Procedures for International Sample Transportation

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The international regulations for the transport of infectious materials

• Special precautions are required when sending perishable suspect FMD material both within and between countries.

• The international regulations for the transport of infectious materials by any mode of transport are based upon the Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods (UN).

• The International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) have incorporated the UN Recommendations in their respective regulations.
The international regulations for the transport of infectious materials (2)

• The World Health Organization serves in an advisory capacity to these bodies ("Guidelines for the safe transport of infectious substances and diagnostic specimens," WHO/ EMC/97.3 (1997),

• OIE Manual, 2012. Foot and mouth disease. Chapter 2.01.05 describes specifically sampling and sample submission

• Airline companies carrying pathological material and biological products may also have special requirements and these should be consulted prior to shipment.

• The Universal Postal Union (UPU) reflects these recommendations in its regulations, particularly for packaging.
Classifying Biological Materials for shipment

1. **Infectious substances:** Infectious substances are substances that are known or are reasonably expected to contain pathogens

   a. **Category A Infectious Substance:** a substance which is transported in a form that is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals if exposure occurs.

   b. **Biological Substance, Category B:** a substance that contains or is suspected to contain pathogens but does not meet the criteria for inclusion in Category A.

2. **Exempt Human and Exempt Animal Specimens:** any bodily fluid or tissue sample from animal which has no signs of disease and you have no reason to believe he is sick

3. **Genetically Modified Micro-Organisms (GMMOs) or Genetically Modified Organisms (GMOs)**

4. **Unregulated Biological Materials:** Biological substances that do not contain pathogens or substances in which any present pathogens have been neutralized are considered unregulated biological materials.
UN regulation based on classification of biological substance (FMD)

• **Category A Infectious Substances:** assigned to **UN 2900**
  Infectious substances, affecting animals (only); *Foot and mouth disease virus (cultures only)*
  • **Packaging regulation:** Category A substances must be packed according to packing instructions 620 of the IATA Dangerous Goods Regulations

• **Biological Substance, Category B:** assigned to **UN 3373**

  *Biological substance, Category B.*
  – **Packaging regulation:** Category B substances must be packed according to packing instructions 650 of the IATA Dangerous Goods Regulations.
Evaluation on Dengrous Substance Categories

EuFMD Specific Committee for Research and Program Development discussed safety issues for transportation of FMD sample and standards based on categories.

Then agreed the recommendations:

- **FMDV RNA**: For shipment to the UK, UN2900 is to be used, as ‘dangerous goods’
- All materials should be packed according to UN2900/3373 standards
- However, procedure UN2900 for shipping dangerous goods is primarily meant for culture material and clinical samples containing significant amounts of virus. samples contain infectious RNA but not live virus, the working group is of the opinion that **UN3373 may be appropriate**.
- That shipping potentially infectious materials under the **UN3373 regime may also be appropriate for sample shipments within a country, either in an endemic setting or within an outbreak or in case of suspicions.**
Summary

• Taking account all these consideration; a draft Standard Operation Procedure (SOP) on FMD sample transportation [SOP_FMDSampletransportation.docx]

• However, there needs a agreement that which standard is acceptable for shipment of the FMD sample between countries in the region.
  – Epithelium sample can be packaged and shipped by using UN3373 without dry-ice?
  – RNA material treated by RNA later is best option for cost saving; however this has still limitation, only for serotyping and genetic analysis; not use for vacc.matching unless recovery method is validated?
  – Another considerations and comments?