How to start up a national wildlife health surveillance programme

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EWDA Network (for Wildlife Health Surveillance in Europe)

Goals

1. Improve exchange of information among Wildlife Health Surveillance programs in Europe
2. Share specialist expertise
3. Develop standard operating procedures for diagnostic investigation
4. Develop common criteria for diagnosis of wildlife disease
5. Provide training opportunities for wildlife health surveillance

Committee members

- Thijs Kuiken (Netherlands) Chair
- Antonio Lavazza (Italy) Diagnosis Cards
- Becki Lawson (UK) Secretary
- Aleksija Neimanis (Sweden) Google Group
- Jorge Ramon Lopez Olvera (Spain) Species Cards
- Paul Tavernier (Belgium) WildList

https://ewda.org/ewda-network/

EWDA Network – Diagnosis Cards

Purpose

• To share knowledge on appropriate diagnostic methods for diseases or disease agents and to promote methodological harmonization throughout Europe

• Original produced by EMIDA-ERANet APHAEA project, now maintained by EWDA Network

• >20 available

Network for wildlife health surveillance in Europe
Diagnosis Card

Canine Distemper

Author(s) (*corresponding author)
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Last update
July 2021

Etiology
Canine Distemper is caused by a single-stranded, negative sense RNA virus belonging to the genus *Morbillivirus*, within the family Paramyxoviridae. This virus is related to the etiologic agents of measles, peste des petits ruminants and rinderpest and more closely to phocine distemper virus in seals, marine mammals morbilliviruses and the Morbillivirus responsible for the infection in horses (Hendra virus).

CDV genome encodes six structural proteins: phospho- (P), nucleocapsid (N), large polymerase (L), matrix (M), fusion (F) and hemagglutinin (H) proteins. Phylogenetic analyses based on the H sequence revealed at least 12 distinct lineages distributed worldwide. The hemagglutinin protein is crucial, regulating the interaction between the virus and the host cell and the subsequent cell infection and viral replication.

The virus is characterized by limited resistance in the external environment and to U.V. It is extremely susceptible to high temperatures (being inactivated at 50-60°C for 30 minutes) and drying. It is also easily inactivated by common disinfectants (chloroform, formalin, phenol, quaternary ammonium salts). Survival time increases in cold climates: at temperatures close to 0°C (0-4°C) it can survive in the environment up to several weeks. At temperatures below 0 °C the virus is relatively stable, surviving at - 65°C up to 7 years.

https://ewda.org/diagnosis-cards/

EWDA WildList & Google group

Purpose - WildList

- To connect scientists interested in wildlife health
- Regular messages on wildlife health topics
- Anybody with a particular expertise in wildlife and interested in wildlife health can join
- ~300 members from ~47 countries

Show [5 ▼] entries   Search: [_____]

First name	Last name	Country	Institution	Position	Field and degree of education	Wildlife disease(s)	Wildlife species

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Purpose – Google Group

- To enable rapid communication of recent findings amongst community directly involved in WHS
- Application process to join for those active in the field
- ~240 members from ~33 countries

https://ewda.org/ewda-network/

Background

- Existing national schemes for WHS vary in scope and scale

Meeting Aim

- Understand events that led to programme start-up and expansion
- Identify practical recommendations to help overcome key challenges
- Create a tool to help support the creation and expansion of WHS programmes

EWDA Network Meeting:
How to start up a wildlife health surveillance programme
Amphitheater 1, 2nd Floor, Faculty of Medicine, University of Thessaly

Background:

Out of 49 European countries, we know of only 14 countries that have a wildlife health surveillance programme at a level 2 or 3. Level 2 means partial general surveillance, i.e. wide range of programmes but restriction in various ways, e.g. geographical regions or covered species. Level 3 means comprehensive general surveillance, involving the entire country, and a wide range of species and diseases covered. Therefore, we have no or only poor knowledge of the state of wildlife health in the majority of European countries. In wildlife health surveillance, as in many other areas, "The first step is the hardest". How did those European countries who do have partial or comprehensive general surveillance of wildlife health get started? Knowledge of their histories may be useful for people who are keen to start wildlife health surveillance in their own country. However, this information is not generally available. The goal of this EWDA Network meeting is to use the knowledge from OIE training programmes, plus from the start-up periods of countries with established wildlife health surveillance systems to help other countries to set up their own systems.

Programme:

13:00-14:00.	Welcome coffee
14:00-14:05.	Welcome and introduction (Thijs Kuiken)
14:05-14:15.	Overview of wildlife health surveillance in Europe as of 2009 (Thijs Kuiken)
14:15-14:30.	Review of requirements of a wildlife health surveillance programme (Marie-Pierre Ryser)
14:30-15:30.	Start-up and growth spurts of established wildlife health surveillance systems in a selected number of countries, part 1 (4 x 15 min; Paul Tavernier, Belgium; Antonio Lavazza, Italy; Jorge Lopez, Spain; Marie-Pierre Ryser, Switzerland)
15:30-16:15.	Break and Poster Viewing
16:15-16:45.	Start-up and growth spurts of established wildlife health surveillance programmes in a selected number of countries, part 2 (2 x 15 min; Jolianne Rijks, The Netherlands; Becki Lawson and Paul Duff, UK)
16:45-17:30.	Panel discussion: what worked, what didn't? (Panel: all speakers on start-up and growth spurts of established programmes. Chair: Thijs Kuiken)
17:30-18:00.	Break and Poster Viewing
18:00-19:00.	Situation reports of a selected number of countries who wish to start a wildlife health surveillance programme (4 x 15 min; Daniel Mladenov, Bulgaria; Gudrun Wibbelt, Germany; Charalambos Billinis, Greece; Sara Savic, Serbia)
19:00-19.45.	Panel discussion: how to get started? (Panel: all speakers on countries wishing to start a programme. Chair: Thijs Kuiken)
19.45-20:00.	Concluding remarks (Thijs Kuiken)

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Establishing a European network for wildlife health surveillance

T. Kuiken[1]*, M.-P. Ryser-Degiorgis[2], D. Gavier-Widén[3] & C. Gortázar[4]

☐ Level 1: no general surveillance (i.e. absence of a programme of general wildlife health surveillance, but limited targeted surveys of selected wild animal species for a few specified diseases).
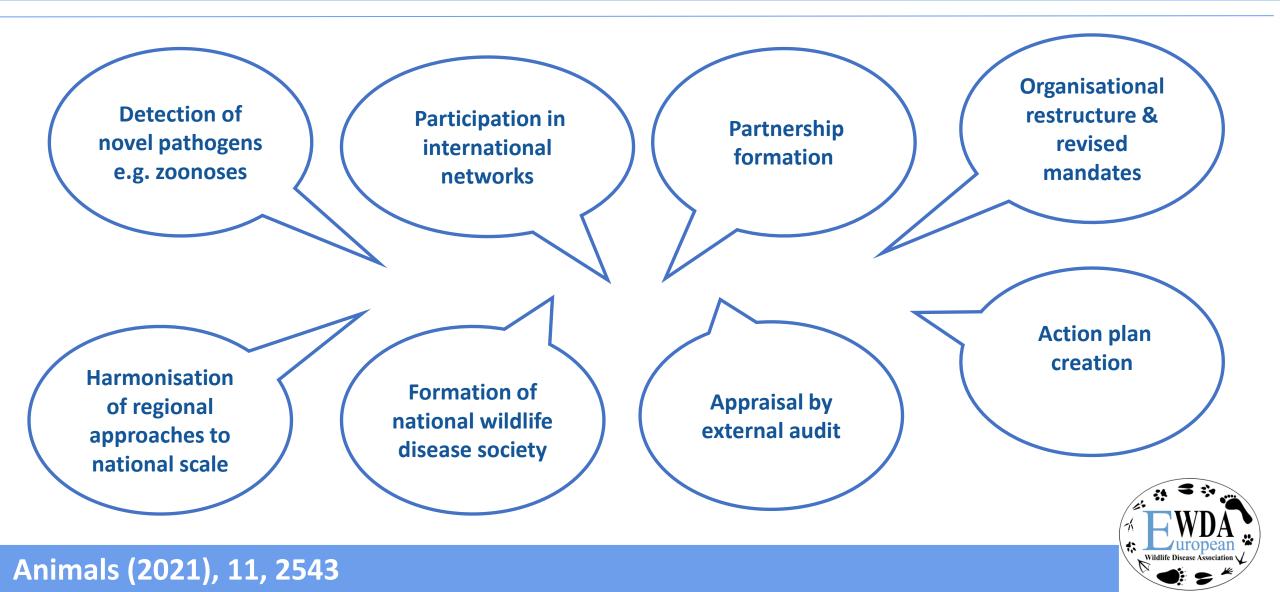
■ Level 2: partial general surveillance (i.e. a wide range of programmes including detection, diagnosis and management of disease-related information, but restricted in various ways)

■ Level 3: comprehensive general surveillance (i.e. one or several programmes covering the entire country and being comprehensive with respect to species of mammals and birds examined and types of diseases assessed; Table I, Fig. 1)

Reasons for Start up and Growth Spurts

Challenge 1: Understanding & Awareness

The general public and stakeholders often have limited understanding of the importance of wildlife diseases

Recommendations

- Communicate significance of wildlife disease and value of WHS, to benefit:

  - public and domestic animal health

  - wildlife health, conservation and welfare

EWDA European Wildlife Disease Association

Challenge 2: Cross-Sectoral Scope

Activities are typically focused on public and/or domestic animal health whilst wildlife health and conservation are neglected

Recommendations

• Promote the One Health approach

• Support multidisciplinary initiatives

• Identify common interests and benefits of collaborative working for each sector

Challenge 3: National-Scale Collaboration

Early stage WHS programmes often operate in isolation

Recommendations
- Start with an audit of WHS activities - regional, taxa or threat specific initiatives

- Identify stakeholder community and review goals and values

- Develop collaborative WHS strategy with clearly outlined aims, terms of reference and responsibilities

Challenge 4: Harmonisation of Methods

It is not possible to compare data across existing schemes that employ different methods

Recommendations

- Promote harmonization of methods to enable data sharing

- Develop set case and incident definitions and SOPs

- Build centralized databases and reporting networks using online or mobile-based technology

Challenge 5: Government Support

Government funding is often insufficient, short-term and comes from one department (e.g., Agriculture or Public Health)

Recommendations

• Encourage governmental co-funding of WHS across departments for environment, agriculture and public health – synergy, cost-efficiency and avoids duplication of effort

• Identify governmental obligations under international legislation where WHS can provide data

Challenge 6: Academic Support

Academic recognition of the value of WHS is often lacking

Recommendations

- Growing undergraduate and postgraduate student interest in wildlife health training opportunities

- WHS can generate science outputs with impact for conservation, public and domestic animal health

Challenge 7: Other Funding Support

It is challenging to secure funding

Recommendations

• Develop integrated WHS and research programme – coordinated and cost-effective approach

• Sample archive can support retrospective targeted investigations at low cost

• Consider funding sources with specific interests e.g. taxa, threat

Challenge 8: Staff Expertise & Capacity

It is difficult to recruit, train and maintain expertise in staff

Recommendations

• Explain long-term secure funding is essential to train experts and maintain capacity

• Promote information sharing through national and international exchange networks

• Encourage staff participation in undergraduate and postgraduate training

Challenge 9: Leadership, Feedback & Engagement

Problems often arise with maintaining momentum and keeping stakeholders engaged in the long term

Recommendations

- Importance of small leadership team to act as contact point and build network

- Develop a communication strategy to raise awareness and maintain engagement

- Consider interests across stakeholder community and tailor information dissemination accordingly

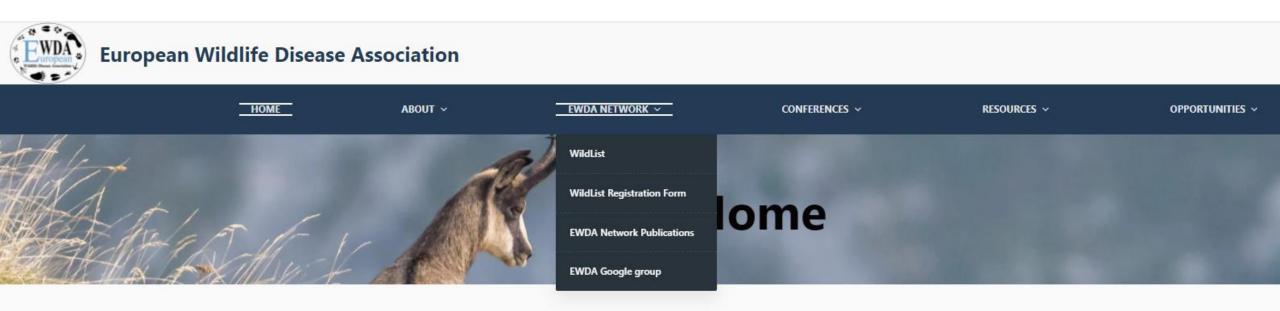*There is a poor translation of WHS findings into practical action or intervention*

Recommendations

- Integrate WHS and population monitoring to appraise population impact
- Establish links with government and NGOs to optimize knowledge transfer from WHS to policy

- Use WHS data to inform development of
  - disease response plans
  - disease risk analyses for conservation interventions

Any Questions?