# Pandemic Preparedness: Why Bother?

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## SOME EMERGENT INFECTIONS AND THEIR MODE OF TRANSMISSION

#### I. Direct contact, ingestion, inhalation

Ebola, Marburg, Lassa viruses Hanta viruses SARS coronavirus Avian influenza HPAI H5N1 Noroviruses

### II. Vector borne

Ehrlichia (ticks) Borrelia burgdorferi (ticks): Lyme disease Congo-Crimean hemorrhagic fever (ticks, direct contact, blood borne) Dengue viruses (mosquitoes) Chikungunya virus (mosquitoes) West Nile virus (mosquitoes)

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





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SYNOPSIS

### Wildlife, Exotic Pets, and Emerging Zoonoses<sup>1</sup>

Bruno B. Chomel,\* Albino Belotto,† and François-Xavier Meslin‡



Figure 4: The reported host range of avian influenza A viruses (H5N1) 1996–2005 Colour represents that H5N1 is present in the host species.

## DETERMINANTS OF EMERGING INFECTIONS AND THEIR CONSEQUENCES

- Principal host
- Other hosts
- Outcome of infection in various hosts
- Economic consequences of infection

## DISSEMINATION OF AVIAN INFLUENZA VIRUSES AMONG BIRDS

1) Carriage by migratory, wild waterfowl – occasional

2) Trade and traffic in poultry – widespread

3) Carriage by mammalian hosts: cats, bats, pigs, humans – *rare* 

## Avian Influenza

Village and small holdings

Commercial bird/animal producers

Small to moderate numbers of birds

Free range

Frequent contact with other animals and humans

Wet markets

Large volume

Many birds in confined quarters

Rare contact with other animals; occasional contact with humans



Biologic Prerequisites for a Human Influenza Pandemic Originating from Avian Influenza Strain H5N1 As of October 2004

Present

Yes

- 1. Emergence of a new influenza virus Yes
- 2. Ability of the virus to replicate in Yes human beings and cause disease
- 3. Efficient human-to-human transmission Maybe
- 4. No effective vaccine



• Districts with H5N1 Outbreaks since january 2005

Sources: AI outbreaks: OIE, FAO and Government sources. Hyways: Wetlands International



## DOCTORING IN THE WORLD

