address these barriers to influenza vaccination may lie within EDs.

Background/Significance

The CDC (2021) proposes influenza vaccines as the most efficient way to prevent risks associated with influenza diseases such as pneumonia, acute respiratory distress syndrome, and even death. Moreover, the CDC recommends that everyone older than six months receive influenza vaccinations each year unless contraindications exist, such as allergies to any ingredient in the influenza vaccine, including gelatin or antibiotics.

For 2015, the economic burden to the U.S. healthcare system due to influenza was approximately $11.2 billion (Putri et al., 2018). During the 2019-2020 influenza season, the CDC (2020) estimated about 39-56 million influenza illnesses, 410-740 thousand influenza-related hospitalizations, and 24-62 thousand influenza deaths. Many of these hospitalizations and deaths may have been prevented with the influenza vaccine.

Influenza vaccinations have been given to the population since 1957, with extensive research supporting its safety (CDC, 2021). They are given every year at the beginning of the influenza season which starts as early as October and can continue through May. During the last influenza season 2020-2021, vaccination rates increased to 52.1% in the U.S. from 48.4% the prior season (CDC, 2021). Even

though there was a positive change in vaccination uptake, the rate still does not meet the optimal rate of 70% established by Healthy People 2030 (ODPHP, n.d.).

The Vaccine Recommendation and Guidelines from The Advisory Committee on Immunization Practices (ACIP, 2017) proposed that the biggest challenge in obtaining target vaccination rates is limited awareness of vaccines among adult patients and providers. Other studies, such as Nowak et al. (2015), also highlight the lack of awareness, misperceptions, and limited accessibility to influenza vaccination as contributors to the underachievement of ideal influenza vaccination rates.

Understanding the population that utilizes the ED is essential as it may decrease the barriers causing sub-optimal influenza vaccination rates. According to McConvile et al. (2019), people with public health insurance are the ones with the most use of ED services, followed by the uninsured. Reasons suggested for this population's overuse of emergency services may be related to limitations in transportation, appointments with primary care providers, and access to resources other than EDs. The National Health Survey published by the CDC (Gindi et al., 2012) estimated that 79.9% of adults between 18-64 years old went to the ED because of their limited access to other providers. The same survey also found that adults with unmet healthcare needs are more likely to visit the ED.

Furthermore, approximately 90% of ED patients under 65 years are considered outpatient and discharged the same day. Also, patients being admitted to the hospital represent 10% of ED visits (McConvile et al., 2019). Many of these patients who seek care in EDs for less severe illnesses are described as low acuity patients. These patients are primarily treated in the ED fast-track area. Fast-track is an area in the ED where patients with lower acuity illness are rapidly seen and discharged by an ED fast-track provider. These ED visits are a unique opportunity to provide patients with vaccine education and recommendation.

Vaccinating healthy, young, working adults translates into less cases of upper respiratory illness, less sick days form work, and fewer doctor’s office visits for upper respiratory complaints (Nichol et al.,1995). These results reduce the economic burden and support overall patient health.

Problem Statement

The need to overcome vaccination barriers and facilitate vaccine access to underserved communities and high-risk patients has been the focus throughout the COVID-19 pandemic (CDC, 2021). As discussed earlier, the ED serves many people with public health or no insurance, with limited healthcare access and unmet healthcare needs (McConvile et al., 2019). According to the Community Health Needs Assessment (2019) conducted by the University of California Irvine Medical Center (UCIMC) for Orange County, approximately 87.7% of the population is insured, with 37% relying on public health programs such as Medi-Cal, Medicare, and others. Another 12.3% of the population reported no access to care. In addition, the Community Health Needs Assessment Survey (2019) also reported that the influenza vaccination rate in Orange County was 40.9% in 2016. Orange County represents the third most populated county in California.

The ED provides the population it serves with a unique opportunity for patient education about influenza vaccines (Ozog et al., 2020). However, this unique opportunity is not utilized at this Level I trauma center and academic ED in Orange County. Patients who present to the ED are screened for vaccination status, including the influenza vaccine, during their first point of clinical contact with a Registered Nurse (RN) at the time of arrival. There is no follow-up provided for patients who report that they are not current in their vaccinations, potentially missing the only opportunity to provide vaccine education or vaccinate a patient who otherwise would not have access to it.

The problem this project addresses is that, among the population who use the fast-track area of the ED for their healthcare needs, opportunities are missed to educate them about influenza vaccination.

The project question is: Will a new influenza vaccination education strategy deployed by RNs and Nurse Practitioners (NPs) in the fast-track area of an academic ED increase the willingness to receive the influenza vaccine in fast-track patients who initially were not willing to receive one?

CHAPTER 2: Body of Evidence

Review of the Literature

Search Process

An extensive publication search and review utilized PubMed, CINAHL, and Google Scholar databases. The key search terms included "influenza vaccine", "influenza OR flu", "vaccine", "vaccination", "immunization", "vaccination campaign", "immunization program", "strategies OR methods OR techniques", "emergency department OR emergency medical services", "treatment refusal OR declined", and "education". Research articles from 1995 to 2021 and only in the English language were eligible for inclusion. Included in the search were international articles and articles including the pediatric population. By examining the reference lists of the included studies, additional related studies were identified. Initial search literature yielded a total of 166 articles. After carefully screening articles for eligibility and considering the project outcomes, a total of 17 were found to be relevant to the project. Please refer to Appendix C for PRISMA Chart.

Appraisal of Evidence

Most of the studies were qualitative, with some including quantitative data as well. Fourteen years of influenza research was presented in a qualitative meta-analysis. Seven articles focused on strategies to specifically improve influenza vaccination rates in ED settings, including one in a pediatric ED, one in a military hospital ED, and one abroad were used. Five randomized Control Trials, two of them with an application of evidence-based practice strategies to improve influenza rates in ED settings, were also included. The other articles focused on the following - clinical staff views of an influenza vaccination strategy implementation in the ED (2); patient's perception of influenza vaccines, the need for educational interventions and potential uptake of influenza vaccines in the ED (3); the importance of provider recommendations of influenza vaccination (2); the use of screening tools for influenza vaccine status in triage (2); and approaches to vaccinating the young, healthy population that visit the ED (1). Please refer to Appendix D for the Table of Evidence (TOE).

Comprehensive Synthesis of Evidence

Exploiting opportunities to vaccinate patients in a nontraditional setting like an ED is not a novel concept. The administration of influenza and pneumococcal immunizations in an ED has been discussed for over 20 years, and widespread use continues to be lacking (Martin et al., 2008). EDs have been providing preventive care such as tetanus vaccination for many years. Although uncertain when ED tetanus vaccinations started, it is common and standard of care for patients with wounds (Martin et al., 2008). During a Hepatitis A outbreak in 2019, Hepatitis A vaccinations were given in the ED to serve populations with risk factors for Hepatitis A. These efforts led to a reduction in ED patients and Hepatitis A hospital admissions within the high-risk population (Kaigh et al., 2020).

Casalino et al. (2018) demonstrated that implementing a vaccination program in the ED could be effective without affecting time interval quality indicators. A strategy to increase vaccination rates and study the impact of ED quality indicators was developed as part of a 4-year prospective interventional study. The strategy allowed for vaccine acceptance by 66.7% and 90% of patients who agreed to receive the ED vaccine were vaccinated before discharge. This strategy is a practical, simple, cost-efficient strategy with minimal disruption in the clinical workflow. Implementations included raising ED team awareness of the importance of influenza vaccinations, informational posters, and flyers, encouraging providers and nurses to offer vaccine proposals at different stages of the care process, non-judgmental patient dialogue, and immediate availability of vaccines so nurses can quickly administer them.

An evidence-based quality improvement project to improve vaccination acceptance rates and ensure that every patient who requested the vaccine did receive it was implemented in a Level I trauma center with a pediatric ED that serves over 71,000 patients per year. After interviewing stakeholders, conducting failure modes and an effects analysis, the project interventions included: 1) EHR enhancements such as a "flu" section on the ED track board; 2) nursing and provider education via email, huddles, and staff meeting; 3) nursing and provider acknowledgment; and 4) a pharmacy process supporting vaccine storage in the ED. As a result, vaccine acceptance rates increased from 13% to 22%,

and the percentage of patients discharged prior to vaccination decreased from 32% to 17% (Baumer-Moradian et al., 2021).

The 4 Pillars™ Practice Transformation Program was used in a study (Lin et al., 2016) to increase vaccination rates in primary care settings. "The 4 Pillars" consists of best practices to improve vaccination rates in primary care. There are four focuses: Pillar 1 - Accessible vaccinations; Pillar 2 – Communication with patients about the importance of vaccinations and the resources available; Pillar 3 - Improved processes and systems to support vaccinations; and Pillar 4 - Encouragement through a location vaccination champion. The intervention improved the likelihood of accepting the influenza vaccine when opportunities were reduced in the practices.

Rimple et al. (2008) suggest that an ED-based vaccination program is a level 1 trauma center with a census of > 60,000 was both feasible and successful. The study found that the barriers to a vaccination before an ED visit included: 1) insurance limitations, 2) age younger than 50 years, and 3) no perceived need for vaccination. After making the vaccine available to the patient through the ED-based vaccination program, the only barrier to address was the lack of perception, which could potentially be resolved with influenza vaccine education in the ED.

A study that focused on establishing the feasibility of an ED influenza immunization program and defining factors associated with its success suggested that acceptance of influenza vaccination rates varies by month, highest at the beginning of the season in September and lowest towards the end of the season, March. Also found that acknowledgment of comorbidity and high risk for disease yields higher odds of receiving an influenza vaccine. Regarding the process, the article suggested that both patient and provider/system factors influence program success and that a successful vaccination program requires vaccine availability and the willingness of providers to administer and of patients to accept. However, willingness will differ between groups and individuals (Cassidy et al., 2009).

A successful vaccination strategy requires vaccine availability and the willingness of providers to administer and of patients to accept. A survey of vaccinated ED nurses showed that the influenza vaccination process was too time-consuming and inappropriate for the ED, required more staff, needed

more simplified patient consent/vaccination documentation, and called for improvements in the vaccine supply and stocking processes (Venkat et al., 2012).

A study by Fernandez et al. (2009) showed that support from healthcare care teams for vaccination efforts in the ED varied. Healthcare workers who were likely to be vaccinated were more supportive of patients' ED-based influenza vaccination program. Nurses were less likely than residents and attending physicians to be vaccinated. The belief that the vaccination is effective and having been vaccinated in the previous year were the main factors associated with increased likelihood of vaccination, while the belief that the side effects were common and having heard that someone had an adverse event caused the opposite effect. Implementing an educational initiative regarding influenza vaccine among healthcare teams may result in acceptance of influenza vaccination, resulting in increased support of an influenza vaccination campaign.

A recent study in Canada (Ozog et al., 2020) that assessed the willingness of low acuity patients in ED to receive vaccinations if offered in the ED found that these patients were supportive of an ED influenza vaccination campaign. The study suggested that unvaccinated patients that were not supported had some unmet education needs, including: 1) perception that influenza vaccine was not needed and lack of perceived seriousness; 2) did not think vaccine was efficient in preventing influenza; 3) did not have time to get it; and 4) did not like needles. This unmet educational needs to be addressed before agreeing to receive influenza vaccinations in the ED or anywhere else. Long waiting hours in the ED could be used to address those unmet educational needs. This study demonstrates a need for future quality improvement projects to determine the best approach for the health education of ED patients.

A randomized trial that explored clinical education strategies to increase pneumococcal vaccination rates included: 1) video alone education and 2) video and brochure education. Compared to the control group, culturally appropriate videos and low-literacy brochures about pneumococcal vaccines increased the vaccination rates threefold. According to the study, the effects were most likely attributed to the low literacy brochure than the video alone. The brochure was a key trigger in increasing patient-

physician discussion about the vaccine attributable to a potential physician reminder about it when seeing the handout (Thomas et al., 2003).

An experimental study, the first study of the intervention effects with educational handouts in a pediatric clinic, was associated with increased vaccine uptake of influenza vaccines during and after the visit. Two different handouts were used for implementation and compared to a control group, one included local influenza data, and the other included national influenza data. Handouts were given to parents while waiting to be seen by the provider. The handouts that included local data, which showed lower numbers of affected people than national data, were less effective in increasing same-day vaccinations but more effective in increasing vaccination by the end of the season. The handout that included national data with higher numbers of affected people was more effective in increasing same-day vaccinations while in office (Scott et al., 2019).

In a 2016 National Internet Flu Survey (NIFS) conducted on a random sample of 4,305 people designed to be representative of the U.S. population over 18 years old, it was indicated that the receipt of influenza vaccination during the early season could be influenced by a provider recommendation and offer (Lu et al., 2018). Provider recommendation is also essential in pregnant women (CDC, 2016). Women who were recommended to receive the influenza vaccine by a doctor or other medical staff had a higher chance of being vaccinated versus those who did not. The CDC (2016) also recommends using the Standards for Adult Immunization Practice, which indicates that healthcare providers should assess, recommend, administer, refer, and record all vaccinations to reduce missed chances for vaccination and improve vaccination rates among pregnant women. The same concept can be applied to the general population.

Although the possible administration of influenza immunization in the ED has been considered for more than 20 years, widespread use continues to be lacking (Martin et al., 2008). Most found studies during literature search focused on increasing influenza vaccination rates in primary care for high-risk populations such as people > 65 years old, people with comorbidities, or pediatrics. However, few studies focused on addressing the population that utilizes the ED the most, which is people with limited

knowledge and limited health care access to influenza vaccination (Nowak et al., 2015). Different influenza vaccination implementation strategies have been recommended and proven feasible in an ED setting (Casalino et al., 2018; Baumer-Mouradian et al., 2021; Ghazali et al., 2021; Rimple et al., 2006 and Hilger et al., 2016). Nevertheless, reported barriers such as patient and clinical staff perceptions and willingness to participate, along with available resources and an ED culture of combating vaccine-preventable diseases, could impact an influenza vaccine project's success

Evidence-Based Recommendation for the Project

Recommendations for the project included the following:

1. Recruitment and education of RN and NP *Project Champions* to increase willingness and staff participation suggested as part of best practices to improve vaccination rates in primary care by "The 4 Pillars" (Lin et al., 2016).
2. Clinical Staff (including triage RNs, fast-track RNs, and fast-track NPs) education about the importance of the influenza vaccine and the need for recommendations. Influenza vaccine strategies reviewed in the literature highlight the need for clinical staff education to increase compliance, willingness to participate in the project, and knowledge on how to correctly answer the most common questions asked by patients about influenza (Fernandez et al., 2009; Baumer-Moradian et al., 2021; Casalino et al., 2018; Cassidy et al., 2009).
3. An easy-to-read handout provided by a reliable source that answers most common patients' questions about the influenza vaccine would be part of the evidence-based recommendation about educating patients and triggering provider-patient discussion about the influenza vaccine (Rimple et al., 2006; Thomas et al., 2003; Scott et al., 2019; Ozog et al., 2020; Lin et al., 2016).
4. Provider recommendations of influenza vaccine (Lu et al., 2018) during patient evaluation using the "You are due for a flu vaccine" verbiage and the SHARE (Share, Highlight, Address, Remind, Explain) recommendation method suggested in "Make a Strong Influenza Vaccine Recommendation" campaign driven by the CDC (2021).

CHAPTER 3: PROJECT FRAMEWORK

Logic Model

The Logic Model is a visualization tool used to develop this project structure, from detailed initial planning to the future processes and outcomes evaluation. The Logic Model can assist in determining the association between inputs and activities, leading to appropriate distribution of resources, setting of priorities, and vital planning (Hayes et al., 2011). It made it easier to share and communicate with other stakeholders the activities, goals, and areas where support or reinforcement was needed. Using the Logic Model, project inputs such as support from clinical site management, fast-track NPs, triage nurses, and access to written educational materials for patients and staff were identified. Following the inputs, project activities were determined, including the recruitment of Project Champions, clinical staff education, and adoption of patient education handouts. Once all activities were fulfilled, screening of patients' influenza vaccine statuses and their willingness to receive one began in triage. Handouts were provided to unvaccinated patients who were unwilling to receive the influenza vaccine in triage. Lastly, fast-track NPs re-assessed patients for their willingness to receive the vaccine after providing influenza vaccine education and recommendation. As detailed in the Logic Model, the short-term outcome was increasing patients' willingness to receive the influenza vaccine in the ED. This outcome was successfully achieved during the project evaluation process serving as the foundation for achieving long-term outcomes. Please refer to Appendix E for the Logic Model Chart.

CHAPTER 4: METHODS

Project Goals

The project's purpose was to reach out to patients with limited or no access to routine healthcare who use the ED to meet their healthcare needs and increase the willingness of these patients to receive an influenza vaccination through a simple, cost-effective education strategy. The short-term goals of this project included: 1) to increase patients' willingness to receive the influenza vaccination while visiting the ED during a four-week implementation period and 2) to create a simple, cost-effective influenza vaccine educational strategy that does not disrupt the clinical flow. Long-term goals include: 1) to apply the same

vaccine educational strategy to other vaccines as needed to increase vaccination willingness in underserved populations; 2) to increase influenza vaccination rates in the community; and 3) to decrease the impact of influenza illness in the UCIMC ED patient population.

Project Description

Project Type/Design

This project is a Quality Improvement (QI) Project that aimed to create an educational strategy to increase patients' willingness to receive the influenza vaccine while in the ED. The design of the project included assessment of patients' willingness to receive an influenza vaccine pre and post influenza vaccine education and recommendation by a provider.

Project Setting/Population

The project was implemented at UCIMC ED, a Level I adult trauma center and academic ED in Orange County, California. The Orange County population is about 3,186,989 people (United States Census Bureau, 2020). In 2019, 19.5% of Orange County residents visited an ED, with adults between 18-64 visiting the ED at higher rates (21.2%) than other age groups (Community Health assessment, 2019). Approximately 150 patients are seen every day at UCIMC ED.

Participants and Recruitment

The project's targeted population included patients who presented to the ED with Emergency Severity Index (ESI) IV – less urgent – and ESI V – non-urgent – who were seen at the fast-track area of the ED by a NP. Participants were adults over 18 years old, Spanish and English speakers only, and who had not received an influenza vaccine. Exclusions included: 1) patients with ESI I – life-threatening, ESI II – high risk, or ESI III - stable; 2) patients with severe pathology; 3) patients with altered mental status or impairments with an inability to consent; 4) patients unable to receive the vaccine due to allergies or other medical reasons; and 5) patients < 18 years old.

Description of Intervention

Interventions of this project involved the recruitment and education of RNs and NPs *Project Champions* to increase willingness and staff participation suggested as part of best practices to improve

vaccination rates in primary care by "The 4 Pillars" (Lin et al., 2016). CDC influenza vaccination education slides for providers, which included the SHARE method to make a strong influenza vaccination recommendation (CDC,2021), were shared with NPs working in the fast-track area. Moreover, laminated reminders with the SHARE method and verbiage were placed in the NPs' consultation rooms and computers. These slides, reminders, and suggested verbiage provided the NPs with a solid knowledge base and the ability to answer patients' questions efficiently during education intervention and re-assessment of willingness. Triage nurses were also educated about project goals and the importance of screening patients for influenza vaccine via morning huddles and reminders via emails. A free patient education handout in English and another one in Spanish were obtained from the CDC website to reach out to a broader population. This handout was written in plain language and addressed the most common questions and misperceptions about the influenza vaccine. It was explicitly provided to patients who stated unwillingness to receive an influenza vaccine during triage screening. The purpose of the handout was for patients to have the opportunity to read it while waiting to be seen and to serve as a reminder to providers to recommend the vaccine.

Measures/Instruments

For this Quality Improvement (QI) project, tracking sheets were used to collect responses to patients' willingness to receive an influenza vaccine pre- and post-intervention. One tracking sheet was assigned per patient, and the tracking sheet followed the patient from the triage screening area to the fast-track area where the fast-track NP saw the patient. The tracking sheets also collected patients' demographics. Please refer to appendix F for data tracking sheet.

Data Collection Procedures

Between January 9th and February 5th, 2022, unvaccinated fast-track patients were asked in triage by the RN about their willingness to receive an influenza vaccine if it was offered in the ED. Data were collected at this time (timepoint 1) by the triage RN on patients' willingness to receive a vaccine and, if they were not willing, on the reasons why not. If the patient was willing to receive a vaccine, demographic data were collected at this time (timepoint 1). If the patient was unwilling, the triage RN

provided the patient with an educational handout. After the triage process, patients waited in the lobby with the handout to be evaluated by the fast-track NP. Patients were subsequently called to be evaluated by the NP. During this evaluation, the NP provided education and recommendation for the vaccine, assessed whether the patients read the educational handout while waiting, reassessed their willingness to receive the vaccine after education, and collected demographic data (timepoint 2).

Data Analysis

Microsoft Excel was used to collect, organize, store, analyze and present all the data. All raw data were entered into Microsoft Excel and analyzed. Demographic data were described using frequencies (n) and percentages (%). Participants' willingness to receive vaccination was described using frequencies and percentages at timepoint 1 (pre-intervention) and timepoint 2 (post-intervention).

Ethical Considerations

The official University of California, Irvine, Institutional Review Board (IRB) form, Request for-Determination-Non-Human-Subjects was submitted after project proposal and approved before starting the DNP project.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) protects participants and patients' health information (Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notification Rules, 2013). Information obtained for this project will be summarized and will not include any data that may identify patients. The risk to participants in this project will be explained. Participant confidentiality will be protected by using unique identification numbers. Participant information and identifying numbers will be securely stored, and only the DNP student will have access. Electronic files will be password protected to deter unauthorized access, and only the DNP student will have access.

Stakeholders/Barriers

The Stakeholders for this project were UCIMC ED management, fast-track NPs, fast-track and triage RNs, and ED patients. A barrier not foreseen when developing the project implementation was the third wave of COVID-19, which added to the ED overcrowdedness, low staff resources, and frequent fast-track area closure, causing fewer patients to be seen in that area every week. Barriers were overcome by

making minor changes to meet the stakeholders' needs without altering the project outcome. Using stakeholders' feedback, implementations were refined to adapt to the challenges faced after launching the project.

Formative Process Evaluation

During the first week of implementation, feedback from stakeholders was collected using in-person interviews and follow-up emails. Considering the stakeholders' feedback and the challenges faced by the department, minor changes were made to the project.

Due to the increased number of suspected COVID-19 fast-track patients, willingness to receive the influenza vaccine pre- and post-education intervention was established as a measure of the outcome rather than the number of patients that received the vaccine. In addition, since tracking influenza vaccine status and willingness was not a straightforward process when using the Electronic Medical Records (EMR), a simple tracking sheet followed the patient from triage to fast-track. Based on stakeholders' feedback, these minor changes increased staff collaboration and support of the project during a busy COVID-19 wave.

CHAPTER 5: RESULTS AND CONCLUSIONS

Results

Seventy-six unvaccinated patients met inclusion criteria and were approached. These patients were low acuity with ESI Levels IV and V to be seen by a nurse practitioner in the fast-tack area of the ED. The question regarding willingness to receive an influenza vaccine if it was to be offered in the ED, was asked during the triage screening process upon arrival by the triage RN. The age ranges of the patients were 18-64 (97%) and 65+ (3%). Patients identified themselves as females (55%), males (45%), and others (0%). The race and ethnic origin included non-Hispanic whites (13%), Hispanic origin (67%), Asian (13%), African American (7%), and other (0%). Patient data was segmented by insurance including patients who had public insurance such as Medi-Cal and Medicare (66%), no reported insurance or

emergency Medi-Cal insurance (24%), and private insurance (11%). Patient demographics are described in Table 1.

Table 1

Demographics of Project Participants (N=76)

	n	***%***
Age		
18-64	74	97%
65+	2	3%
Gender		
Female	42	55%
Male	34	45%
Other	0	0%
Race		
White, Non-Hispanic	10	13%
White, Hispanic	51	67%
Asian	10	13%
African American	5	7%
Other	0	0%
Insurance		
Public	50	66%
No Insurance	18	24%
Private	8	11%

Note: Percentages are rounded to the nearest whole percent

During triage screening, 22 unvaccinated patients (29%) were willing to receive an influenza vaccine if offered so they did not need to receive further intervention. Stated reasons for not receiving the vaccine prior to ED visit despite willingness included: they did not know it was influenza season, they did not know that they needed one, they were never offered one or they had no time.

On the other hand, 45 (59%) were not willing to receive the influenza vaccination at the time of visit, and nine (12%) were not sure about it. Documented reasons for unwillingness to receive an influenza vaccination if offered in the ED were the following: they never get sick, they become sick from the vaccine, they never had one, some were pregnant, they were not interested, they did not believe in vaccines, or they feared needles.

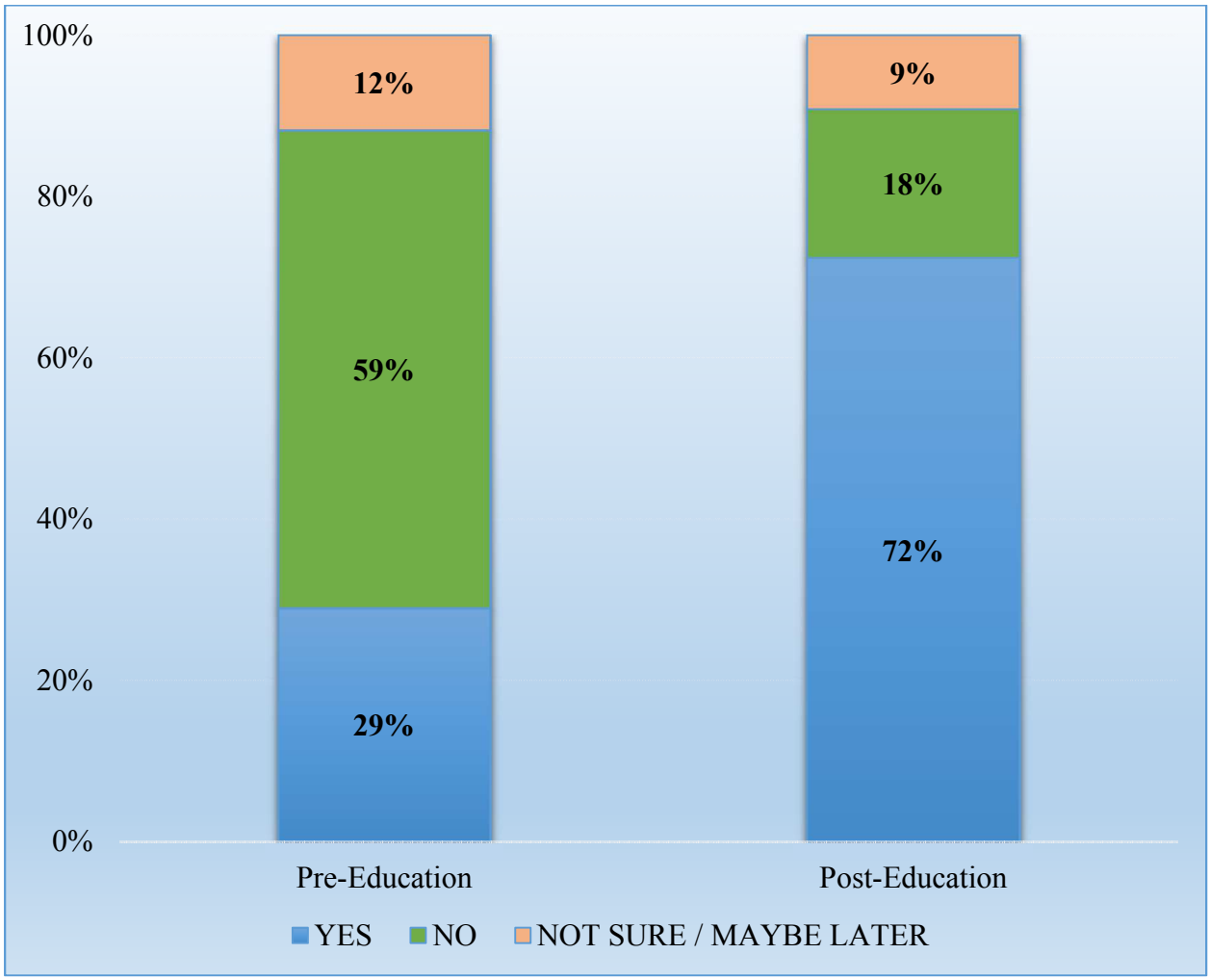
The intervention of this project included of a handout with influenza vaccine education and a recommendation by a healthcare provider in the ED. Of the total patients that received the intervention, 93% (n=50) received the full intervention, and 7% of the patients (n=4) received the recommendation by the fast-track NP but did not receive the handout. Of those who received the handout, 82% (n=41) reported reading the handout prior to seeing the NP in fast-track.

After intervention, willingness to receive influenza vaccination in the ED was reassessed. Of the 45 patients who initially said no to the influenza vaccine in the ED, 56% (n=25) patients agreed to be vaccinated post-education, 31% (n=14) patients continued to refuse the vaccine while 13% (n=6) patients stated they may be willing to receive it later. Of the nine patients who were initially not sure, 89% (n=8) were willing to receive the vaccine while 11% (n=1) stated they may be willing to receive it later. The project demonstrates post-intervention, the overall willingness increased from 29% (n=22) pre-intervention to 72% (n=55) post-intervention, representing a 150% increase. Figure 1shows the percentage of pre- and post-intervention willingness to receive an influenza vaccine in the ED.

Even though vaccines were not offered as part of the implementation due to challenges faced in the department due to the third wave of COVID-19, six patients were able to receive an influenza vaccine before discharge.

Figure 1

Percentage of Pre- and Post-Intervention Willingness to Receive an Influenza Vaccine in the ED (N=76)



Note. Patients' willingness to receive an influenza vaccination increased from 29% pre-intervention to 72% post-intervention. Patients' unwillingness to receive an influenza vaccination decreased from 59% pre-intervention to 18% post-intervention. 12% of patients were not sure about receiving a vaccination pre-intervention while 9% of patients states they may receive one later post-intervention.

Discussion

This project was QI project that aimed to create an educational intervention to increase patients', who use the fast-track area of the ED for their healthcare needs, willingness to receive the influenza vaccine while in the ED. The educational intervention consisted of written and verbal education and recommendation of the influenza vaccine by the fast-track NPs to the unvaccinated fast-track patients in

the ED. Though the primary goal of this strategy was to educate patients about vaccinations, it was necessary to first educate providers regarding how to successfully increase vaccine awareness and uptake by using CDC recommended methods.

Before the intervention, 29% (n=22) of the 76 patients who participated in the project were willing to receive the vaccine, 59% (n=45) were unwilling, and 12% (n=9) were unsure/maybe later. After the intervention, of the 45 patients who were unwilling, 25 (56%) patients were willing, and six (13%) were unsure/maybe later, and of the nine patients who were initially unsure/maybe later, eight (89%) were willing and one (11%) unsure/maybe later. If, however, this influenza education strategy was implemented as routine in the ED, the project's results suggest that the willingness of patients to receive influenza vaccination in the ED could be increased by another 33 patients or 43%.

Implications

Lack of awareness, misperceptions, and limited access to vaccinations, especially among the underserved communities and high-risk patients, have been identified as factors that inhibit the achievement of the 70% target influenza vaccination rate established by Healthy People 2030.

Since the ED tends to be utilized by underserved communities as a primary point of contact for healthcare, it could be used as an opportunity to educate and potentially provide these patients with vaccinations. In fact, the need to overcome vaccination barriers and facilitate vaccine access to underserved communities and high-risk patients was highlighted during the COVID-19 pandemic. COVID-19 may not be the only or last pandemic we will face in the upcoming years.

The project showed that an educational handout intervention, along with an ED provider's recommendation during the encounter, could be successfully utilized in a busy and high volume ED setting to increase willingness to receive influenza vaccination among low acuity patients in the ED. EDs provide the opportunity to reach out to the most vulnerable populations from different backgrounds, ethnicities, ages, and education levels, contributing to decreasing vaccine-related illness and the burden of this disease in the community during influenza season or a pandemic.

Sustainability

As vaccine-preventable illnesses may never be eradicated, the need for vaccinations may always exist. The project used inexpensive education materials and did not impact existing clinical workflows. Additional tasks created by this project were incorporated into the existing workflows. During the intake, triage nurses only needed to distribute the handout to the patients who had not received the influenza vaccine. As the patients moved through the ED, fast-track nurse practitioners educated, recommended, and reassessed patients for willingness to receive a vaccine if offered.

Strengths of the Project

The intervention does not cause any interruption of workflow, which makes the adaption of this project easier in the busy ED setting. In the post-implementation survey, which included project participant RNs and NPs, 100% of all the responders answered that the intervention was easy to implement, that they believed that educating patients in the ED could improve vaccination awareness in the community, and that they will be willing to implement the interventions daily.

Also, handouts in English and Spanish from a trusted source were used to reach out to a broader population. Handouts in other languages could also be used to increase influenza vaccination education in ED settings with a high volume of other ethnic minorities.

Limitations

The project was implemented in the middle to the end of the influenza season, which may have decreased the total number of eligible project participants due to patients already being vaccinated or reduced their willingness. Further, low staff resources and ED overcrowding from the third surge of COVID-19 virus resulted in frequent closure of the fast-track area, causing a lower number of patients seen in the fast-track unit.

Since a relatively small number of nurses and providers (n= 21) participated in the project, how other nurses and providers would perceive this project is not known, even if participating nurses and providers thought this project was feasible and worthy of expanding to all areas of the ED for the next influenza season.

Dissemination

The plan for dissemination of this project includes an oral presentation on May 19th at Epilogue, where chairs, faculty, team members, students, and family members will be invited to attend. The final paper will be uploaded to the ProQuest database as a requirement for graduation.

After approval, a manuscript of the project will be submitted to The Journal of Immigrant and Minority Health for publication. In addition, consideration will be made for presenting the project at the AAENP (American Academy of Emergency Nurse Practitioners) Annual Conference.

Conclusion

Barriers such as lack of awareness, misperceptions, and lack of access to vaccines have been proposed as the biggest challenges in achieving optimal influenza vaccination rates. EDs serve a higher number of patients with limited access to daily, routine healthcare and could be used as an essential site for vaccine education.

This vaccination education strategy positively impacted patients' willingness to receive the influenza vaccine while not missing the opportunity to reach out to a vulnerable part of the community. The project sample population willing to receive a vaccination increased from 29% to 72% after receiving influenza vaccination education and recommendation. Similar strategies could be applied to other vaccine-preventable illnesses in different ED settings to overcome vaccination barriers and achieve the target influenza vaccination rate of 70% established by Healthy People 2030.

Suggestions

As evidenced by this project, increased willingness to receive the influenza vaccine during an ED visit can be improved with an education strategy. Future QI projects should focus on whether patients will receive the influenza vaccine in the ED or any other setting since, according to data collected, 29% of patients initially assessed in triage were willing to receive the influenza vaccine even before the intervention, with a significant increase to 72% post-intervention.

Future hypotheses could focus on the optimization of the processes taking into consideration cost justification, financial benefit analyses, and accessible resources. Ultimately, the final objective could be

to decrease the burden of influenza illness in the ED during influenza season and, thereby, providing holistic ED resources to treat higher acuity patients. This burden could be accentuated by another pandemic.

DNP Essentials

Understanding and Achievement of the DNP competencies described in the DNP essentials is crucial during training and education as future Advanced Nurse Practitioners. The DNP essentials are the foundation that guides our degree and our project.

Based on extensive literature research and review, an evidence-based education strategy was proposed, including numerous studies from different settings, populations, and countries. The educational strategy proposed therein was simple, cost-effective, did not disrupt the existing clinical flow in the busy setting where it was implemented, and focused on improving the healthcare outcomes of the population served. Outcomes reflected the importance of this project in closing a gap in achieving optimal vaccination rates and for future projects to continue expanding these findings to similar settings and other vaccine-preventable illnesses. These competencies are described in *Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice.*

This project was developed and implemented with the cooperation of an interprofessional team, including registered nurses, physicians, nurse practitioners, and pharmacists. During implementation, constant feedback from the interprofessional team was received, studied, and applied for improvement. Effective communication, team collaboration, and leadership skills used in the development and implementation of this project, and which contributed to changes in healthcare, are competencies described in *Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes.*

Due to unexpected challenges faced by the Emergency Department at the time of implementation during the COVID-19 third wave, refinements to this project were made after the first week of implementation, based on feedback obtained from stakeholders. These refinements did not alter the

project outcomes, rather they demonstrated sensitivity to the department's needs and culture during the challenging times. By using exceptional communication skills when leading a quality improvement project in a clinical setting, and by demonstrating sensitivity to diverse organizational cultures and populations, *Essential II was achieved: Organizational and Systems Leadership for Quality Improvement and Systems Thinking.*

This project aimed to provide education and recommendations to patients regarding the influenza vaccine, and who otherwise would have limited or no access to them, to increase their willingness to receive the vaccine. Furthermore, this project focused on health promotion, and ways to advocate for social justice and equity. Data about influenza vaccination rates and the impact of influenza disease on patients' health and the economy were analyzed, and implementations and project outcomes considered the population determinants of health. These competencies applied to *Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health.*

References

Advisory Committee on Immunization Practices (2017). *Vaccine Recommendations and Guidelines of ACIP.* https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/programs.html#ref-18

Baumer-Mouradian, S. H., Kleinschmidt, A., Servi, A., Jaworski, B., Lazarevic, K., Kopetsky, M., Nimmer, M., Hanson, T., Gray, Matthew P., & Drendel, A. L. (2020). Vaccinating in the emergency department, a novel approach to improve influenza vaccination rates via a quality improvement initiative. *Pediatric Quality & Safety*, 5(4). http://doi:10.1097/pq9.0000000000000322

Casalino, E., Ghazali, A., Bouzid, D., Antoniol, S., Kenway, P., Pereira, L., & Choquet, C. (2018). Emergency Department influenza vaccination campaign allows increasing influenza vaccination coverage without disrupting time interval quality indicators. *Internal and Emergency Medicine*, 13(5), 673-678. https://doi.org/10.1007/s11739-018-1852-8

Cassidy, W., Marioneaux, D. M., Windham, A. F., Manning, S., Fishbein, D., & Horswell, R. L. (2009). Factors influencing acceptance of influenza vaccination given in an ED. *The American Journal of Emergency Medicine*, 27(9), 1027-1033. https://doi.org/10.1016/j.ajem.2008.05.014

Centers for Disease Control and Prevention. (2020). *2019-2020 U.S. Flu Season: Preliminary In-Season Burden Estimates.* https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm

Centers for Disease Control and Prevention. (2021). *Influenza (Flu)*. https://www.cdc.gov/flu/about/index.html

Centers for Disease Control and Prevention. (2016). *Influenza vaccination among pregnant women*. http://www.cdc.gov/flu/fluvaxview/pregnant-coverage_1516estimates.htm

Centers for Disease Control and Prevention. (2021). *Make a Strong Influenza Vaccine Recommendation.* https://www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm

Centers for Disease Control and Prevention. (2021). *Prepare Your Practice to Flight Flu: Make a Strong Influenza Vaccine Recommendation and Improve Your Influenza Vaccination Rates this Season.* https://www.cdc.gov/flu/pdf/professionals/vaccination/PrepareYourPractice.pdf

Community Health Need Assessment. (2019). *UCI Health.* https://www.ucihealth.org//media/files/pdf/about/2019_community_health_needs_assessment_060419.pdf?la=en

Fernandez, W. G., Oyama, L., Mitchell, P., Edwards, E. M., George, J. S., Donovan, J., & Feldman, J. A. (2009). Attitudes and practices regarding influenza vaccination among emergency department personnel. *The Journal of Emergency Medicine*, 36(2), 201-206. https://doi.org/10.1016/j.jemermed.2007.07.070

Gindi, R.M, Cohen, R.A. Kirzinger, W.K. (2012). *Emergency room use among adults aged 18–64: early release of estimates from the National Health Interview Survey*, January–June2011. https://www.cdc.gov/nchs/data/nhis/earlyrelease/emergency_room_use_january- june_2011.pdf

Ghazali, D. A., Choquet, C., Bouzid, D., Colosi, L., Ben Hammouda, A., Wargon, M., Gay, M., Vaittinada Ayar, P., Douay, B., Revue, E., Soulat, L., Hellmann, R., & Casalino, E. (2021). Analysis of the Feasibility of a Vaccination Campaign against Influenza Epidemic and COVID-19 Pandemic in French Emergency Departments: A National Survey. *Vaccines*, 9(4), 400. https://doi.org/10.3390/vaccines9040400

Hayes, H., Parchman, M. L., & Howard, R. (2011). A logic model framework for evaluation and planning in a primary care practice-based research network (PBRN). *The Journal of the American Board of Family Medicine*, *24*(5), 576-582. https://www.jabfm.org/content/jabfp/24/5/576.full.pdf

Hilger, K. A., Hilger, J. R., Putnam, S. D., Carstairs, S. D., & Maves, R. C. (2016). Feasibility and patient acceptance of emergency department-based influenza vaccination in a military medical center. *Military medicine*, *181*(8), 883-886. https://doi.org/10.7205/MILMED-D-15-00074

Kaigh, C., Blome, A., Schreyer, K. E., & Healy, M. (2020). Emergency Department-based Hepatitis A Vaccination Program in Response to an Outbreak. *Western Journal of Emergency Medicine*, 21(4), 906. http://doi: 10.5811/westjem.2020.4.45847

Lin, C. J., Nowalk, M.P., Pavlik, V.N., Brown A.E., Zhang, S., Raviotta J.M., Moehling, K. K., Hawk, M., Ricci, E., Middleton, D.B., Patel, S., South-Paul K. E., & Zimmerman R.K. (2016). Using the 4 pillars practice transformation program to increase adult influenza vaccination and reduce missed opportunities in a randomized cluster trial. *BMC Infectious Diseases*, 16(1), 1–11. https://doi.org/10.1186/s12879-016-1940-1

Lu, P. J., Srivastav, A., Amaya, A., Dever, J. A., Roycroft, J., Kurtz, M. S., Halloran, A. & Williams, W. W. (2018). Association of provider recommendation and offer and influenza vaccination among adults aged ≥ 18 years–United States. *Vaccine*, 36(6), 890-898. https://doi.org/10.1016/j.vaccine.2017.12.016

Martin, D. R., Brauner, M. E., & Plouffe, J. F. (2008). Influenza and pneumococcal vaccinations in the emergency department. *Emergency medicine clinics of North America*, *26*(2), 549-570. https://doi.org/10.1016/j.emc.2008.02.004

McConville, S., Danielson, C. & Hisa, R. (2019). *Emergency Department use in California: Demographics, Trends, and the impact of ACA.* Public Policy Institute of California. https://www.ppic.org/wp-content/uploads/emergency-department-use-in-california-demographics-trends-and-the-impact-of-the-aca-february-2019.pdf

Nichol, K. L., Lind, A., Margolis, K. L., Murdoch, M., McFadden, R., Hauge, M., Magnan, S., & Drake, M. (1995). The effectiveness of vaccination against influenza in healthy, working adults. *New England Journal of Medicine*, *333*(14), 889-893. DOI:10.1056/NEJM199510053331401

Nowak, G., Sheedy, K., Bursey, K., Smith, T., & Basket, M. (2015). Promoting influenza vaccination: Insights from a qualitative meta-analysis of 14 years of influenza-related communications research by U.S. Centers for Disease Control and Prevention (CDC). *Vaccine*, 33(24), 2741–2756. https://doi.org/10.1016/j.vaccine.2015.04.064

Office of Disease Prevention and Health Promotion. (n.d.). Increase the Proportion of People who Get the Flu Vaccine Every Year. *Healthy People 2030*. U.S Department of Health and Human Services.

https://health.gov/healthypeople/objectives-and-data/browse-objectives/vaccination/increase-proportion-people-who-get-flu-vaccine-every-year-iid-09

Ozog, N., Steenbeek, A., Curran, J., Kelly, N., & Campbell, S. (2020). Attitudes toward influenza vaccination administration in the emergency department among patients: a cross-sectional survey. *Journal of Emergency Nursing*, 46(6), 802-813. http://dx.doi.org/10.1016/j.jen.2020.05.017

Putri, W. C., Muscatello, D. J., Stockwell, M. S., & Newall, A. T. (2018). Economic burden of seasonal influenza in the United States. *Vaccine*, 36(27), 3960-3966. https://doi.org/10.1016/j.vaccine.2018.05.057

Rimple, D., Weiss, S. J., Brett, M., & Ernst, A. A. (2006). An Emergency Department based Vaccination Program: Overcoming the Barriers for Adults at High Risk for Vaccine preventable Diseases. *Academic Emergency Medicine*, 13(9), 922-30. https://doi.org/10.1197/j.aem.2006.04.022

Scott, V. P., Opel, D. J., Reifler, J., Rikin, S., Pethe, K., Barrett, A., & Stockwell, M. S. (2019). Office-based educational handout for influenza vaccination: a randomized controlled trial. *Pediatrics*, 144(2). https://doi.org/10.1542/peds.2018-2580

Thomas, D. M., Ray, S. M., Morton, F. J., Drew, J., Offutt, G., Whitney, C. G., & Jacobson, T. A. (2003). Patient education strategies to improve pneumococcal vaccination rates: randomized trial. *Journal of Investigative Medicine*, 51(3), 141-148. http://dx.doi.org/10.1136/jim-51-03-16

United States Census Bureau. (2020). *Quick Facts Orange County, California.* https://www.census.gov/quickfacts/orangecountycalifornia

Venkat, A., Hunter, R., Hegde, G. G., Chan-Tompkins, N. H., Chuirazzi, D. M., & Szczesiul, J. M. (2012). Perceptions of participating emergency nurses regarding an ED seasonal influenza vaccination program. *Journal of Emergency Nursing*, 38(1), 22-29. https://doi.org/10.1016/j.jen.2010.08.015

Appendix A

Site Approval Letter

Letter of Cooperation with Outside Organization for UCI DNP Project

Date: November 30, 2021

Dear: Teressa Polinski, Manager, Emergency Department

This letter confirms that I, as an authorized representative of UCIMC Emergency Department, allow Paola German, Doctor of Nursing Practice student, access to conduct a leadership, policy, quality improvement, or evidence-based practice project activities at the listed site(s) as discussed with the DNP student and outlined below. These activities may commence after the DNP student has consulted with UCI IRB about the proposed project.

- **Project site(s):**

  UCI Emergency Department

  101 The City Dr, S
  Orange, CA 92868

- **Project purpose**:

  The purpose of this project is to implement a vaccination education strategy to increase the vaccination rates in unvaccinated ED patients withESI level IV and V, who initially decline vaccination in triage.

- **Project activities**:

  Activities include: flu vaccination education to participating triage and fast-track nurses/NPs, flu vaccination educational handouts for patients, vaccine recommendation, pre and post-intervention data of target patients.

- **Target population**:

  Unvaccinated patients who decline the Influenza vaccine in triage, > 18 y.o., ESI IV and V, Spanish or English speakers only. Excludes severe pathology, allergies, ALOC, isolation precautions, < 18 y.o.

- **Site(s) support**:

  Project site agrees to support project activities such as education to clinical staff, access to nursing schedules, and ED data retrieval pre and post project implementation.

- **Data management plan**:

  Data will be de-identified.

- **Other agreements**:

  Dr. Isabel Algaze-Gonzales, an ED attending, has agreed to work with me as mentor for the project.

- **Anticipated end date**:

  Project will be implemented over four weeks starting second week ofJanuary through second week of February.

It is understood that all DNP Scholarly Project related activities must cease if directed by UCI IRB. It is also understood that any activities that involve Personal Private Information or Protected Health Information must comply with HIPAA Laws and institutional policy.

Our organization agrees to the terms and conditions stated above. If there are any concerns related to this project, we will contact the DNP student named above and their DNP Scholarly Project Chair. For concerns regarding IRB policy or human subject welfare, we may also contact our own institutional IRB.

UCI IRB: https://www.research.uci.edu/compliance/human-research-protections/researchers/irb-faqs.html

With regards,

(Signature of Project site-authorized representative) ED NURSE MANAGER (Job title of authorized representative)

12-2-21

(Date signed)

Appendix B

Kuali Approval Email

Kuali Approval Email

From: no-reply=kuali.co@mx3.kuali.co <no-reply=kuali.co@mx3.kuali.co> on behalf of Kuali Notifications <no-reply@kuali.co>
Sent: Tuesday, December 28, 2021 9:38:52 AM
To: pgerman@uci.edu <pgerman@uci.edu>
Subject: Confirmation of Activities that DO NOT Constitute Human Subjects Research

Dear Paola Helena German,

The University of California, Irvine (UCI) Human Research Protections (HRP) Program complies with all review requirements defined in 45 CFR Part 46 and 21 CFR 50.3.

Based on the responses provided in Non Human Subjects Research (NHSR): #686 - "Influenza Vaccination Education Strategy in the Emergency Department ", and per the definitions cited below, the activities do not constitute human subject research or a clinical investigation, as applicable. Therefore, *UCI IRB review is not required and will not be provided*.

45 CFR 46.102(l) defines research as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge; and 45 CFR 46.102(e)(1) defines a human subject as "a living individual about whom an investigator conducting research obtains (i) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens."

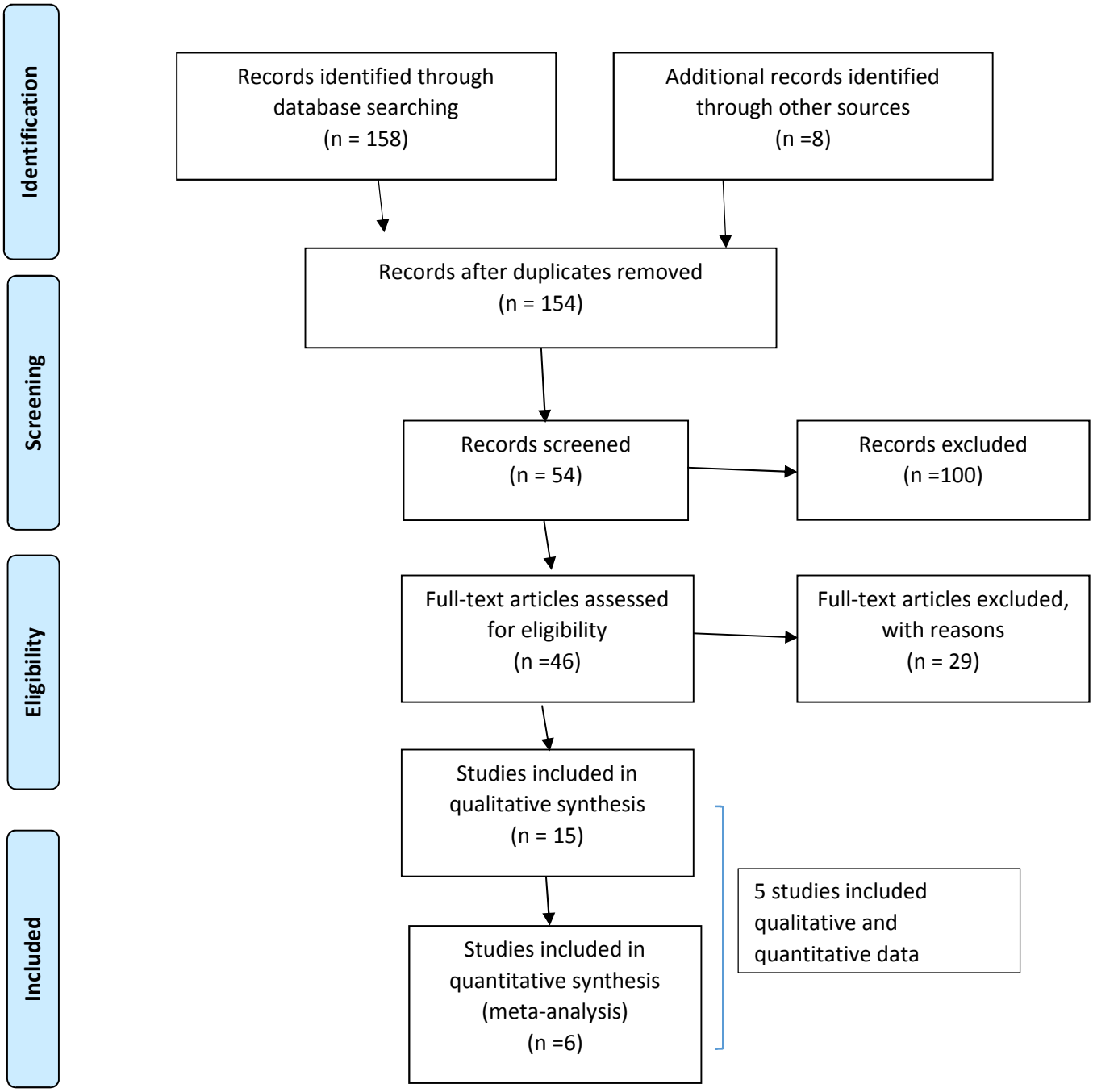
21 CFR 50.3(c) defines a clinical investigation as "any experiment that involves a test article and one or more human subjects and that either is subject to requirements for prior submission to the Food and Drug Administration under section 505(i) or 520(g) of the act, or is not subject to requirements for prior submission to the Food and Drug Administration under these sections of the act, but the results of which are intended to be submitted later to, or held for inspection by, the Food and Drug Administration as part of an application for a research or marketing permit."

To view the determination for your submission, click here:
uci.kuali.co/protocols/protocols/61b2eaeb375339003ce1863e

Please DO NOT REPLY to this email as this mailbox is unmonitored. If your project changes in ways that may affect this determination, please contact the HRP staff for additional guidance: irb@uci.edu.

Appendix C

PRISMA Diagram



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal. pmed1000097

For more information, visit www.prisma-statement.org.

Appendix D

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Nowak, G. (2015). Promoting influenza vaccination: Insights from a qualitative meta-analysis of 14 years of influenza-related communications research by U.S. Centers for Disease Control and Prevention (CDC).	Qualitative meta-analysis	29 unpublished, primarily qualitative CDC-sponsored studies related to flu and flu vaccination knowledge, attitudes, and beliefs (KABs).	Assist those designing or undertaking communication, education, or promotional efforts to increase seasonal influenza vaccination, including by and among healthcare professionals.	Analysis	Researcher analyzes textual reports and seeks to identify major themes, including over time and across different studies.	Findings reaffirm 1) the central role that physicians and other HCPs play when it comes to seasonal influenza vaccination acceptance, 2) the need for continued efforts to facilitate and assist on the patient education front, 3) need for HCP training to better understand the health threat posed by influenza, 4) develop, provide, and assess protocols and tools that can make patient education more effective and efficient (for example, "SHARE" framework), 5) incremental progress has been made with respect to influenza-related knowledge, attitudes, and beliefs, on both the public and HCP fronts, and 6) many people and HCW remain unconvinced of the need for influenza vaccinations.	Yes, peer reviewed. Vaccine Journal. Level 1, High quality *Need for education of population and HCW *Need for providers and recommendations

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Lin, C. (2016). Using the 4 pillars practice transformation program to increase adult influenza vaccination and reduce missed opportunities in a randomized cluster trial.	RCT Application of Evidence-based program. Practices were randomized into intervention and control groups	25 primary care practices stratified by city, location, and type.	1) report on changes in adult influenza immunization rates 2) report on factors related to the likelihood of receiving influenza vaccine after application of the 4 pillars program.	Office visit and vaccination data were derived from EMR data	Descriptive analyses	The intervention increased the likelihood of influenza vaccination when missed opportunities decreased in the practices.	Yes, BioMed Central Infection Diseases Journal. Level 1, Good quality *4 pillars program
Thomas, D. (2003). Patient education strategies to improve pneumococcal vaccination rates: randomized trial.	RCT comparing (1) a videotape and brochure group, (2) a videotape only group, and (3) a control group.	558 patients from a primary clinic of an inner-city public hospital.	Evaluation of the effects of a culturally appropriate patient education videotape on pneumococcal vaccination rates among the clinic population.	Post- intervention survey to capture: 1) if brochure showed to physicians, 2) if vaccine recommender by physician, and 3) if patient wants vaccine today.	Descriptive statistics	Videotape along with a low literacy brochure significantly increased pneumococcal vaccination rates and physician-patient discussion about the vaccine. Same outcomes were not observed with use of videotape alone so increased in vaccinations were likely attributable to the effect of the brochure.	Yes, Journal of Investigating Medicine. Level 1, Good quality *Brochure served as a physician reminder and trigger vaccine discussion with provider.

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Venkat, A. (2012). Perceptions of participating emergency nurses regarding an ED seasonal influenza vaccination program.	Cross sectional Comparative study	59 ED nurses participating in the ED influenza protocol in an urban, academic, Level I trauma medical center.	Evaluate the perceptions of ED nurses that participated in a trial of using clinical decision support built in the electronic medical records to provide seasonal influenza vaccines without added staffing resources.	Web based survey	Descriptive statistics and χ^2 analysis to assess	59% of responding ED nurses considered that protocol was too time consuming, and it was inappropriate in the ED setting. ED nurses reported that efficiency could be improved by adding staff, simplifying screening and vaccination documentation requirements, and improving vaccine supply and stocking procedures in the ED.	Yes, Journal of Emergency Nursing. Level 3, Moderate quality *SurveyMonkey example for RNs responses to trial process implementation
Fernandez, W.G. (2009). Attitudes and practices regarding influenza vaccination among emergency department personnel.	Cross sectional	130 full-time ED staff (nurses, emergency medicine residents, and emergency medicine faculty) at an urban academic medical center in Boston with >90,000 ED patient visits annually.	Knowledge, attitudes, and practices regarding personal influenza vaccination and support of an ED-based influenza vaccination program were assessed.	Anonymous, self-administered questionnaire	All analyses were done with SAS 9.1	ED staff vaccinated on the year of the study were more likely to support a vaccination program for ED patients (80% vs. 55% of those not)	Yes, peer reviewed. Journal of Emergency Medicine. Level 2, Moderate quality *Importance of education of ED staff to increase support for influenza vaccination program in the ED

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Cassidy, W. (2009). Factors influencing acceptance of influenza vaccination given in an ED.	Cross sectional	2,858 adult patients who met criteria for ACIP vaccine recommendation in a primary and tertiary acute care private urban Hospital in Louisiana.	Stablish feasibility of an ED flu immunization program and to further define factors associated with its success	Data collection	Logistic regressio	1) Month in which influenza vaccine is offered can make a difference in rates. 2) Patients agreed to vaccination but were not vaccinated during ED visit suggesting that both patient and provider/system factors influence program success. 3) A successful vaccination program requires vaccine availability and the willingness of providers to administer and of patients to accept. Willingness will differ between groups and individuals.	Yes, peer reviewed. The American Journal of Emergency Medicine. Level 1, High quality *Acceptance varies by month, acknowledgment of comorbidity and high risk (higher odds of vaccination)
Casalino, E. (2018). Emergency Department influenza vaccination campaign allows increasing influenza vaccination coverage without disrupting time interval quality indicators.	4-year prospective interventional study	Bichat hospital in Paris with 80,000 visits per year. Serves a population characterized by poor to medium income and a low primary care availability.	Evaluation of the influenza vaccination coverage trend over the study period of 4 years and before and after ED vaccination campaign. Also measured ED time interval quality indicators during intervention.	Data collection pre and post interventions.	Statistica10 (StatSoft) software was used for data collection and analysis.	Influenza vaccination campaign can be successfully implemented in an ED without affecting time interval quality indicators.	Yes, Internal and Emergency Medicine Journal. Level 2, High quality *Successful public health strategy implemented even in overcrowded ED.

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Baumer-Mouradian, S. (2021). Vaccinating in the Emergency Department, a Model to Overcome Influenza Vaccine Hesitancy	QI project plan-do-study-act cycles. Evidence based QI project.	Level 1 pediatric trauma center and ED with over 71,000 ED visits located in Milwaukee, WI.	Improve the ED vaccination process by increasing influenza vaccine acceptance rates and making sure that every patient that requested a vaccine has received it.	The outcome measures were the percent of eligible patients vaccinated and the total number of vaccines administered.	Descriptive statistics and chi-square analysis.	Comparing season 1 to 2, screening rates and eligibility rates were similar. However, vaccine acceptance rates improved from 13% to 22%, the proportion of patients leaving before vaccination decreased from 32% to 17%, and vaccination rates improved from 9% to 20%. Total vaccines administered increased from 1,309 to 3,180 and vaccination time was 5 minutes faster in season.	Yes, Pediatric Quality and Safety Journal. Level 2, Good quality *Provides evidence-based model to overcome vaccine hesitancy for vaccine preventable illness
Ghazali, D. A., (2021). Analysis of the Feasibility of a vaccination Campaign against Influenza Epidemic and COVID-19 Pandemic in French Emergency Departments.	Cross sectional study	All EDs in France. 414 responses out of 800 questionnaires were collected.	Investigate the adherence of heads of French EDs and nursing departments on a potential vaccination campaign of healthcare workers and patients in ED.	Electronic survey to ED and nursing departments heads	The Shapiro–Wilk test was used to assess data distribution. Chi-square test was used to compare categorical data. Univariate and multivariate logistic regression were used to determine factors associated with the	1) existence of a vaccine program in the hospital and the use of influenza test point of care in ED were positively associated with the acceptance of influenza vaccination campaign for health care workers and patients. 2) barriers to vaccinate patients were overcrowding, lack of medical staff, and lack of patient follow-up. 3) a hospital and an ED culture of combatting infectious viral diseases were related to an adherence to vaccinating patents and staff.	Yes, Vaccine Journal. Level 2, Good quality

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Rimple, D. (2006). An emergency department-based vaccination program: overcoming the barriers for adults at high risk for vaccine-preventable diseases.	Prospective cross-sectional study Feasibility study	674 patients were enrolled from the ED of an inner-city Level 1 trauma center with a census of >60,000	Determine if high-risk patients would be responsive to an ED-based flu vaccination program and to identify barriers to not receiving vaccinations when offered.	Written survey	Descriptive analysis was completed using standard parametric and nonparametric methods. Two-way contingency analysis was completed using chi-square and Spearman correlation coefficients for two subgroups.	ED-based vaccination program is both feasible and successful. Identified barriers for not being vaccinated prior to visit to the ED were: no insurance, age younger than 50 years, and a lack of perceived need for vaccination. After being included in the ED program, the only barrier to obtaining influenza vaccination as the patient perception that they did not require.	Yes, Academic Emergency Medicine Journal. Level 2, Good quality *Confirms need to educate the younger than 50 that perceive they did not require it.
Ozog, N. (2020). Attitudes toward influenza vaccination administration in the emergency department among patients: a cross-sectional survey.	Cross sectional study	151 low acuity patients in ED	Gauge the interest of low acuity ESI IV,V ED patients in influenza vaccination. Also, identify perceived barriers and facilitators to influenza vaccine	Self-administered questionnaire	Questionnaires were exported from Redcap for analysis to SPSS version 24.	Patients classified as low acuity were supportive of ED influenza vaccination. Some of the unvaccinated participants had unmet education needs that would require addressing before considering receiving influenza vaccination.	Yes, peer reviewed. Journal of Emergency Nursing. Level 2, Good quality *Importance of meeting educational needs

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Nichol, K. (1995). The Effectiveness of Vaccination against Influenza in Healthy, Working Adults.	Randomized, double-blind, placebo-controlled trial.	849 Working adults from 18 to 64 years of age, employed full-time, and had no medical conditions.	The outcomes included upper respiratory illnesses, absenteeism from work due to upper respiratory illnesses, and physicians visits for upper respiratory illnesses.	Base-line data collected by questionnaire administered at the time of enrollment. Follow-up data were obtained through structured telephone interviews.	Chi-square tests for categorical variables and student's t-tests for continuous variables. The kappa statistic was used to assess the adequacy and maintenance of blinding.	Vaccination against influenza has substantial health-related and economic benefits for healthy, working adults.	Yes, The New England Journal of Medicine. Level 1, Good quality
Hilger, K. (2016). Feasibility and Patient Acceptance of Emergency Department-Based Influenza Vaccination in a Military Medical Center.	Prospective, observational pilot study	Individuals visiting the NMCSD ED between March and July 2011.	Willingness of the individual participant to receive the vaccine.	Total of 905 Surveys	Statistical analysis using Stata 12 Software	A significant proportion of unvaccinated persons in the study expressed interest in receiving influenza vaccination in the ED.	Yes, Military Medicine Journal. Level 2, Good quality
Martin, D. (2008). Influenza and Pneumococcal Vaccinations in the Emergency Department.	Article Review		To discuss importance and need for influenza vaccination in ED setting and to describe the strategy of how to initiate this process.			The precise strategy of how to initiate the vaccination process in the ED, which patients should be immunized and the evidence for such a program in the ED.	Yes, peer reviewed. Emergency Medicine Clinics of North America. N/A *Tetanus comparison

Appendix D (continued)

Table of Evidence

First author (Year) Title of the article	Design / Method / Conceptual Framework	Sample / Setting	Major valuables (outcomes) studied (their definitions)	Measurement (Instruments or tools to measure outcomes)	Data Analysis Method	Findings	Appraisal: Put the level and quality of the article Worth to use?
Lu, Pj. (2018). Association of provider recommendation and offer and influenza vaccination among adults aged ≥18 years - United States.	Survey	The 2016 NIFS survey, a total of 4305 completed the NIFS survey conducted on a random sample of designed to be representative of the non-institutionalized U.S. population aged ≥18 years	Provider recommendation/ offer status in achieving vaccination coverage.	Self-administered interview	SAS release 9.4 (and SUDAAN 11.0.) Multivariable logi stic regression model were used.	Provider recommendation was significantly associated with influenza vaccination.	Yes, Vaccine Journal. Level 1, High quality *Providers need for recommendation
Scott, V., (2019) Office-Based Educational Handout for Influenza Vaccination: A Randomized Controlled Trial.	RCT	Convenience sample of parent-child dyads at 2 pediatric clinics affiliated with an academic medical center in an underserved area .	The primary outcome was the child influenza vaccine receipt on the clinic visit day and by the end of the influenza season.	Post- intervention survey	Multivariable logistic regression was used for primary analysis.	Providing an educational handout for parents was associated with increased child influenza vaccine receipt by the end of the influenza season. Handout with national data was more efficient in same date visit vaccinations than local data.	Yes, pediatrics Journal. Level 2, Good quality *Importance of handout in waiting room

Appendix E

Logic Model

Inputs	Activities	Outputs	Short Term Outcome	Long Term Outcomes
• Support from clinical site management, ED fast-track NPs, fast-track RNs, and triage nurses to conduct activities. • Access to written educational material for clinical staff and patients. • Quick access to Influenza vaccinations in the ED.	• Recruit 2 NPs as "Project Champions" and educate all ED fast-track NPs about influenza vaccination importance and how to make a strong influenza vaccine strong recommendation. • Recruit 2 RNs as "Project Champions" and educate triage and fast Track RNs about influenza vaccination importance and need for screening in triage. • Adopt an educational handout for patients that declined influenza vaccination published by a trusted source.	• Screening of patient's influenza vaccine status and assessing for willingness to receive an influenza vaccine during triage process by triage RN. • Fast-track NPs educating and recommending influenza vaccine during ED encounter. • Education of patients about influenza vaccine while waiting in ED via handout. • Fast-track NPs reaassessing for patient's willingness to receive an influenza vaccine post education and recommendation.	• Increase patient's willingness to receive an influenza vaccine in the ED. • To create a simple, cost-effective influenza vaccine educational strategy that does not disrupt the clinical flow	• To apply the same vaccine educational strategy to other vaccines as needed to increase vaccination willingness in underserved populations • Increase Flu vaccination rates in community. • Decrease impact of influenza illness in UCIMC ED patient population.

Assumptions	External Factors

• Nurses will be screening and assessing for willingness to receive an influenzas vaccine • NPs will be recommending vaccines during evaluation	• Number of unvaccinated fast-track patients visiting the ED • Number of days per week that fast-track area will be open • Availability and cooperation of clinic staff

Appendix F

Data Collection Instruments - Track Sheet

Number: _____ Patient initials: _____

To be done by Triage RN TRIAGE RN NAME _____

If patient has not receive a flu vaccine this season			
If we were to offer a flu shot in the ED, is the patient willing to receive one?	Yes **No intervention**	No Reason:_____ **Give handout regardless of reason**	Not sure **Give handout**

Please hand form to Fast Track NP FT NP NAME_____

Did the patient read the handout?	Yes	No	If no, why?
Was verbal recommendation to receive flu shot given?	Yes	No	
Is patient willing to receive flu shot after recommendation?	Yes, patient is willing 1. **And** meets criteria for receiving flu vaccine 2. **But** does not meet criteria to receing flu vaccine due to: A. Covid symptoms B. Other medical	No	Maybe later
If meets criteria and order placed, did the patient receive flu shot at ED?	Yes	No 1. Eloped 2. No staff available 3. No order placed 4. Other	

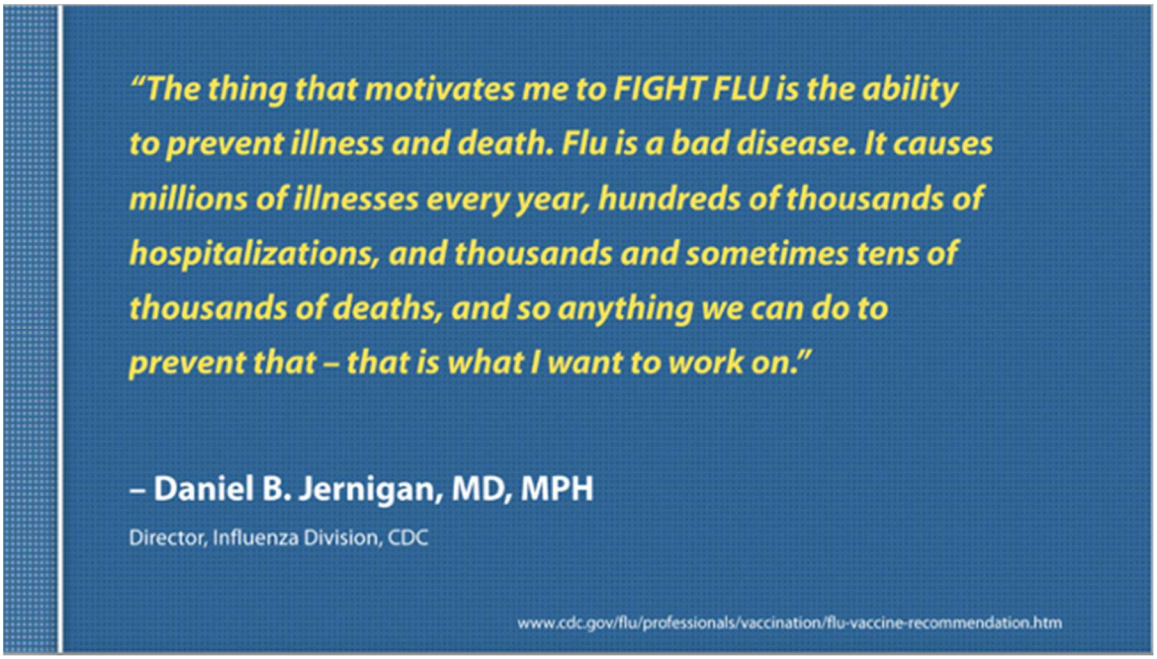
Age _____ **Sex:** Male Female Other **Hispanic Origin:** Hispanic Not Hispanic

Race: Asian
African American
American Indian
Pacific Islander
Other
White

Insurance: Private
Government (Medicaid,Medicare, CalOptima, LA Care, IEH)
No Insurance (including Emergency Medical)
Other

Appendix G

Intervention Material (Clinical Staff Education)



Appendix G (Continued)

Intervention Material (Clinical Staff Education)

Learning Objectives

- Understand how to make a strong influenza vaccine recommendation.
- Learn how to answer some common questions about influenza.
- Learn how to answer some common questions about influenza vaccination.
- Understand best practices for increasing influenza vaccination rates in their clinical practices.

www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm

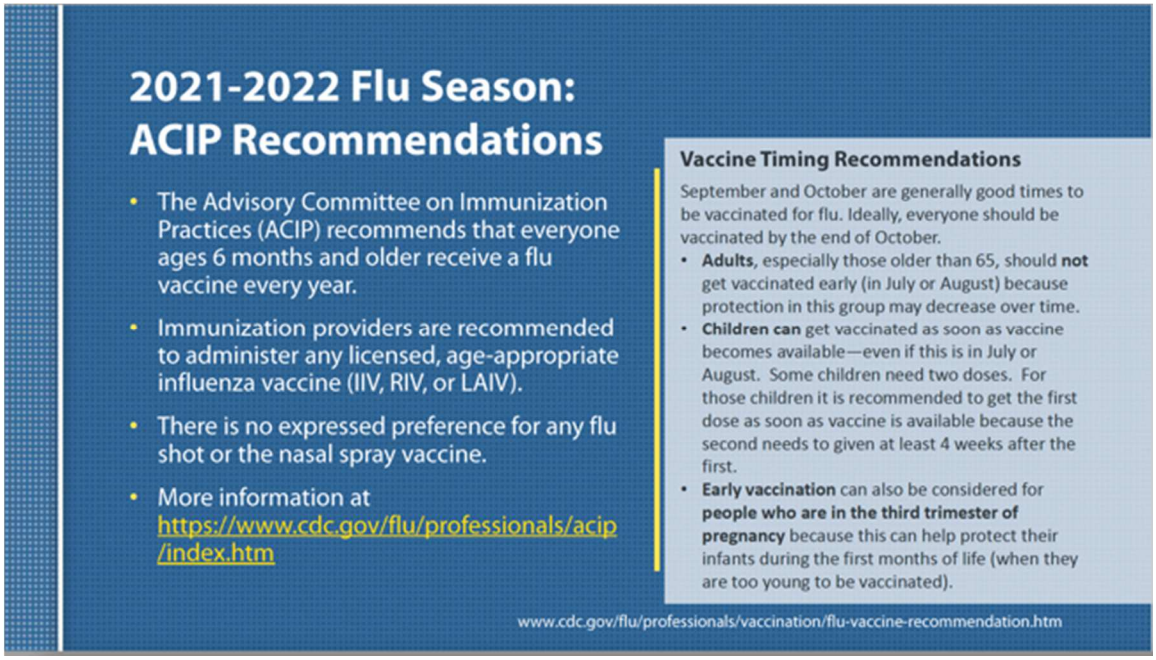
2020-2021 Flu Season in Review

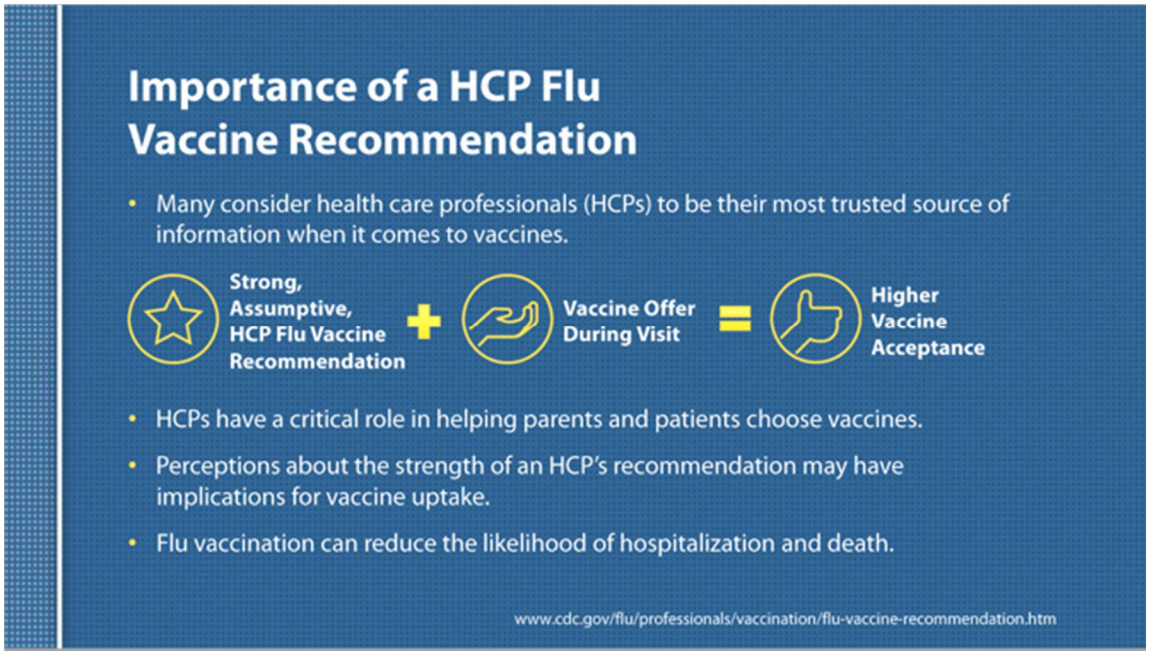
Influenza (flu) activity during the 2020–2021 season was unusually low both in the United States and globally, despite high levels of testing.

- The low level of flu activity during this past season contributed to dramatically fewer flu illnesses, hospitalizations, and deaths compared with previous flu seasons.
- In the United States, the cumulative rate of laboratory-confirmed influenza-associated hospitalizations was the lowest recorded since this type of data collection began in 2005.
- COVID-19 mitigation measures, like mask wearing, staying home, hand washing, school closures, reduced travel, increased ventilation of indoor spaces, and physical distancing, likely contributed to the low level of flu activity during the 2020–2021 season.

Appendix G (Continued)

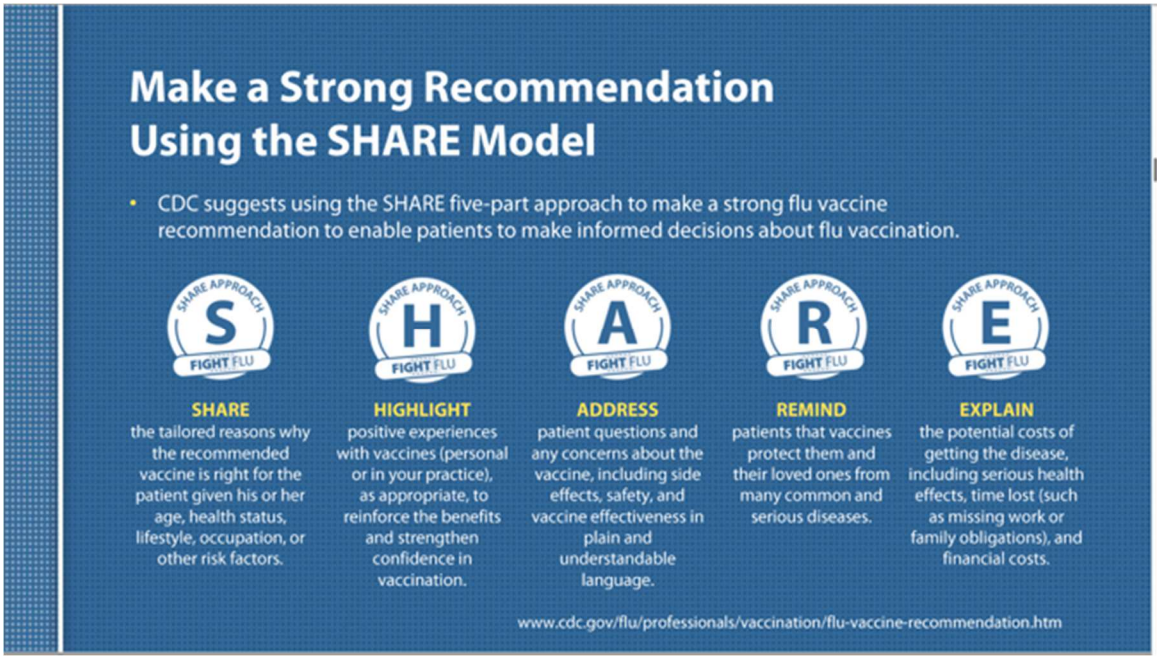
Intervention Material (Clinical Staff Education)

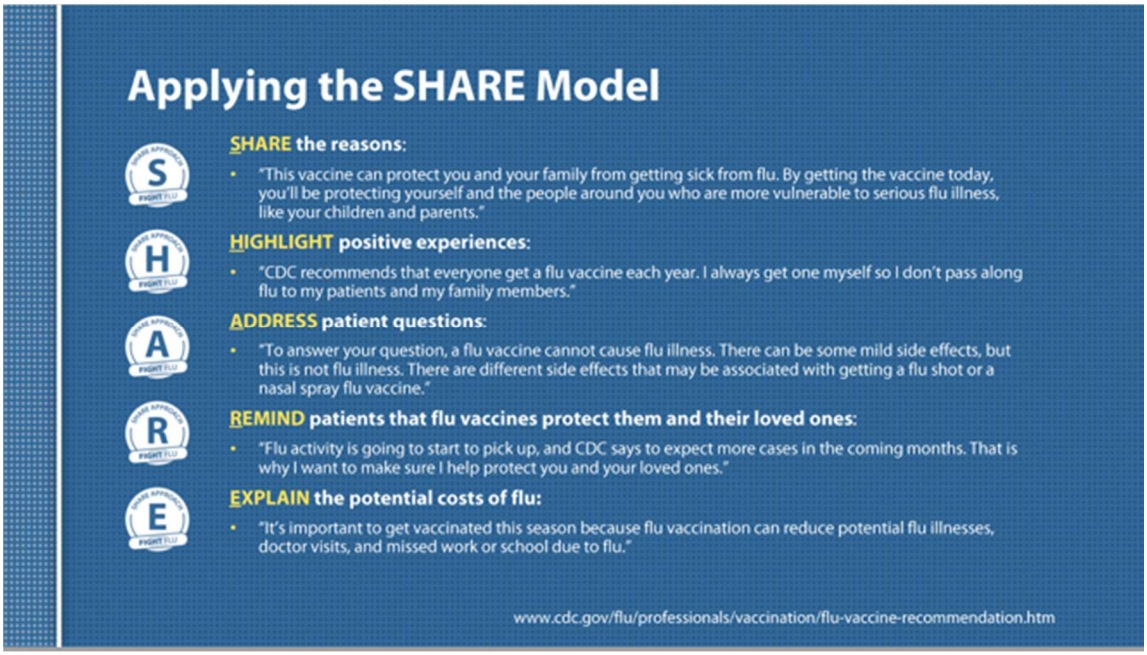




Appendix G (Continued)

Intervention Material (Clinical Staff Education)





Appendix G (Continued)

Intervention Material (Clinical Staff Education)

Higher Risk Populations

- Everyone 6 months of age and older should get an influenza vaccine every year. Even healthy adults can get sick with influenza and spread it to others.
- However, vaccination is particularly important for certain patients, like young children, who are at higher risk of serious complications.
- When making an influenza vaccine recommendation to these patients share tailored reasons the flu vaccine is particularly important for their overall health.

www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm

Higher Risk Populations: Young Children

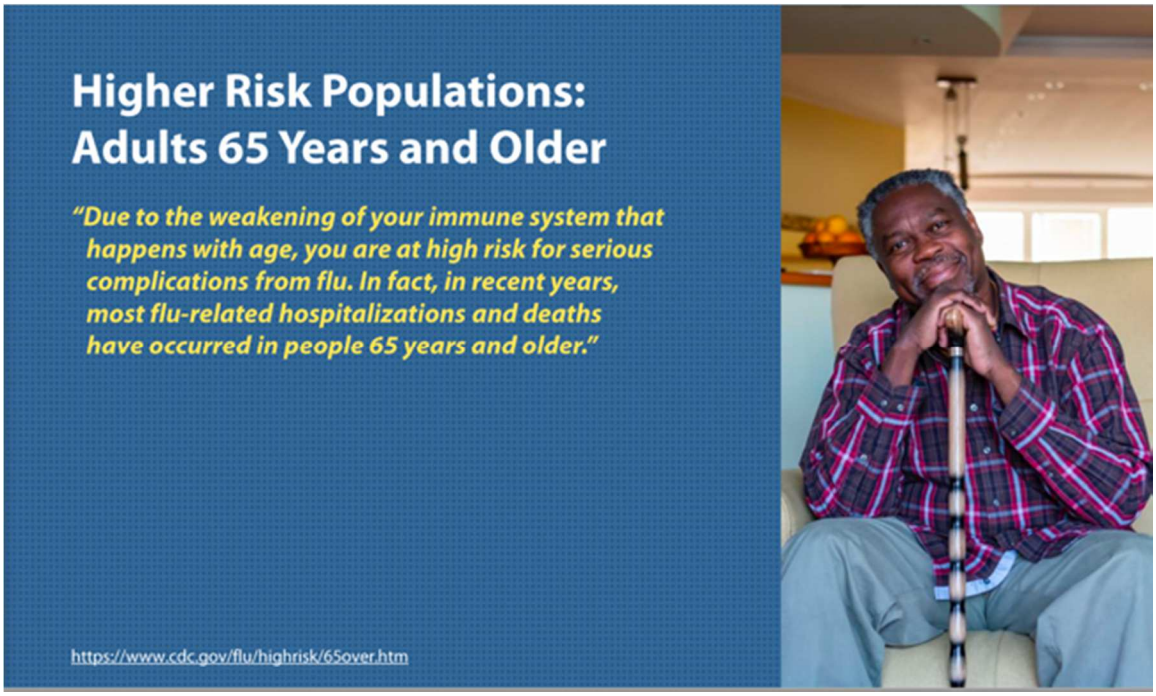
"Young children, even healthy young children, are at higher risk for serious flu-related complications. A recent study found that flu vaccination reduced the risk of flu-associated death by half (51%) among children with underlying high-risk medical conditions and by nearly two-thirds (65%) among healthy children."

Consider bundling influenza vaccine recommendation with other vaccines

https://www.cdc.gov/flu/highrisk/children.htm

Appendix G (Continued)

Intervention Material (Clinical Staff Education)



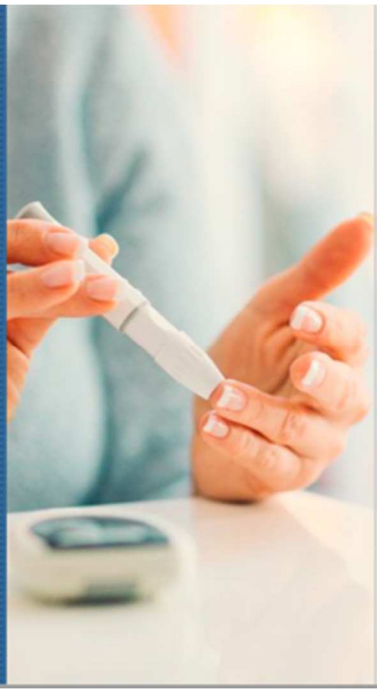
Appendix G (Continued)

Intervention Material (Clinical Staff Education)

Higher Risk Populations: Adults with Certain Medical Conditions

"People with chronic medical conditions—such as heart disease, diabetes and asthma—are at higher risk for developing flu-related complications, ranging from worsening of these chronic conditions, to pneumonia, and other more severe complications."

https://www.cdc.gov/flu/highrisk/



Addressing Questions and Vaccine Refusals

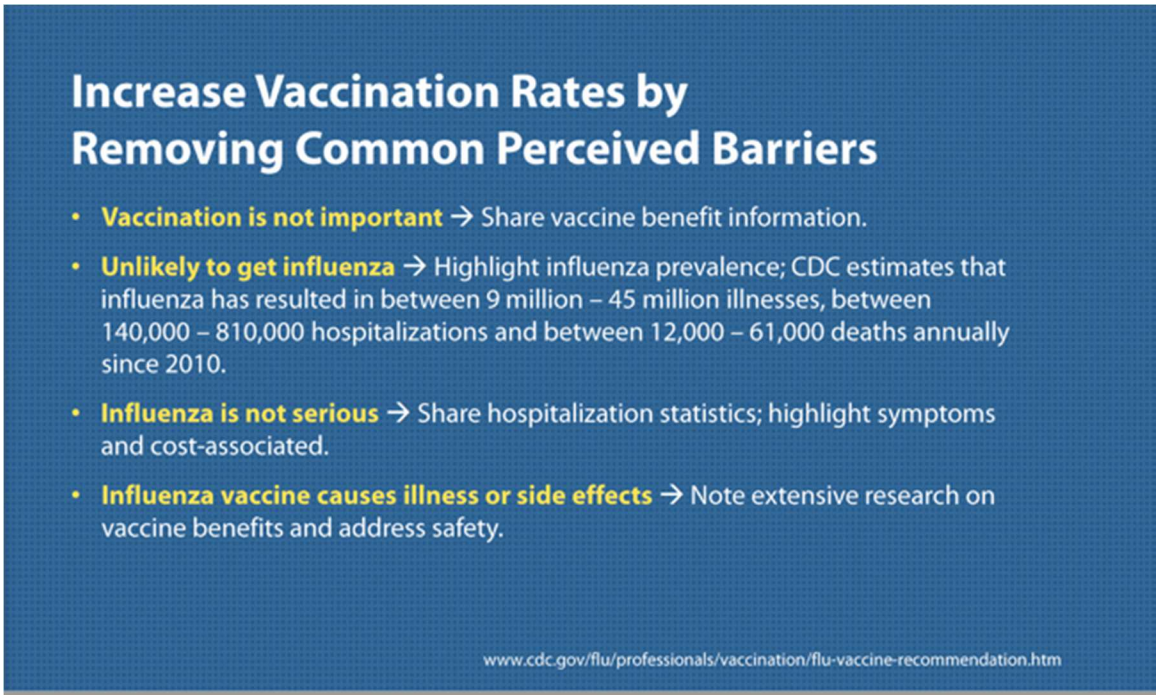
Every visit with a patient is an opportunity to recommend an influenza vaccine. Patients may have questions. Interpret questions as a request for additional information and be prepared to answer common questions.

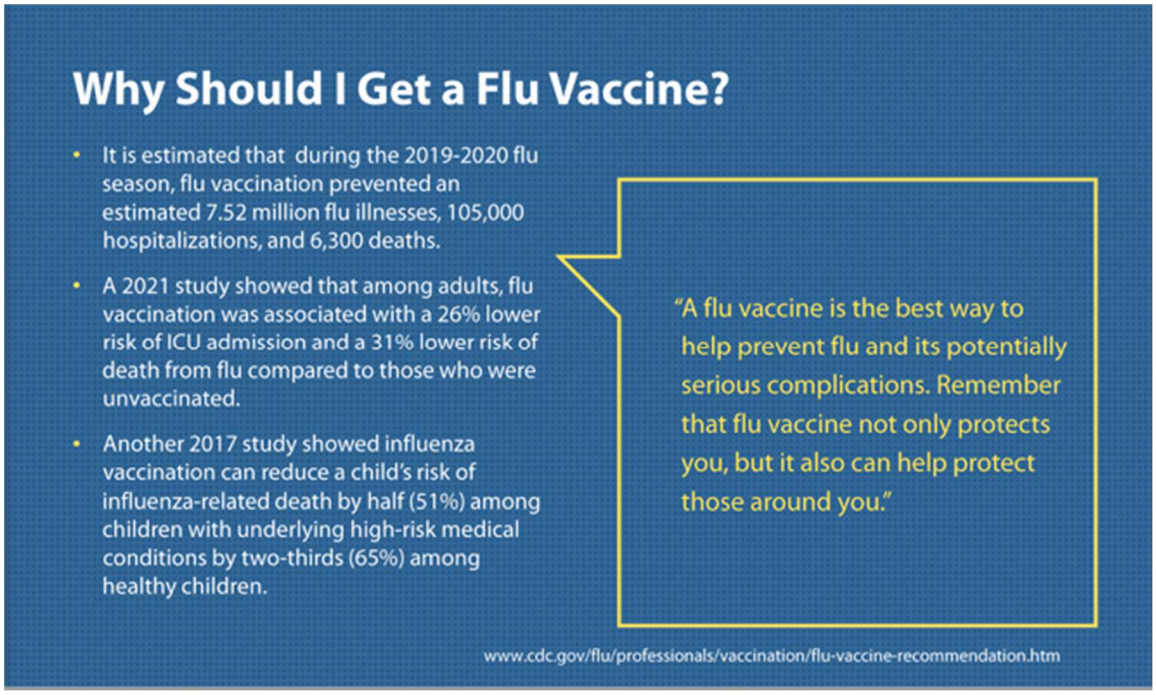
- Address questions immediately and apply the SHARE model. Offer influenza vaccine in the same visit.
- If a patient or patents refuses an influenza vaccine, probe for reasons, and provide answers to any concerns.
- If a patient continues to refuse an influenza vaccine, share an informational handout to help advance education beyond the office visit and follow up at a later time.

www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm

Appendix G (Continued)

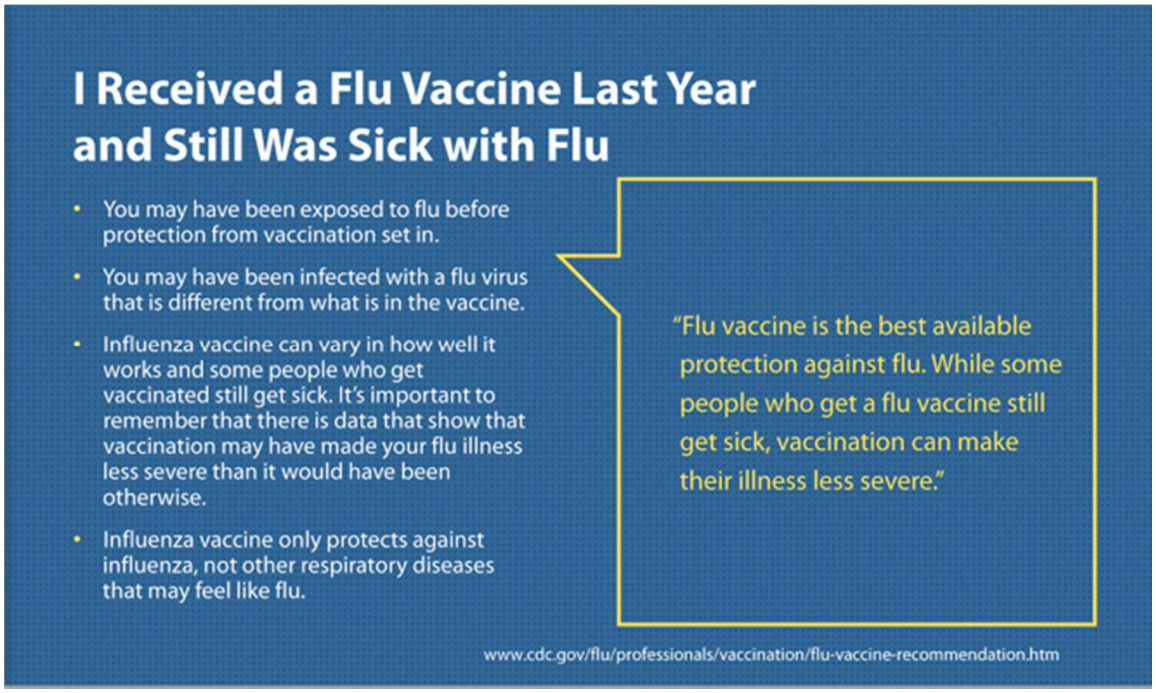
Intervention Material (Clinical Staff Education)

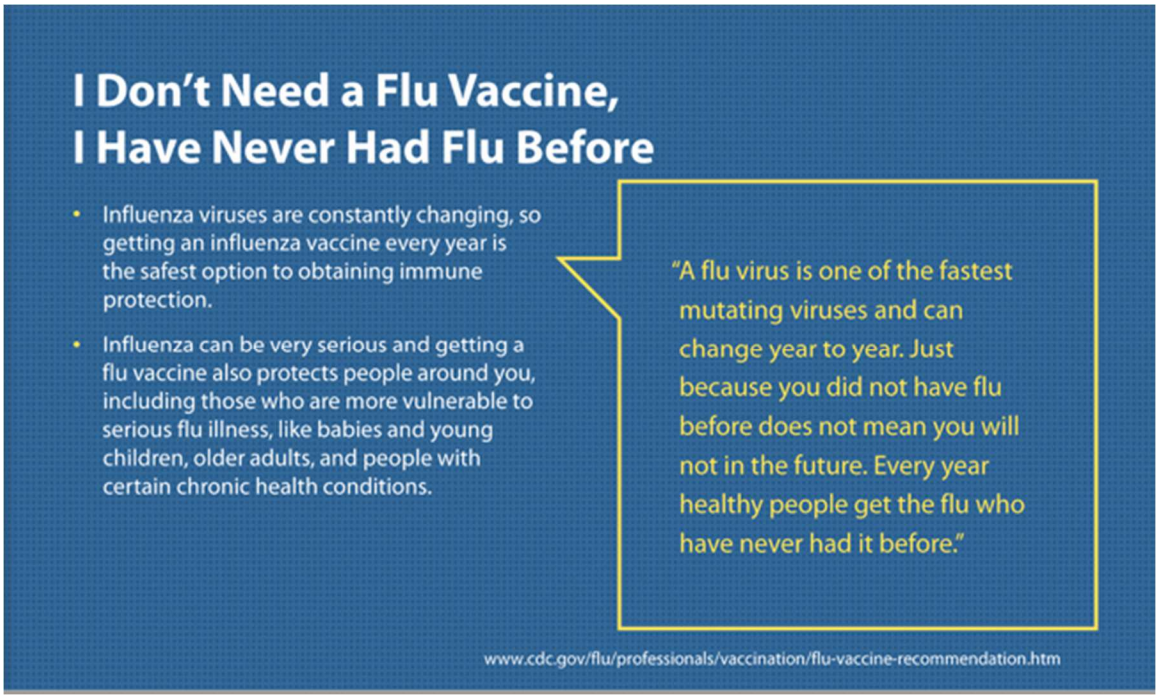




Appendix G (Continued)

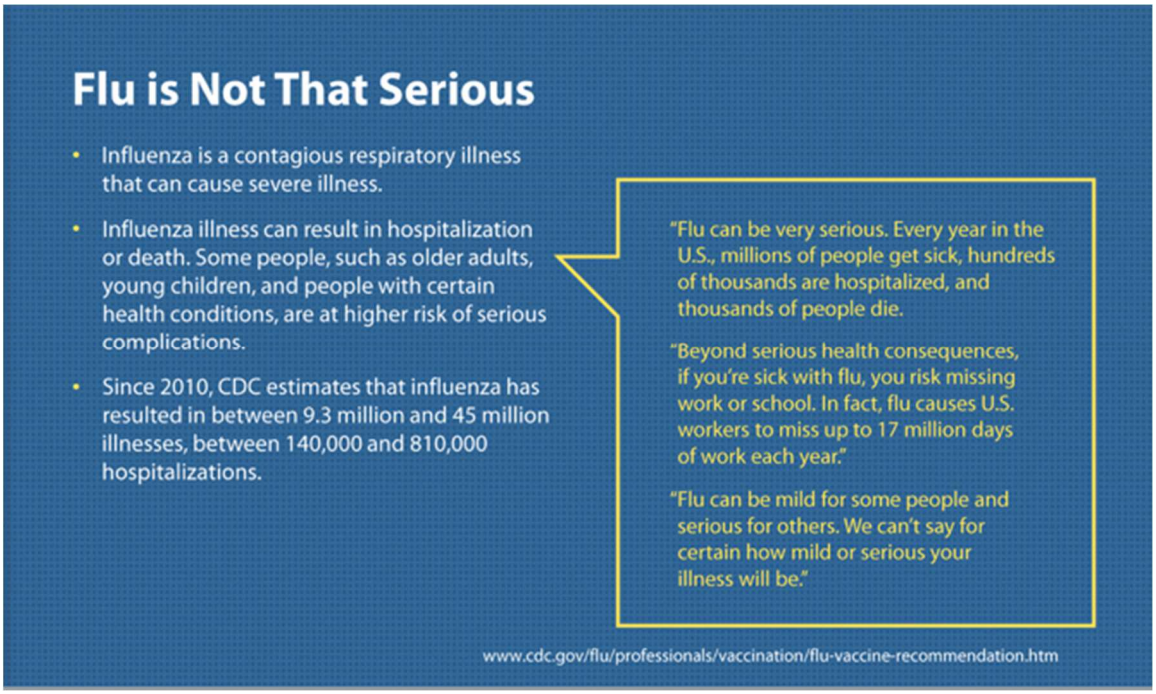
Intervention Material (Clinical Staff Education)

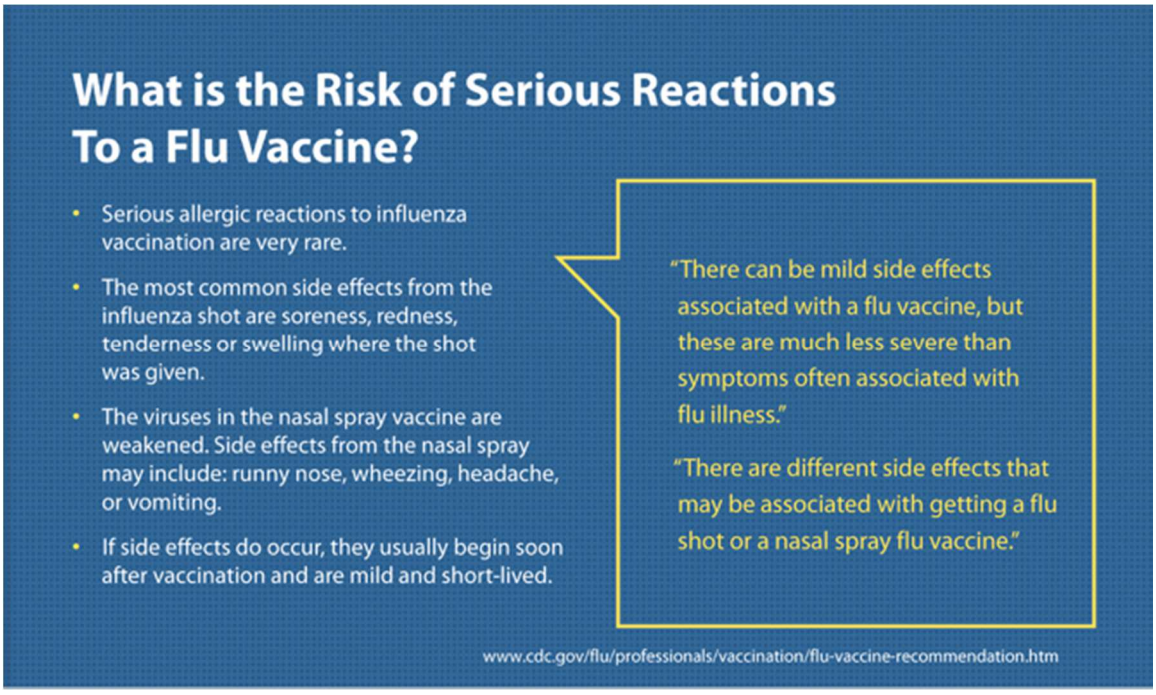




Appendix G (Continued)

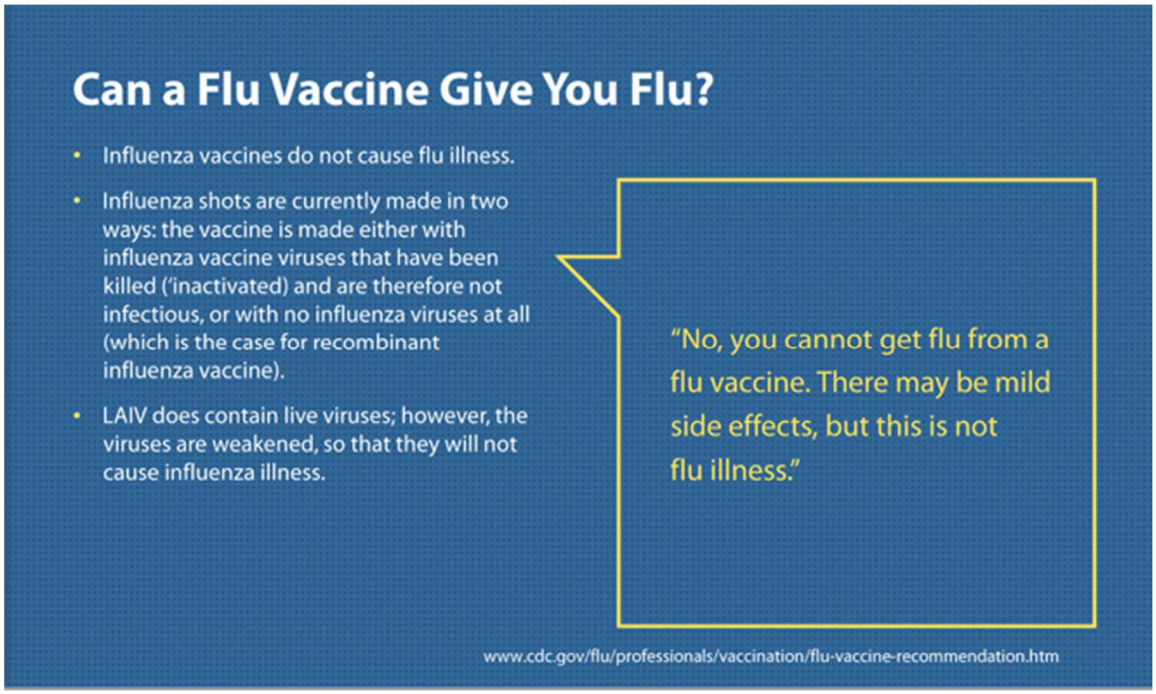
Intervention Material (Clinical Staff Education)





Appendix G (Continued)

Intervention Material (Clinical Staff Education)



Appendix G (Continued)

Intervention Material (Clinical Staff Education)

Additional Tips in Communicating with Patients About Flu Vaccination

- Keep it simple.
- Complement statistics with personal stories.
- Avoid repeating the incorrect information.
- Tie flu vaccination to protecting your loved ones.
- Position annual flu vaccination as an important component to overall management of health.

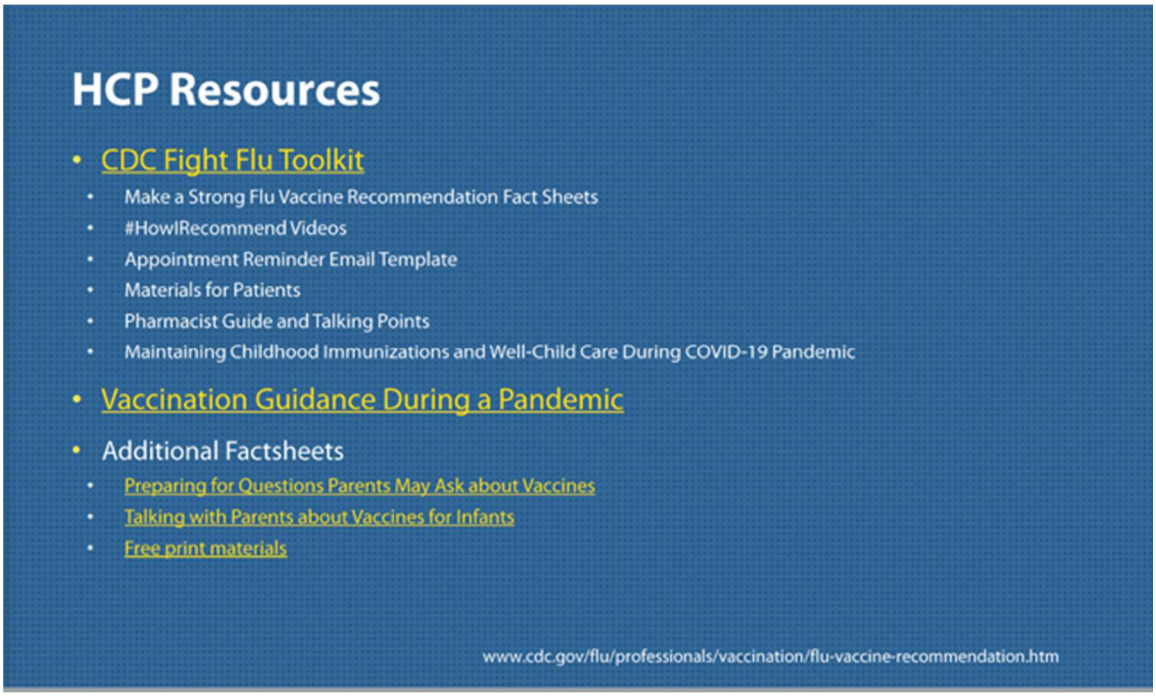
Techniques to Improve Vaccination Rates

- HCPs report higher vaccination rates when working in practices that involve medical staff in vaccine delivery, offer influenza vaccination during routine visits, have standing orders, and monitor vaccine rates.
- Keep up to date on immunization recommendations by the Advisory Committee on Immunization Practices (ACIP).
- Create a culture of immunization within your practice.
  - Make clinical resources and informational handouts readily available for staff and patients.
  - Develop standing orders for influenza vaccination.
  - Empower all staff to take every opportunity to recommend influenza vaccination.
- Assess influenza vaccination status at every visit September to March; every visit is an opportunity to recommend an influenza vaccine.
- Send email, call, or text reminders to patients to make an appointment before influenza season and follow-up with missed appointments, especially with high-risk patients.
- Make referrals to other pharmacies if stock is unavailable.

www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm

Appendix G (Continued)

Intervention Material (Clinical Staff Education)



Appendix G (Continued)

Intervention Material (Clinical Staff Education)

Make a Strong
Flu Vaccine Recommendation

FIGHT FLU

Information for Health Care Professionals

CDC recommends everyone six months and older get an influenza vaccine every year. Influenza vaccine has been shown to prevent millions of influenza illnesses, tens of thousands of hospitalizations, and thousands of deaths each year.

Your Vaccine Recommendation is Critical

As a health care professional (HCP), your strong recommendation is a critical factor in whether your patients get an influenza vaccine. Most adults believe vaccines are important, but they may need a reminder from you to get vaccinated. After making your recommendation, follow up with each patient during subsequent appointments to ensure the patient received an influenza vaccine. If the patient is still unvaccinated, repeat the recommendation and try to identify and address any questions or concerns.

When to Vaccinate

- CDC recommends that influenza vaccination should be offered in September or October. However, vaccination should continue throughout influenza season as long as influenza viruses are circulating, even into January or later.
  - » Children and pregnant people in their third trimester can be vaccinated as soon as influenza vaccine is available—even if this is in July or August.
  - » Adults, and especially those older than 65, should not be vaccinated early (in July or August) as immunity wanes more quickly in this age group.
- If you do not offer vaccine at your facility, make an influenza vaccine referral, and then follow up with each patient during subsequent appointments to ensure they got vaccinated. If the patient remains unvaccinated, repeat the recommendation/referral and try to identify and address any questions or concerns.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Appendix G (Continued)

Intervention Material (Clinical Staff Education)

How to Make a Strong Flu Vaccine Recommendation

Based on years of research into vaccine motivators, CDC has developed a mnemonic device to help HCPs make a strong vaccine recommendation. This method known as "SHARE" can help you to make a strong vaccine recommendation and provide important information to help patients make informed decisions about vaccinations.

S- SHARE why an influenza vaccine is right for the patient given his or her age, health status, lifestyle, occupation, or other risk factors.

> *"This vaccine can protect you and your family from getting sick from flu. By getting the vaccine today, you'll be protecting yourself and the people around you, like your children and parents, who may be more vulnerable to serious flu illness."*

H- HIGHLIGHTpositive experiences with influenza vaccines (personal or in your practice), as appropriate, to reinforce the benefits and strengthen confidence in influenza vaccination.

> *"In addition to recommending a yearly flu vaccine to my patients, I get one each year to protect myself and my family from flu."*

A- ADDRESS patient questions and any concerns about influenza vaccines, including for example, side effects, safety, and vaccine effectiveness, in plain and understandable language. Acknowledge that while people who get an influenza vaccine may still get sick, there are studies to show that their illness may be less severe.

> *"A flu vaccine cannot cause flu infection. The most common side effects of an influenza vaccine are mild, like redness, swelling, soreness, or a low-grade fever for a flu shot. This should go away within a few days."*

> *"Flu vaccines protect against flu illness but aren't 100% effective, so even if you get vaccinated you might still become sick with flu. It's important to get your flu vaccine because studies show that even if you do get sick, vaccination may make your flu illness less severe."*

R- REMIND patients that influenza vaccines help protect them and their loves ones from serious influenza illness and complications that can result in hospitalization or even death for some people.

> *"Flu activity is going to start to pick up, and CDC says to expect more cases in the coming months. That is why I want to make sure I help protect you and your loved ones against flu and its potentially serious complications."*

E- EXPLAIN the potential costs of getting influenza, including potential serious health effects for the patient, time lost (such as missing work or family obligations), financial costs, and potentially spreading flu to more vulnerable family and friends.

> *"It's important to get vaccinated this season because flu vaccination can reduce potential flu illnesses, doctor visits, and missed work and school due to flu, and can protect those around you who are more vulnerable to potentially serious flu complications."*

Appendix G (Continued)

Intervention Material (Patient Education)

No More Excuses: You Need a Flu Vaccine

Get the Facts

- Flu vaccines have an excellent safety record, do not cause flu not cause flu, and can protect the ones you love.
- Spread the word and GET VACCINATED!

Even healthy people need a flu vaccine.

Influenza (flu) is a contagious disease which affects the lungs and can lead to serious illness, including pneumonia. Even healthy people can get sick enough to miss work or school for a significant amount of time or even be hospitalized. Flu vaccines are recommended for everyone 6 months of age and older. Pregnant people, young children, older people, and people with certain chronic medical conditions like asthma, diabetes and heart disease are at increased risk of serious flu-related complications, so getting a yearly flu vaccine is especially important for them.

Is the flu vaccine safe?

Yes. Flu vaccines have an excellent safety record. They have been given to hundreds of millions of people for more than 50 years and have a very good safety track record. Each year, CDC works closely with the U.S. Food and Drug Administration (FDA), and other partners to ensure the highest safety standards for flu vaccines.

The most common side effects of flu vaccines are mild.

Flu vaccines cannot cause flu illness; however, it can cause mild side effects that may be mistaken for flu. For example, people vaccinated with the flu shot may feel achy and may have a sore arm where the shot was given. People vaccinated with the nasal spray flu vaccine may have a stuffy nose and sore throat. These side effects are NOT flu. If experienced at all, these effects are usually mild and last only 1-2 days.

Even if I get sick, won't I recover quickly?

Not necessarily. Influenza can be serious and anyone can become sick with flu and experience serious complications. But even if you bounce back quickly, others around you might not be so lucky. Older people, young children, pregnant people and people with medical conditions like asthma, diabetes, heart disease and lung disease are at especially higher risk from the flu. Kids, teens and adults who are active and healthy also can get very sick from flu and spread it to others. Some people can be infected with the flu virus but have no symptoms. During this time, you can still spread the virus to others. Don't be the one spreading flu to those you care about.

CDC

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

C5272590-C 09/02/2021

Appendix G (Continued)

Intervention Material (Patient Education)

Can't I wait and get vaccinated when/if flu hits my community?

It is best to get vaccinated before flu begins to spread. It takes about two weeks for the flu vaccine to provide full protection, so the sooner you get vaccinated, the more likely it is that you will be fully protected once flu begins to circulate in your community.

Flu vaccines can't give you the flu.

Even if you got a flu vaccine, there are reasons why you might still get flu or a flu-like illness.

- You may have been exposed to a non-flu virus before or after you got vaccinated. The flu vaccine can only prevent illnesses caused by flu viruses. It cannot protect against non-flu viruses that may cause flu-like illness.
- Or you might have been exposed to flu after you got vaccinated but before the vaccine took effect. It takes about two weeks after you receive the vaccine for your body to build protection against the flu.
- Or you may have been exposed to an influenza virus that was very different from the viruses included in that year's vaccine. The flu vaccine protects against the influenza viruses that research indicates will cause the most disease during the upcoming season, but there can be other flu viruses circulating.
- Unfortunately, the flu vaccine doesn't provide the same protection for everyone. How well the flu vaccine works (or its ability to prevent flu) can range widely from season to season and also can vary depending on who is being vaccinated.

Don't avoid getting a flu vaccine because you don't like shots.

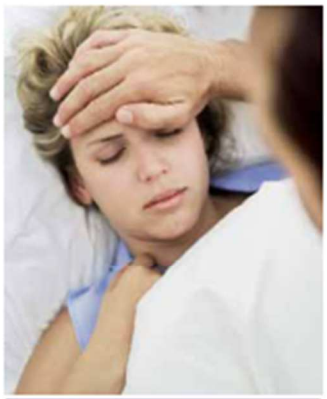
The very minor pain of a flu shot is nothing compared to the suffering that can be caused by the flu. The flu can make you very sick for several days; send you to the hospital, or worse. For most healthy, non-pregnant people ages 2 through 49 years old, the nasal spray flu vaccine is a great choice for those who don't like shots. Also, there is an intradermal shot that uses a much smaller needle than the regular flu shot. Either way, getting the shot or nasal spray can help to protect you from catching the flu. So, whatever little discomfort you feel from the minor side effects of the flu vaccine is worthwhile to avoid the flu.

You need to get a flu vaccine every year.

You need to get a flu vaccine every year to protect yourself against the viruses that research suggests are most likely to circulate each season. There are two reasons for getting a flu vaccine every year:

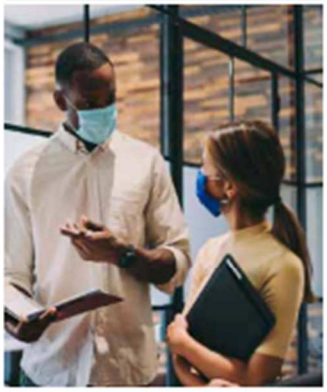
a) The first reason is that because flu viruses are constantly changing, flu vaccines may be updated from one season to the next to protect against the viruses research indicates may be most common during the upcoming flu season.

b) The second reason that annual vaccination is recommended is that a person's immune protection from the vaccine declines over time. Annual vaccination is needed for optimal protection.



Get a Flu Vaccine

- Flu vaccines are offered in many locations. Even if you don't have a regular doctor or nurse, you can get a flu vaccine somewhere else including: doctor's offices, clinics, health departments, retail stores, pharmacies, health centers, as well as by many employers and schools.



For more information, visit http://www.cdc.gov/flu or call 1-800-CDC-INFO (800-232-4636).

Appendix G (Continued)

Intervention Material (Patient Education in Spanish)

No tiene más excusas: necesita la vacuna contra la influenza

Conozca los datos

- La vacuna contra la influenza es segura, no causa la enfermedad y puede brindarles protección a sus seres queridos.
- ¡Transmita el mensaje y VACÚNESE!

Hasta las personas sanas necesitan la vacuna contra la influenza.

La influenza es una enfermedad contagiosa que puede causar complicaciones graves como la neumonía. Incluso las personas sanas pueden enfermarse y tener que faltar al trabajo o a la escuela por varios días, o necesitar hospitalización. Se recomienda una vacuna anual contra la influenza a todas las personas, a partir de los 6 meses de edad en adelante. Las mujeres embarazadas, los niños pequeños, las personas mayores y las personas con ciertas afecciones médicas crónicas como asma, diabetes y enfermedad cardíaca tienen mayor riesgo de sufrir complicaciones graves por la influenza; por lo tanto, es sumamente importante para ellos que se vacunen contra la influenza todos los años.

¿Es segura la vacuna contra la influenza?

Sí. La vacuna contra la influenza es segura. Cientos de millones de estadounidenses recibieron las vacunas contra la influenza con total seguridad en los últimos 50 años y, además, se han realizado amplias investigaciones que respaldan la seguridad de las vacunas contra la influenza estacional. Cada año, los CDC trabajan conjuntamente con la Administración de Alimentos y Medicamentos (FDA) de los EE. UU. y otros socios, con el objetivo de garantizar los más altos estándares de seguridad para las vacunas contra la influenza.

Los efectos secundarios más comunes de las vacunas contra la influenza son leves.

La vacuna contra la influenza no puede causar la enfermedad; sin embargo, puede causar efectos secundarios que pueden confundirse con la influenza. Los efectos secundarios de la vacuna inyectable contra la influenza incluyen dolor, enrojecimiento y/o inflamación en la zona de aplicación, dolor de cabeza, fiebre, dolores musculares y náuseas. Estos efectos secundarios NO son síntomas de influenza. En caso de que aparezcan, estos síntomas son leves y duran solo 1 o 2 días.

Incluso si me enfermo, ¿no será rápida la recuperación?

No necesariamente. La influenza puede ser grave y cualquier persona puede contraerla y presentar complicaciones graves, incluso los niños, los adolescentes y los adultos sanos y activos. Aunque usted se recupere rápidamente, las personas que lo rodean pueden no correr la misma suerte. Usted puede transmitir la enfermedad a otra persona que sea más vulnerable a la influenza. Algunas personas pueden infectarse con el virus de la influenza, pero sin presentar síntomas. Durante este período, todavía puede contagiar el virus a otras personas. No sea usted quien transmita la influenza a sus seres queridos.

National Center for Immunization and Respiratory Diseases
Office of Health Communication Science

Appendix G (Continued)

Intervention Material (Patient Education in Spanish)

¿No puedo esperar y vacunarme cuando la influenza llegue a mi comunidad?

Es mejor vacunarse antes de que la influenza comience a propagarse. Deben transcurrir dos semanas, a partir de la vacunación, para que se creen anticuerpos en el organismo y quede protegido contra la influenza; por lo tanto, cuanto más pronto se vacune, más probabilidades tendrá de estar protegido cuando la influenza aparezca en su comunidad.

Las vacunas contra la influenza no le transmiten la enfermedad.

Incluso si recibió una vacuna contra la influenza, hay algunas razones por las que todavía puede contraer la enfermedad o tener síntomas similares a los de la influenza:

- Usted pudo haber estado expuesto a un virus que no sea el de la influenza. La vacuna contra la influenza previene únicamente las enfermedades por virus gripales. No protege contra otros .
- Usted pudo haber estado expuesto a la influenza después de haberse vacunado, pero antes de que la vacuna hiciera efecto. Después de haber recibido la vacuna, tarda aproximadamente dos semanas para que su cuerpo esté protegido contra la influenza.
- Usted pudo haber estado expuesto a un virus de la influenza que fuera muy diferente a los virus incluidos en la vacuna de ese año. La vacuna contra la influenza brinda protección contra los virus de la influenza que, según las investigaciones, serán los más comunes durante la temporada entrante, pero puede haber otros virus de la influenza en circulación.
- Sin embargo, lamentablemente algunas personas que se vacunan contra la influenza pueden enfermar. La efectividad de la vacuna contra la influenza (o su capacidad para prevenir la enfermedad) puede variar de una temporada a otra, y también según quién reciba la vacuna. No obstante, si se enferma, la vacunación contra la influenza puede hacer que la enfermedad sea más leve de lo que hubiese sido en caso contrario.

No evite vacunarse por el solo hecho de que no le gustan las inyecciones.

El leve dolor de una vacuna inyectable contra la influenza no es nada en comparación con el malestar que provoca la enfermedad. La vacuna contra la influenza reduce el riesgo de que se enferme, de que sea hospitalizado y, además, evita que transmita el virus a sus seres queridos. En conclusión, vale la pena soportar cualquier pequeña molestia que sienta por los efectos secundarios leves de la vacuna inyectable contra la influenza, y así evitar contraer la enfermedad.

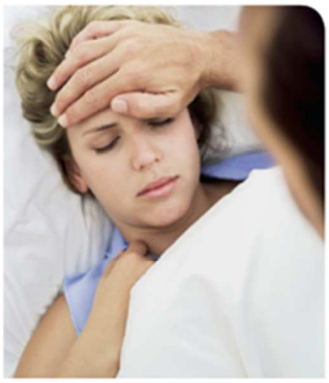
Usted debe vacunarse contra la influenza todos los años.

Hay dos razones para vacunarse contra la influenza todos los años:

a) los virus de la influenza cambian constantemente por lo que las vacunas contra esta enfermedad pueden actualizarse de una temporada a la siguiente. Para lograr la mayor protección, es necesario que reciba la vacuna de esta temporada.

b) la protección inmunológica que una persona obtiene de la vacuna va disminuyendo en la medida que pasa el tiempo. Para lograr la mayor protección, es necesario recibir la vacunación anual.

Last Updated November 28, 2016



Vacúnese contra la influenzae

- Las vacunas contra la influenza se ofrecen en muchos lugares. Aunque no tenga un médico o un enfermero de cabecera, puede recibir la vacuna contra la influenza en cualquier otro sitio, incluidos los consultorios médicos, las clínicas, los departamentos de salud, las tiendas minoristas, las farmacias y los centros de salud; además, muchos empleadores y escuelas se encargan de administrar la vacunas.
- Use la herramienta para buscar vacunas en http://vaccine.healthmap.org/ para encontrar los sitios en su comunidad donde se ofrece la vacuna contra la influenza.

For more information, visit http://www.cdc.gov/flu or call 1-800-CDC-INFO (800-232-4636).

Page 2 of 2