5th meeting of the One Health surveillance subgroup of EFSA's Scientific Network for Risk Assessment in Animal Health and Welfare

8-9 July 2025
09:00-17:00 / 09:00-17:00
Minutes agreed on 06 August 2025

EUROPEAN FOOD SAFETY AUTHORITY

Location: EFSA - Parma (Meeting Rooms M07-M08, M09)

Attendees:

- Subgroup Participants:

Country	Member State Organization
Austria	AGES - Austrian Agency for Health and Food Safety
Belgium	Sciensano-Health Institute
Croatia	Faculty of Veterinary Medicine University of Zagreb Croatian Agency for Agriculture and Food
Czech Republic	National Institute of Public Health
Denmark	Statens Serum Institut
Estonia	National Centre for Laboratory Research and Risk Assessment Estonian Health Board
Finland	Finnish Food Authority
Germany	Friedrich-Loeffler-Institut
Greece	Veterinary Research Institute, Hellenic Agricultural Organisation (ELGO-DIMITRA) National Public Health Organization, Greece
Hungary	Hungarian National Centre for Public Health and Pharmacy Hungarian National Food Chain Safety Office
Ireland	University College Dublin Department of Agriculture, Food and the Marine (DAFM)
Italy	Istituto Superiore di Sanità Istituto Zooprofilattico Sperimentale Abruzzo e Molise
Latvia	Institute of Food Safety, Animal Health and Environment "BIOR" Food and Veterinary Service
Lithuania	National public health surveillance laboratory National Food and Veterinary Risk Assessment institute
Luxembourg	Luxembourg veterinary and food administration (ALVA) Luxembourg Institute of Health (LIH)
Netherlands	Dutch Wildlife Health Centre RIVM
Norway	Norwegian Institute of Public Health

	Norwegian Veterinary Institute
Poland	Panstwowy Instytut Weterynaryjny Panstwowy Instytut Badawczy
Portugal	National Institute of Health Doutor Ricardo Jorge Direção Geral de Alimentação e Veterinária
Slovak Republic	The University of the Veterinary Medicine and Pharmacy in Košice
Slovenia	Administration for Food Safety, Veterinary Sector and Plant Protection National Veterinary Institute/Veterinary Faculty
Spain	Ministry of Health Ministry of Agriculture, Fisheries and Food (MAPA)
Sweden	Swedish Veterinary Agency

- Hearing Experts:
  BEREZOWSKY John, DE BALOGH Katinka, DOREA Fernanda
- European Commission
  HaDEA.A.1.02
- Other EU Agencies representatives:
  European Centre for Disease Prevention and Control (ECDC): Áine Collins
- EFSA:
  BIOHAW Team Animal Health: GERVELMEYER Andrea, KRYEMADHI Kamela

  IDATA Team Data gateway and outreach: IANCU Catalin, SIMON Ancuta Cezara

Session 1: Setting the scene

1. Welcome and apologies for absence

The Chair welcomed the participants, noting that apologies for absence were received from hearing expert Simon Ruegg and briefly outlined the workshop's objectives and expectations. The main goals of the meeting were to share practical country experiences with One Health (OH) surveillance systems, identify key challenges and enabling factors in coordinated surveillance efforts, discuss the added value of multi-sectoral approaches, and explore potential improvements to future surveillance priorities and methodologies.

2. Introductions

The chair opened the meeting by welcoming all subgroup participants and introducing the other attendees of the workshop. The participants included representatives from 22 EU Member States and Norway, bringing together expertise from the animal health, public health, wildlife, and environmental sectors. Also present were members from academia, national reference laboratories, as well as representatives from EFSA, ECDC, and HaDEA. Additionally, hearing experts were invited to contribute to the discussions.

3. Presentation on 2024 surveillance results and questionnaire survey outcomes

The meeting continued with a recap of the 2024 surveillance results reported to EFSA and the analysis of responses to a questionnaire survey that had been conducted in spring 2025.

The three-year surveillance project is framed by beneficiaries' grant agreements with HaDEA and EFSA's mandate for scientific and technical support for the work carried out by countries. Since 2022, progress has been steady: priority pathogens were identified, surveillance options defined, grant agreements with beneficiaries in 23 countries signed by late 2023, and data collection and reporting starting in 2024. Now in mid-2025, the assessment and review of the priorities and methods of the OH surveillance is being conducted to identify any necessary adjustments for the remainder of the project period.

The review draws on three main resources: surveillance data reported to EFSA, ECDC's feedback on the 2024 results, and the questionnaire survey results.

Regarding 2024 surveillance activities, data submission is ongoing, with some countries also adding additional information. Preliminary results show a large sampling effort, particularly for West Nile virus, Tick-borne Encephalitis virus, Avian Influenza virus and *Coxiella burnetii* surveillance. Countries used various approaches for the surveillance of a given pathogen, targeting different host species and detecting either the pathogens or antibodies. The data showed that few pathogens were detected overall, though some countries reported first detections of a pathogen in their territories as a result of the surveillance done.

The questionnaire survey, covering 239 surveillance components, revealed that countries considered that about 48% of surveillance components fully achieved their objectives. Most participants reported that the surveillance results improved disease knowledge, especially in cases where aims were considered achieved. Intersectoral collaboration was strongest during the surveillance design and information-sharing phases, though less evident during testing. Some countries have yet to initiate intersectoral discussions, which merits further exploration. Decision-making based on surveillance results remains limited, even where aims were met, highlighting a gap between data generation and its practical application. This evaluation of the surveillance activities reflects the achievements after one year of their implementation and indicates areas and opportunities for further enhancements during 2025 and 2026.

4. Icebreaker

To kick off the workshop, participants engaged in an activity designed to encourage interaction. Each person received a colored letter and was asked to group together with others with letters in same color to form a word. Participants gathered in color-coded corners to collaborate in deciphering their word and to exchange on their sectors and backgrounds.

5. Poster viewing "Biggest Challenges & Game-Changing Solutions"

Before the meeting, each country had been asked to prepare a poster highlighting the biggest challenges and surprises as well as the game-changing solutions of their 2024 surveillance activities. The posters were displayed in the meeting rooms. During the meeting, participants were invited to individually explore the displayed posters and vote for their personal favorite. In addition, participants were asked to reflect on three key aspects: the top solution found, the top challenge identified, and the biggest surprise shared.

Session 2: Sharing country experiences (successes and challenges)

6. Group discussion on poster observations

Participants discussed the insights gathered during the poster viewing in groups that brought together different countries and sectors. They collaboratively selected one challenge, one solution, and one surprise identified through the project experience. Each group presented their group view in a plenary discussion.

The top challenges
Key challenges raised by participants revolved around resource limitations, technical constraints, structural barriers to OH collaboration, and sustainability. Limited human and financial resources, particularly within government institutions, created bottlenecks in sample collection, data reporting, and overall workload management. Several countries reported a lack of dedicated personnel, difficulties in hiring long-term staff, and restrictions on employing project-specific personnel,

which affects the sustainability and continuity of surveillance activities. Time constraints, complex stakeholder coordination, and fragmented communication channels further impeded the timely implementation of surveillance systems.

Meeting EFSA's data requirements, particularly for reporting and uploading of surveillance data, was often difficult due to technical constraints, insufficient training, and weaknesses in countries' data management systems. Legislative constraints on data sharing and IT systems, as well as political sensitivities, especially related to farm animal testing, were also identified as critical barriers.

Laboratory capacity and logistical challenges in sample collection and quality control were significant issues, especially for wildlife sources or citizen science programs. Participants noted challenges related to the number of samples, seasonality, sample storage conditions, and sample handling, all of which added complexity to surveillance activities. Further, the transition from informal OH networks to formalized collaborations faced institutional and political hurdles.

Participants emphasized the need for capacity building in both technical and operational aspects of surveillance. Sharing protocols and methodologies through the two consortia and EFSA was seen as useful for ensuring harmonized approaches across countries.

Overall, the sustainability of surveillance efforts was a recurrent concern, with calls for continued support to maintain, scale up, and build on the progress achieved.

Top solutions implemented

The groups identified network building, enhanced communication, and intersectoral collaboration through a OH approach as the top solutions. Strengthening collaboration across animal health, public health, and environmental sectors, supported by formal agreements and regular coordination, has proved to be key for addressing challenges. The involvement of academia, including post-doctoral researchers, contributed to building human capital and fostering sustainability, although short-term contracts remain a concern.

Participants highlighted the benefits of exchanging methodologies between countries, which allowed adaptation to different national contexts despite initial gaps in knowledge. Technical innovations, such as the use of filter paper for serological tests and improved data management tools like standardized data entry sheets, were cited as practical solutions that facilitated operations and reporting.

Enhanced communication strategies, including outreach to general practitioners, farmers, and citizen science participants, supported broader stakeholder engagement.

Biggest surprises

Participants were positively surprised by the enthusiastic involvement of public health authorities, particularly in countries like Portugal, where informal field-based systems evolved into more formal procedures that triggered concrete actions and regional dissemination. The project also spurred unexpected levels of interest and engagement from a wide range of stakeholders, including farmers, hunters, and citizen science participants, leading to the creation of new networks and working groups for data exchange.

The emergence of sudden outbreaks, such as CCHFV in Greece, or first detection of a pathogen, such as WNV in Latvia and Estonia, underscored the project's timeliness and the importance of joint surveillance. In Greece, the surveillance of ticks was initiated for the first time under this project and fostered the collaboration between veterinary and public health sectors.

Other surprises included the need for specific permissions to collect vectors like ticks and mosquitoes in some countries, the identification of new pathogens in previously free aeras, and the production of significant results within a short timeframe.

The overall enthusiasm and positive engagement across sectors exceeded expectations, highlighting the added value of the projects in building capacity and fostering intersectoral collaboration.

7. ECDC review of 2024 surveillance

The ECDC representative provided detailed feedback on the 2024 OH surveillance data countries have submitted to EFSA. The review of the results proved challenging due to the variability of the epidemiological situation across the participating countries and the applied surveillance methods. The critical importance of cross-sector collaboration between animal, environmental, and human health sectors was highlighted, as it facilitates early detection of zoonoses, clarifies transmission dynamics, identifies shared risk factors, improves risk assessment, and supports informed decision making and targeted public health interventions. The data produced by this surveillance could be integrated with data from human health, other animal health surveillance and environmental health across EU to enable combined analysis and visualization, identify gaps in knowledge and align surveillance efforts so data can be analyzed together effectively for stronger public health protection.

The analysis of the animal and environmental samples was also highlighted as an important step to generate high resolution genomic data. Sharing the typing and sequencing results across sectors helps to trace the transmission pathways and identify emerging variants, which is crucial to coordinate interventions for disease control.

Countries were informed that ECDC has access to the Animal Disease Information System (ADIS), as this real time information sharing facilitates taking necessary action for diseases relevant for the public health authorities.

Significant findings of the OH surveillance included the detection of West Nile virus in resident birds in Estonia and Latvia, suggesting the virus may be endemic in these regions. West Nile virus was also found in domestic birds in southern Germany, expanding the known areas of circulation. These results emphasize the need for continued surveillance and close cooperation with public health authorities for early detection of human cases.

Tick-borne encephalitis (TBE) virus antibodies were detected in wild, farm and pet animals in Croatia, despite the low number of reported human cases. The positive detections of TBEV in ticks in Estonia and Latvia align with existing public health knowledge. Hence, continued tick surveillance for TBE in these countries is considered to be of limited added value and surveillance efforts could potentially be redirected toward other pathogens or surveillance types.

Detections of Crimean-Congo hemorrhagic fever (CCHF) virus in Croatia and Portugal were consistent with expected regional circulation. These findings highlight the importance of maintaining vigilance and raising awareness among public health professionals in southern Europe.

Surveillance of low pathogenic avian influenza (LPAI) subtypes H7 and H9 was highlighted as important due to their zoonotic and pandemic potential, particularly in relation to mutations that may enable mammalian adaptation. These subtypes were detected in Germany and Sweden, confirming their presence in Europe. ECDC recommended enhancing avian influenza surveillance in domestic animals such as swine, cattle, sheep, and mink, which could serve as mixing vessels for viral reassortment. Environmental surveillance was also emphasized as useful, and the grant holders were encouraged to expand it to enhance early warning for zoonotic influenza strains.

It was underlined that *Echinococcus multilocularis* is a pathogen with public health significance due to its distribution in wild foxes and potential urban risks, and that its surveillance could help identify high-risk areas and improve prevention strategies.

Many countries monitor Hepatitis E virus (HEV) on farms prior to slaughter. This surveillance clarifies zoonotic risks and contributes to reducing human infections.

Finally, ECDC acknowledged the efforts of the countries, the European Commission, EFSA, and the OH Surveillance working group experts, congratulating all involved for their commitment and valuable contributions to this collaborative surveillance initiative.

After the presentation, participants shared country experiences, challenges, and best practices. It was emphasized that positive ELISA results for WNV must be confirmed by virus neutralization tests, following EU reference laboratory protocols. It was noted that some suggestions by ECDC concern pathogens that were not included in the list of priority pathogens drawn up in 2023. Several participants raised concerns about the inability to differentiate or report multiple influenza virus types (e.g., avian, swine, or general influenza A) in EFSA's current laboratory data model. There was broad agreement on the need to adapt the reporting rules to better reflect sequential testing of samples and subtyping of pathogen-positive samples. Participants also recommended that surveillance plans and reporting frameworks be updated annually. For 2025, some countries may expand avian influenza surveillance to species such as cats and cows, pending approval and funding. Regarding data integration, EFSA clarified that OH surveillance data for certain pathogens that are also covered by the EU Zoonosis Report will be included therein to avoid double reporting. Other data on zoonotic pathogens outside the OH surveillance will continue to be reported separately by countries through the zoonosis data reporting mechanism.

Session 3: Sharing country experiences (constraints and opportunities)

8. Working Group discussions on pathogen-specific surveillance systems:

During this session the participants were divided into six working groups to share experiences from various countries on pathogen-specific surveillance systems. The main objectives were to assess whether surveillance goals were achieved, identify key constraints and opportunities faced, understand what worked well and what implementation challenges were faced, and evaluate which surveillance activities contributed most or least to specific surveillance systems. The groups reported their findings in a plenary session.

1. Surveillance of Highly Pathogenic Avian Influenza (HPAI)

The participants discussing the HPAI surveillance activities reported that the goals of detecting HPAI through testing of water and wildlife samples were generally achieved. Key constraints included sample concentration and inhibition issues, and limited access to high-risk areas, which caused sampling bias. A positive practice was testing samples collected for African Swine Fever (ASF) control for HPAI in wild boars. Testing water samples proved effective, detecting the virus 2–3 days before it was found in wild birds. Surveillance also focused on testing scavengers, while efforts continue to enhance wildlife disease monitoring. Environmental monitoring was identified as a promising complementary method, though it is still too early to assess its full impact.

2. Surveillance of Hepatitis E, Swine Influenza and Echinococcosis

Surveillance goals were only partially met, varying by country. Constraints included difficulties in sample collection, limited sample numbers, restricted access to farmers and wildlife, biosecurity concerns, and inconsistent sample quality. Opportunities lay in establishing and expanding surveillance networks. Pre-established laboratory protocols worked well, but challenges persisted in reporting to the EFSA database and establishing Next-generation interaction sequencing (NGIS) pipelines for sample reporting. Additionally, uncertainty about reporting positive cases and the potential consequences discouraged farmer participation, posing a major obstacle.

3. Surveillance of *Coxiella burnetii* and Borrelia

Regarding the *Coxiella burnetii* surveillance, participants concluded that most countries achieved their surveillance objectives, although some encountered difficulties in obtaining the required number of samples. The primary surveillance strategy focused on targeted sampling, particularly from clinical cases such as abortions, but collecting these samples proved challenging as farmers needed to be convinced to participate. One effective approach was to offer broader diagnostic testing for other potential causes of abortion, providing farmers with comprehensive insights into their farm's health status. Nonetheless, establishing a permanent Q-fever surveillance system remained difficult. Additional surveillance methods included conducting serological surveys on serum and milk, which yielded good results, and detecting the pathogen in ticks. The choice of laboratory tests and diagnostic kits also influenced the detection of *Coxiella burnetii* in ticks in specific areas. Combining multiple surveillance components was seen as beneficial, even though some approaches proved to be more feasible than others.

Country-specific experiences highlighted further challenges and adaptations. In Belgium, while air sampling was feasible, plans to collect rodent spleens were abandoned due to the high cost of sourcing rodents. Latvia focused on sampling pigs near farms with abortion cases to test for *Coxiella burnetii*. In Norway, sampling of bulk milk from cattle and small ruminants was planned but delayed due to staffing constraints, with efforts postponed to the following year. Croatia employed an environmental sampling method by collecting farm dust using specialized vacuum equipment, which was costly and required trained personnel, adding further logistical and financial burdens. These diverse experiences reflected both the adaptability and the practical constraints of implementing Q fever surveillance across different contexts.

For Borrelia, some of the challenges included permission delays for vector sample collection and weather conditions, as well as the need to recruit additional staff.

4. Surveillance of Tick-Borne Encephalitis (TBE), Crimean-Congo Hemorrhagic Fever (CCHF), and vector presence surveillance

Most countries met their surveillance goals, with collaboration and system setup being key to success. Challenges included reporting issues, sample collection techniques, serology interpretation, logistical difficulties in working with hunters, and sample storage. Access to farmed animals was limited in some countries due to lack of farmer cooperation, whereas in others, active farmer involvement strengthened surveillance of domestic animals. Activities contributing most were flagging ticks for TBEV, collaboration between neighbouring countries (Sweden and Norway) and bulk milk screening. The citizen scientists’ program significantly increased the number of collected vectors and citizens’ engagement in Sweden.

Longstanding CCHF data collected in Spain from PCR testing in ticks, human cases, and serology in domestic and wild animals has revealed persistent challenges in interpreting the results for human risk characterization. Although the disease has been endemic in the southwest for years, seropositivity in wildlife and domestic animals has been detected in various regions, including areas without human cases. Conversely, in some locations where human cases occurred, no corresponding positivity was found in animals or ticks, and the presence of certain tick species, such as *Hyalomma*, did not consistently correlate with pathogen detection. In other cases, other tick species like *Rhipicephalus* tested positive via PCR. This variability complicates the identification of risk areas, making it difficult to direct surveillance effectively. Current efforts focus on collecting ticks from areas deemed risky by pig experts and on integrating citizen science tools to gather more data. However, despite the wealth of information already available, interpretation remains complex, and further input from other countries engaged in CCHF surveillance was requested to compare experiences and approaches.

5. Surveillance of Disease Y

The discussion emphasized the importance of strengthening capacity and infrastructure to support effective surveillance. Participants highlighted several critical areas, including workforce development and technical training. Establishing clear and harmonized case definitions was considered essential to ensure consistency in data collection and interpretation across sectors and countries. Bioinformatics emerged as a key area requiring further investment. Cost considerations were also a recurrent theme. While the discussion did not focus on specific surveillance outcomes, participants agreed that building capacity is critical to achieving long-term goals in Disease Y surveillance.

6. Surveillance of Rift Valley Fever (RVF) and WNV

For WNV, participants clearly recognized the need for multiple surveillance components, as relying on a single component was insufficient for effective monitoring. Participants emphasized that the combined surveillance of these pathogens in humans, birds, and mosquitos was essential, since in some years one component provided early signals, while in other years a different one was more informative.

In several instances, participants felt that the design of surveillance components could have benefited from stronger input from public health experts. For example, in Croatia, where horse vaccination is prohibited, surveillance has revealed that nearly all horses in endemic areas are now seropositive. To address this, the project facilitated the inclusion of additional species such as cattle, dogs, and cats to enhance surveillance in urban and other areas. This expansion aimed to explore alternative solutions that add to already established WNV surveillance systems.

The discussion also highlighted that the choice and combination of surveillance components often depend on the specific surveillance objective, such as early detection of the seasonal onset, which further underscores the importance of a multi-component approach tailored to disease dynamics.

Finally, the engagement of the interested stakeholders and the strengthening of vector surveillance allowed countries with few or no WNV cases to establish surveillance systems.

The implementation process remains protracted, often exceeding three years, and is impeded by existing regulatory frameworks, low pathogen prevalence, difficulties in vector identification, and limited personnel resources.

Among the surveillance components that contributed most substantially to effectiveness were mosquito monitoring, sentinel chicken sampling, and wild bird testing. These surveillance components enabled pathogen detection 2 to 3 weeks prior to human case identification.

Session 4: Lessons learned

9. World Cafe on the main issues (good and bad) for each of the surveillance system implementation stages

The World Café format was used to facilitate a dynamic discussion across five stations, each representing a phase of the surveillance system implementation: design, sample collection, testing, data analysis, and dissemination. Participants spent a fixed time at each station sharing positive and negative experiences before rotating to the next, with a final round allowing review of all contributions. This method encouraged focused, collaborative reflection on the surveillance systems' implementation stages.

10. Plenary presentation of results of working group discussions and world café

a. Design

Positive Aspects:

Participants highlighted several strengths during the design phase. The establishment of OH surveillance networks was recognized as a major achievement, as it brought together multiple surveillance components with notable flexibility. The broad expertise available across participating institutions and countries was seen as a key factor in supporting effective surveillance efforts.

The creation of OH surveillance consortia was viewed positively, and the midterm evaluation process was appreciated for enabling the participants to learn and adjust their approaches. Participants also valued the opportunity to identify gaps in existing surveillance systems.

Many noted that they built on existing cross-sector collaborations when designing activities. Promoting transparency about the risks for participants, such as farmers and other stakeholders, was encouraged to build trust. Lastly, participants acknowledged the importance of the various support mechanisms in place, including strong backing from EFSA and national authorities.

Challenges:

Despite these positives, several challenges were raised. A significant issue was the lack of involvement of key stakeholders from the very beginning, which impacted ownership and planning. In some countries, national rodent sampling faced outright prohibitions, and exclusion of human samples limited the comprehensiveness of surveillance. Many countries struggled with insufficient preparation time, making implementation of surveillance plans difficult. Confidentiality concerns, especially at the NUTS3 administrative level, created barriers to data sharing, and recruiting representatives from the environmental sector proved challenging. Securing funding was a persistent constraint that limited scope, such as restricting sample sizes and preventing inclusion of ongoing surveillance activities. Designing animal surveillance in a way that effectively informs human health remained challenging. Participants suggested establishing pathogen-specific working groups across countries at the European level to help harmonize efforts and consolidate expertise, and emphasized the need for more structured support to strengthen networks.

b. Sampling

Positive Aspects:

Risk-based sampling allowed for a formal assessment and better targeting of sampling locations, and existing sampling schemes were effectively utilized to improve efficiency. Citizen science programs played a valuable role by increasing the number of samples collected, and innovative methods such as using camera traps to pilot wild animal monitoring sites showed promise. Harmonized sampling protocols facilitated additional testing and the reuse of samples, and offering practical incentives such as prepaid shipments and free testing to people providing samples in Sweden supported the sample collection efforts.

Challenges:

Several challenges were also identified. Access to certain sample types, such as brain tissue, or blood samples of wild animals, was difficult, and achieving target sample numbers remained a struggle. The quality of samples obtained from dead or hunted animals was often compromised, with weather and seasonal variations further impacting sample collection. Logistical issues around shipping and storing samples, especially those collected by citizens or hunters, created additional hurdles. Outbreak-related restrictions, problems with releasing samples from high biosafety level laboratories for sequencing, and procedural requirements like material transfer agreements for blood samples from wild birds posed considerable challenges. Concerns about farm anonymity and fear of consequences limited participation of farmers.

In countries that implemented citizen science programs, relying on citizen-collected samples proved challenging and raised concerns about data reliability.

Human resource constraints, including the need for training and biohazard protection for sample collectors, were significant. The need for large sample sizes, limited experience with environmental sampling, and dependencies created by sample reuse also threatened the sustainability of surveillance efforts. These discussions underscored the complexity of implementing effective surveillance systems and identified important areas for future improvement.

c. Testing

Positive Aspects:

Some countries already had established testing capacities, which facilitated quicker implementation. Capacity building efforts enhanced overall testing capabilities, while testing played a crucial role in confirming outbreaks. The availability of rapid screening tests increased efficiency, and samples could be tested for multiple pathogens, allowing for more comprehensive surveillance. The participants underlined that retrospective testing of existing samples, while only eligible for co-funding under capacity building in the current projects, can provide useful information for the ongoing surveillance efforts. In some instances, trained staff with existing knowledge and expertise contributed to smoother operations. Advances in test development and improvements in testing methods were also recognized. Multiple testing methods were often available for a single pathogen, and protocol sharing between countries promoted consistency. Moreover, many test methods adhere to international standards, supported by the availability of positive sample controls, which helped ensure standardization.

Challenges:

Despite these strengths, several challenges were identified. Issues with test specificity, particularly for pathogens like CCHFV and WNV, were a concern. Access to appropriate testing resources, including appropriate laboratory biosafety levels and necessary equipment, was sometimes limited. The costs associated with testing and limited availability of resources posed additional constraints. Technical difficulties arose from inhibitors present in samples, such as PCR inhibition by wastewater slurry, and from variations in pathogen concentration and sample quality. Troubleshooting problems with both in-house and commercial testing kits proved challenging. Limited harmonization of testing approaches and the diversity of available tests complicated the diagnostic process. There were often insufficient samples to perform diagnostics in a timely manner, alongside issues related to sample storage. A lack of standardized guidelines for pooling samples (e.g., how many samples to pool and which ones) further complicated testing strategies. Finally, gaps in guidance for testing to detect Disease Y were highlighted as a barrier to consistent implementation of the surveillance plans.

d. Analysis

Positive Aspects:

During the session on data analysis, several strengths were identified. Although the overall volume of available data at this time was limited, which simplified the analysis process, this also posed challenges for capturing the broader surveillance perspective.

Participants highlighted that selecting appropriate and representative sample types greatly improves the effectiveness of surveillance. For example, in HEV surveillance, environmental samples provided valuable insights into disease presence and trends. Similarly, combining phylogenetic data with spatio-temporal and population data enhanced the understanding of disease patterns and transmission dynamics. Testing for multiple pathogens within the same sample was also recognized as an efficient approach that maximizes the value of each collected sample.

The use of harmonized data collection protocols strengthened the validity, comparability, and utility of surveillance data, particularly for detecting trends across regions and time periods. It was noted that analyzing results generated under the OH surveillance projects is useful for capturing current and seasonal insights. Combining this analysis with a retrospective analysis of samples collected before these projects could also help understanding the historical evolution of the diseases.

Data analysis also contributed to establishing baseline values, which are essential for designing risk-based surveillance strategies. Participants reported greater awareness of available data sources and databases, along with improvements in analytical methods, software tools, and notification systems.

Efforts to harmonize data, particularly within vector-borne disease surveillance, and encouraging countries to integrate data across sectors, were seen as important steps toward enabling collaborative OH analyses. Additionally, the inclusion of negative results was valued for providing a more comprehensive picture of disease presence or absence.

Challenges:

It was considered too early for comprehensive data analyses, compounded by time constraints and delays in reporting. New activities, especially related to Disease Y, lacked clear analytical approaches. There was uncertainty about which population context, animal or human, to prioritize and the absence of integrated national-level data limited the completeness of analyses. International integration beyond EFSA was lacking, reducing cross-country analytical power. Handling uncertainty, such as the meaning of negative results, and ensuring comparability across countries proved difficult. Integration of animal and environmental data with human health information was still limited. The variation in surveillance objectives made it challenging to assess overall goal achievement. Additionally, there was a shortage of trained analytical staff and restricted access to metadata due to privacy concerns. Frequent data corrections and changing surveillance contexts further complicated analysis. Participants expressed a need for greater insights from public health and improved integration with other reports such as WOAH reports and the EU Zoonoses Report. Finally, the participants recommended a cross-sector collaboration at EU level as well, for aligning data from animal health, public health, and environmental sources.

e. Dissemination

Positive Aspects:

The discussion on dissemination and communication of surveillance results highlighted several positive aspects. There is strong enthusiasm among the various stakeholders, which has led to improved collaboration across sectors involved in the projects. This environment has fostered the initiation of new activities in some countries, supported by two workshops aimed at disseminating results and presenting project activities. Media engagement showed increased public interest in certain diseases in general, such as HPAI, or during spring when attention to vector-borne diseases rises. There were multiple interview requests, though caution must be taken to avoid causing public panic. The COVID-19 pandemic contributed positively by educating the public on concepts like herd immunity, vaccinations, and PCR testing. Regarding publications, the projects provided opportunities to publish data, with some initial funding allocated for scientific dissemination. EFSA dashboards and SharePoint platforms were recognized as useful tools, and there was agreement that EFSA and HaDEA could further support dissemination efforts to increase project visibility. Further suggestions included developing a comprehensive dissemination strategy and establishing disease-specific working groups to tailor communication materials for different audiences, such as the general public, farmers, and specific sectors. Leveraging EU policy platforms and existing EU communication channels was also identified as a valuable opportunity to raise awareness.

Challenges:

On the other hand, several challenges remain. Some pathogens covered by the surveillance lack public appeal compared to others, which complicates engagement efforts. There is currently no unified communication strategy, and the right stakeholders are not always involved at the national level. Communication between partners was noted as insufficient, and explaining project funding sources to the public remains difficult. There is a need to improve feedback mechanisms for sample results, particularly for farmers and pet owners, while carefully considering the implications of positive findings. Defining the information providers or messengers is essential to ensure consistent communication. Overall, communication efforts remain siloed, and there is a recognized need to enhance capacity for data analysis to support more effective dissemination.

11. Wrap-up of Day 1 and Preparations for Day 2

A look ahead to the second meeting day that would focus on how surveillance components can be improved based on the first day discussions and participants' experiences. The goal of everyone returning with new ideas to share with their teams after the meeting and to identify changes of the current surveillance approaches was underlined.

12. Opportunity to clarify questions regarding HaDEA reporting and laboratory data submission

Day 1 ended with a presentation by EFSAs' IDATA Data gateway and outreach Team representatives of the technical updates on the laboratory data submission process as well as the timelines for the amendment of the 2024 surveillance data and their validation.

The HaDEA representative informed countries about the deadlines for the submission of the 1st periodic report on the implementation of OH surveillance projects. HaDEA remains at the disposal of the grant beneficiaries for questions on an amendment of a grant agreement, would updates of the surveillance components for the 2025 surveillance activities and onwards, be needed.

The reporting of occurrence IDs from the VectorNet database in the laboratory data reporting was discussed. Specifically, countries are expected to first report vector data to VectorNet to generate an occurrence ID, which would then be reported to EFSA when submitting laboratory results for some of those vectors. Since the occurrence ID is intended to link vector presence data with laboratory results found in tested vectors, submitting incorrect IDs compromises data integrity. As EFSA currently is not able to fully integrate the two datasets, it was proposed to make the reporting of the occurrence ID optional rather than mandatory. However, countries were strongly encouraged to use the official occurrence ID generated by the VectorNet database, should they choose to complete that data field when reporting vector pathogen test results to EFSA.

Additionally, the group discussed surveillance component IDs. EFSA is working on enhancing the data model to enable the reporting of surveillance component IDs. This will facilitate clearer links between planned surveillance activities and reported results. For the 2024 data, efforts were made to manually map the results to the respective surveillance components; moving forward, a dedicated attribute will be introduced in the laboratory data model to capture this information directly. The feature will be implemented by September 2025. These IDs will be visible in country-specific reports.

A request was made to extend the presented data reporting periods for 2025 data and to allow more than one data validator per country. EFSA agreed to assess these proposals.

Finally, some countries asked for the possibility to submit additional data for 2024. To accommodate this, EFSA proposed reopening the 2024 data collection period from September 1st to 14th, 2025. A reminder will be sent ahead of this reopening to ensure all countries are informed and prepared to submit any outstanding information. This period should also be used to correct, where needed, 2024 surveillance data already submitted.

Once supplementary data for 2024 have been submitted to EFSA, a new/updated report on the outcome of surveillance for priority pathogens under the OH approach will have to be submitted to HaDEA. Grant beneficiaries shall inform the HaDEA project officer on the need to re-submit an updated report (deliverable) on the outcome of surveillance in 2024. This will trigger the re-opening of the related deliverable in the eGrant Managment system and activation of an 'upload slot' for the deliverable, on the beneficiary side.

Session 5: Multisectoral collaboration

13. Recap of Day 1

The chair started the meeting with a brief recap of the first days' activities which included intensive and productive sessions in which participants worked extensively on evaluating surveillance results and discussing their alignment with OH surveillance aims. It was emphasized that the insights gathered on Day 1 should form the basis for the forward-looking discussions on Day 2.

14. Panel discussion on the value of intersectoral collaboration for disease surveillance.

The moderator opened the discussion by presenting a visual summary of the degree of intersectoral collaboration between domestic animal, wildlife, environment, and public health sectors in different stages of countries' OH surveillance in 2024. While full intersectoral collaboration was reported for only nine surveillance components, stronger collaboration was noted particularly in the interpretation and dissemination stage. Sample collection showed limited intersectoral collaboration, with just three reported instances of collaboration, mostly between wildlife and domestic animal sectors.

Following the introductory presentation, panelists from Italy, the Netherlands, and Portugal introduced themselves, their national institutional frameworks and their involvement in the project, before responding to the moderator's questions regarding their intersectoral collaboration during the preparation of their grant applications, other stages when no intersectoral collaboration took place but would have been useful and if there are instances when intersectoral collaboration is not needed.

In Italy, intersectoral collaboration emerged as a key element during the preparation of the grant application. Collaboration was largely facilitated through informal networks and personal contacts. Coordination was ensured by meetings led by the Ministry, particularly between animal and public health directorates. However, each country adopted different approaches based on their institutional structures and pre-existing networks.

The Netherlands leveraged existing partnerships between veterinary, public health, and wildlife sectors. Personal contacts also played a crucial role in connecting with stakeholders like hunters, who contributed to wildlife sampling efforts.

In Portugal, intersectoral collaboration efforts predated the project, but tangible coordination mainly developed through the initiative. Veterinary services actively engaged with public health authorities, supported by general directors, though participation from environmental agencies remained limited. Wildlife authorities showed low involvement, despite being part of the initial task force alongside health and environmental agencies.

The plenary discussion following the panel discussions also incorporated perspectives from other countries. The limited involvement of environmental agencies was a recurring challenge across countries. In Portugal and Luxembourg, environmental authorities cited resource constraints and perceived limited relevance, resulting in their declining participation. In Greece, water and wildlife monitoring are under environmental sector control with minimal collaboration with veterinary services, reflecting differing prioritization when human health was seen as the main concern.

Conversely, some countries have institutionalized OH frameworks to facilitate cross-sectoral collaboration. The Netherlands host monthly OH meetings to discuss emerging threats and circulates confidential newsletters to share findings. Belgium operates separate but coordinated groups for human and animal health, regularly convening joint panels for zoonotic risks. In Denmark, a coordination meeting about zoonoses is held monthly or at higher frequency, if needed, and the environmental sector as well as national medicines agency have joined the structure.

Panelists emphasized that intersectoral collaboration tends to strengthen in response to high-profile threats or when new funding opportunities arise. Sustainable coordination requires institutional commitment, long-standing networks and flexible meeting formats—both physical and virtual—to maintain engagement.

Regarding lessons learned and areas for improvement, the panelist from Portugal noted that early project phases included task force meetings with health, wildlife, and environmental agencies. The lack of wildlife authorities' active participation highlighted the need to clarify roles and responsibilities upfront to avoid overlaps or disengagement. The Netherlands reported successful collaboration within the project but identified the need to reinforce partnerships with environmental agencies beyond the project's scope. It was pointed out that the importance of the environmental sector was not always fully understood. Italy's experience showed early involvement of environmental health institutes during grant design, but fieldwork engagement remained limited. This underscored the importance of involving a broader range of stakeholders, such as conservation societies, universities, and hunters, especially for practical field activities.

On occasions when intersectoral collaboration might not be necessary, the Netherlands emphasized the importance of sharing results transparently with all interested parties to foster learning. Portugal stressed that collaboration must include clearly defined roles to prevent duplication and inefficient use of resources. Italy noted that carefully investing in building networks over time allows better mobilization when cross-sectoral efforts become necessary.

Following the panel discussion, participants compiled a set of recommendations and lessons learned to enhance intersectoral collaboration and improve OH surveillance efforts across countries.

- A key recommendation is to make a concerted group effort to actively include environmental agencies in countries, recognizing their crucial role in comprehensive OH approaches.
- To facilitate communication and information sharing, it was proposed that EFSA create a dedicated OH signal newsletter to disseminate emerging alerts and findings across sectors.

- Participants also emphasized the importance of improving surveillance components and strategies by learning from and linking with other European projects, fostering synergy and avoiding duplication.
- Formalizing collaborations beyond traditional public health and veterinary sectors was highlighted as essential. This includes establishing partnerships with wildlife associations, ornithological societies, and other relevant stakeholders. Participants advised being proactive in engaging potential new partners, clearly pointing out the long-term benefits of collaboration. Identifying common priorities across sectors was viewed as a practical step to align objectives and resources effectively.
- Building and maintaining trust was stressed as a cornerstone for sustainable cooperation. Setting up regular face-to-face meetings was also recommended to strengthen trust and facilitate in-person collaboration, which remains invaluable despite advances in virtual communication.
- To better integrate OH approaches, participants recommended making intersectoral collaboration an explicit component of surveillance activities. Clear communication of key points and highlighting the advantages of OH can help leverage political commitment and secure sustained support. Moreover, a truly transdisciplinary approach is needed, involving not only veterinarians and medical doctors but also experts from social sciences, psychology, economics, and other disciplines to address complex health challenges holistically.
- Advocacy efforts toward the European Commission were encouraged to ensure future and sustainable funding for OH surveillance initiatives targeting emerging diseases.
- Finally, the creation of top-down OH frameworks at both EU and national levels was deemed necessary to ensure that integrated approaches are upheld across units and disciplines.

Session 6: The way forward

15–16. Working Group discussions on what needs to change and what can be improved looking at the different surveillance components for specific pathogens

During this session, participants were divided into disease-specific working groups to discuss what changes or improvements are needed to ensure more effective surveillance for the priority pathogens.

Avian Influenza virus:

The groups focusing on AIV identified several priorities and recommendations for enhancing surveillance efforts.

A key point raised was the need to ensure that surveillance activities remain feasible through continued funding and enhanced international and cross sector collaboration. Capacity-building efforts should aim at preparing systems for scaling up when needed. In addition, more attention should be given to the occupational health of individuals involved in surveillance activities.

Continuation of dead wild bird surveillance was considered essential for the early detection of outbreaks. Participants emphasized the importance of genomic analyses to better understand virus evolution and spread dynamics.

Surveillance components must remain flexible to adapt to evolving situations, including addressing ethical concerns related to sample collection from pets. The participants suggested to follow a risk-based surveillance approach considering the epidemiological situation of each country. They also recommended to broaden the range of targeted species to include not only wild birds, but also farm animals such as cattle, sheep, pigs, mink, as well as feral cats, rodents, marine mammals and companion animals, considering the spread of HPAI in the US. The participants also considered the importance of testing wastewater from farms or abattoirs due to its potential to detect the pathogen, but at the moment the correct procedure to follow is unclear. Another suggestion was to conduct an aerosol spread analysis during the outbreak surveillance.

The importance of dissemination was stressed, including the organization of workshops, stakeholder feedback sessions, and awareness campaigns, accompanied by appropriate incentives to encourage participation. Mapping stakeholders and competencies was suggested to better understand available expertise and capacities. Simulation exercises involving the human, animal, and environmental health sectors were proposed to improve preparedness and intersectoral coordination.

Hepatitis E virus

For HEV surveillance, the group stressed the importance of environmental sampling, particularly wastewater/run-off from pig farms, to get a better view of the pathogen circulation in the farm. Participants recommended sharing standard operating procedures (SOPs) for sampling and RNA extraction protocols across EU to harmonize methodologies. Some of the countries are already testing companion animals such as cats, dogs and horses, and suggest considering broadening the surveillance including these species as well. Temporal evaluations of infection dynamics within pig farms were deemed essential, alongside assessing the impact of positive samples on farm contexts and worker health. It was suggested that if a farm consistently tests positive, food products derived from these animals should be investigated. The genotyping of positive samples was recommended to understand strain circulation and transmission patterns.

Swine Influenza virus

SIV was considered to be potentially underreported due to its non-notifiable status, low priority perception and due to the fact that the infection may go undetected by the farmers and the veterinarians. It was suggested to collect samples from cleaning pools of pig farms. Poland proposed as an effective alternative strategy to review the laboratory data from other pig disease surveillance (e.g., animals tested negative under ASF national surveillance programs), particularly looking for samples from animals displaying respiratory signs. Other suggestions were to collect nasal swabs from pigs showing clinical signs, cautioning that while being a great sample, if collected incorrectly nasal swabs may give false negative results. The participants also briefly discussed the best laboratory methods to detect the pathogen.

Participants concluded that it is important to focus on the aim of the surveillance and analyze whether the current surveillance components are providing the information needed to achieve the aim.

E. granulosus sensu lato

The group recommended increasing awareness within the public health sector to initiate and strengthen surveillance for Echinococcus infections in humans, which could complement veterinary surveillance efforts. Spain reported that it had discontinued human surveillance due to the long incubation period of the disease and the predominance of imported cases. Greece, on the other hand, reported persistent underreporting of human cases, which may be influenced by cultural practices, for example, during Easter, many families engage in home slaughter of animals.

It was noted that surveillance efforts have been reduced in Southern Europe following changes to EU legislation regarding slaughterhouses. Some participants advocated for the reintroduction of active surveillance, at least in Southern Europe.

The participant from Portugal shared their experience, having launched *E. granulosus* surveillance early on, with a mass information campaign targeting the general public and intensified control of stray dogs. Currently, the number of stray dogs remains very low, facilitating the tracing of the pathogen in the event of positive detections. In addition, veterinarians are required to deworm dogs present on affected farms and educate farmers on best practices. During rabies campaigns in endemic areas, animals are also treated with antiparasitic agents. Portugal is also making significant efforts to comply with best practices for the management of by-products.

Coxiella burnetii

During this year's surveillance, the project participants adopted different approaches. For example, Belgium began sampling rodents but, due to a high number of negative results, shifted their focus to farms where the pathogen is already known to be present. It was emphasized that effective collaboration and communication with the public health sector are necessary to determine whether the pathogen is present in humans and to better target areas that may be at risk.

It was noted that different surveillance components should be applied in countries that are free of *Coxiella burnetii* and those where the disease is endemic. For example, serological surveillance is highly informative in disease-free countries, regardless of the ruminant species targeted, because the detection of seropositive animals can serve as an early warning of changes in the epidemiological trend. However, in countries where *Coxiella burnetii* is already endemic, serological surveillance is less useful since many animals are likely to be seropositive. Therefore, it is important to tailor surveillance strategies to the specific epidemiological context of each country. Monitoring tick populations and testing rodents were suggested to identify risk areas.

Borrelia

The group concluded that there were not yet sufficient results to determine which aspects of surveillance required improvement. However, they acknowledged that additional information from the public health sector could enhance the overall approach. The monitoring efforts focused on detecting the pathogen in ticks, which allowed for the observation of trends in tick populations over time. This information helps identify and prioritize risk areas where monitoring could be intensified.

The group also emphasized the importance of aligning communication campaigns with specific seasons, particularly those preceding periods when borreliosis cases typically increase. For example, raising public awareness just before the holiday season, when people are more likely to engage in outdoor activities, was considered a more effective strategy.

Tick-Borne Encephalitis virus

The integration of animal health data into public health surveillance was encouraged for TBEv. A suggestion from Belgium is to conduct patient interviews in case of positive human cases, asking for THE latest locations visited to then conduct follow-up surveillance and conduct extensive tick collection in these areas. The resulting information lead to further recommendations to protect public health. Strategies such as bulk milk screening and tick flagging in urban parks and other green urban areas, were proposed to enhance detection efforts. Other suggestions include the use of citizen science programs.

Crimean-Congo Hemorrhagic Fever virus

In many countries CCHFV surveillance faces challenges in tick collection, diagnostics, and storage.

One of the challenges brought up by Spain was related to the pathogen detection in already infected areas, where animals are likely to test positive. The participants discussed the best methods to collect non-exposed ticks. One of the solutions suggested was to place CCHFV-negative animal in such areas and monitor the animal. Another suggestion from Austria is to use CO_2 traps with double sided sticky tape around it to collect high numbers of actively hunting tick species such as *Hyalomma spp*. Spain on the other hand did not have much success using this kind of trap. Another solution implemented by Croatia was the collection of the ticks from dead animals.

Preservation of vectors proved to be another challenge in Luxembourg, where the samples were stored in ethanol in the context of a previously ongoing collaboration between bird ringers and the National Museum of Natural History of Luxembourg, which posed further challenges for the diagnostics. Currently other storing methods are being explored.

Vector Surveillance

To improve vector surveillance overall, participants suggested enhancing storage capabilities, for instance, by using dry ice boxes. It was noted that some countries need prior permissions to collect ticks, highlighting the need for early planning. The use of web applications was proposed to enable public reporting of tick findings and allowing authorities to collect relevant samples, an approach successfully implemented in Sweden and Estonia.

Disease Y

For Disease Y, the need for a clear case definition and a decision tree was emphasized. Some countries have already initiated sampling and testing, particularly in cases of animal abortions or undiagnosed human illnesses. The group called for harmonizing bioinformatics pipelines and improving data storage infrastructures. Countries decided to join forces by sharing protocols and experiences. Developing a white paper outlining the surveillance approach for Disease Y was recommended, alongside exploring collaborations with defense laboratories.

West Nile Virus

An integrated, multisectoral surveillance approach involving birds, equids, mosquitos, and humans was proposed for WNV. The group advocated for evaluating the cost-effectiveness of individual surveillance components for characterizing affected areas to determine risk periods. Wild bird surveillance, especially focused on selected species, was highlighted as the best early detection method. Proactive communication and rapid cross-border information exchange were recommended. It was considered important to have a good protocol for mosquito surveillance.

Given the seasonal variation of the pathogen, it was deemed crucial to clearly define both the season and the geographic areas where surveillance should be concentrated.

Testing samples collected by sentinel chickens placed in high-risk areas, was considered to be very useful for active WNV surveillance. The detection of positive animals must lead to intensified surveillance in the area as well as prompt risk communication.

Rift Valley Fever virus

The group suggested focussing the surveillance efforts on domestic ruminants with abortions, as these would likely be the first clinical sign indicating that something is wrong. Early detection in these animals was considered critical for identifying potential outbreaks.

The challenges of preventing the introduction of infected mosquitoes from other countries was also discussed, acknowledging that this is not an easy task. For this reason, mosquito surveillance was deemed essential, not only for detecting the presence of the virus but also for identifying mosquito species. The group emphasized the importance of cross-border collaboration with countries where the infection is already present, to strengthen surveillance capacity and support disease control and eradication efforts.

Furthermore, the group agreed that raising awareness is crucial even before the disease reaches a region. Awareness campaigns should not only target veterinarians and medical professionals but also farmers, to ensure that all stakeholders are informed about the potential risks and know what signs to look for should the disease emerge.

17. Wrap-up and closure of the meeting

The chair concluded the meeting with a brief wrap-up, thanking the participants for their active engagement and the wide range of ideas and solutions proposed to advance the OH surveillance strategies. Emerging connections and networking efforts among participants were noted, along with a laudable willingness to share tools, experiences, and resources across sectors and interested countries. Participants were encouraged to reach out to EFSA for any further support to sustain these collaborations.

The meeting closed with thanks to all for their valuable contributions and commitment to strengthening integrated OH surveillance in the EU.