A SURVEY OF BARRIERS TO ADULT INFLUENZA VACCINATION

Laura Sherman and Dr. Tillman Farley
Department of Family Medicine, University of Colorado Denver
Disclosures

- There are no real or perceived conflicts of interest for those involved in this project.

- COMIRB Protocol #11-0968
Background

- Influenza is a serious, contagious respiratory illness that, according to the Centers for Disease Control and Prevention, resulted in 41,914 laboratory-confirmed hospitalizations and 2,125 laboratory-confirmed deaths of US patients from August 30, 2009 to April 3, 2010.

- These statistics do not include the much greater number of individuals infected with influenza who were treated on an outpatient basis.

- These high numbers of infections and deaths are preventable; they could and should be reduced in the future, with consistent, widespread use of the annual influenza vaccine.

As of August 2010, the Advisory Committee on Immunization Practices recommends an annual influenza vaccination for everyone ages 6 months and older.

Unfortunately, only 25% of noninstitutionalized adults ages 18 to 64 were vaccinated in 2008.

One of the objectives of Healthy People 2020, a US health initiative, is to increase the influenza vaccination rate of this group to 80% by 2020.


Background

- An 80% vaccination rate is an ambitious goal, and in order to reach it, physicians need to identify and address existing barriers to flu vaccination among US adults.

- The Hispanic population, in particular, has historically reported lower flu vaccination rates than non-Hispanic Whites.

- Most of the research concerning this disparity has focused on elderly populations and pediatric populations. Our work will attempt to identify major barriers to influenza vaccination among Hispanic Coloradans ages 18 to 89.

What are the major barriers to influenza vaccination among Colorado adults, particularly Hispanic Coloradans?
Hypotheses

- We hypothesize that barriers to influenza vaccination among Colorado adults include:
  - A lack of knowledge about the benefits and risks of the flu vaccine and about its importance as a recommended adult vaccination
  - Several common misconceptions about influenza and the flu vaccine
- These hypotheses are based on the findings of previous studies concerning influenza vaccination rates and disparities, though most of those studies focused on older and elderly populations.
To investigate our hypotheses, we plan to conduct a written survey of adult clients of the Commerce City, Fort Lupton, and Longmont Salud Family Health Centers in Colorado.

Clients of the Salud Family Health Centers will be identified through their presence in each clinic’s waiting room. All clients 18 to 89 years old will be invited to participate in the survey; if a client is accompanied by friends or family, only one adult member of each group may choose to complete the survey.

A written invitation to participate will be distributed to potential respondents; Laura Sherman will inform them about the study and their rights, and after giving verbal consent to participate in the survey, respondents will be provided with the questionnaire.
Our survey will evaluate attitudes toward influenza vaccination using a series of 17 questions addressing clients’ interest in and use of the flu vaccine, their understanding of the risks and benefits of the vaccine, and their opinions regarding common reasons for vaccine refusal.

Four other pieces of information will also be collected from respondents: self-identified age, sex, race/ethnicity, and health insurance type. The survey is completely anonymous, and does not ask for any personally identifiable information.

Once respondents have completed the survey, the questionnaires will be collected, and the data will be recorded in aggregate (as a group) in a computerized spreadsheet.
We will utilize the assistance of the Colorado Biostatistics Consortium Research Consulting Lab to analyze our data. They will perform a logistic regression analysis and create ROC curves for the survey data.

Logistic regression analysis: This is a mathematical model that utilizes the logistic function to predict the probability of occurrence of an event by fitting data to a curve. In our study, the model uses responses to survey questions as predictor variables to determine the probability that a respondent has received the flu vaccine.
ROC curve: A receiver operating characteristic is a graph of true positive rate vs. false positive rate for a given model, and can be used to compare various models in order to select the best one. In our study, ROC curves will be used to determine which survey questions are the best predictors to determine the probability that a respondent has received the flu vaccine.

We hope to identify significant trends in responses collected from all respondents, and self-identified Hispanic respondents in particular; if the data shows that specific responses regarding one or more of the issues addressed in our questionnaire are associated with a lack of vaccination, then we will note those issues as possible barriers to adult influenza vaccination.

If no associations become evident, then we will consider the possibility that none of the issues addressed in our survey are significant barriers to influenza vaccination among Colorado adults.
We have already conducted a pilot test of both the English and Spanish versions of our survey at the Longmont Salud Family Health Center. The pilot test allowed us to determine whether we needed to revise the wording of our survey questions. Overall, both versions of the survey were well-received, and no revisions were made.

Additionally, with the help of the Colorado Biostatistics Consortium Research Consulting Lab, we used the pilot test data to calculate the necessary sample size for our study. Up to 750 individuals will be surveyed in order to attempt to achieve 80-90% statistical power for each survey question.
Statistical power: The probability that a test will determine an effect to be statistically significant when it is, in fact, statistically significant. Power analysis may be used, as in our study, to calculate the minimum sample size necessary to be reasonably (80-90%) likely to detect an effect.

Data and Results

- Data collection will begin when COMIRB approval has been received. Results are pending.

- We predict that we will identify a trend in the data indicating that the English-speaking Hispanic population has an influenza vaccination rate that is approximately equal to that of non-Hispanic Whites, but the Spanish-speaking Hispanic population has a lower vaccination rate.

- After the data has been collected and analyzed, we hope to prepare a report on the study results that will be made available to the Salud Family Health Centers, and through those clinics, their patients.
Thank you to Dr. Tillman Farley, Maria de Jesus Diaz-Perez, Stefan Sillau, Salud Family Health Centers, the Colorado Biostatistics Consortium Research Consulting Lab, the Department of Family Medicine, and the Adler Scholarship Committee. Without your support, this study would not be possible.

Questions?