"Pandemics- an inevitable consequence of human predatory behaviour"

Björn Olsen
Professor, Infectious Diseases
Uppsala University
Examples of Emerging Infection Outbreaks since 2000

1) 2002 SARS in China. In 2003, 8092 cases. Mortality 10 %
2) 2003 Bird flu (H5N1) 859 cases, 453 died
3) 2009 Swine flu (H1N1) Started in Mexico. Low fatality rate. 55 000 died during the pandemic. Now post-pandemic
4) 2012 MERS started in Jordan and Saudi. Outbreak in Korea 2015. 2081 cases, 722 deaths, 27 countries
5) 2013 Bird flu (H7N9) China 2013. 764 cases, fatality rate 35 %
6) 2014 Ebola, Sierra Leone, Guinea, Liberia 28 000 cases, 11 000 deaths
7) Ongoing Outbreak of Plague in Madagascar. Urban areas. Several hundreds infected.
8) Ongoing rapid spread of antibiotic resistance
The Flu Wheel
Flu pandemics, 20th century

1918: “Spanish flu”
50 million deaths
(H1N1)

1957: “Asian”
4 million deaths
(H2N2)

1968: “Hong Kong”
1-4 million deaths
(H3N2)

Credit: US National Museum of Health and Medicine
Why new Emerging Infections?

• Seven billion humans (increasing)
• 100 billion domestic animals (increasing)
• Eco-system changes
• Bio-diversity (decreasing)
Urban pop:
2010 ~ 3 bill.
2030 ~ 5 bill.

“Human History will ever more become Urban History”
Habitat destruction

Expanded farming and animal husbandry

Human crowding

Movement of humans into wildlife domains
Annual Global Trade in Exotic Animals

4 million birds
640,000 reptiles
40,000 primates
Illegal trade unknown
Biodiversity
Population explosion - the coin

• Climate change, environmental degradation and loss of biodiversity

• Emerging, re-emerging diseases and pandemics