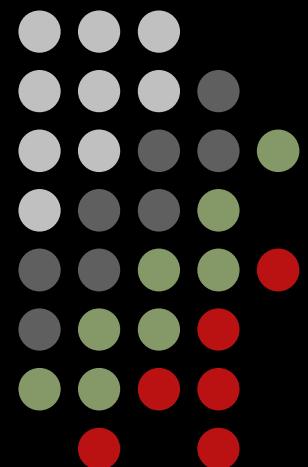


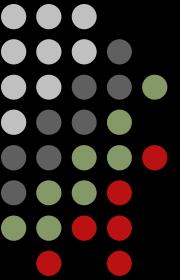
PENYAKIT ZOONOSIS DI DUNIA & DI INDONESIA KINI

Prof. DR. Dr. Nasrin Kodim, MPH

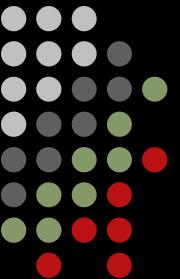
Seminar
Konsep One Health
Penanggulangan Penyakit Zoonosis
Hotel Salak The Heritage Bogor
Sabtu, 20 Desember 2008



ZOONOSIS



- The word is derived from the Greek words *zōon* (animal) and *nosos* (ill).
- A **zoonosis** is:
 - any infection disease that is able to be transmitted from wild or domestic animal to human or from humans to animals (**reverse zoonosis**).
 - a disease that can be transmitted from other vertebrate animals to humans.
 - a disease that normally exists in other animals, but also infects humans.
- The emerging interdisciplinary field of conservation medicine which integrates human and veterinary medicine
- Environmental sciences, is largely concerned with zoonoses.



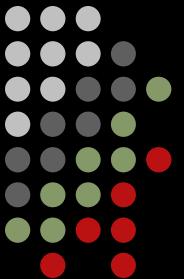
WHAT'S ZOONOSIS?

- An animal disease that can be transmitted to humans.

What are the cattle zoonotic agents?

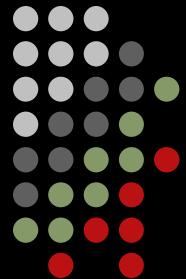
- *Salmonella* sp.
- *Escherichia coli*
- Dermatophytosis (Ringworm)
- *Cryptosporidium parvum*
- *Coxiellaburnetii* (Q fever)
- Leptospirosis
- *Rabies*

FACTOR PROMOTE ZOONOTIC INFECTION

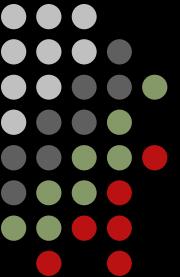


- Several factors exist that promote zoonotic infection in an agricultural setting.
 - Frequent contact with domestic animals
 - Overlap with wildlife habitat
 - Intensive livestock production
 - Poor animal sanitation
 - Poor personal hygiene

PARTIAL LIST OF ZOONOSES



- Anthrax
- Avian Influenza (Bird Flu)
- Babesiosis
- Barmah Forest virus
- Bartonellosis
- Bilharzia
- Bolivian hemorrhagic fever
- Brucellosis
- Borrelia (Lyme disease and others)
- Borna virus infection
- Bovine tuberculosis
- Campylobacteriosis
- Chagas disease
- Chlamydophila psittaci
- Cholera
- Cowpox
- Creutzfeldt-Jakob disease (vCJD),
a transmissible spongiform
encephalopathy (TSE)
from bovine spongiform "
- Dengue fever
- Ebola
- Echinococcosis
- Escherichia coli O157:H7
- Eastern equine encephalitis
virus
- Western equine encephalitis
virus
- Venezuelan equine
encephalitis virus
- Hantavirus
- Hendra virus
- Henipavirus
- Korean hemorrhagic fever
- Kyasanur forest disease
- Lábrea fever
- Lassa fever
- Leishmaniasis
- Leptospirosis
- Listeriosis
- Lymphoctic choriomeningitis
virus
- Omsk hemorrhagic fever
- Ornithosis (psittacosis)
- Orf (animal disease)
- Oropouche fever
- Plague
- Puumala virus
- Q-Fever
- Psittacosis, or "parrot fever"
- Rabies
- Rift Valley fever
- Ringworms (*Tinea canis*)
- Salmonellosis
- Sodoku
- Streptococcus suis
- Toxocariasis
- Toxoplasmosis
- Trichinosis
- Tularemia, or "rabbit fever"
- Typhus of Rickettsiae
- Venezuelan hemorrhagic
fever
- Visceral larva migrans



PARTIAL LIST OF CARRIERS

Assassin bugs

Bats

Bank voles

Birds

Cats

Cattle

Chimpanzees

Dogs

Fish

Fleas

Flies

Geese

Goats

Hamsters

Horses

Humans

Lice

Mice

Monkeys

Mosquitos

Opossums

Pigs

Rabbits and hares

Raccoons

Rats

Rodents

Sloths

Sheep

Snails

Ticks



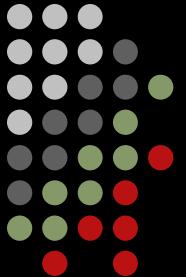
**75% of all emerging diseases
are zoonotic**

Zoonotic potential of animal pathogens

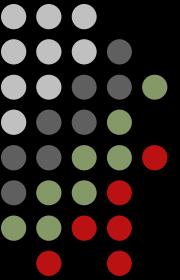
- 60% of human pathogens are zoonotic
- 80% of animal pathogens are multi-host
- 75% of emerging diseases are zoonotic
- 80% of agents having a potential bioterrorist use are zoonotic pathogens
- Nearly all new human diseases originate from animal reservoirs
- Diseases can now spread faster across the world than the average incubation period of most diseases



KONTRIBUSI ZOONOSIS

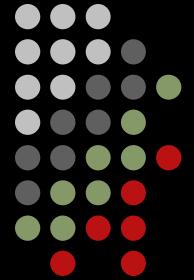


- Zoonosis tidak selalu mengusung ancaman, beberapa justru melindungi seperti cacar & Avian Influernza



CACAR

- Edward Jenner mengamati para gadis pemerah susu sapi terhindar dari penyakit & kematian akibat cacar.
- Ternyata mereka pernah tertular penyakit cow pox yg relatif tidak ganas & memberikan imunitas silang.
- Jenner menggunakan ceiran cacar sapi sebagai bahan vaksinasi.
- Kini terbukti cacar tinggal dalam kenangan, tersimpan dalam buku ajar di perpustakaan medis.
- Dunia bebas cacar.



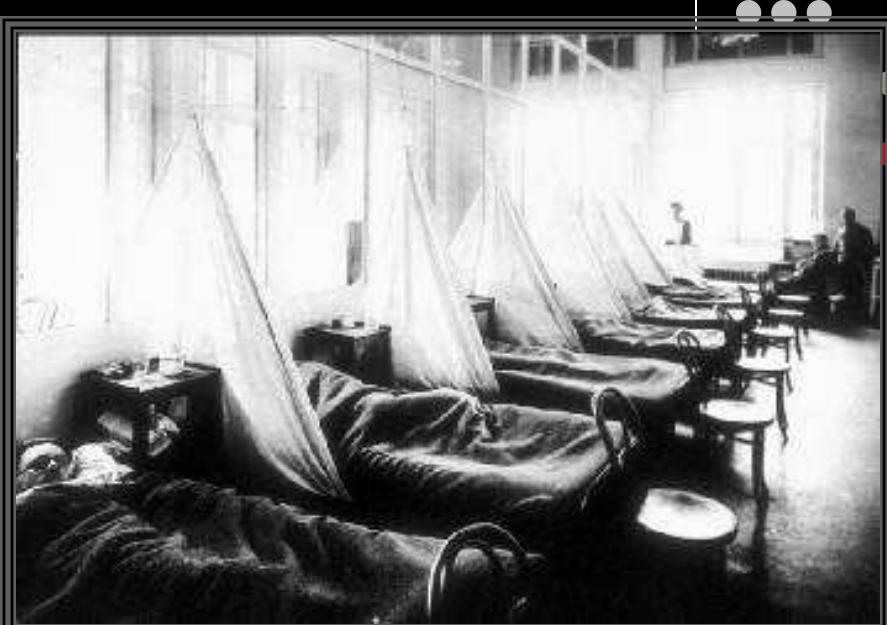
- **The Avian Influenza image is influenced strongly by:**
 - **Influenza pandemic experience in the past and the assumption of viral mutation in the future.**
 - **But, it ignores the objective epidemiology evident at present.**

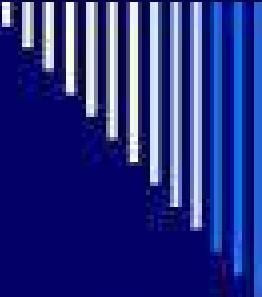
Approximate beginning of the epidemic, 1918



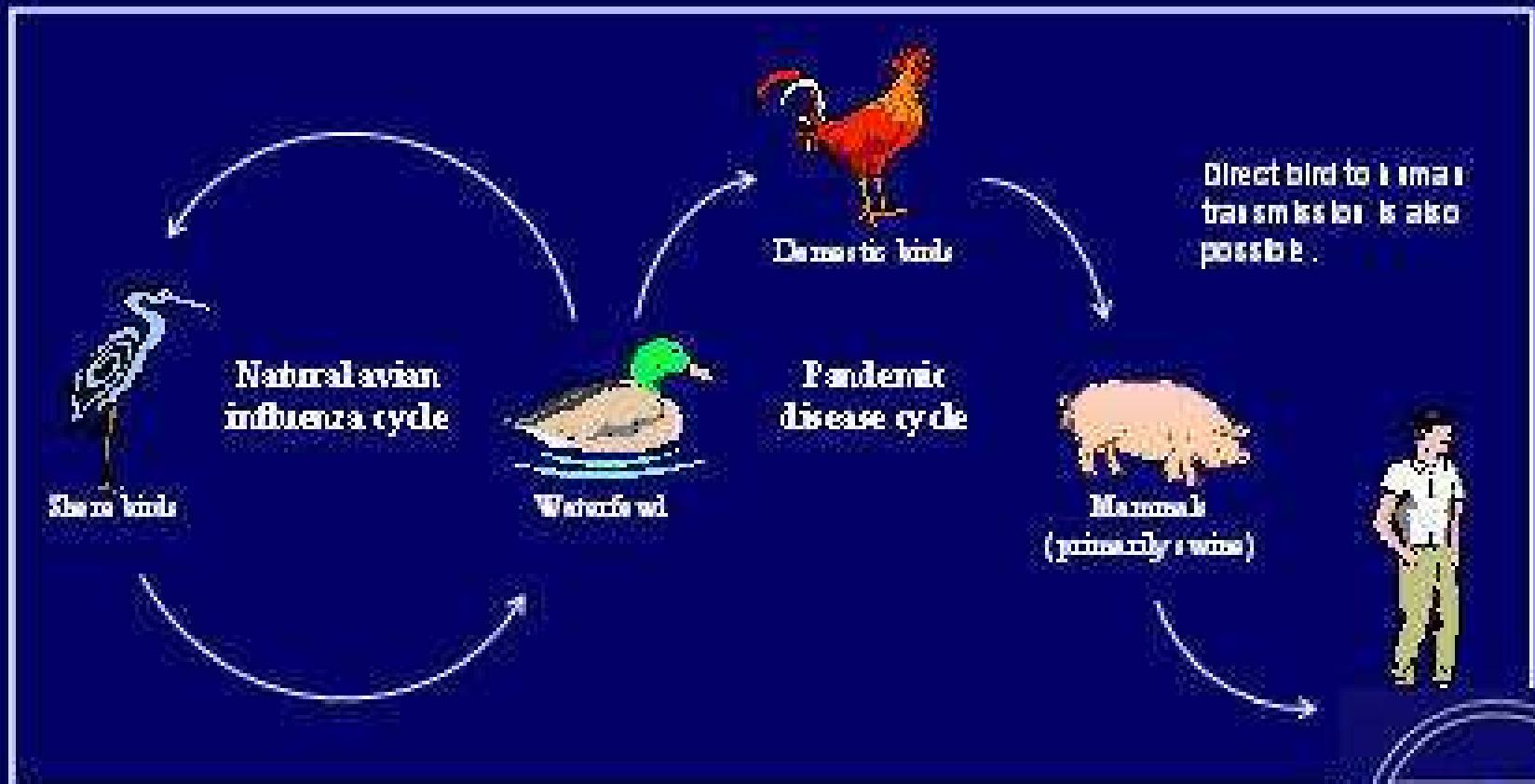
before sept 14	between sept 14 - 21	between sept 21 - 28	between sept 28 - oct 5	after oct 5
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Source: America's Forgotten Pandemic - The Influenza of 1918 - 1989

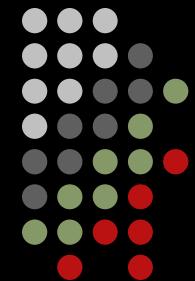




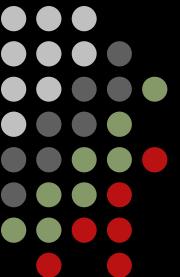
Cycle of Avian Influenza Viruses in Animals & Humans



THE CFR IN INDONESIA, 2005-2007



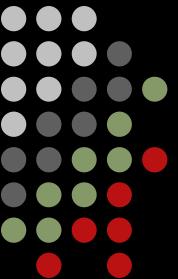
Province	Cases	Death	Fatality (%)
West Java	29	23	79,3
DKI Jakarta	25	22	88,0
Banten	12	10	83,3
North Sumatra	7	6	85,7
East Java	7	5	71,4
Central Java	6	5	83,3
West Sumatra	3	1	33,3
Lampung	3	0	0,0
South Sulawesi	1	1	100,0
South Sumatra	1	1	100,0
Total	94	74	78,7



THE FATALITY RATE AFTER TREATMENT

Treatment onset	Cases	Death	%
< 3 days	4	2	50,0
3-5 days	6	4	66,7
> 5 days	18	14	77,8
Total	28	20	71,4

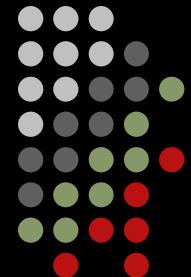
Endarti and Djuwita, 2006



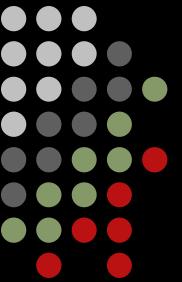
THE EXPERIENCE OF CHICKEN OUTBREAK CONTROL PROGRAM

- In 2004, in Central Java, the chicken cases (8.178.493) are the highest, but without human case.
- In 2005, the province reported 80 bird cases & only one human case without death case.
- The Department of Poultry distributed about 23,2 millions dose of vaccines freely for poultry farming & conducted selected stamping out

THE NUMBER OF AFIAN INFLUENZA CASES IN ASIA, 2003-2007



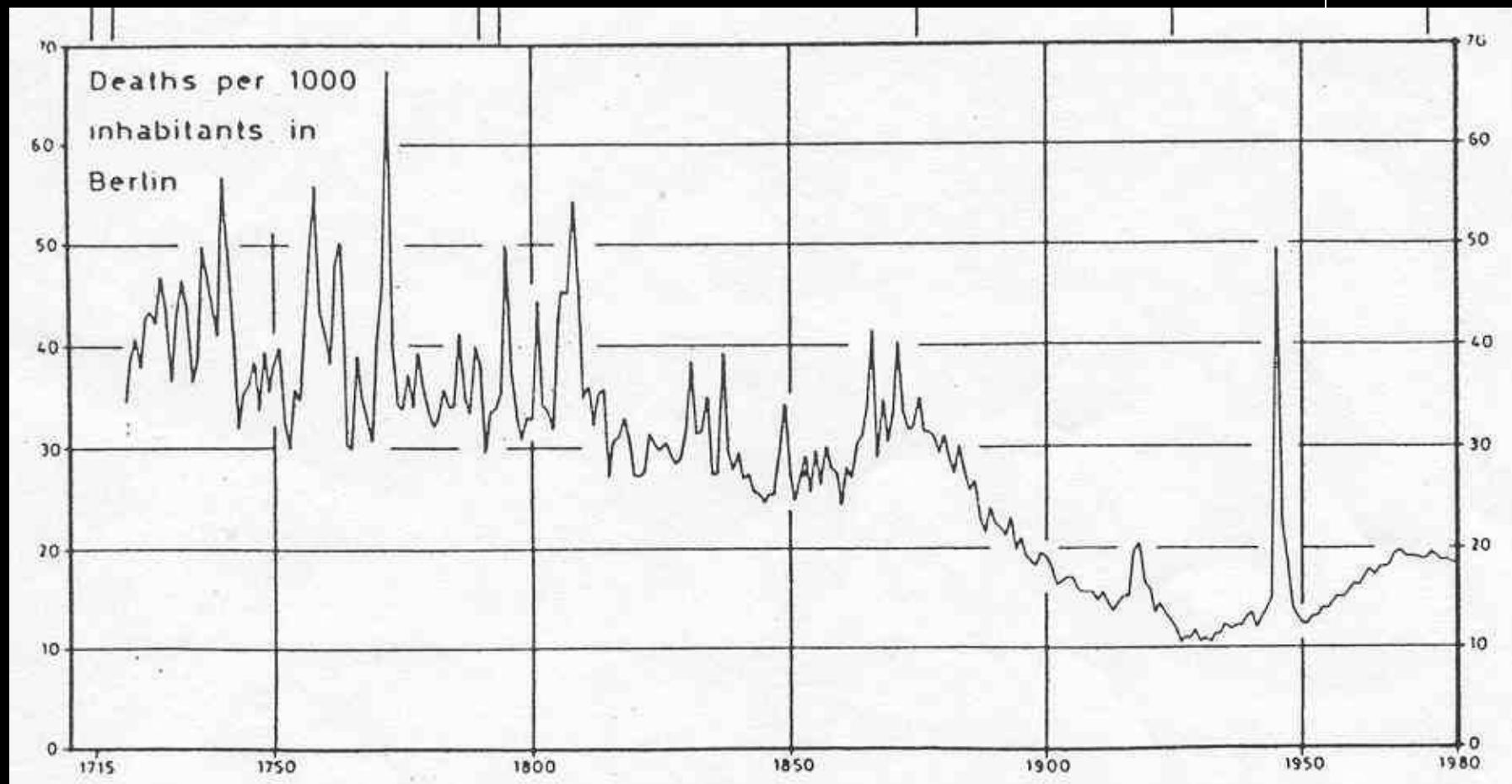
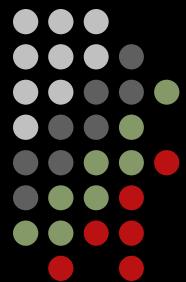
Countries	2003	2004	2005	2006	2007	Total
Indonesia	-	-	20	55	19	94
Vietnam	3	29	61	-	-	93
Egypt	-	-	-	18	14	32
Thailand	-	7	5	3	-	32
China	1	-	8	13	2	24
Turkey	-	-	-	12	-	12
Total	4	36	98	115	38	301



POSISI “TIGA ABAD”(1)

1. Abad pestilens & kelaparan (sp th 1875)
 - Mortalitas & fertilitas tinggi
 - Umur harapan hidup sangat rendah (< 40 th)
2. Abad penyusutan pandemik (1875 – 1930)
 - Frekuensi epidemik menurun
 - Peny degener muncul & meningkat lambat.
 - Umur harapan hidup meningkat (30 – 55 th)
3. Abad peny degeneratif & ulah manusia
 - Mortalitas rendah, Fertilitas kritis pd dinamika populasi
 - Umur harapan hidup tinggi (70 lebih)

KEMATIAN DI BERLIN, 1715-1980 (per 1000 pnddk)



Dari Imhof 1985

MORTALITAS DI NEW YORK

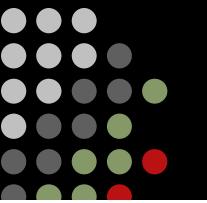
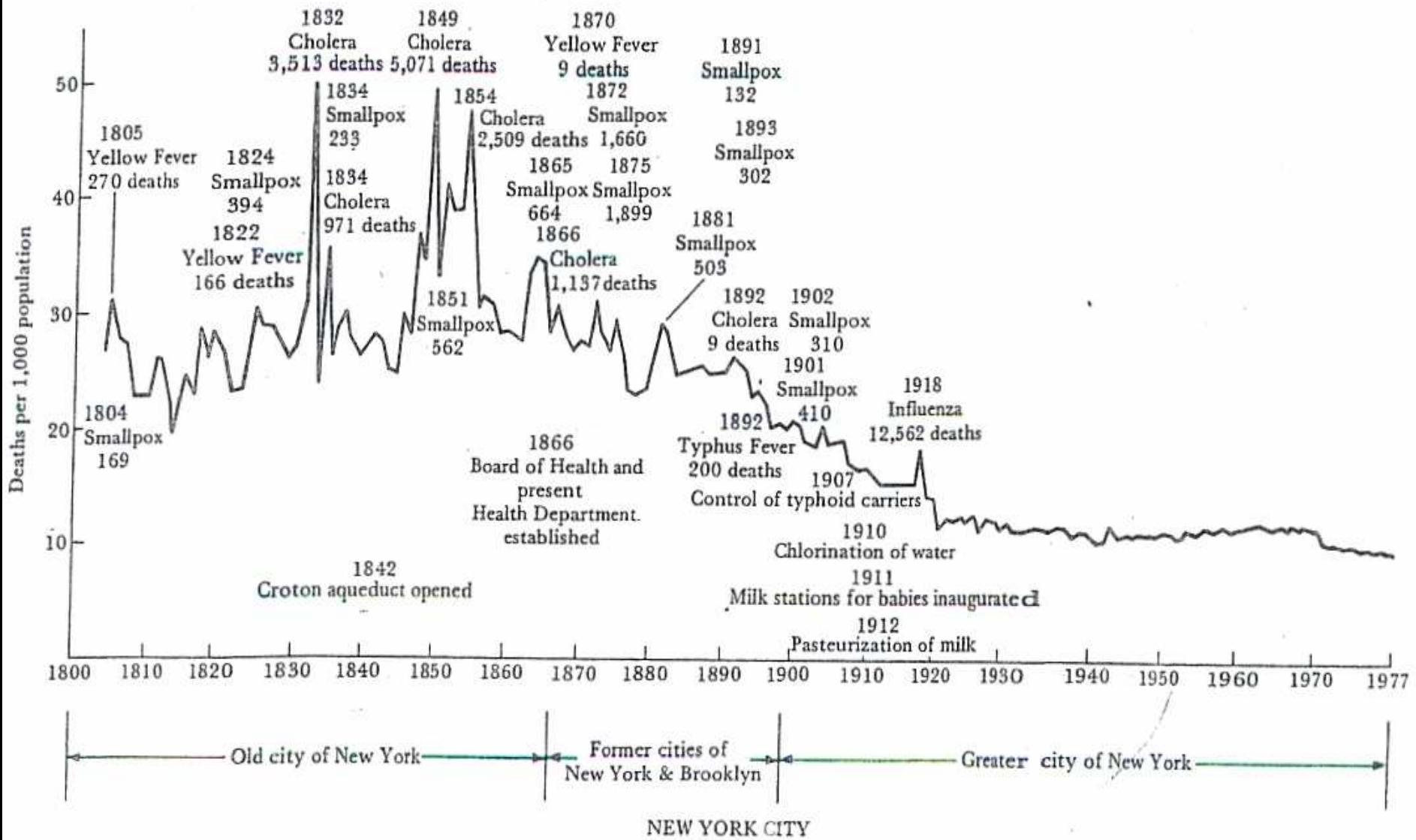
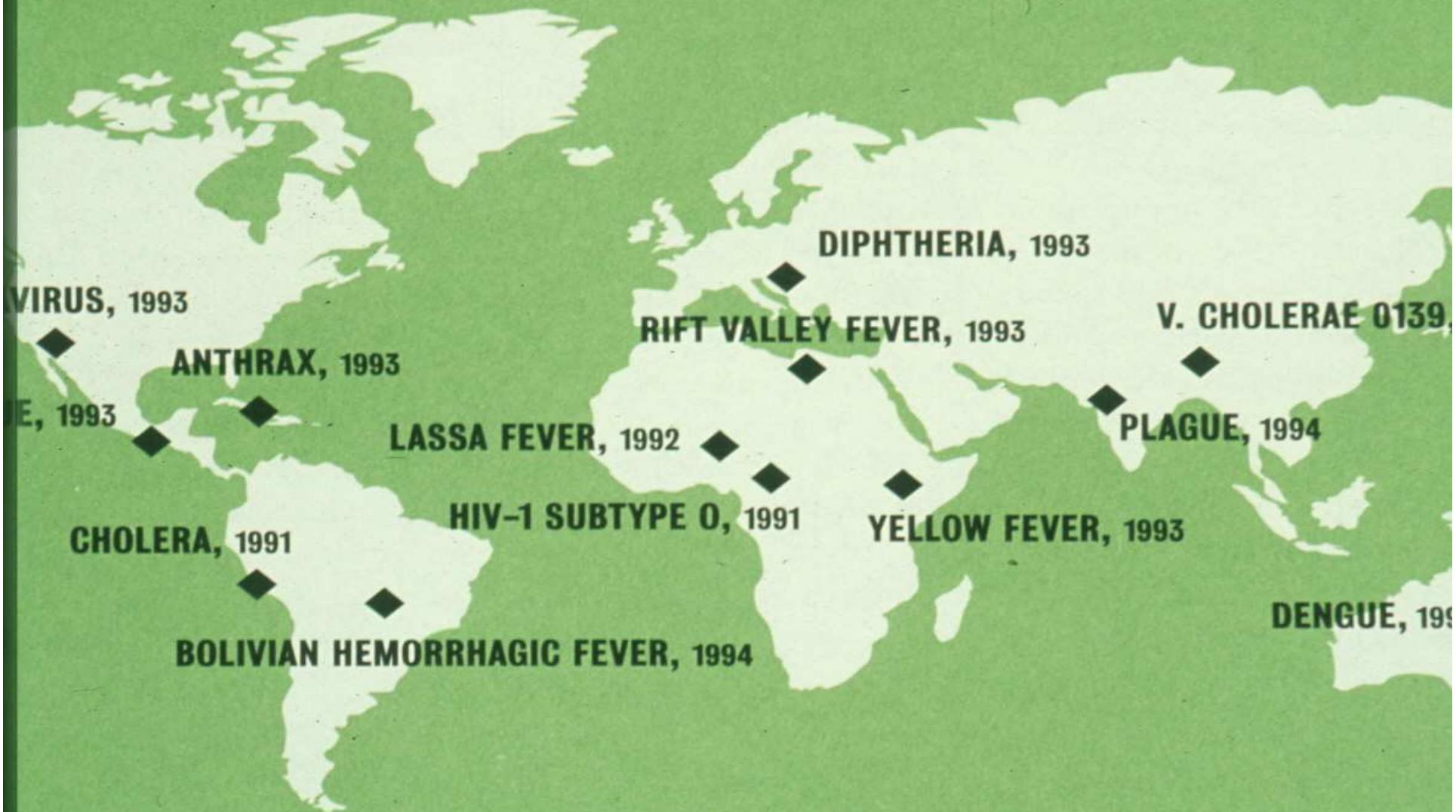
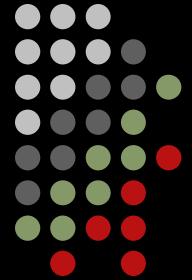


FIGURE 1. Mortality transition in New York City



Global Microbial Threats in the 1990s





This Is Not An Option



Market, Regulatory, & Animal Health Integration





AGRICULTURE

- *Agriculture is relatively more important than most other human activities. It is the basis of sustenance and civilisation. But in terms of perception of those that people our towns and cities and body politic, it seems less important than entertainment, celebrity, sport, recreation, having a good time and just about any other activity.*

**That's Relativity
John Hillman, 2003**

Annual global trade in exotic animals

- 4 million birds
- 640,000 reptiles
- 40,000 primates
- Illegal trade
unknown – estimate
\$4-6 billion



19

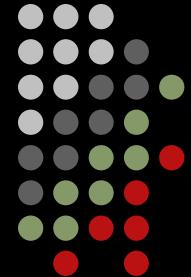
Intent to harm  18%

14

BSE – DEMONSTRATIONS IN KOREA OVER USA BEEF IMPORTS – June 2008



INDONESIA FACES OTHER PUBLIC HEALTH PROBLEMS

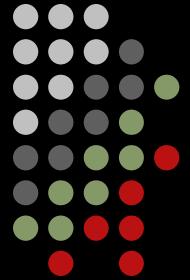


Public Health Problem

- Traffic accident
- DHF
- Tuberculosis
- Malaria
- HIV/ AIDS
- Kwashiorkor
- Maternal Mortality
- Infant Mortality
- Avian Influenza

Indicators

- 98 death cases / day
- 95.000 cases & 1.359 deaths/year
- 110 per 100.000 people/ year
- 0,09/ 1000 people/ years
- 5.640/ 8.988 cases/ years
- 7,5% per year
- 307/ 100.000 life birth/ years
- 35 per 1000 life birth/ years
- 94/ 660 million/ years



Terim^ə Kasih