Influenza like Illness(aka Flu) and Vaccines

Ratna Chembrolu

Influenza like Illness Activity over the Years

The motivation for this analysis is that, every year we hear advertisements about getting flu vaccines. If any every year I see more and more advertisements to get flu shots. I was curious how the trends of Influenza like Illness were trending. With these vaccines were we reducing flu.

Background:

1st vaccine was developed in 1938 and mass production started in 1976. As the influenza vaccine market expanded, so did recommendations for use by the CDC's Advisory Committee on Immunization Practices (ACIP). 1984 onwards CDC started recommending influenza vaccines starting with high risk individuals.

All the data and Information is gathered from CDC website which is public data

Research Questions

Research Question1:

Is there an increase in Influenza Like Illnesses over the course of the past 21 years?

Research Question 2

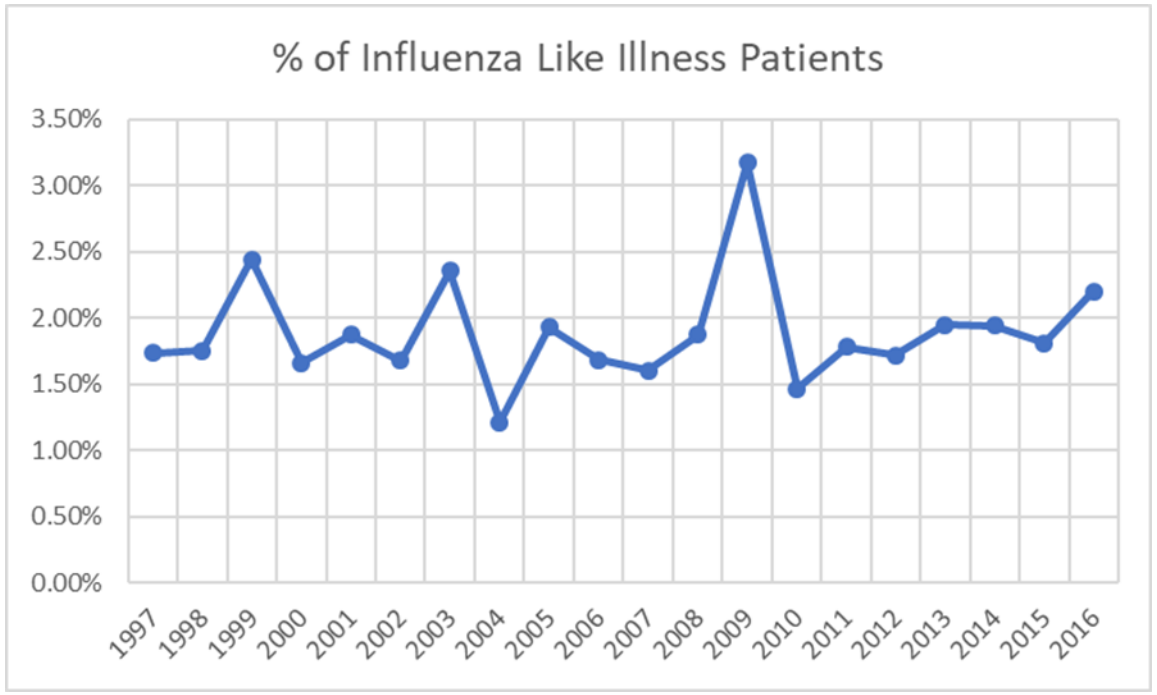
Are all age groups showing a similar behavior over the years with respect to influenza like illnesses(ILI).

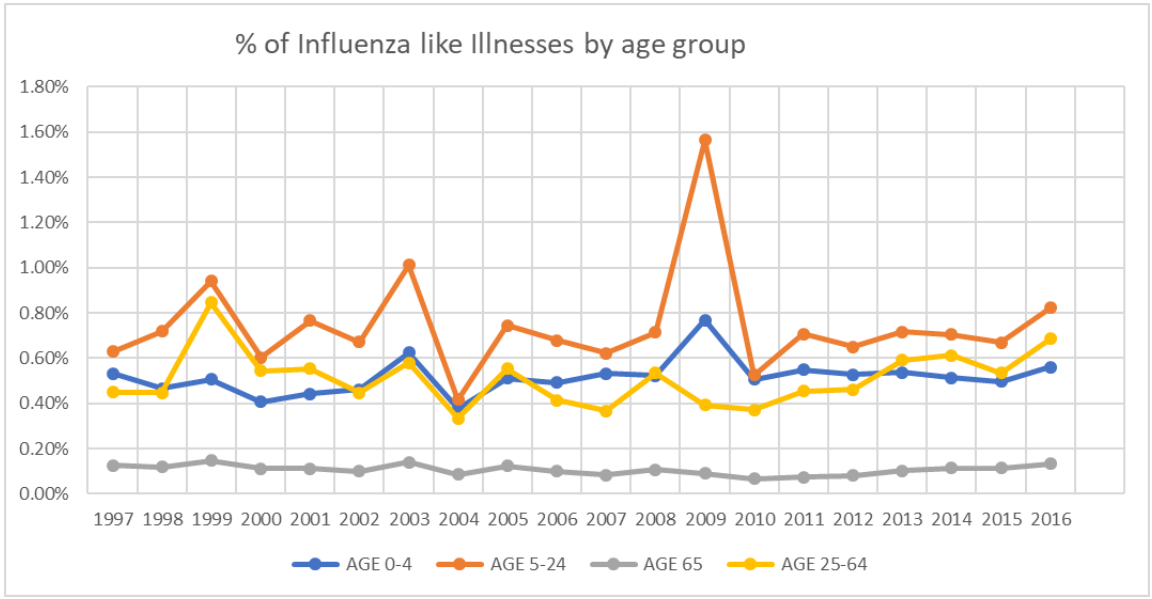
Research Question 3:

If the ILI increases or stays neutral how did vaccines influence in reducing this illness.

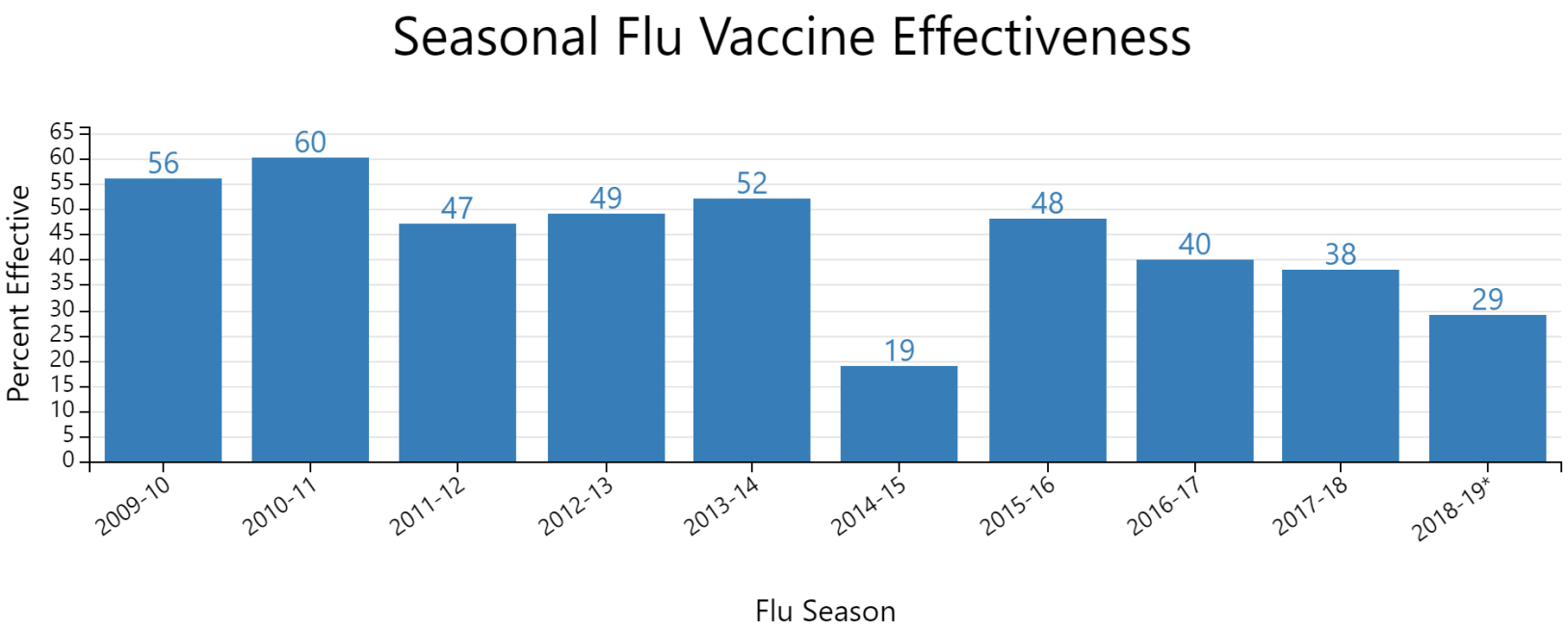
Research Question 1 and 2

The share of Influenza like Illness stayed steady over the years across age groups.





Research Question 3 – Vaccines Influence on Flu



- Influence of vaccines on Flu is determined by the effectiveness of the vaccine. If the vaccine is not effective for the strains of virus prevalent during that season, the vaccine is not so effective.

Summary

- Vaccines are only effective in the range of 40% - 60, though the trend of Influenza like illness ratio is steady across the years.
- During seasons when the flu vaccine viruses are similar to, circulating flu viruses, flu vaccine has been shown to reduce the risk of having to go to the doctor with flu by 40 percent to 60 percent per CDC.
- CDC though measures the effectiveness of vaccines in relation to the reduction of flu burden to the society.
- Finally my conclusion is that even if there is a 1% chance of reducing fatality due to a commonly occurring illness like flu we should go ahead and take the vaccine.

Questions ?