

PROJECT MANAGEMENT PLAN FOR THE PREPARATION OF THE INFLUENZA SEASON



Information Slide

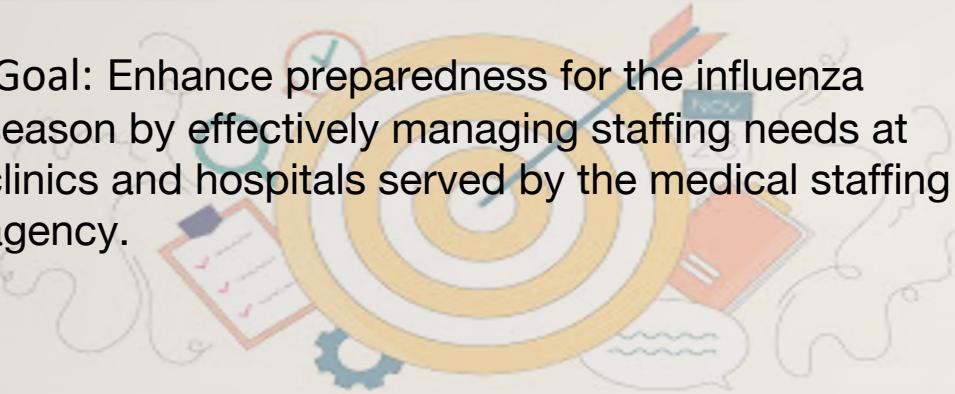
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Flu
Season
Ahead

Overview

Goal: Enhance preparedness for the influenza season by effectively managing staffing needs at clinics and hospitals served by the medical staffing agency.



Scope: The scope of the analysis encompasses examining historical influenza data, including incidence rates, peak seasons, and regional variations, to forecast staffing needs across the country. It involves identifying patterns, seasonal fluctuations, and high-risk periods for influenza outbreaks. Additionally, the analysis will assess the implications of influenza trends on the demand for temporary healthcare workers, considering factors such as clinic size, patient demographics, and geographic location.

Motivation: The United States has an influenza season where more people than usual suffer from the flu. Some people, particularly those in vulnerable populations, develop serious complications and end up in the hospital. Hospitals and clinics need additional staff to adequately treat these extra patients. The medical staffing agency provides this temporary staff.

Ahead

Objective: Determine when to send staff, and how many, to each state.

Additional Goals

Success factors:

The project's success will be based on:

- A staffing plan that utilizes all available agency staff per state requirements, without necessitating additional resources.
- Minimal instances of understaffing and overstaffing across states (a state can be considered understaffed if the staff-to-patient ratio is lower than 90% of the required ratio and overstaffed if greater than 110%).

Assumptions:

- Vulnerable populations suffer the most severe impacts from the flu and are the most likely to end up in the hospital.
- Flu shots decrease the chance of becoming infected with the flu.

Requirements:

- Provide information to support a staffing plan, detailing what data can help inform the timing and spatial distribution of medical personnel throughout the United States.
- Determine whether influenza occurs seasonally or throughout the entire year. If seasonal, does it start and end at the same time (month) in every state?
- Prioritize states with large vulnerable populations. Consider categorizing each state as low-medium, or high-need based on its vulnerable population count.

Assess data limitations that may prevent you from conducting your desired analyses.

Constraints:

- The staffing agency has a limited number of nurses, physician assistants, and doctors on staff.
- There's no money to hire additional medical personnel.

Stakeholder

Medical agency
frontline staff (nurses,
physicians assistants
and doctors)



Hospitals and
clinics using the
staffing agency
services

Influenza patients



Staffing Agency
Administrators



Communicating with stakeholders

Email	Meeting	Calls	Video Calls
<ul style="list-style-type: none">Updates and Reports: Send regular email updates and reports to stakeholders regarding influenza activity, staffing plans, vaccination campaigns, and other relevant information.Announcements: Use email to make announcements about upcoming meetings, training sessions, policy changes, or important updates related to influenza season.Documentation: Share documents, guidelines, protocols, and reference materials with stakeholders via email attachments for their review and reference.	<ul style="list-style-type: none">In-Person Meetings: Schedule in-person meetings with key stakeholders to discuss influenza season planning, coordination, and collaboration.Virtual Meetings: Organize virtual meetings using video conferencing platforms to facilitate discussions, decision-making, and information sharing among stakeholders who may be geographically dispersed or unable to meet in person.	<ul style="list-style-type: none">One-on-One Calls: Schedule individual calls with stakeholders to provide personalized updates, address specific concerns or questions, and solicit feedback on influenza season planning and response efforts.Conference Calls: Arrange conference calls with multiple stakeholders to discuss overarching goals, action plans, and coordination efforts for managing influenza season demands effectively.Emergency Calls: Use calls to communicate urgent information, alerts, or requests for assistance during influenza outbreaks, staffing shortages, or other unforeseen circumstances requiring immediate attention.	<ul style="list-style-type: none">Virtual Conferences: Host virtual conferences or webinars via video calls to engage stakeholders in discussions, presentations, and interactive sessions on influenza season topics such as vaccination strategies, infection control measures, and staffing coordination.



Schedule and Milestones

Week	Activity	Milestones
Week 1	<ul style="list-style-type: none">Conduct background research on the topic.Identify and gather relevant data sources.Perform data cleaning and preprocessing.Conduct exploratory data analysis.	<ul style="list-style-type: none">Define the research question or problem statement.Identify key variables and metrics for analysis.Complete data cleaning and preprocessing.Generate initial insights and observations from the exploratory data analysis.
Week 2	<ul style="list-style-type: none">Perform advanced data analysis techniquesDevelop and train predictive models.Evaluate model performance and fine-tune parameters.Document data analysis procedures and results.	<ul style="list-style-type: none">Apply advanced data analysis techniques to the dataset.Build and evaluate predictive models.Select the best-performing model and fine-tune its parameters.Document the data analysis process and present preliminary results.
Week 3	<ul style="list-style-type: none">Conduct hypothesis testing and statistical analysis.Perform data visualization to communicate findings.Identify patterns and trends in the data.Validate the results and draw conclusions	<ul style="list-style-type: none">Perform hypothesis testing and statistical analysis on relevant variables.Create visualizations to effectively communicate findings.Identify significant patterns and trends in

Week 4	<ul style="list-style-type: none"> Conduct additional analysis based on stakeholder feedback. Fine-tune models and refine analysis techniques. Conduct sensitivity analysis to test model robustness. Prepare intermediate project report 	<ul style="list-style-type: none"> Incorporate stakeholder feedback into the analysis. Refine models and analysis techniques based on feedback. Perform sensitivity analysis to assess model robustness. Prepare an intermediate project report with updated findings.
Week 5	<ul style="list-style-type: none"> Conduct in-depth analysis on specific subgroups or variables. Identify potential limitations or biases in the analysis. Conduct external research validation and benchmarking. Refine and finalize the project report. 	<ul style="list-style-type: none"> Perform in-depth analysis on specific subgroups or variables of interest. Identify and address potential limitations or biases in the analysis. Conduct external research validation and benchmarking for comparison. Refine and finalize the project report.
Week 6	<ul style="list-style-type: none"> Prepare and deliver the final project presentation. Summarize key findings and recommendations. Address questions and feedback from stakeholders. Submit the final project report. 	<ul style="list-style-type: none"> Prepare and deliver the final project presentation to stakeholders. Summarize key findings and provide actionable recommendations. Address any questions or feedback from stakeholders.

Project deliverables

Creation of a report with the data analysis required for this project

- Meeting presentation introducing the project to stakeholder.
- Written report with project outcomes
- Creating a dynamic report or dashboard for stakeholders to monitor activity.

Medical agency frontline staff (nurses, physicians assistants and doctors)

- Hospitals and clinics using the staffing agency services
- Staffing Agency Administrators

Context

Q. What is seasonal influenza?

A: Seasonal influenza is an acute respiratory infection caused by the influenza virus. It is common in all parts of the world and typically occurs in annual cycles, with peaks of activity during colder months in temperate regions.

Q. How does influenza spread?

A: Influenza spreads through respiratory droplets when an infected person coughs, sneezes, or talks. It can also spread by touching surfaces contaminated with the virus and then touching the mouth, nose, or eyes.

Q. What are the common symptoms of influenza?

A: Common symptoms of influenza include fever, cough, sore throat, body aches, fatigue, and sometimes vomiting and diarrhea, particularly in children.

Q. Who is at higher risk of complications from influenza?

A: Certain groups are at higher risk of developing severe complications from influenza, including young children, older adults, pregnant women, and individuals with underlying medical conditions such as asthma, diabetes, or heart disease.

Q. How can influenza be prevented?

A: Influenza can be prevented through vaccination, practicing good hand hygiene, covering coughs and sneezes, avoiding close contact with sick individuals, and staying home when experiencing flu-like symptoms.

Q. What is the importance of vaccination during influenza season?

A: Vaccination is the most effective way to prevent influenza and its complications. It helps protect individuals from getting sick and reduces the spread of the virus within communities, particularly among vulnerable populations.

Q. How does the healthcare system prepare for the influenza season?

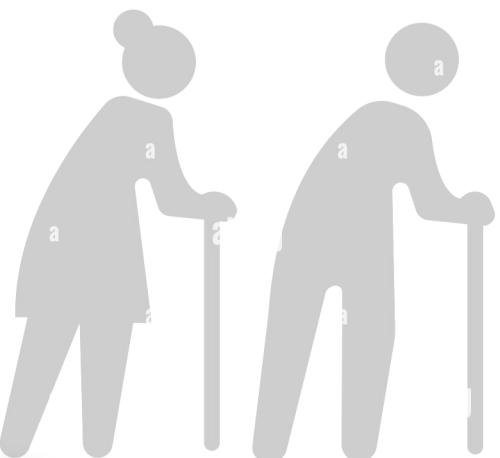
A: Healthcare systems prepare for the influenza season by ensuring an adequate supply of influenza vaccines, educating healthcare providers and the public about prevention measures, and implementing surveillance systems to monitor influenza activity and identify outbreaks.

Q. What are the challenges faced during the influenza season?

A: Challenges during the influenza season include managing increased demand for healthcare services, addressing vaccine hesitancy, adapting to changes in circulating influenza strains, and coordinating public health responses across multiple sectors.

Hypothesis

- If there is a decrease in population mobility and travel during the influenza season, then there will be a accordingly decrease in the spread of influenza viruses between regions and countries, potentially limiting the scope of influenza outbreaks.
- - If there is a delay in school closures during an influenza outbreak, then there will be a corresponding increase in the spread of influenza among school-aged children and their households.
- - If the population data by age are analyzed relating to mortality rates, then the older individuals over 65 years will exhibit a higher mortality rate, which emphasizes the significance to focus on the elderly population during the flu season.



Data Wishlist

- Vaccination Rates within Vulnerable
- Hospital and Clinic Staffing Data
- Hospitalization Rates per state
- Prior Influenza Season Analysis
- PPE Stockage for Urban and Rural
- Enhancing Public Health Messaging and Education



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Ahead



Thank you!