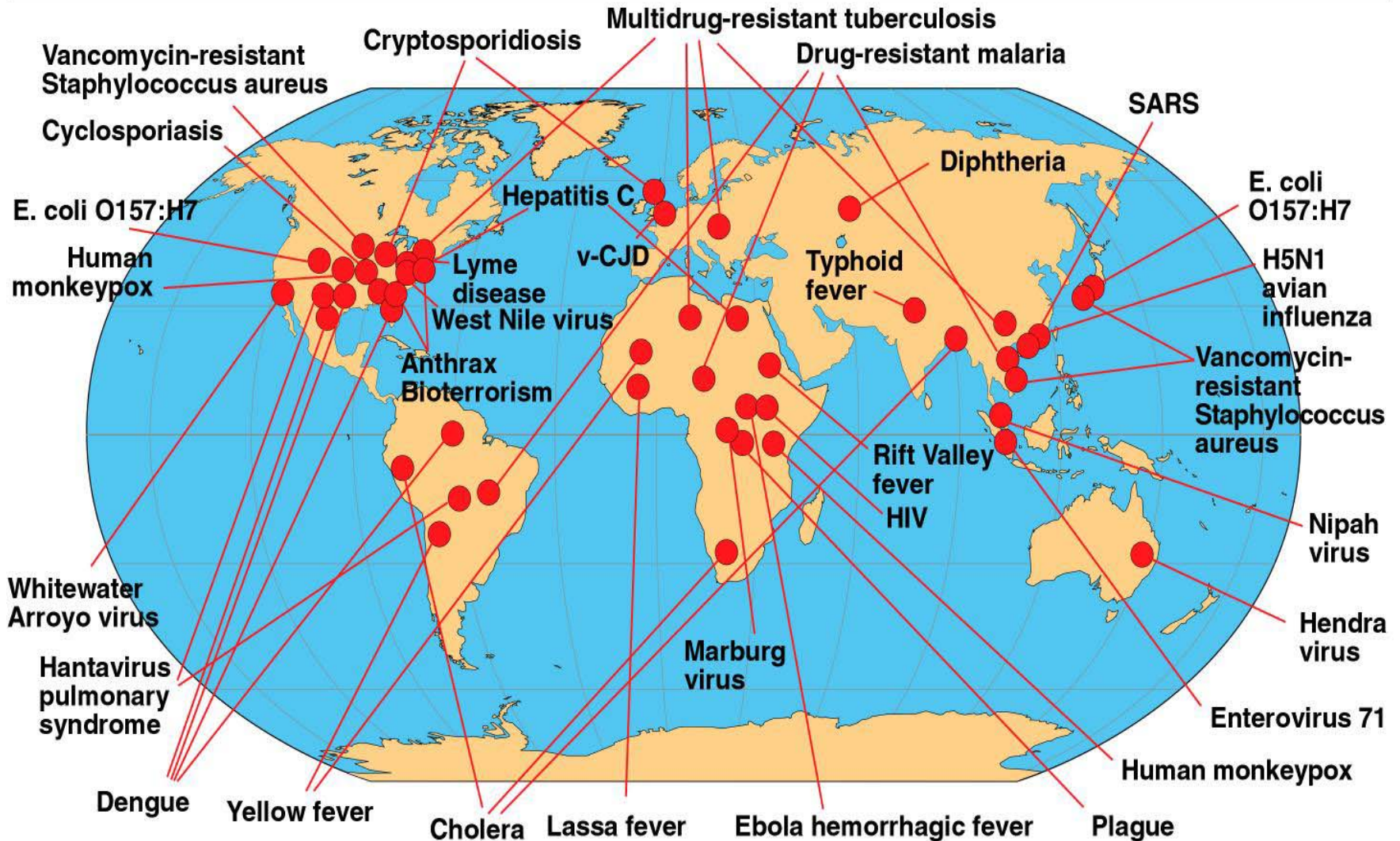


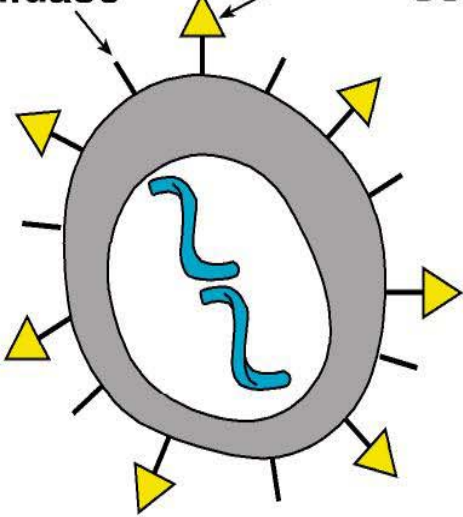
Examples of Emerging and Re-Emerging Diseases



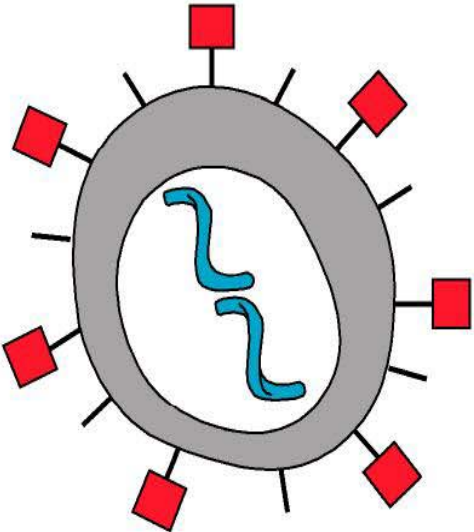
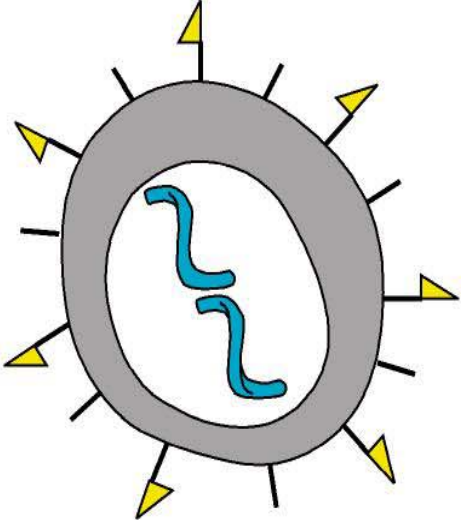
Influenza: Antigenic Drift and Shift

Neuraminidase

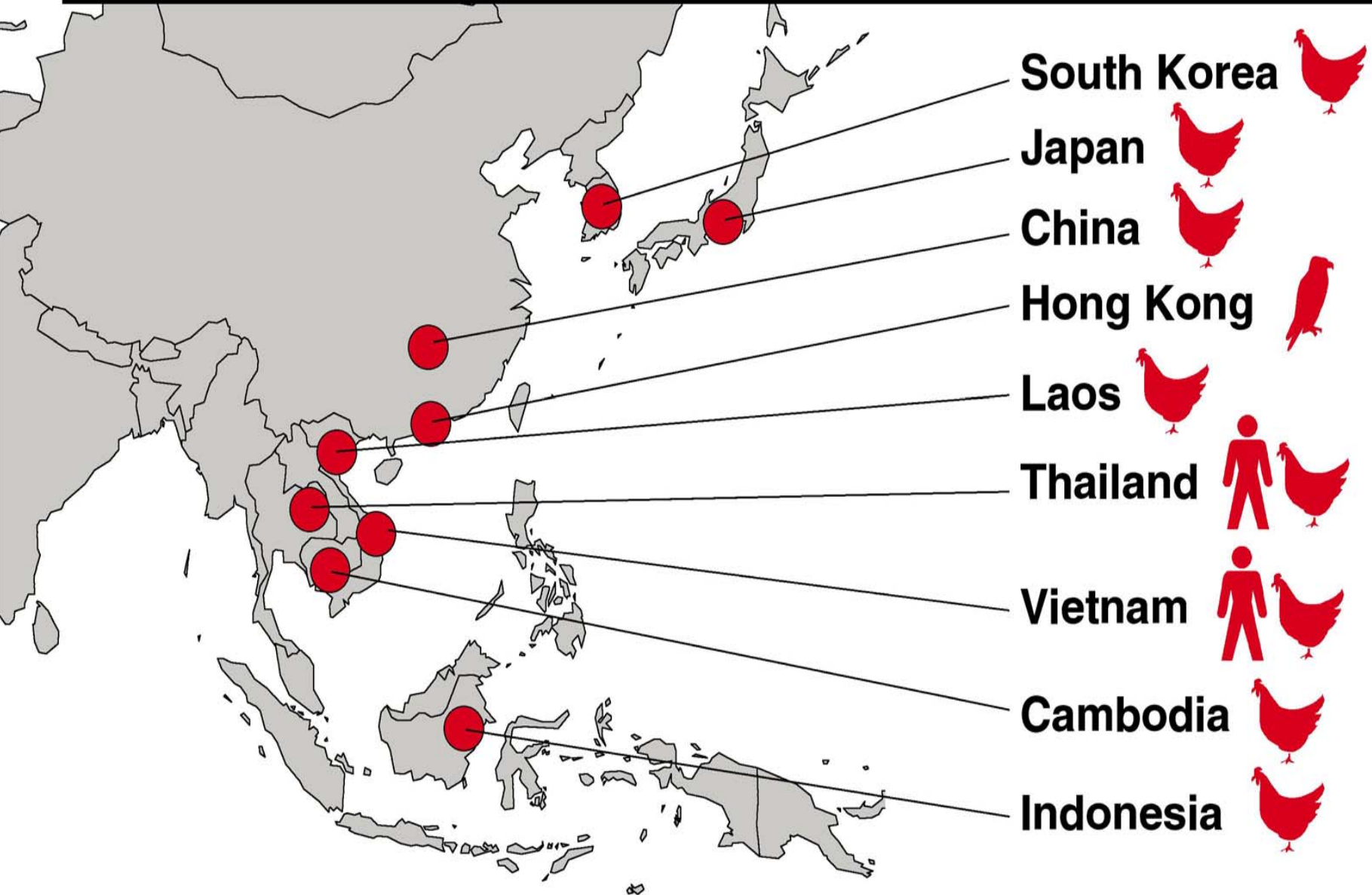
Hemagglutinin



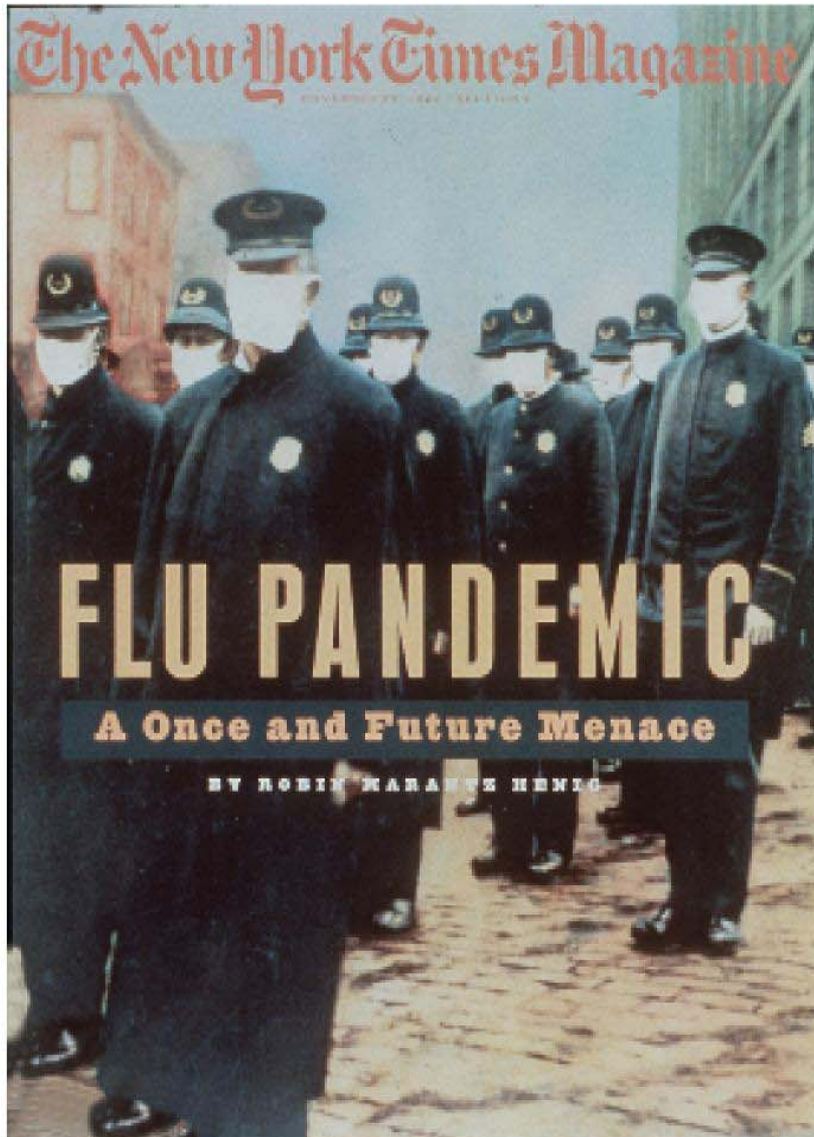
Influenza Virus



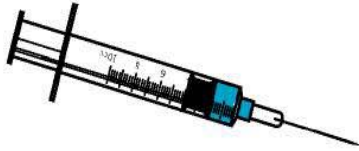
H5N1 Influenza in South-East Asia



The Influenza Pandemic of 1918-1919



- 500 million people infected worldwide
- 20-40 million deaths worldwide; ~50 percent in people ages 20-40
- >500,000 deaths in United States; 196,000 in October, 1918 alone



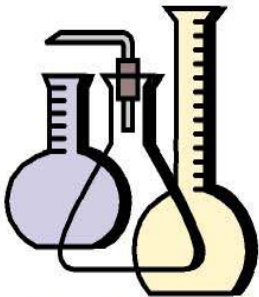
Vaccines



Therapeutics



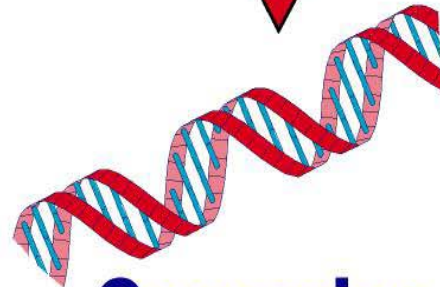
Diagnostics



Basic Research



**Expansion of
Research
Capacity**



Genomics

NIH Role in Influenza Vaccine Development

