# Group working session: Surveillance for priority diseases in the region - FMD

REMESA
Mediterranean Animal Health Network

**REPIVET–RESEPA workshop: Epidemiology and surveillance of animal diseases**
**Tunis 1-2 December 2015**

**Objectives:** outbreak investigation (what to do under suspicions and when the outbreak is confirmed), sampling, traceability, *etc*.

**Outcomes:** 1. outbreak investigation protocol
2. epidemiological questionnaire.

**Facilitators:** English speaking group: C. Pötzsch (lead)
French speaking group: S. Chedia

REMESA
Mediterranean Animal Health Network

# Group work part 1: Outbreak investigation protocol

**Tasks:**

**1. Define and prioritise risk hotspots (high risk populations, high risk practices) for:**

- **FMD entry into your country**
- **FMD spread in your country**

**Risk hotspots should be specified**

**(1) Common hotspots for the country cluster**

**(2) Specific hotspots for individual countries if necessary**

# Group work part 1: Outbreak investigation protocol

**Tasks (cont.):**

**2. Outbreak investigation (OI) protocol – see table**

- **Objectives of OI**
- **Case definitions in OI**
- **Triggers for OI – in which situations are OI conducted (e.g. suspicions, confirmed cases)**
- **Scope, frequency and prioritisation of OI (e.g. in epidemic and endemic situations)**
- **Institutions which conduct/lead OI**
- **Methods of OI**
- **Reporting and use of the results of OI**

**3. Recommendations for improving the current system of OI, incl. regional cooperation**

# Group work part 2: Epidemiological questionnaire

**1. Identify the main topics to be covered in an epidemiological questionnaire for FMD outbreak investigation (OI)**

**2. Present the outline of the epidemiological questionnaire**

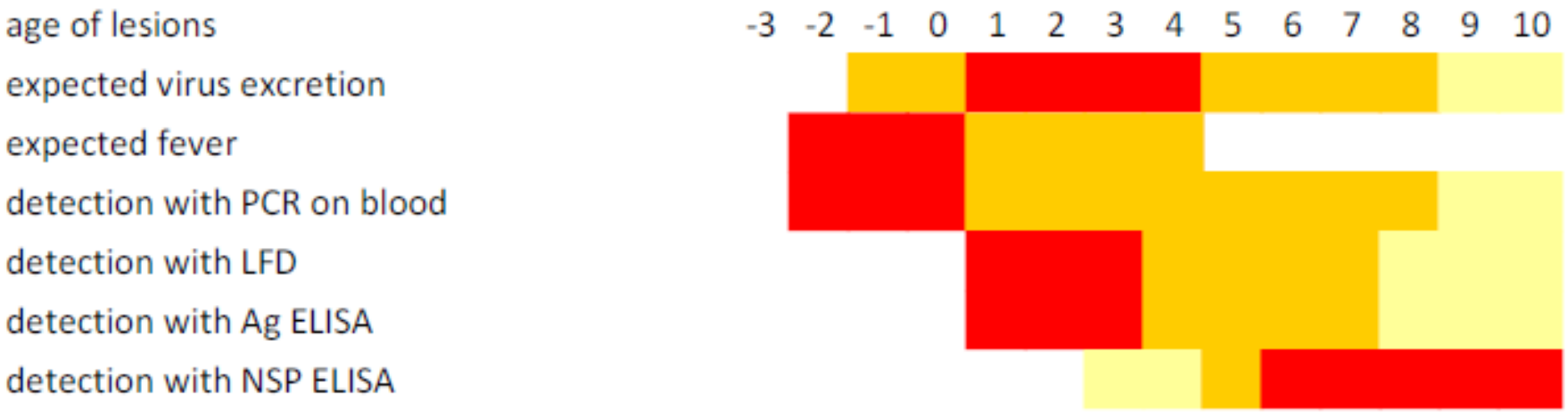
- You can use your national OI forms and the EuFMD template
- Include:
  - timeline template
  - forms on clinical investigation and sampling
  - Risk assessment of possible sources and spread
  - priorities for OI in epidemic and endemic situations if necessary
  - plan on further actions

# Animal examination and sampling form

| no | animal ID | species and sex[1] | age[1] | clinical signs | | | | | | type of lesions | | | | | | samples taken[5] | vacci-nation status[1] | estimated age of the oldest lesions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | lameness | fever[2] | salivation | foot[3] | mouth[4] | teats | intact vesicle | recently rup-tured vesicle | raw eroded area | ulcer with fibrinous scab | ulcer with fibrosis | [illegible] break coro- | | | |
| 1 | 12344567 | bov / M | 7 months | - | NT | - | - | - | - | - | - | - | - | - | - | B - S | not reported | |
| 2 | 12324567 | bov / M | not known | - | NT | - | - | - | - | - | - | - | - | - | - | B - S | not reported | |
| 3 | 12234567 | bov / M | 7 months | - | NT | - | - | - | - | - | - | - | - | - | - | B | not reported | |
| 4 | 12234567 | bov / F | 1.5 year | - | NT | + | - | LTD | - | - | - | - | + | + | - | B | not reported | 6 to 7 days |
| 5 | 12334567 | bov / F | 1.3 year | + | NT | + | C | G | - | - | - | - | + | | - | B | 10.2008 | 5 to 6 days |
| 6 | 12344567 | bov / F | 1.3 year | + | NT | + | I | LG | - | - | + (I) | - | | + (M) | - | B - E | 10.2008 | 7 days |
| 7 | 12345567 | bov / F | 1.5 year | + | NT | + | - | MLD | - | - | - | - | + | | - | B - S - E | not reported | 5 to 6 days |
| 8 | 12345667 | bov / F | 1.3 year | + | NT | + | I | L | - | - | - | - | - | + | - | B | 10.2008 | 7 days |
| 9 | 12345677 | bov / F | 1.3 year | - | NT | + | - | ML | - | - | - | - | - | + | - | B | 10.2008 | 7 days |
| 10 | 12345678 | bov / F | 1.3 year | + | NT | + | I | LTD | - | - | - | + (I) | + (T) | + (D) | - | B | 10.2008 | 7 days |
| 11 | not identified | bov / M | not known | - | NT | - | - | - | - | - | - | - | - | +? | - | B - P | not reported | 7 to 10 days |

[1] information retrieved from the livestock information system
[2] NT: not tested (animals did not appear to have fever)
[3] foot: Coronary band – Inter-digital space / [4] mouth: Muzzle - Lips - Gums - Tongue - Dental pad / [5] samples: Blood - Saliva - Vesicle fluid - Epithelium - Probang sample

# Timeline of events - Signs of FMD and diagnostic detection




Red = most likely time frame of detection
Yellow = likely time frame of detection
Pale yellow = less likely time frame of detection

# Focus of OI in PCP stages 1 - 3

| | **Stage 1 FOCUS** Getting an understanding about FMD virus transmission and impact | **Stage 2 FOCUS** Implementation risk-based control to reduce impact of clinical FMD | **Stage 3 FOCUS** Implementation control targeted at eliminating FMD virus circulation |
|---|---|---|---|
| **Sampling for confirmation** | Relevant | Relevant | Relevant |
| **Identification of routes of introduction and spread** | Gaining a general understanding about routes of introduction and spread | Gaining a progressively better understanding about routes of introduction and spread | Detection of source, and follow-up of onwards routes of spread |
| **Raising awareness and local response** | Awareness raising to support local response | Awareness raising to support local response | Response under responsibility of competent authority |
| **Assessing disease and economic impact of FMD** | Getting a general understanding of morbidity, mortality, treatment costs | Getting a progressively better understanding of morbidity, mortality, treatment costs | Every outbreak to be fully documented |
| **Getting a deeper understanding – testing assumptions** | Optional | Getting a progressively better understanding about risk factors, vaccine effectiveness and infection spread – means of M&E | Every outbreak requires full investigation into risks, spread and vaccination effectiveness |

# Outbreak investigations can also help to:

## Identify risk factors for FMD introduction and spread

- comparing cases and non-cases on household or village level (pasture use, common grazing/watering, vaccination, dangerous contacts [markets, dealers], etc.)

## Understand subclinical spread of FMD

- NSP survey

## Improve vaccination programmes

- Sampling: matching vaccine strain with field virus
- Education of animal owners
- Measure vaccination effectiveness
- improve vaccination coverage
- Measure duration of protection after vaccination
- Application of biosafety of vaccinators

# OI in FMD endemic countries?

## YES!

- better **understanding of the epidemiology** of FMD and progressively **improve control** (risk based)
- identify **risk hotspots** (production systems, animal populations, main animal movements, seasons, etc.) - OI in systems where priority control is targeted
- identify **risk factors**, estimate effectiveness of **vaccination programs**, FMD morbidity and mortality, cost of vaccination
- OI can guide **serological surveys** and vice versa

# Timeline (from earliest to last event)

try to identify the oldest lesion in the epidemiological unit;

the date of entry of infection (up to 14 days previously)

which events in this 14 day period may explain the entry of infection, e.g. entry of contaminated animals, or vehicles, and the most likely sources identified.

identify the serotype involved in, on the outbreak (aim - within 24 hours in the national lab or within 5 days by an international lab)

Measures, e.g. ring vaccination with the involved serotype