Animal disease agents including those transmissible to humans (zoonoses) have the potential to be used as biological weapons because they have wide ranging economic, health and social impacts and are readily available. Countries applying good veterinary governance are better positioned to detect animal disease outbreaks early and to respond to all animal disease outbreaks, whether they are caused by natural, accidental or deliberate release of pathogens.

ANIMAL PATHOGENS USED AS BIOWEAPONS

On numerous occasions throughout history, animal pathogens have been used to develop bioweapons against animal and human populations. The economic impact of large scale animal disease outbreaks can be immense because they impact directly on productivity, local economies, and market access. The cost of controlling the disease may also be very high. Disease agents such as foot and mouth disease virus are readily available in endemic countries and can easily be acquired from infective animals before being released to cause disruption and economic losses in countries that are free from the disease.

Many animal diseases which are zoonotic also pose a threat to public health. About 60% of human infectious diseases are zoonotic and 75% of emerging human infectious diseases have an animal disease origin.

Animal pathogens can be easily acquired from animals or the environment and from laboratories, and could be smuggled through border checks undetected.

The release or threat of release of animal pathogens may result in significant economic and health impacts or social disruption; this makes them attractive to terrorists. Advances in synthetic biology also mean that now and in the future it may be easy to manipulate animal pathogens so that they are more harmful than in their natural state.

Rinderpest was a devastating disease. Following well-coordinated global efforts the world was declared to be free from rinderpest in May 2011 by the World Organisation for Animal Health (OIE) and the Food and Agriculture Organization (FAO). This is only the second disease after smallpox in humans that has been successfully eradicated by humans. Stores of rinderpest virus remain in a number of laboratories, and like small pox there is potential for accidental or deliberate release unless these remaining viruses are destroyed or secured safely.

OIE Campaign for the sequestration and destruction of the rinderpest virus: www.youtube.com/watch?v=XLpws1PY2Y&list=UUYYwT1w9Yz2qPCHz9H00mg

Biosafety

Some pathogens handled in veterinary laboratories are dangerous to both human and animal health. Biosafety measures for laboratory workers handling hazardous biological materials are a prerequisite. The OIE Manual of Diagnostic Tests and Vaccine Production Chapter 1.1.2 (2011) provides risk based guidelines for laboratory biosafety which are developed in collaboration with the WHO.

...and biocontainement in the lab

Biocontainment measures prevent accidental or deliberate release of pathogens into the environment. Four biocontainment levels, with increasingly stringent requirements, are defined by the OIE based on the risk to animal and public health.

EARLY DETECTION AND RAPID RESPONSE TO ANIMAL DISEASE OUTBREAKS

Whether animal disease outbreaks result from natural events, or accidental or deliberate release, the mechanisms for disease detection, notification and control are very similar. To maintain global disease security these mechanisms should be in place in all countries.

When there is suspicion that a malicious act is behind an animal disease outbreak it is important to know about it at a very early stage so that the appropriate response mechanisms are quickly engaged. Using modern techniques, laboratory experts in Reference Laboratories will often be the first to confirm the identity and origin of a pathogen. Farmers and field veterinarians play a very important role in being the first to suspect a contagious disease in animals. Continual training of all these actors is important to maintain preparedness.
6. The OIE continuously cooperates with international partners including BTWC and the UN Office for Disarmament Affairs, World Health Organisation, Food and Agriculture Organisation, and IATA on matters relating to biological threat reduction, and biosafety.

7. The OIE Territorial and Aquatic Animal Health Codes provide international standards, guidelines and recommendations and on the prevention and control of agents that are pathogenic for animals, humans, or both, i.e. zoonoses.

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The Biological and Toxin Weapons Convention (BTWC)

The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, commonly known as the Biological Weapons Convention (BWC), or Biological and Toxin Weapons Convention (BTWC), entered into force in 1975. It now counts over 160 State Parties. The Convention prohibits the development, production and stockpiling of biological and toxin weapons, and ensures their destruction. Through the national implementation of its provisions, the BTWC helps to ensure modern biology is safe, secure and used solely for our collective benefit. No organisation has yet been given the responsibility to verify the compliance and obligations of signatory States to the BTWC. Through its overarching missions for the safeguard of animal health the OIE collaborates with the Biological and Toxins Weapons Convention requirements (BTWC) and manages a number of mechanisms able to help countries meet their obligations as required by the BTWC.

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For more information

Biosafety and Biological Safety

The OIE Biological Threat Reduction Strategy

The OIE Territorial Animal Health Code
www.oie.int/eng/normes/mcode/en_sommaire.htm

The OIE Manual of Diagnostic Tests and Vaccines for Territorial Animals
www.oie.int/eng/normes/mmanual/A_summary.htm