New challenges for the veterinary profession in global animal disease control and the trade in animals and animal products
100 years of excellence and achievements now compacted into one challenge for the next 5 to 10 years
Why do we need a global approach for the control of animal diseases and why should we look differently at the epidemiology of animal diseases?
The veterinary profession on the front pages

Do we enjoy the exposure or do we see warning lights?
BSE – DEMONSTRATIONS IN KOREA OVER USA BEEF IMPORTS – June 2008
Rift Valley fever
Bluetongue
Highly pathogenic avian influenza (H5N1)
Conjectured Status of FMD

Endemic
Intermediate, sporadic
Free with vaccination
Free. Virus present in game parks
Free
Economic impact of Emerging diseases

Figures are estimates and are presented as relative size.
Risks for disease spread

Fig.1. Conceptual considerations – national and international factors influencing potential risks to animal health in the UK

- Major factors
  - A) Natural Determinants
    - Land cover
    - Wildlife biodiversity
    - Wildlife migration patterns
    - Climate changes
    - Ultraviolet radiation
  - B) Human Determinants
    - Demographics
    - Social behaviour
    - Land use changes
    - Economic development
    - Globalisation (travel & trade)
    - Technology and industry
  - C) Animal Health Determinants
    - Animal population
    - Pathogen adaptation
    - Modes of transmission
    - Veterinary Services
    - Husbandry practices

Influences

Effects on animal health and production

Mitigating measures

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
Factors of emergence and re-emergence

- International travel and commerce: 77%
- Globalization of agriculture and trade: 70%
- Microbial adaptation: 66%
- Climate and weather: 57%
- Changing ecosystems: 49%
- Changing host susceptibility: 43%
- Poverty: 38%
- Economic development: 32%
- Technology: 20%
- Intent to harm: 18%
Emerging and re-emerging infectious diseases
Veterinary science – within the global village
The impact of ecosystems on animal diseases
Annual global trade in exotic animals

- 4 million birds
- 640,000 reptiles
- 40,000 primates
- Illegal trade unknown – estimate $4-6 billion
Our enemies
Wildlife factor

- Forest encroachment
  - Nipah, Hendra and Ebola
- Exotic animal farming
  - SARS
- Trade in exotic animals
  - Monkey pox, psittacosis
  - 37.8 million counted animals imported in USA from 163 countries in 2000-2004
- Livestock/wildlife farming
Climate change - diseases

- Vector ecology and distribution (flies, ticks, mosquitoes)
- Invading pathogen adaptation with new vectors
- Migratory patterns
- Floods, drought
- Deforestation
Spill over and spill back
Bioterrorism and agroterrorism
Global spread of pathogens

- Increases in international air travel (5%/yr)

- Include the shipment of livestock and animal products

- Animals pathogens can move to any part of the world in a time shorter than the incubation periods of main epizootic diseases

- Entrenchment in poor farming communities
Pathogen spread

- Pathogens are transported around the world faster than the average incubation time of most epizootics.

- There is no place in the world from which we are remote and no one from whom we are disconnected.
Factors in emergence favouring the international spread of animal diseases and zoonosis

- International travel and commerce
- Breakdown of public health measures
- Indiscriminate use of antimicrobials
- Poverty and social inequality
- Ruralisation of the urban environment
- War and famine
- Lack of political will
- Intent to harm
- .....
Some of the more important diseases of concern to southern and eastern Africa

- **Potential economic disasters** (animal health, food security)
  - Foot and mouth disease
  - Classical swine fever
  - African swine fever
  - Avian influenza
  - Rabies
  - Newcastle Disease
  - Rinderpest
  - Botulism
  - CBPP
  - Rift Valley Fever
  - BSE
  - African Horse Sickness
  - Nipah Virus
  - Psittacosis

- **Potential human health** (zoonosis)
  - Avian influenza
  - Rabies
  - West Nile Fever
  - Botulism
  - Rift Valley Fever
  - BSE
  - Psittacosis
Safe Food always begins with healthy animals

Animal health is a key component of animal welfare
Increasing food demand

Source: FAO (2005)
Of veterinary concern …

• Last year, over 21 billion food animals were produced for over 6 billion people.
• 1 billion people worldwide rely on livestock for livelihood
• Worldwide population increase by 72 million/year
• By 2020 the demand for animal protein up by 50% mainly in developing countries.
• 80% export from developed countries and 5% from LDC
• 90% of beef and poultry export come from 5 countries
Veterinary services – a global public good

Safe animal production

Food safety

Alleviation of poverty

Public and animal health

Market Access
Veterinary science – the essential buffer mechanism and guarantee

Animal Disease
Zoonosis

Veterinary
science

Animal health

Human health

Poverty
Food security

Lack of trade
Key role players in surveillance and early warning

Official Veterinarians

Private Veterinarians

Farmers / Stakeholders/Public
The OIE was created in 1924 to prevent animal diseases from spreading internationally.

The 4th Strategic Plan (2006-2010) extends the OIE’s global mandate to “the improvement of animal health all around the world.”
Priority concepts for OIE approach to global animal health and disease control

- International Public Good
- Good governance and veterinary legislation
- Well functioning infrastructure and resources of Veterinary Services
- Public/Private partnerships
- Early detection and rapid response
- Surveillance, transparency, pathogen confinement
- Meeting of Deans of Veterinary Faculties 2009
The acceptance of the sanitary guarantees of the exporting country and how closely it satisfies the desired level of protection for human and animal health and zoonosis of the importing country
### OIE PVS Evaluations

<table>
<thead>
<tr>
<th>OIE Regions</th>
<th>OIE Members</th>
<th>Country Requests received</th>
<th>PVS Missions done</th>
<th>Confidentiality Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>51</td>
<td>36</td>
<td>31</td>
<td>15</td>
</tr>
<tr>
<td>Americas</td>
<td>29</td>
<td>12</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>28</td>
<td>13</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Europe</td>
<td>51</td>
<td>9</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Middle East</td>
<td>13</td>
<td>10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>172</strong></td>
<td><strong>80</strong></td>
<td><strong>62</strong></td>
<td><strong>28</strong></td>
</tr>
</tbody>
</table>
Aug 20, 2008 (The Monitor/All Africa Global Media via COMTEX News Network):

“Africa is not threatened by a single malaise such as HIV and Aids or Avian Influenza but by a combination of various human, plant and animal diseases, which can have potentially devastating social, environmental and economic effects”
One World – One Health (OWOH)

- Concept first introduced by WCS (Wildlife Conservation Society) – 2004 Manhattan principles
- Triggered by WNF, Ebola, SARS, Monkey pox, BSE, AI
- HPAI (H5N1) pandemic triggered wider international response (WHO, World Bank, OIE, FAO, UICEF) – Strategy document
- International realization of animal-human-wildlife interface in emerging infectious diseases
- Realisation for control of emerging infectious diseases at source → 75% zoonotic = animal source
- IHR – International Health Regulations (2007) – veterinarian+public health?
International standards, guidelines and recommendations

- Terrestrial Animal Health Code
- Aquatic Animal Health Code
- Manual of Diagnostic Tests and Vaccines for Terrestrial Animals
- Manual of Diagnostic Tests for Aquatic Animals
One World – One Health (OWOH)

Human/Animal Interface

Animals  Humans

Control zoonosis at the animal source

GLEWS

IHR (International Health Regulations)

WHO
Acceleration of interactions due to the avian influenza crisis
- Improving public health, animal health and food safety
- Protecting the health of ecosystems
- Role identification and responsibilities
- Focus on human/animal pathogen interface rather than just zoonosis
OWOH - overall objectives

- Build global capacity, as an international public good, in early detection and early response to identify emerging infectious diseases
- Control them at source to prevent their spread and entrenchment
- Decrease zoonotic disease risks to public health
In summary – what are the challenges?

- Accept the change in the global epidemiology of animal disease threats
- Accept the challenge and obligation to prevent zoonosis and EID’s at the animal source
- Accept the need for supportive good veterinary governance
- Accept to always expect the unexpected
- Accept the obligation as partners for delivering a global public good
- Accept to maintain our identity and role in a multidisciplinary environment
In conclusion ….

The veterinary profession has many success stories in Africa …

Are we ready to take the new challenges?
Thank you very much!

World Organisation for Animal Health

12 rue de Prony
75017 Paris, France
Tel: 33 (0)1 44 15 18 88
Email: oie@oie.int
http://www.oie.int