RAPIDIA-FIELD

WP3: Collection and preparation of samples

BBSRC
bioscience for the future

Department
for Environment
Food & Rural Affairs

FMD Reference Laboratory
SVD Reference Laboratory

Trials of mobile PCR equipment in Kenya (2013)

Training: Luc Aplogan and Lorraine Edwards

Activities undertaken in WP3 underpin the work undertaken to develop and validate **simple assay formats**.

- Minimise the practical obstacles to the implementation of these diagnostic systems
- For the **non-specialist user**

Sample Preparation:

WP3

Serological assays

Antibody detection in the **field** and in **small labs**

Antigen assays

Molecular assays

Pathogen detection in the **field** and in **small** labs

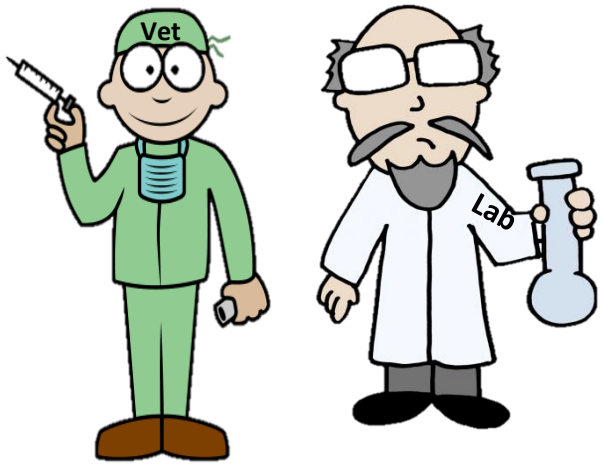
Protocol complexity

Diagnostic storyboards

Creating simple storyboards permits visual narration and understanding of scenario flow (story components).

For diagnostics this can help us define:

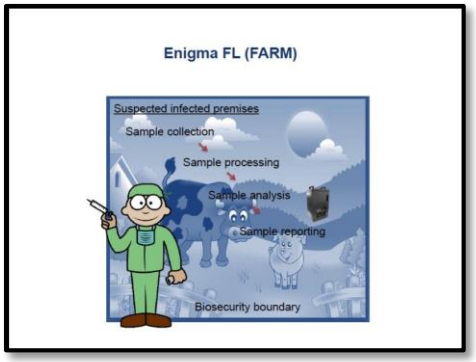
- The scenario from **sample collection** to **result**;
- Where scenarios may differ (i.e. diseases and in different countries;
- What is the test trying to do;
- Who will be performing the test;
- What equipment/reagents are required at each step;
- Are there any **gaps** in the process?

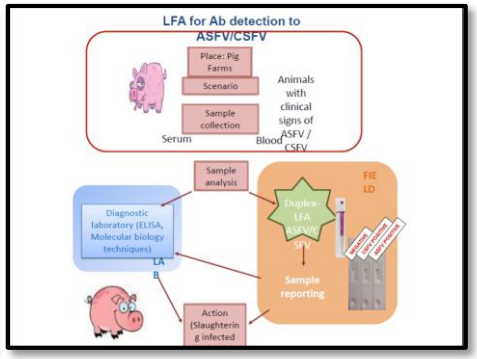


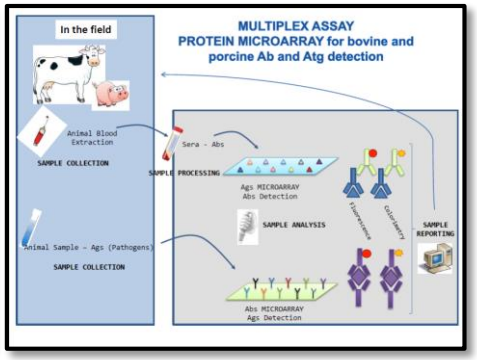
Diagnostic storyboards

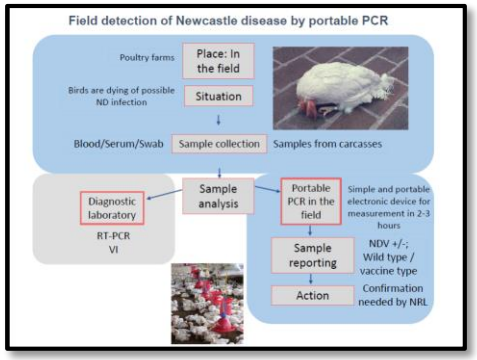
Thanks to Zsófia (Prophyl)

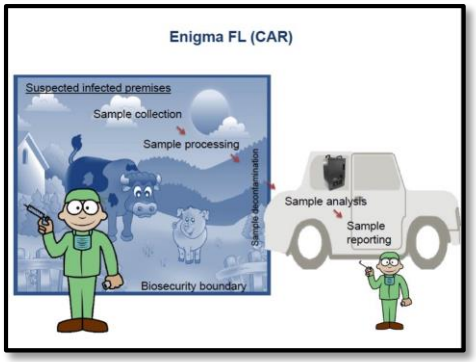
- 14 storyboards have been prepared that cover a range of different technologies and diagnostic scenarios

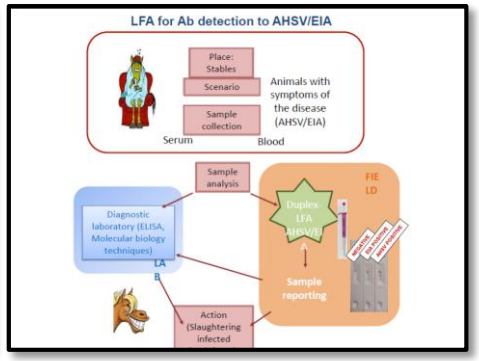


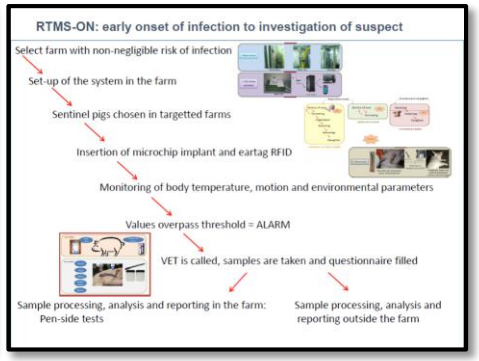


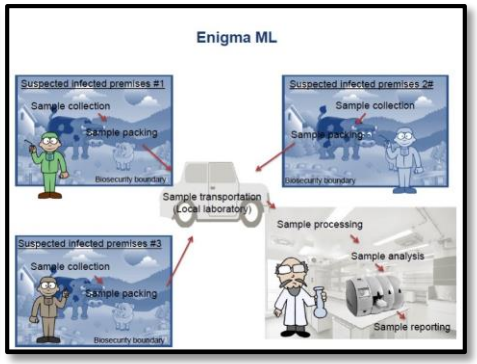


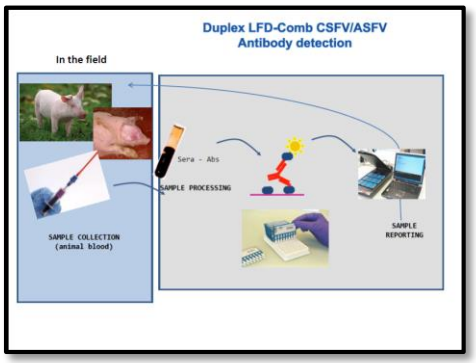


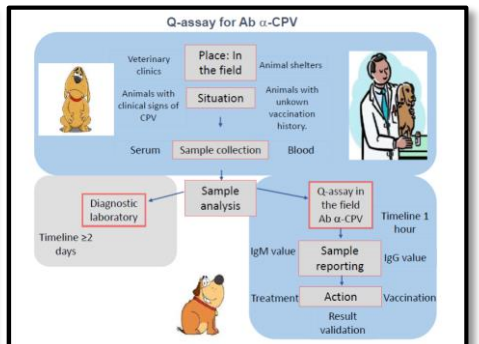


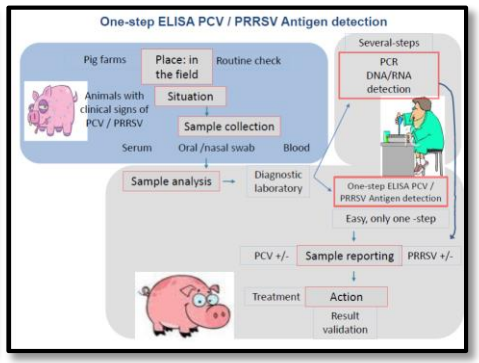


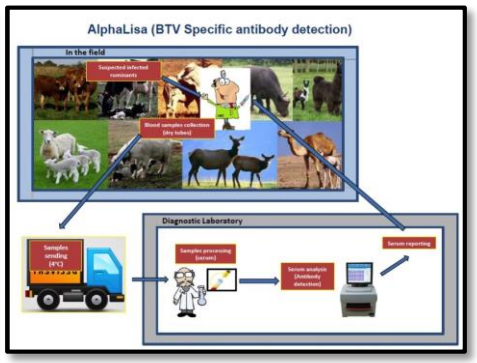












Not only local testing

- FMDV can be detected by real-time RT-PCR using nucleic acid recovered from positive LFDs
- RNA is stable > 1 month
- Possible to generate larger RT-PCR amplicons
  - Strain characterisation
  - “live” virus recovery by electroporation into BHK cells
- Use of LFDs to ship FMDV positive material to Ref. Labs?

Paulo-Fupi Raphael in Tanzania (2013)

Fowler et al., 2014: *PLoS ONE*

Virtual database (May 2015):

Samples for assay evaluation and validation

- http://rapidia.eu/app/search.php
- **5487** samples in “sample collection”
- **46** individual submissions
- Represent 15 diseases
- Range of appropriate sample types for validation of diagnostic tests.

A number of experiments have been undertaken to generate samples: including **NDV, PRRSV, ASFV, PCV-2, BTV, EHDV**

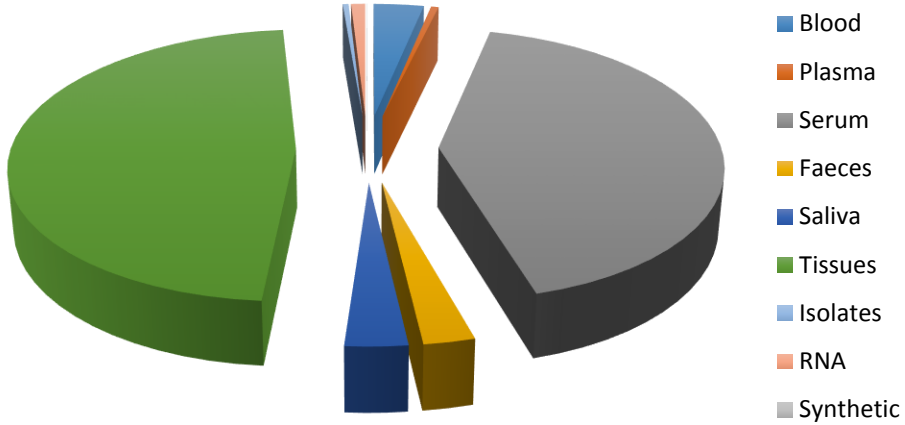
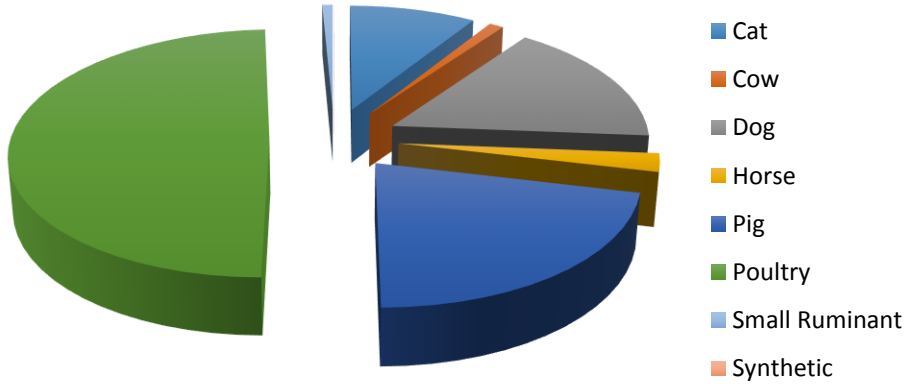
- **Project legacy** – well characterised materials for assay validation

Virtual database (May 2015):

Samples for assay evaluation and validation

15 diseases:

7 sample types:



6 target species