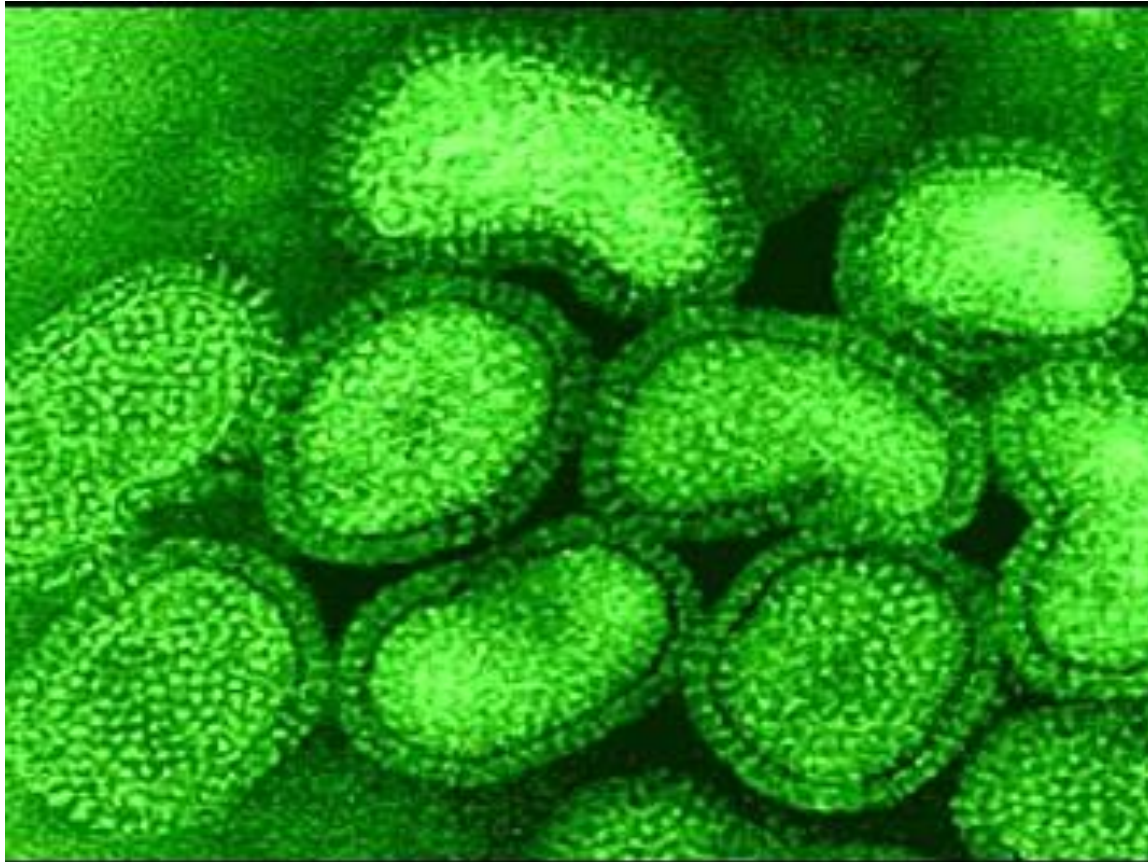


Seminar on Pandemic Influenza

19 February 2009

a brief introduction to influenza



Influenza – electron microscopy

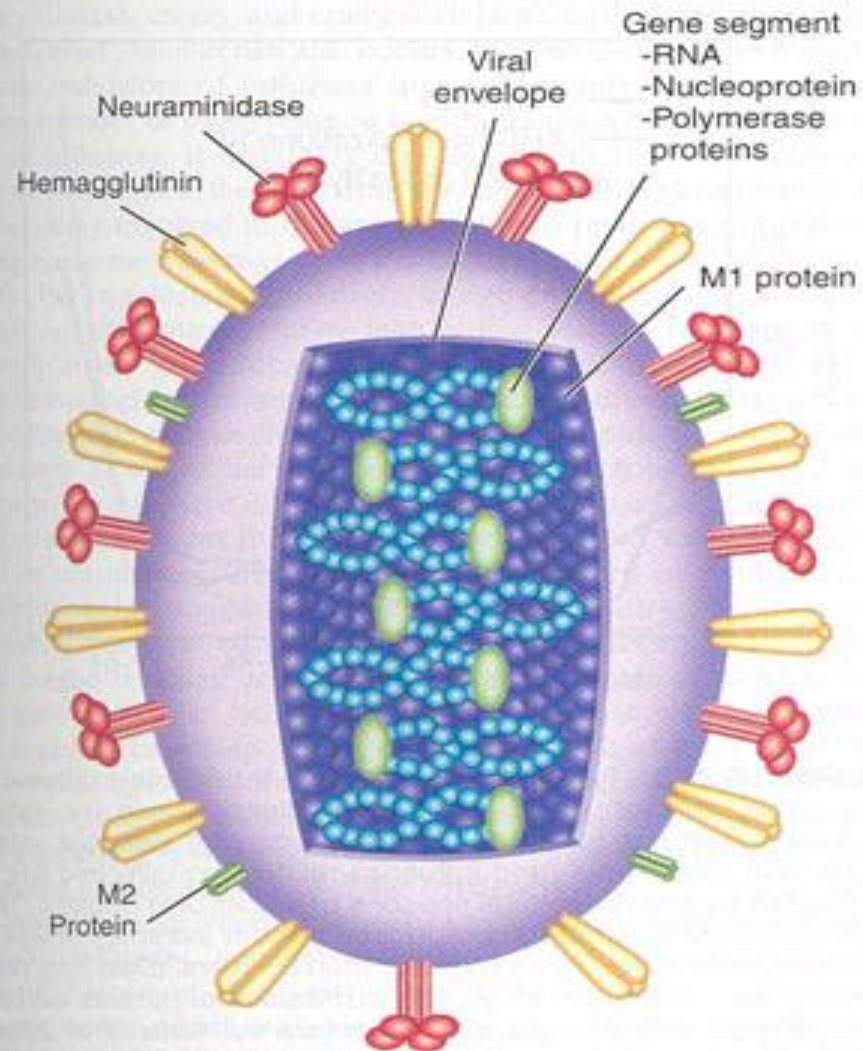


FIGURE 162-2. Schematic model of an influenza A virus.

Three types of influenza A

1. Seasonal influenza in humans (H3N2, H1N1)
2. Influenza in birds (H5N1, H7N7)
3. Pandemic influenza in humans (??)

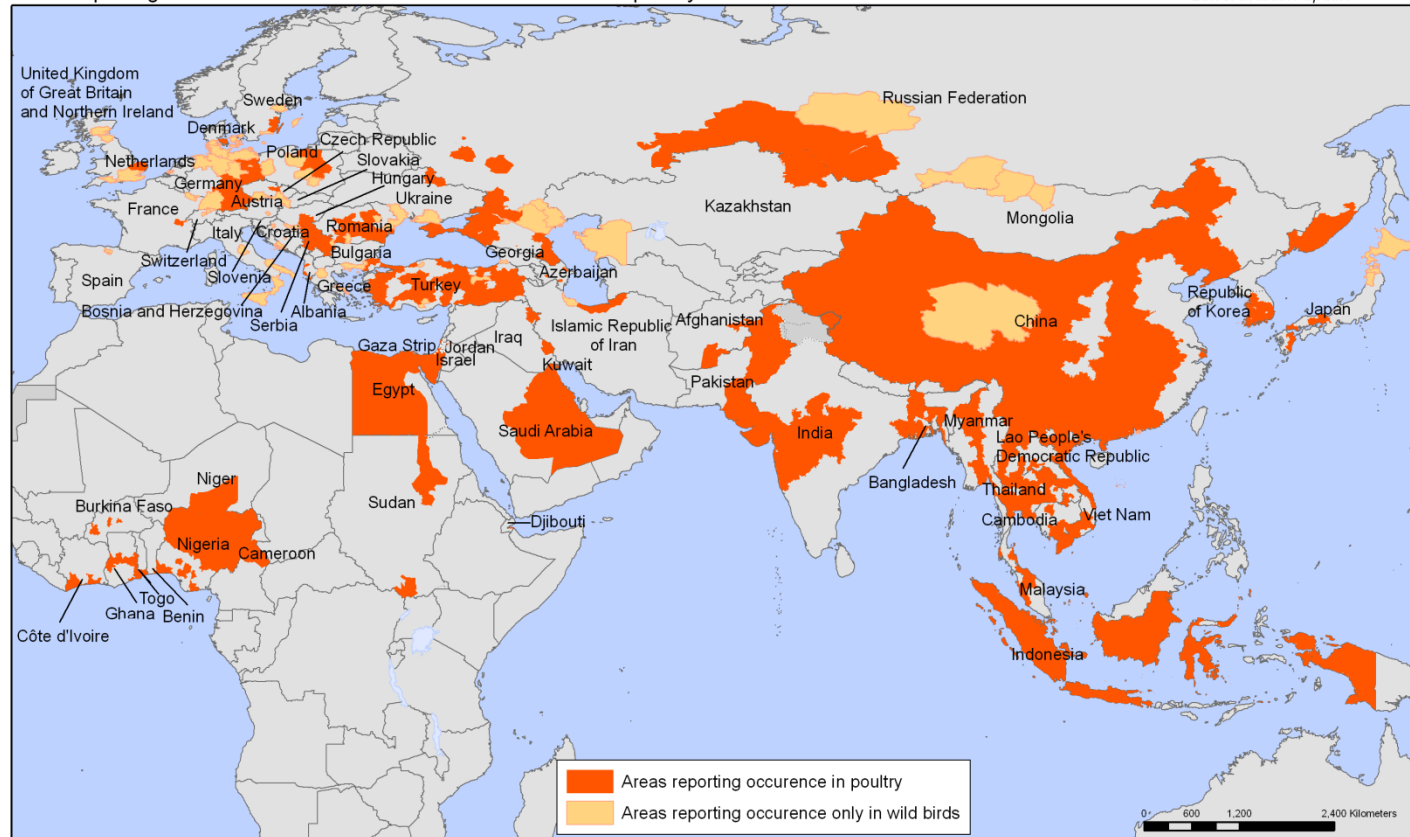
1. Sesonal influenza

- Comes every year
- A problem in particular for people with other diseases and the elderly
- A vaccine is available. But because the influenza virus changes rapidly, a new vaccine must be made every year

2. Influenza in birds

Areas reporting confirmed occurrence of H5N1 avian influenza in poultry and wild birds since 2003

Status as of 15 August 2008
Latest available update



World Health Organization

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Data Source: World Organisation for Animal Health (OIE) and national governments

Map Production: Public Health Information and Geographic Information Systems (GIS), World Health Organization

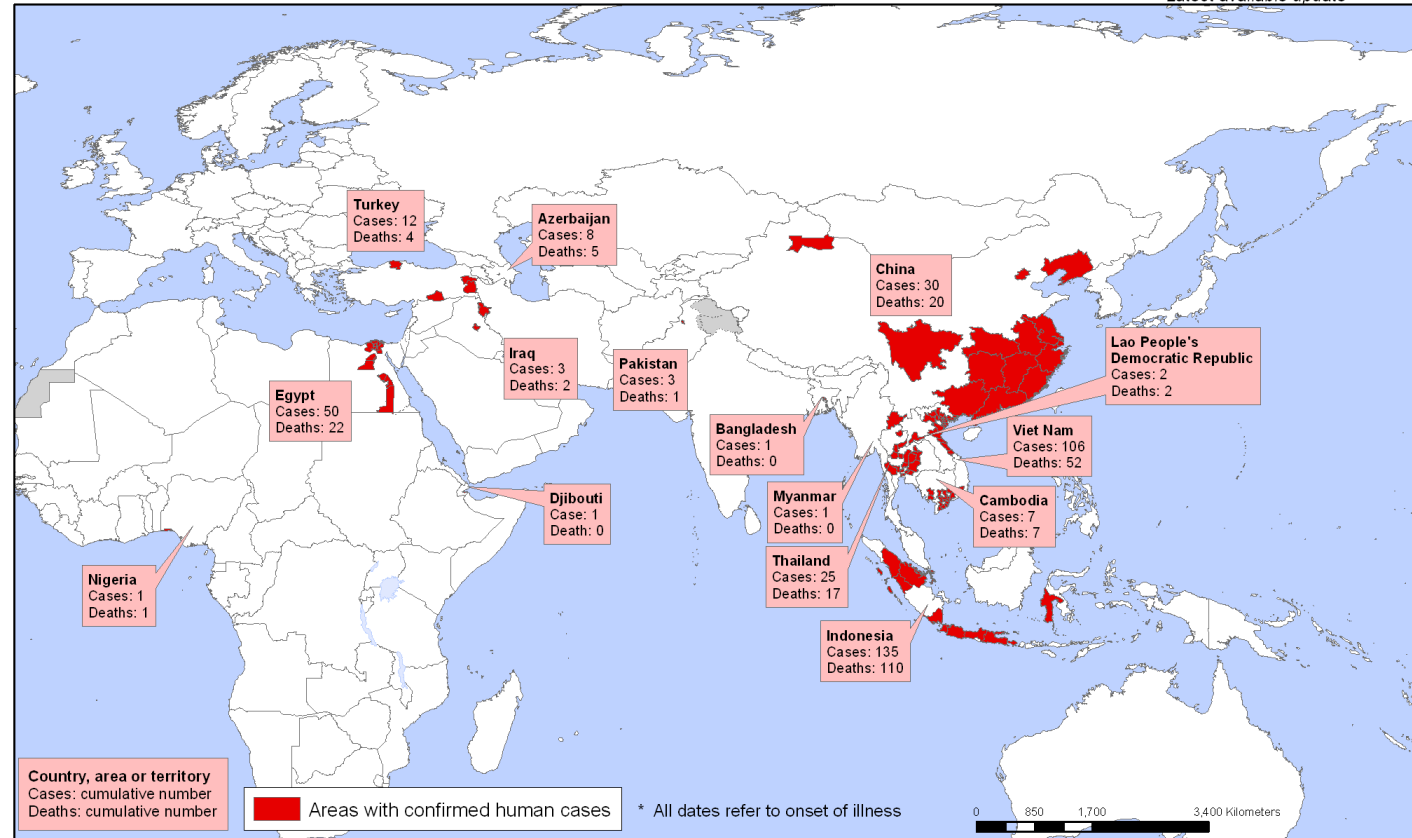
3. Pandemic influenza in humans

- Not there yet!
- During the last centuries a pandemic influenza has occurred in average three times per century, eg. in 1918, 1957 & 1968.
- An influenza virus becomes "pandemic" if it is a new (sub)type so people's immune system is not prepared.

From birds to humans (H5N1)

Areas with confirmed human cases of H5N1 avian influenza since 2003 *

Status as of 19 June 2008
Latest available update



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO
Map Production: Public Health Information and GIS
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How likely is a H5N1 influenza pandemic in humans?

- Nobody knows!
- It could be another combination of Hs and Ns; eg. H7, H9 og H2
- H5: Low probability, high impact!

Available strategies

1. Vaccines
2. Drugs
3. Non-pharmaceutical interventions

1. Types of pandemic vaccines

Pandemic vaccines: Will be produced after the pandemic has started as soon as the virus has been identified.

Pre-pandemic vaccine: Produced now based on the assumption that the next pandemic will be caused by H5N1

2. Drugs

- Several classes of anti-influenza drugs are available
- They can prevent disease and reduce symptoms, but they don't cure
- Resistance may be a problem

3. Non-pharmaceutical measures

Often called "social distancing":

- Closing schools
- Closing borders
- Quarantine
- Masks
- Etc.