Fall 2019 Pre Health Case Competition

Vaccinations & Measles Outbreak Case Competition

Childhood vaccination has proven to be one of the most effective public health strategies to control and prevent disease. In an effort to reduce childhood morbidity and mortality, the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) issues annual recommendations and guidelines for childhood and adolescent immunizations.

A new study shows that numerous states and large metropolitan centers have seen an increase in the number of nonmedical exemptions (NMEs) from childhood vaccinations granted (https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002578). In the past decade, the number of philosophical exemptions to vaccination has increased in two-thirds of the states that allow such exemptions. As a result, researchers suggest that these areas are becoming increasingly vulnerable to vaccine-preventable disease outbreaks.

Although school immunization laws in every state grant vaccination exemptions to children for medical reasons, states may also grant NMEs for other reasons. According to the National Conference of State Legislatures, 47 states have provisions that allow parents to exempt their children from receiving a vaccine if it contradicts their religious beliefs, and 18 states permit philosophical exemptions based on moral, personal or other beliefs.

There are a variety of reasons that parents refuse, delay, or are hesitant to vaccinate their child. These reasons vary widely between parents, but they can be encompassed in 4 overarching categories. The 4 categories are religious reasons, personal beliefs or philosophical reasons, safety concerns, and a desire for more information from healthcare providers.

Unvaccinated groups of people can generate local outbreaks of diseases that can later spread across the country, affecting anyone who was unable to get vaccinated for any reason. For example in 2000, measles was declared to be eliminated in the United States, when no sustained transmission of the virus was seen in this country for more than 12 months. However, since 2010, measles outbreaks (defined as 3 or more cases in a geographic area) have increased. In 2019 there were more than 1000 reported cases of measles across more than 20 states. Most of these cases occurred in unvaccinated people.

Contracting measles can be largely avoided through vaccination with the MMR vaccine. Though considered safe and effective, the MMR vaccine can have side effects. Most people who get the MMR vaccine do not have any serious problems with it. Common side effects of the MMR vaccine include sore arm from the shot, fever, mild rash, temporary pain and stiffness in the joints. The MMR vaccine has been linked with a very small risk of febrile seizures (seizures or jerking caused by fever). Febrile seizures following MMR are rare and are not associated with any long-term effects. Because the risk of febrile seizures increases as infants get older, it is recommended to follow the immunization schedule recommended by the American Academy of Pediatrics.

**CDC Implementation TASK Force**

The Center of Disease Control and Prevention (CDC) is spearheading a new task force to combat measles outbreaks. You have been selected by the CDC as a member of a three person task force in Florida, which will focus on how to increase the immunization rate in Florida, specifically addressing the number of nonmedical exemptions (NMEs) from the MMR vaccine. The CDC has asked that you address the issue from a Public Health, Psychological and Scientific perspective. Your task force will develop and submit a program proposal, which will be reviewed by the Florida Department of Health for approval of funding. The maximum request for funding would be $10,000. This proposal will aim to create a new program that will assist in combating the issue within Florida.

**Implementation Plan Proposal Breakdown**

1. *Background and significance – maximum 500 words*
   a. Describe the background and significance of measles and measles vaccination
   b. Describe the overall problem to be addressed in the context of biology, public health and psychology
   c. This section must include a clearly defined project goal
   d. Include minimum of 2 peer-reviewed articles, plus other credible sources
2. Define target population – maximum 300 words
   a. Describe specific population you are targeting in Florida
   b. Explain why you selected this target population

3. Program Summary/Approach – maximum 300 words
   a. Describe your program model and approach
      i. Describe the overall program strategy, methodology, and analyses to be used to accomplish the specific goals of your program. Discuss potential problems, alternative strategies, and benchmarks for success anticipated to complete the program.
      ii. Address any corresponding policy that will need to be addressed for your program to be effectively implemented

4. Innovation – maximum 75 words
   a. Describe how your approach is different from other approaches/models that have been used to improve vaccination rates

5. Proposed collaborations and partnerships – maximum 200 words
   a. Describe partners and collaborators you will need to engage to meet your desired outcomes

6. Evaluation methodology – maximum 300 words
   a. Describe how you will evaluate if your program works, including the specific indicators you will use to assess program effectiveness (process evaluation) and program outcomes (outcome evaluation).
   b. Describe how you will collect data and how often you will evaluate the progress of the program

7. Project timeline
   a. Present a program timeline: include critical milestones and mid-term and end of project deliverables

8. Budget
   a. Present a program budget: the purpose of the budget and justification section is to present and justify all expenses required to achieve project aims and objectives. (Ex: personnel, community resources, supplies, marketing, recurrent costs, logistics, state policy programs, awareness campaigns, monitoring costs etc.)

**Steps to Participate in Competition**

1. Attend Pre Health Case Competition Information Session.

2. Sign up your team for the competition by emailing Emilio Lorenzo at el541@nova.edu or Olivia Fogel at of107@nova.edu
   a. Teams must be made up of 3 students and represent the three colleges associated with the case study: Halmos College of Natural Sciences and Oceanography, College of Psychology & Dr. Kiran C. Patel College of Osteopathic Medicine’s (Public Health or Nutrition).

3. Submit an “Implementation Plan Proposal” for the case study by **Monday, October 28th, 2019** to el541@nova.edu or Olivia Fogel at of107@nova.edu
   a. 3 Teams will be selected to present their Implementation Plan to Faculty and Professionals on **Wednesday, November 20th**

4. Attend **lunch on Friday, November 22nd from Noon to 1pm** to hear the announcement of the winner

5. Prizes:
   - **1st Place**: $900 ($300 each Team Member)
   - **2nd Place**: $450 ($150 each Team Member)
   - **3rd Place**: $150 ($50 each Team Member)