What is Influenza?

Influenza is a respiratory tract infection caused by influenza viruses.

What is the Influenza Virus?

- RNA virus, Orthomyxoviridae group
- Easy to mutate
- Has various types: A, B, and C

Symptoms caused by type A are heavier than type B, while type C is more likely to cause no symptoms.

Type A is also the easiest to mutate (both minor mutations and major mutations)

What are the symptoms of influenza-induced disease?

- Fever
- Cough
- Cold
- Headache
- Throat pain
- Sore
- Weak

Why should influenza be watched out?

INFLUENZA is very EASY TO DELIVER (Friends, Family Members, and Patients)

Transmitted by air through mediation

- Cough
- Sneezing
- Saliva
- Objects contaminated by coughing, sneezing and saliva

INFLUENZA reduces PRODUCTIVITY

Not going to work or not going to college because of influenza

An ounce of prevention is worth a pound of cure

- Higher medical costs
- Discomfort due to symptoms of influenza for several days (dizziness, headache, rheumatic pain, etc.)

GROWING OTHER CHRONIC DISEASES

- Strengthening heart disease
- Strengthening lung disease
- Prevent diabetics who are susceptible to flu
- Can result in death from pneumonia

EASY and FAST to MUTATE

Influenza viruses are viruses that are very easy to change (mutate) compared to other viruses. Mutations that occur can be small / minor (antigenic DRIFT) and large / major (antigenic SHIFT).

Antigenic DRIFT

- Minor changes in the HA (haemagglutinin) and NA (Neurominidase) influenza viruses
- Occurs in all types of influenza viruses

Seasonal Influenza Causes

Antigenic SHIFT

- Changes occur in RNA
- 2 different strains of the virus merge to form an RNA segment change - called "reassortment", occurring in one 'reservoir' - infected host
- Causes major changes to HA & NA
- Only occurs in type A viruses
- **Causes of influenza pandemic**
- Causes pain and more death

What are HA & NA?

HA and NA are the buttons on the surface of the influenza virus

- **HA (Haemaglutinin Antigen)**
  Playing a role in attachment of the virus to respiratory epithelial cells (host) so that it can enter into the host cell.
- **NA (Neuraminidase Antigen)**
  Playing a role in releasing viruses which have multiplied in host cells so that they can spread to other cells.

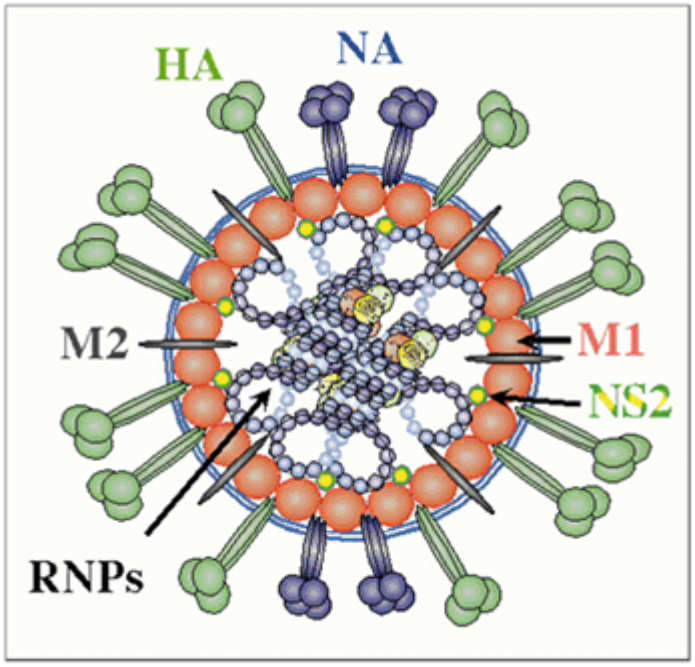


Diagram kindly provided by Paul Digard, University of Cambridge

Have you been vaccinated against influenza?

Who is susceptible to influenza?

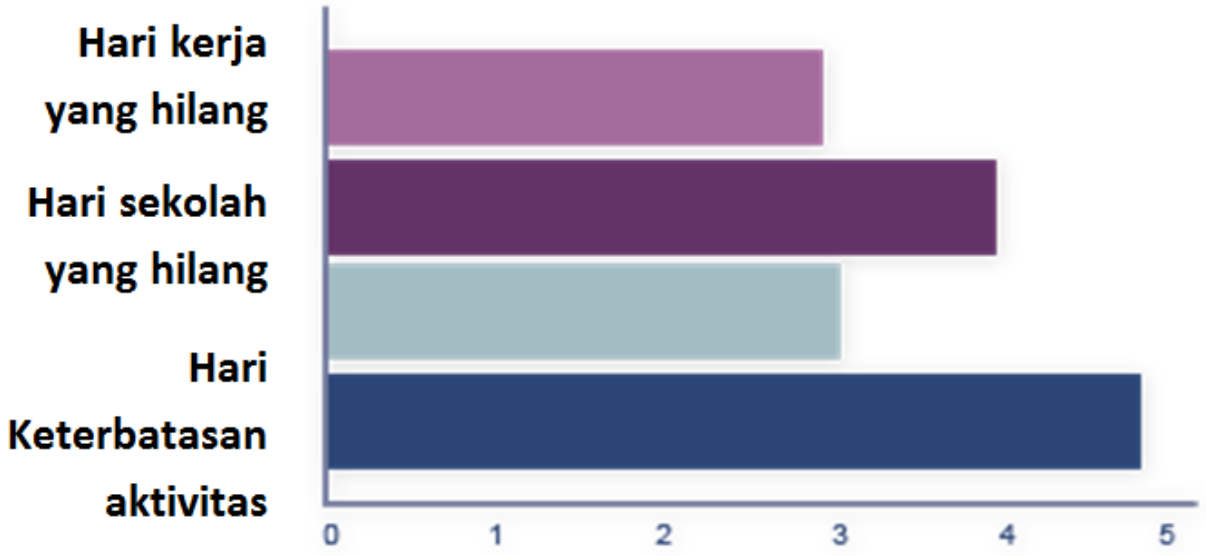
Children

Elderly

Immune disorders sufferer

Health worker

Estimated days lost due to influenza infection


Hari kerja yang hilang
Hari sekolah yang hilang
Hari Keterbatasan aktivitas
0
1
2
3
4
5