



Outbreak investigation

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Outbreak investigation and traceability

Does the practical & feasible measures to improve traceability systems for live animals, food products, feed, focusing on the challenges, that Veterinary Services face when investigating the origin and possible spread of disease, exist?...





THE 3 MAIN PHASES

Watching over

- Setting up and updating of Contingency plans (CP)...
- Identification of animals and updating of data basis;
- Training of the actors;
- Raising awareness;
- On duty 24h organization;
- Maintenance of alert network (vets, lab);
- Checking (transport, markets, slaughterhouses...)

Suspicion

- CP actors mobilization
- Sequestration of concerned & linked holdings
- Samplings for analysis
- Epidemiologic survey

Confirmation

- Notification (24 hours) (ADNS, WAHIS);
- Animal, products, people control;
- Protection and surveillance zones;
- Crises center set up;
- Experts groups mobilization;
- Culling + carcasses destruction;
- Decontamination.



Outbreak...

Who introduced? **Who** did spread?

When introduced? **When** spread?

How introduced? **How** spread?

Where from introduced?

Where to spread?

How to prevent further spread?





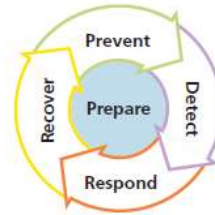
Outbreak preparedness and investigation

Outbreak preparedness

- Surveillance
- Planning

Outbreak investigation

- Confirmation and assessment;
- Case definition;
- Case finding;
- Outbreak description;
- Hypothesis generation from the existing outbreak data;
- Analytic epidemiology;
- Conclusions.



Outbreak





LEGISLATION!!!

Epidemiological inquiry

.... shall ensure that the epidemiological inquiry in relation to suspected cases or outbreaks of animal contagious diseases (FMD, CSF, ASF, AI and etc.) is carried out by specifically trained veterinarians on the basis of questionnaires, prepared within the framework of the contingency plans, to ensure standardised, speedy and targeted inquiries...



Targeted inquiries

- the **length of time during which the animal contagious disease may have been present** on a holding before being suspected or notified;
 - the **possible origin** of the animal contagious disease virus on a holding and the **identification of other holdings** where there are animals suspected of being infected or animals suspected of being contaminated from the same source;
-



Targeted inquiries

- the possible extent to which animals of susceptible species may have been infected or contaminated;
 - the movement of **animals, persons, vehicles and the substances** (stocks of milk, milk products, meat, meat products, carcasses, hides and skins, wool, semen, embryos, ova, slurry, manure as well as animal feed and litter on the holding) likely to have carried the animal contagious disease virus / pathogen to or from the holdings in question.
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Outbreak investigation forms

- Standard format to collect a standard set of data;
- Should be space for non-standard information...
- Easy to complete;
- Detailed information in combination with short and useful data;
- Information for questionnaire is only the key for outbreak investigation – really more on your eyes than on piece of paper...





Tracing

- Direct interviewing on spot and thorough inspection of the farm and surrounding;
- Usage of all available data (validation, cross check, ID&R database, movement data and etc...)
- Usage of different sources of information on the same subject and logical checks and prove of theories;

Data waste should be avoided...



Other sources of information for veterinary service?

- Family, employees;
- Private veterinarians;
- Animal dealers;
- Slaughterhouses;
- Rendering plants;
- Feed suppliers;
- Neighbours.





Priorities for Tracing

- The number of contacts to be traced can become very large;
- Resources for investigations are not unlimited;
- Time can be critical...
- Need to prioritise highest risk contacts!



KEY COMPONENTS TO AN OUTBREAK INVESTIGATION

1. Establish trust;
2. Be patient;
3. Keep an open mind;
4. Listen to what the farmer and his staff says;
5. Explain yourself and answer any questions they have;
6. Remember – farmers talk to each other.





Traceability ...because identification alone does not ensure

OIE (Code): ability to follow an animal or group of animals during all stages of its life;

ISO (8402): ability to trace the history, application or location of an entity by means of recorded identifications.

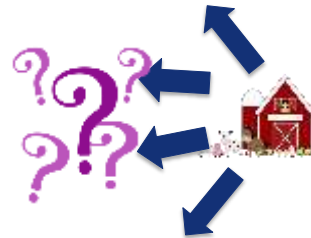


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Tracing

- Movements of animals, carcasses, semen, ova, meat or any material which could have carried virus or phatogen;
- Persons;
- Vehicles, equipment;
- Feed;
- Water, products, by-products;
- Other live vectors or wild animals;
- others (unknown?)...



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Tracing

- Collaboration with other authorities (municipalities, agricultural / rural organisations, associations, breeding services...);
- Continuous summarizing of knowledge and transmission of the information to decision makers (if any exist...);
- Use of external support (e.g. epidemiological services, task forces, etc.) – **difficult, but reasonable...**
- Continuous generation of hypothesis...



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Animal movement - Tracing

Animal Identification and Registration Database;



National Animal Disease reporting system;

National / International documents leading animal during transportation or movement / animal health certificate;



TRACES.



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Steps towards animal traceability

- ✓ Holding registration;
- ✓ Animal identification;
- ✓ Movement records on farm;
- ✓ Central movement recording (group);
- ✓ Central movement recording (individual).



Outbreak – commercial farm





Outbreak – backyard farm



An example of one country... Outbreak of ASF in commercial farm

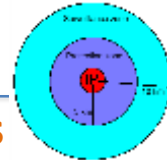


★ - pigs died with lesions resembling poisoning;

★ - location of seropositive pigs.



Tracing the movement of pigs



Protection and surveillance zones

- The geographical delimitation of those two zones must take into account the administrative borders and natural barriers, where will be taken the surveillance and control measures that can stop animal disease virus spreading.
- Protection zone will have a radius of a minimum 3 kilometres, having the centre into outbreak, and the surveillance zone will have a radius of a minimum 10 kilometres, having the same centre.
- These two zones will be at least of 3 and 10 kilometres, but they might be enlarged, not necessary as a circle, but as any other geometrical form, varying with natural barriers and the administrative borders.



Measures in contact holdings

- Official supervision;
- Temporal restrictions:
 - ❑ no meat, pig products, semen, ova or embryos of pigs, animal feed, utensils, materials or waste likely to transmit ASF may leave the holding without an authorization;
 - ❑ no animal carcasses may leave the holding without an authorisation
- No pigs may enter or leave the holding;
- Clinical examination, thermometry and observations;
- Sampling and testing in order to rule out the disease.



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Measures in slaughterhouses

Meat of animals slaughtered during the period between the probable introduction of the disease into the holding and the taking of official measures is wherever possible to be traced and processed under official supervision...



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What can be done additionally?

- Veterinary certification rules could be drawn up and implemented: before the movement of susceptible animals from their keeping place clinical examination should be carried out and veterinary certificate should be issued 24 hours prior their movement...
- Regular update of the Animal Identification and Registration Database;
- Additional training for animal keepers, private veterinarians and hunters on biosecurity requirements, clinical signs and diagnosis of animal contagious diseases, animal registration and identification, pig keeping welfare requirements...



“PREVENTION IS BETTER THAN CURE”

**ON-FARM BIO-SECURITY MEASURES ARE
CHEAPER THAN OUTBREAK
ERADICATION...**





Any questions?!



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Thank you for your attention