Report of the Standing Technical Committee and its working groups

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The STC: how does it help EuFMD CVOs?

- Identify issues of strategic concern
- Explore options to solve problems
- Allocate research funds for developing applied, real-world solutions through the EuFMD Fund for Applied Research
- Support experts in specific areas to work together through networks and working groups
- Goal: help EuFMD CVOs through improved understanding of problems and tools to address them

Vaccination to live working group

- Sub-committee on vaccination to live met in Paris, 8th June 2016
- Following on from the work of Paton et al. presented at Cavtat Open Session 2014
- Sub-committee: *Stephan Zientara (Chair), Donald King, Labib Bakkali Kassimi, Emiliana Brocchi (not pictured), Eoin Ryan, Kris de Clercq*

Key points

Important to tease out the constraints impeding the adoption of vaccination to live as a strategy and address them where possible

Can we make the decision process easier for CVOs?

A 3 month waiting period with a high level of surveillance and vaccination implementation may be as good (or better!) than a six month waiting period

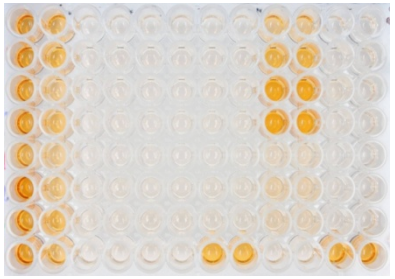
Outputs of working group

- Position paper presented to ExCom
- Presentation at Cascais OS
- Basis for workshop on implementation of vaccination to live policies, held in Ireland March 2017 (led by M Hovari, Secretariat)
- Workshop led to draft guidelines on developing an emergency vaccination operational plan (H Camphor & M De La Puente, Secretariat)

Diagnostic bank working group

- Followed discussions at last GS

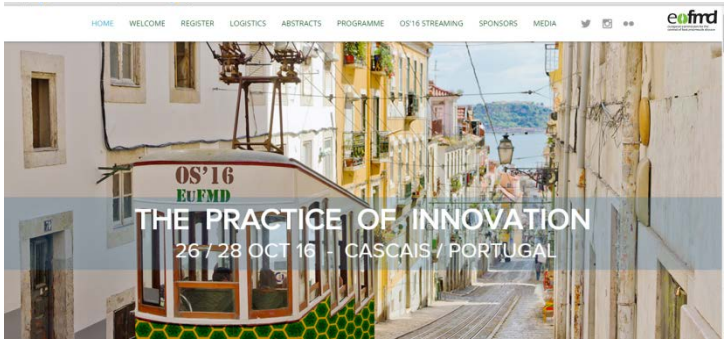
- Position paper presented to ExCom



- Developed with Dr Herzog; now part of workplan for Balkan area

SCRPD and STC closed session meeting, Cascais Oct 2017

- Discussion themes:
  - ➢ Review of FMD research priorities
  - ➢ Development of EuFMD work programme



Outputs presented to ExCom

- ➢ Discussions informed the basis of the 4th call for projects under the fund for applied research
- ➢ Lack of dedicated research funds for FMD, other than EuFMD FAR
- ➢ Partnership arrangements involving public and private bodies working to a common goal may hold promise (e.g. between Nigerian Vom FMD lab, CODA-CERVA Belgium and MSD)
- ➢ Risk to Europe posed by A/Asia/GVII lineage highlighted
- ➢ Issues with lack of transparency for disease information relevant to PCP country assessents
- ➢ Value of network-based training as per EuFMD workplan recognised

Open Session, Cascais Portugal, October 2016

- 269 registrations
- 139 abstracts
- Online conference: 320 participants registered (in addition to 269 above); presentations made available, discussion forums on each session
- GFRA parallel session
- Innovation clusters on day 3: networking/discussion sessions, each with a practical theme and a focus on interactivity

Presentation recordings available on e-learning site: used as a reference resource for many other EuFMD online courses

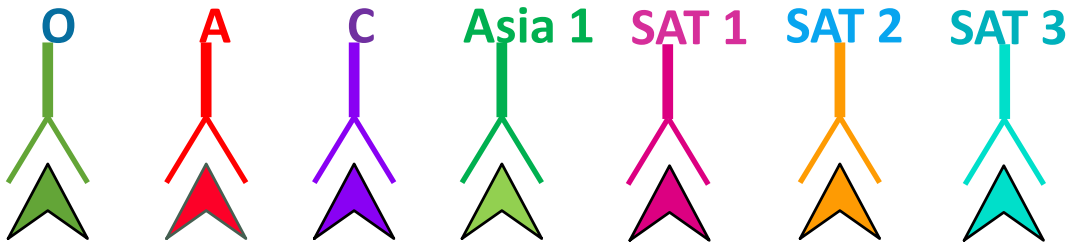
Some key messages from the Open Session

- Role which private sector can play in emergency preparedness and business continuity planning
- Allocations of costs and responsibilities for disease prevention & control
- Constraints to vaccination implementation: logistics, decision support for antigen selection, diagnostic support capacity, key decision points
- Advances in understanding of endemic virus circulation through WGS
- Risk based approaches to early disease detection
- Stakeholder attitudes to adopting disease control measures in endemic areas
- Strategies for vaccination and post-vaccination monitoring in endemic settings
- Innovations in diagnostics and vaccine development
- Knowledge exchange and training strategies for aiding global FMD control

FMD Research: an area of strategic concern

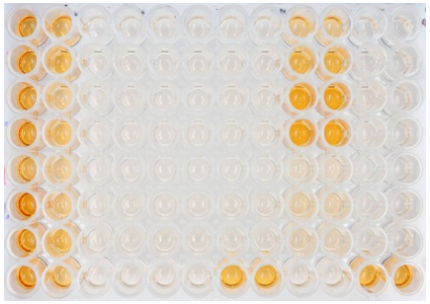
- No dedicated research fund for FMD – other than the EuFMD Fund for Applied Research
- Impact on fundamental/basic FMD research

- Best use of limited FAR funds is to support development of applied research and tools to address specific needs facing EuFMD members
- Field testing of new diagnostics can be facilitated through links with EuFMD field work



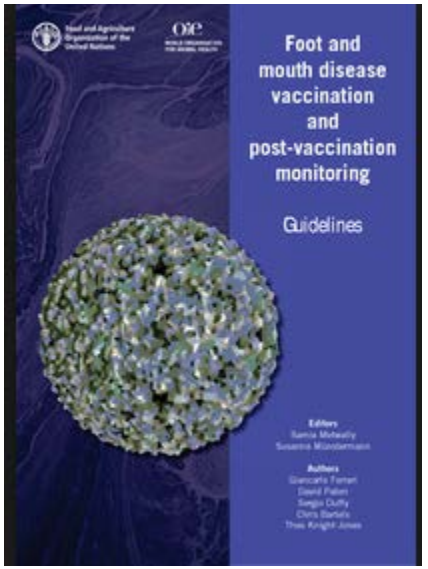
Issue: how to maximise the effectiveness of our limited funds for research?

- FAR receives more high quality grant applications than can be funded
- Awareness of other funding programmes: Keith Sumption is FAO coordination point for STAR-IDAZ research funding consortium
- Key issues identified by STC and SCRPD may also be of concern to other funders
- EuFMD field activities can offer a cost-effective way to test new technology or epidemiological hypotheses in endemic settings



Project on methods for evaluating vaccine effectiveness

- How to evaluate the effectiveness of vaccines: a concern for EuFMD activities and for global FMD control
- Substantial work done by FAO/OIE working group
- USA (via Institute for Infectious Diseases, Texas A&M) funding a study design to evaluate the field efficacy of novel FMD vaccine; led by Dr Nick Lyons (Pirbright and EuFMD) and Prof Eyal Klement (Koret School of Veterinary Medicine, Israel); expert consultation workshop to be held in FAO HQ in June
- Example of how EuFMD can support research into critical areas for policy makers through a cooperative approach



Making the best use of opportunities in the field

- EuFMD field activities present an opportunity for new technologies to be tested in real-world outbreak settings

- Real-time training in particular allows the findings from new technologies to be linked to the local disease investigations carried out by the team

Preclinical detection of FMDV

funded by Department for Environment Food & Rural Affairs

- During transmission experiments at Pirbright we can detect FMDV in:
  - nasal and oral swabs
  - environmental samples
  - air samples

- Advantages of these samples:
  - non-invasive
  - quick and easy to collect
  - can be positive before clinical signs appear

Testing the methods in the field

funded by Department for Environment Food & Rural Affairs

- Moving environmental sampling work from the lab to the field

- Visit to Nepal in November 2016
  - collaboration with EuFMD
  - in association with Australia/New Zealand-funded real-time training courses

Environmental sampling

funded by Department for Environment Food & Rural Affairs

- During visit went to 12 farms:
  - also one milk collection point and Kathmandu goat market
- Positive environmental samples taken from:
  - all clinically-affected farms
  - one (out of two) preclinical farms
  - milk collection point
  - goat market

Fund for Applied Research – third round successes

- FMD impact calculator (J Rushton, RVC)

- Improved quality assurance of FMD vaccines (Seago/Harmsen, Pirbright and Lelystad)

Investigating the integrity of stock FMD vaccine being considered for use in Algeria

Eva Perez[1], Nicholas Lyons[1,2], Karima Ouali[2], Mohamed Slama[3], Valérie Mioulet[1], Michiel Harmsen[4], Bryan Charleston[1], Keith Sumption[2] and Julian Seago[1, *]
[1] The Pirbright Institute, UK; [2]European Commission for the Control of Foot-and-Mouth Disease - EUFMD, Rome, Italy; [3] National Institute of Veterinary Medicine , Algeria; [4] Wageningen Bioveterinary Research, Lelystad The Netherlands. Email: julian.seago@pirbright.ac.uk www.pirbright.ac.uk

Introduction

Foot-and-mouth disease virus (FMDV) is highly contagious and infects cloven-hoofed domestic livestock causing foot-and-mouth disease (FMD) and severe economic impact. Current FMD vaccines are made from chemically inactivated virus and need to contain intact viral capsids for maximum efficacy. FMDV exists as seven distinct serotypes with numerous subtypes within each serotype dictating the requirement to match vaccine strains to those circulating in the field. In addition FMDV, particularly the O and South African Territories (SAT) serotypes, are thermally unstable and the viral capsid readily dissociates into non-immunogenic pentameric subunits which can compromise the effectiveness of FMD vaccines.

FMDV-susceptible livestock in Algeria mainly concerns sheep, goats and cattle; in 2005 their respective numbers were 18.7, 3.2 and 1.56 million (FAO, 2006). Cattle are generally limited to the north of the country, whilst sheep and goat are predominantly raised in the steppe region. This study investigated the integrity of a stock sample of FMD vaccine, with an expired shelf life, that was being considered for use in Algeria. The work described was performed in collaboration between the European Commission for the Control of Foot-and-Mouth Disease (EUFMD), The Pirbright Institute and the Algerian Veterinary Services.

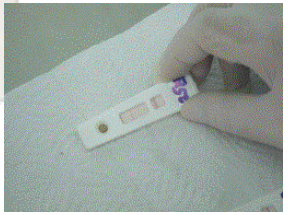
FAR funded project success:

Lateral Flow Devices: a game changer for sample transport?

The problem: transporting FMD samples from endemic countries to reference labs is expensive and complex.

The opportunity: Work by ANSES (funded by the EuFMD FAR) and by Pirbright has shown that viral genome can be recovered from used LFDs, while any infectious virus can be inactivated.

Could this be a way to transport inactivated samples cheaply & safely to obtain vital information to aid FMD control and risk management?



Outcomes of this FAR-funded project

- Facilitate detailed analysis of <u>far more samples</u> from areas where FMD poses a threat to EuFMD states
- More disease risk intelligence
- Cheaper
- Logistically easier

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ORIGINAL ARTICLE

WILEY

Safe and cost-effective protocol for shipment of samples from Foot-and-Mouth Disease suspected cases for laboratory diagnostic

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Funding Information
European Commission for the control of foot-and-mouth disease (EuFMD/FAO)

Summary
An essential step towards the global control and eradication of foot-and-mouth disease (FMD) is the identification of circulating virus strains in endemic regions to implement adequate outbreak control measures. However, due to the high biological risk and the requirement for biological samples to be shipped frozen, the cost of shipping samples becomes one of major obstacles hindering submission of suspected samples to reference laboratories for virus identification. In this study, we report the development of a cost-effective and safe method for shipment of FMD samples. The protocol is based on the inactivation of FMD virus (FMDV) on lateral flow device (LFD, penside test routinely used in the field for rapid immunodetection of FMDV), allowing its subsequent detection and typing

Fund for Applied Research 4th call for projects

- Call themes based on STC discussions and outcomes of Open Session innovation cluster discussions
- Six themes across the three pillars
- Call issued on 18th February

- 12 applications received; deadline March 17th
- Intention is to have decision on funding made shortly

FAR 4th call: themes

Theme 1: Tools to assist modelling: focus on estimating confidence in disease freedom using post-outbreak surveillance in vaccinated populations

Theme 2: Impact calculators: extending these to estimate impacts of vaccination-to-live scenarios and business continuity planning

Theme 3: Tools to manage FMD in wildlife: issues highlighted by the requirement to prove freedom from disease of wildlife

Theme 4: Methodologies for rapid evaluation of vaccine stability.

Theme 5: Optimising the use of bulk tank milk for FMD surveillance

Theme 6: Testing of biosafe transport methods for transport of FMDV RNA to international reference centres

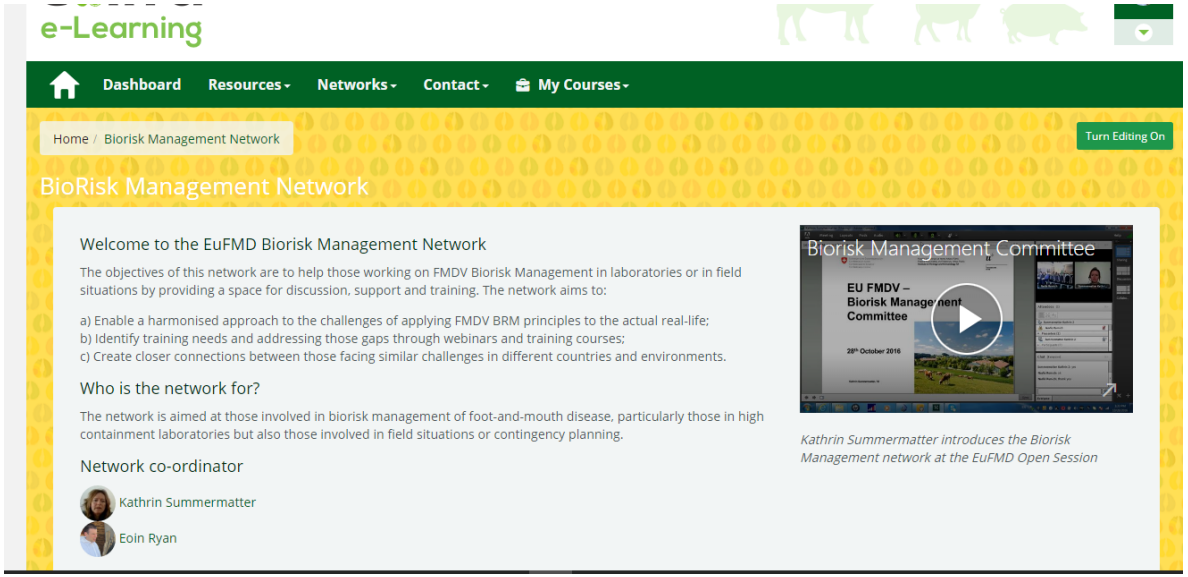
Areas of strategic concern identified by STC

- Risks posed by long-range spread of FMDV (discussed by Dr King of WRL Pirbright)
- Need for pan-European disease spread modelling
- Benefits of coordination on contingency planning
- Need for bio-risk management expertise to revise laboratory standards, assist biorisk managers and assess new sample testing and transport methods

Launch of the Bio Risk Management Network

EuFMD BRM Network

- Launched at the Open Session as part of the dedicated BRM innovation cluster session
- First webinar held on 24th January; very impressive level of participation from those involved in BRM in labs across Europe
- Many issues identified for follow up discussions, high level of interest
- Intention is to hold regular webinars, supported by discussion forum and specific training where needs are identified



Kathrin Summermatter introduces the Biorisk Management network at the EuFMD Open Session

Thank you – any questions?

The Standing Technical Committee 2015-17:

Stephan Zientara

Yanko Ivanov

Karin Schwabenbauer

Eoin Ryan

Thanks to Keith, Nadia, Mark, Jenny and the EuFMD team

Thanks also to the working group members and BRM group members especially Kathrin Summermatter