SIVIZ – 2nd ANNUAL REPORT

January to December 2025

Project: ***Development of an Integrated Surveillance and Alert System of Zoonosis in Portugal*** (Project: 101132818 — SIVIZ — EU4H-2022-DGA-MS-IBA3)

Financed by: EU4H-2022-DGA-MS-IBA-05: Direct grants to Member States' authorities: setting up a coordinated surveillance system under the One Health approach for cross-border pathogens that threaten the Union (AWP Ref: CP-g-22-04.01)

Period: 01-01-2024 a 31-12-2026

Co-funded by the European Union

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INTRODUCTION

Period of reporting: January to December 2025

Partners:
Direção Geral de Alimentação e Veterinária (DGAV) also with the coordination,
Direção Geral da Saúde (DGS),
Instituto de Investigação Agrária e Veterinária (INIAV),
Instituto Nacional de Saúde Dr. Ricardo Jorge (INSA).

Objectives of the project:

The primary objective of this Project is to develop and implement a national, integrated, and innovative surveillance and early warning system for priority zoonotic diseases, namely West Nile Fever (WNF), Rift Valley fever (RVF), Crimean-Congo Hemorrhagic Fever (CCHF), Tick-borne Encephalitis (TBE), Q Fever (FQ) and Hepatitis E (HE), with a focus on animal, environmental, and vector data. This system will complement and support existing human health surveillance infrastructure and enhance intersectoral and response capacity under a One Health approach.

SIVIZ aims to enable real-time data sharing and interoperability between information systems from the relevant sectors – public health, animal health, environmental health and national reference laboratories – thus strengthening the integrated detection, risk assessment, and management of zoonotic threats.

A key component of the project includes the regular and systematic submission of surveillance data to the European Food Safety Authority (EFSA) and other EU bodies, supporting joint risk assessments and contributing to the overall zoonoses preparedness across EU MS and neighboring third countries.

Additionally, the project will enhance the institutional capacity building of the participating entities through the development of sustainable coordination mechanisms, the promotion of regular knowledge exchange, the implementation of joint risk assessment processes, and the improvement of evidence-based and transparent risk communication – both to professionals and the general public.

Ultimately, this project is designed to reinforce and complement existing national surveillance systems and to serve as a scalable model for the progressive establishment of a One Health (OH) surveillance approach across other zoonotic diseases in Portugal in the coming years.

The second year of the project allowed the consolidation of the procedures and the operational framework of the SIVIZ platform. Sampling has continued and the OH approach developed, as well as the communication between health and veterinary services. However, a real constraint was the lack of dedicated personnel, and the time availability for the participants.

DESCRIPTION OF WORKING PACKAGES (WP) ACTIVITIES

1. WP1 – Project Management and Coordination

DGAV is leading this task which also involves all partner institutions.

The project coordinator was present at the EFSA meeting in Parma – 5th One Health Surveillance Subgroup Meeting – Review of surveillance priorities and methodologies – 8-9/07/2025.

In the second year of the Project there were three project coordinating meetings, at 15/01, 19/7 and 17/11. These meetings were subjected to agenda and minutes to document project developments and decisions taken.

2. WP2 – Development of IT support to OH network – SIVIZ Platform

This Work Package is coordinated by the DGS (Ministério da Saúde), also involving all partner institutions, and focuses on the design, development and implementation of the SIVIZ platform and a complementary public microsite, both essential tools for enabling integrated zoonoses surveillance and operational response under the One Health framework.

Two meetings were carried out to discuss the IT specifications and platform requirements, on 28/6 and 28/8.

To comply with the Portuguese legal framework governing national public health surveillance, the SIVIZ platform was designed as a collaborative platform within the scope of the National Epidemiological Surveillance System (SINAVE) Network, ensuring interoperability with its supporting platform, as well as with the other partners platforms, while maintaining its operational autonomy. Therefore, DGS ensured alignment with the Shared Services of the Ministry of Health (SPMS), the entity to develop the platform. The functional and technical final specifications were elaborated by SPMS, based on the previously approved project plan and data structure models and awaits final revision. The development of the integrated digital platform and microsite has been delayed due to a combination of procedural and external constraints.

3. WP3 – Surveillance: field and laboratory activities and capacity building

Samples collection and laboratory work

Sampling in the 2nd year was carried out following the procedures previously established, as well as the laboratory analytical work.

The following table presents the results of sample collection for the surveillance activities.

Data management

Data was collected at field level using standardized forms developed for the project. Data was registered in an Excel database.

Table 3.1 – Results of CCHF surveillance

Virus	Animal species	Matrix	Test	Samples per year	Tested samples	Positive samples	% sampling accomplished
CCHF 2025 37 samples	Bovine	Sera	ELISA Ab	50	4	2	8
	Ovine	Sera	ELISA Ab	50	19	0	38
	Dear	Sera	ELISA Ab	20	6	5	30
		Organs	RT-qPCR	20	8	0	40

Table 3.2 – Results of WNF surveillance

Virus	Animal species	Matrix	Test	Samples per year	Tested samples	Positive samples	% sampling accomplished
WNF 2025 66 samples	Equine (susp)	Sera	ELISA IgM	60	26	13	n.a.*
		LCR	RT-qPCR	3	2	1	n.a.
	Dom. birds	Sera	ELISA IgG	200	0	0	0**
		Organs	RT-qPCR	50	18	0	36
	Wild birds	Organs	RT-qPCR	50	20	0	10

* all horses with suspected clinical signs were tested; blood is not collected from dead domestic birds

Table 3.3 – Results of TBE surveillance

Virus	Animal species	Matrix	Test	Samples per year	Tested samples	Positive samples	% sampling accomplished
TBE 2025 42 samples	Bovine	Sera	ELISA IgG	50	4	1	8
		Milk	RT-qPCR	30	8	0	26
	Ovine/ Caprine	Sera	ELISA IgG	50	19	(1 doubtful)	38
		Milk	RT-qPCR	30	11	0	36

Table 3.4 – Results of RVF surveillance

Virus	Animal species	Matrix	Test	Samples per year	Tested samples	Positive samples	% sampling accomplished
RVF 2025 30 samples	Bovine	Milk	RT-qPCR	30	8	0	27
		Abortions	RT-qPCR	9	2	0	22
	Ovine/ Caprine	Milk	RT-qPCR	30	11	0	37
		Abortions	RT-qPCR	9	9	0	100

Table 3.5 – Results of QF surveillance

Disease	Animal species	Matrix	Test	Samples per year	Tested samples	Positive samples	% sampling accomplished
QF 2025 51 samples	Bovine	Sera	ELISA	40	3	1	78
		Milk	qPCR	50	8	0	16
		Abortions	qPCR	30	2	0	7
	Ovine/Caprine	Sera	ELISA	40	19	9	48
		Milk	qPCR	50	10	2	20
		Abortions	qPCR	30	9	0	30

Table 3.6 – Results of HEV surveillance

Disease	Animal species	Matrix	Test	Samples per year	Tested samples	Positive samples (%)	sampling accomplished (%)
HEV 2025 342 samples	Swine	Feces	RT-qPCR	300	239	14	80
	Slurry	Affluent	RT-qPCR	90	69	27	77
		Effluent	RT-qPCR	90	34	8	38

Sampling was not accomplished in relation to the expected number of samples, except in the case of Hepatitis E, where official veterinarians are responsible for visiting pig farms and collecting the samples.

Positive results were obtained in the serology of domestic and wild ruminants, for it is known that this virus circulates in ticks and causes sporadic disease in humans.

Confirmation of WNF was only achieved in 50% of the cases, probably because more suspected cases are being submitted by equine veterinarians than before.

TBE had one positive serology result in bovine, which was not expected.

Some Q Fever milk samples tested positive for serology in both for bovine and small ruminants. Milk samples from small ruminants tested positive for PCR. QF is endemic and widespread in Portugal.

The detection of HEV in feaces was not very sensitive, while 39% of visited holdings were positive in the affluent slurry. The percentage of positive samples was lower in the effluent (treated slurry water leaving the holding) – only 23.5%.

VECTOR SURVEILLANCE RESULTS

The following tables present the monitoring results for of the presence of selected arboviruses RNA in mosquito and tick samples.

All results of vector surveillance were negative to the virological analysis (mosquitoes – WNV and RVFV and ticks – CCHFV and TBEV).

Results of the surveillance performed in vector samples collected in 2025 is presented in the tables bellow.

Table 3.7 – Results of WNV surveillance in *Culex* spp. (n.º specimens)

***Culex* spp.**	**Region**						
Months	**Alentejo**	**Algarve**	**Centro**	**LVT**	**Norte**	**Total**	Results **WNFV**
May	0	0	0	23	27	50	Neg
June	0	21	0	0	0	21	Neg
July	21	0	7	0	0	28	Neg
Aug	30	0	31	19	4	84	Neg
Sept	0	68	19	3	49	139	Neg
Oct	0	56	38	7	18	119	Neg
Nov	0	0	19	0	0	19	Neg
Total	**51**	**145**	**114**	**52**	**98**	**460**	

Table 3.8 – Results of RVFV surveillance in *Culex* spp. (n.º specimens)

***Cullex* spp**	**Region**						
Months	**Alentejo**	**Algarve**	**Centro**	**LVT**	**Norte**	**Total**	Results **RVFV**
May	0	56	0	23	27	106	Neg
June	0	28	0	0	13	41	Neg
July	21	59	7	0	65	152	Neg
Aug	30	35	57	22	17	161	Neg
Sept	50	149	59	64	121	443	Neg
Oct	39	50	47	7	18	161	Neg
Nov	0	0	48	1	0	49	Neg
Total	**140**	**377**	**218**	**117**	**261**	**1113**	

Table 3.9 – Results of CCHFV surveillance in *Hyalomma* spp. (n.º specimens)

***Hyalomma* spp.**		**Region**							
Host	**Months**	**Alentejo**	**Algarve**	**Centro**	**LVT**	**Norte**		**Total**	Results **CCFV**
Birds	Jul	3	0	0	0	0		3	Neg
	Sept	0	2	0	0	0		2	Neg
	Oct	0	2	0	0	0		2	Neg
Pets	May	1	0	0	0	0		1	Neg
	June	1	0	0	0	0		1	Neg
Equine	Jul	0	0	0	5	0		5	Neg
	Aug	2	0	0	0	0		2	Neg
Human	Jun	0	0	0	0	1		1	Neg
Ruminants	Jun	0	0	0	0	2		2	Neg
	July	0	0	2	0	0		2	Neg
	Aug	6	0	0	0	0		6	Neg
	Oct	1	0	0	0	0		1	Neg
Small mammals	April	0	3	0	0	0		3	Neg
	May	0	0	0	1	0		1	Neg
Total		**14**	**7**	**2**	**6**	**3**		**32**	

Table 3.10 – Results of TBEV surveillance in *Ixodes ricinus* (n.º specimens)

***Ixodes ricinus* (n)**		**Region**						
Host	**Months**	**Norte**	**Centro**	**LVT**	**Algarve**	**Alentejo**	**Total**	Results **TBEV**
Pet	Jan	0	2	0	0	0	2	Neg
	Feb	1	0	1	0	0	2	Neg
	Mar	0	2	0	0	0	2	Neg
	Apr	0	2	0	0	2	4	Neg
	Oct	2	3	0	0	0	5	Neg
	Nov	1	2	1	0	0	4	Neg
Ruminant	Apr	0	0	1	0	0	1	Neg
	May	1	0	0	0	0	1	Neg
	Oct	1	0	0	0	0	1	Neg
	Nov	1	0	0	0	0	1	Neg
Human	Jan	2	2	1	1	1	1	Neg
	Feb	0	1	1	1	1	4	Neg
	Mar	0	0	1	0	0	1	Neg
	Oct	1	0	0	0	0	1	Neg
Vegetation	Jan	1	0	1	0	0	2	Neg
		13	**14**	**7**	**2**	**4**	**32**	

4. WP4 – One Health activities

OH activities are linked to the positive results found in the surveillance. In the second year it was difficult to manage the results and only part of the planned activities were developed. All the following diseases, in humans, are subject to mandatory notification in Portugal. Therefore, Public Health Services, through their network of Health Authorities, ensure epidemiological and vector surveillance, case monitoring, and the implementation of appropriate control measures, contributing to the protection of public health. As such, these diseases are always considered within investigation and intervention processes using a One Health approach.

Crimean Congo Haemorrhagic Fever

In 2025 there were positive samples to ELISA, 2 bovine sera and 5 dear sera. No human cases were identified.

West Nile Fever

Following the detection of West Nile cases in animals, namely in horses, DGS was notified and increased the level of awareness to the network of Health Authorities, which reinforced vector surveillance and articulation with the Veterinary network. No human cases were detected during 2025. No positive results were obtained in dead birds.

Hepatitis E

Genotyping of some of the positive affluent slurry was carried out by INSA, revealing the presence of genotypes 3c (1 sample), 3e (2 samples), 3f (3 samples). From swine stool samples, INIAV identified genotypes 3e (6 samples), 3f (one sample) and 3m (one sample).

A letter of gratitude and information on the results was sent to the participants in the sampling.

For those with positive results, a visit by the local official veterinarian and public health officer is planned to explain the public health risk and access risks posed by the current destination of the effluent.

5. WP5 – Communication activities

5.1. Communication and Dissemination Plan

- Objectives: to present and disseminate (1) the SIVIZ Project, funded by the EU4Health; (2) the OH procedures developed under the program; (3) the future Platform;

- Key messaging: the importance of the exchange of health data and information between sectors and the advantages of the OH approach;

- Target audiences: public health and other medical doctors, official and private veterinarians;

- Communication channels: conferences and seminars, webpages, leaflets.

- Work plan 2026:

Date	Action	Audience	Organizer
January	REVIVE Network meeting	Health Technicians	INSA
March	Seminar on CCHF	Public Health Doctors, Environmental Health Officers, Official Veterinarians and Private Equine Veterinarians	DGAV, DGS, INSA, INIAV
May	Seminar on Q Fever	Public Health Doctors, Environmental Health Officers, Official Veterinarians and Private Equine Veterinarians	DGAV, DGS, INSA, INIAV

5.2. Project website and the project presentation on the beneficiary's website

Project website was prepared with the objectives and expected outcomes.
It can be found in: https://www.dgav.pt/informacaoutil/content/programas-e-projetos/siviz/

SIVIZ Project is referred in the webpages of each partner institution, namely:
INIAV: https://www.iniav.pt/projetos/siviz
INSA: https://www.insa.min-saude.pt/category/projetos/siviz/

5.3. Communication for professionals and the public

The list of the technical meetings where the project was presented, starting at the project preparation phase, is the following:

N.º	Event - organizer	Date	Main audience
1	REVIVE Network meeting		Health Technicians
2	Seminar on Hepatitis E	14/03/2025	Public Health Medical Doctors, Environmental Health Officers and Official Veterinarians
3	Projeto OH SIVIZ – Sistema integrado de vigilância de zoonoses	20/03/2025	Spanish and Portuguese Veterinary Services
4	EFSA 5th meeting of the One Health surveillance subgroup / Parma – round table and poster	8-9/7/2025	OH Subgroup members
5	O papel da vigilância animal na deteção precoce de zoonoses transmitidas por vetores (CNSMP)	31/10/2025	Public Health Medical Doctors
6	Seminar on West Nile Fever	03/11/2025	Public Health Medical Doctors, Environmental Health Officers and Official Veterinarians and Private Equine Veterinarians

Interview with project coordinator: https://www.veterinaria-atual.pt/na-pratica/conheca-o-siviz-sistema-de-vigilancia-e-detecao-precoce-de-zoonoses-alicercado-no-conceito-one-health/

5.4. Preparation of communication materials

• Communication materials were prepared in relation to all diseases, mainly the brochures for each disease and are presented in attachment.

- Leaflet on RVF
- Leaflet on TBE

Each leaflet has the following structure: causal agent, importance for human health, importance for animal health, transmission, prevention of transmission to humans and to animals, best practices prevention and surveillance, contacts and where to learn more.

• Microsite has not been developed and awaits the completion of the SIVIZ Platform.

5.5. Data submission to EFSA

The following activities were necessary for the submission of data to EFSA (in excel format):

- Completeness of sample metadata: some gaps identified that were corrected/ completed
- Coding of data;
- Submission and subsequent corrections;
- Confirmation.

Technical support was provided by EFSA.

INSA also completed the submission of vector data.

SUMMARY OF PROJECT DELIVERABLES DUE FROM MONTH 13 TO 24

The following table summarizes the SIVIZ project achievements in 2024 and 2025

Number	Deliverable	Month due	State of play
D1.1	1st. annual report	13	Completed
D1.1	2nd. annual report	26	Prepared
D2.1	OH Platform	12	Partially completed
D2.1	OH Microsite	12	Pending
D3.1	Procedures for sampling	4	Completed
D3.2	Procedures for testing	4	Completed
D3.3	Simulation exercise report	7	Postponed
D3.4	Outcome of surveillance	13 and 26	Completed
D4.1	Procedures for OH interventions	4	Completed
D4.2	Minutes of OH meetings	4	Completed
D5	Communication materials	12	Partially completed

AMENDMENTS

- Changes of Annex 1, Part B were carried out according to HaDea and EFSA instructions

- Change of the TEAM from DGS

Paulo Lessa and Pedro Pires, Environmental Health Officers, joined the team in the second semester of 2025.

- Changes of dates of deliverables

The following table presents the proposed dates of deliverables:

Number	Deliverable	Month due	Proposed month of deliverable
D2.1	OH Platform	12	32
D2.2	OH Microsite	18	32
D3.3	Simulation exercise report	7	33
D5.1	Communication materials	12	32

Risks management:

- **Explanation for non-completion of the Platform**

The development of the integrated digital platform has been delayed due to a combination of procedural and external constraints, regarding contract signing which have extended the timeline for initiation. In parallel, the technical specifications for the platform are under ongoing discussion, particularly regarding interoperability between sectors. An additional layer of complexity has been the definition of data governance and data protection mechanisms. Throughout most of 2024, the DGS did not have active support from Data Protection Officer services, which has hampered the timely development of a solid framework for data handling and compliance with national and EU-level regulations. These external factors, beyond the consortium's direct control, have importantly affected the progress of the platform.

- **Explanation for non-completion of Microsite**

The microsite is part of the same contract package as the main platform, and its development is interdependent. However, unlike the platform, the microsite is still at an early stage, with only preliminary structural ideas and communication objectives defined. Content drafting and design have not progressed importantly, as they rely on both the technical implementation and the broader coordination with communication strategies linked to the platform. Finalization and launch of the microsite will depend on resolving contractual issues.

- **Explanation for non-completion of the Simulation exercise**

The simulation exercise is designed to test the operational functionality of the integrated platform and stakeholder response mechanisms. As the platform is not yet implemented, the necessary digital infrastructure and data flows required to conduct the exercise under realistic conditions are not available. Consequently, the exercise has been postponed to a later stage of the project, once the platform is functional and tested. This will ensure the activity yields useful insights and supports system improvement goals.

- **Explanation for the non-completion of communication materials**

Part of the communication materials have already been finalized and made available to the public via institutional websites. The materials are being aligned with the technical developments and communication strategy of the project and are expected to be completed and released in the short term, namely the leaflets and the texts for the microsite.