The role of the OIE in biological threat reduction

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World Organisation for Animal Health
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World Organisation for Animal Health (OIE)

- An intergovernmental organisation, founded in 1924
- 176 Members Countries and Territories (June 2010)
- Headquarters in Paris, France
  - 5 Regional offices
  - 6 Regional sub offices
OIE Objectives

- Transparency of the global disease situation
- Scientific Excellence
- Safety of international trade in animals and animal products
- International support to developing countries and the role played by Veterinary Services
- Food safety (farm level)
- Animal welfare

‘To improve animal health worldwide’
Threats
Animal diseases are a serious threat

- Animal health and welfare
- Public health – zoonoses
- Food security (non zoonoses)
- Livelihoods
- Economy (trade, productivity, market access)
Animal disease agents as bio weapons

• Impact – actual and perceived (fear)
• Cheap
• Relatively easy to acquire, smuggle, propagate, and deliver
Detection
Early detection and a rapid response are essential for prevention and control

This requires

• An effective strategy (surveillance and response)
• Authority, resources, and expertise to implement
• Public and private sector involvement
**Transparency of the disease situation**

Early detection and reporting to international community is critical

Members undertake to notify OIE (WAHIS)

- OIE listed diseases
- Emerging diseases
- Significant epidemiological events

OIE disseminates **official reports** from Members to all Members via an alert system and to the public via WAHID

Notification mechanism has a legal basis.
Criteria for listing a disease

INTERNATIONAL SPREAD?
• Has international spread been proven on **3 or more occasions**? OR
• Are **more than 3 countries** with populations of susceptible animals free of the disease or facing impending freedom (based on Code provisions, especially Appendix 3.8.1)? OR
• Do OIE annual reports indicate that at least 3 countries with susceptible populations are reporting absence of the disease?

EMERGING?
(A newly recognised pathogen or known pathogen behaving differently)
• Is there apparent zoonotic properties or rapid spread?

ZOO NOTIC POTENTIAL?
• Has transmission to humans been proven? (with the exception of artificial circumstances) AND
• Is human infection associated with severe consequences? (death or prolonged illness)

SIGNIFICANT SPREAD IN NAIVE POPULATIONS?
• Does the disease exhibit significant mortality at level of a country or zone? OR
• Does the disease exhibit significant morbidity at the level of a country or zone?

NO

EXCLUDE

INCLUDE

NO

EXCLUDE

INCLUDE
The Global Early Warning and Response System (GLEWS)

- **combines** and **coordinates** the alert and response mechanisms of OIE, FAO and WHO
- assists in **prediction**, **prevention** and **control** of animal disease threats, including zoonoses
GLEWS disease priority list

**Non zoonotic**
African Swine Fever (ASF)
Classical Swine Fever (CSF)
Contagious Bovine Pleuropneumonia (CBPP)*
Foot and Mouth Disease (FMD)*
Peste des Petits Ruminants (PPR)
Rinderpest – Stomatitis/Enteritis

**Zoonotic**
Anthrax
Bovine Spongiform Encephalopathy (BSE)
Brucellosis (B. melitensis)
Crimean Congo Hemorrhagic Fever
Ebola Virus
Food borne diseases
Highly Pathogenic Avian Influenza (HPAI)
Japanese Encephalitis
Marburg Hemorrhagic Fever
New World Screwworm
Nipah Virus
Old World Screwworm
Q Fever
Rabies
Rift Valley Fever* (RVF)
Sheep Pox*/Goat Pox
Tularemia
Venezuelan Equine Encephalomyelitis
West Nile Virus

*diseases for which trend analyses and forecasting will be emphasized
Response
Global network of OIE expertise

• OIE Reference Laboratories – expertise in surveillance and control of a named disease

• OIE Collaborating Centres – expertise in a specific designated sphere of competence e.g. epidemiology, emerging avian diseases, zoonoses, veterinary medicinal products
World Distribution of the OIE-Reference Laboratories

OIE-Reference Laboratories
- no OIE-reference labs
- 1 or 2 OIE-reference labs
- 3 or 4 OIE-reference labs
- 5 to 10 OIE-reference labs
- more than 11 OIE-reference labs
World Distribution of the OIE- Collaborating Centres

OIE-Collaborating Centres
- no OIE-collaborating centre
- 1 collaborating centre
- 2 or 3 collaborating centres
- more than 3 collaborating centres
Global network of expertise

- Contribute to global disease surveillance and transparency of the disease situation
- Assist with capacity building
- Promote quality and standardisation
- Contribute to building and sustaining scientific communities
- Promote biosafety and biosecurity
Outbreak response

• OIE network of expertise –
  • Technical support
  • OIE expert missions
  • OIE Reference Laboratory mandate ‘to place expert consultants at the disposal of the OIE’

• Joint missions with FAO and WHO
  • FAO-OIE Crisis Management Centre – Animal Health
    » Rapid response capability
Crisis Management Centre – Animal Health

Function

Deploys missions and develops tools
to support veterinary services
responding to disease emergencies
Investigations
Possible origins of animal disease outbreak

- Natural disease outbreaks
- Deliberate release (bioterrorism)
- Breaches in laboratory bio-containment
- New and emerging diseases
Confirmed outbreak of an OIE listed disease in a developing country where there is suspicion of deliberate or accidental release

National response

- Samples sent to OIE RL for characterisation

OIE notified

- Measures to prevent International spread (e.g. alert to neighbouring countries, trade partners)

International response

- If there is suspicion that Outbreak is not a natural event

UNODA

- Expert mission (OIE, FAO, CMC-AH)
Example: pandemic H1N1

April ’09: novel H1N1 virus with genes of avian, swine, and human origin causing infections in humans in North America with sustained human to human transmission

May ’09: WHO warned of imminent publication of paper suggesting the virus has a laboratory origin

Within 24 hours key experts from WHO and OFFLU networks are mobilised to provide expert opinion in joint WHO-OFFLU telecon

Conclusion: the hypothesis is flawed and the paper does not present scientific evidence to suggest the virus has a laboratory origin
Keys to identify origins of an outbreak

• Baseline surveillance data
• Epidemiological patterns (onset of outbreak and initial propagation)
• Genetic fingerprint of pathogen
• Other circumstantial evidences
  * * * *

• Initial collection of information and samples is critical.
• Elimination of other possible causes
• Not all deliberate releases are not attributed to bioterrorism.
Protection
Veterinary services are global public goods

- poverty alleviation
- food security
- market access
- food safety
- protecting animal health
- protecting public health
- protecting animal welfare
- biological threat reduction
International Standards
International Standards

- Support WTO-SPS
- Surveillance
- Safe trade in animals and products
- Diagnostic tests and vaccines
- Biosafety and biosecurity
- Veterinary Services

Compliance with OIE international standards greatly increases capacity to prevent, detect, and control outbreaks of animal disease (deliberate, accidental, or natural)
Biosafety - biosecurity

- Standards for veterinary diagnostic labs and animal facilities
- Work closely with WHO on setting guidance
- Promote safe and efficient transport of infectious substances
Information and awareness raising

- Scientific and technical review

- Wall chart (disease from potential bioterrorist threats) with Center for Food Security and Public Health, Iowa (OIE CC)
Partnerships
The OIE - a global partner in the promotion of animal health and food security

• FAO/ OIE Crisis Management
• Center
Capacity building through OIE Laboratory Twinning

- Sustainable laboratory capacity building to create a better global distribution of laboratory capacity and expertise

- Is a link between an OIE Reference Laboratory or Collaborating Centre (Parent) and a National Laboratory (Candidate) for disease or topic

- To provide support for diseases and topics that are a priority in a region and improve geographical distribution of expertise

- Aims to improve expertise and diagnostic capacity to meet OIE standards

- Supports expertise but not laboratory equipment or construction of laboratory facilities
OIE actions to strengthen Veterinary Services globally
The OIE-PVS Tool

Evaluate and improve the Performance of Veterinary Services

Improve compliance with OIE Standards

Based on 40 core competencies
Challenges

• **Strengthen veterinary services**
  • Improve surveillance
  • Improve reporting (quality and transparency)
  • Improve legislation
  • Improve education
  • Strengthen links between private and public sectors
  • Strengthen links between animal and public health
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