World Organisation for Animal Health

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WOAH Collaborative Centre Reports Activities 2024

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CENTRE INFORMATION

***Title of WOAH Collaborating Centre**	Diseases at the Animal/Human Interface
***Address of WOAH Collaborating Centre**	Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe)
***Tel:**	+390498084374
***E-mail address:**	GCattoli@izsvenezie.it
Website:	https://www.izsvenezie.it/
***Name Director of Institute (Responsible Official):**	Dr. Antonia Ricci
***Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):**	Dr. Giovanni Cattoli, Director of Science
***Name of the writer:**	Giovanni Cattoli

TOR 1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOAH

Category	Title of activity	Scope
		IZSVe, with its collaborating centre, is

Disease control (true)	Biobanking Study of broad-spectrum antivirals	partner of the EU-funded H2020 European Virus Archive (EVAg) Project, bringing together 43 laboratories associated with leading international organisations, including WHO and WOAH. In 2024, the IZSVe contributed to enrich the EVAg catalogue, which contains viruses and derived products. Furthermore, through the EVAg network the IZSVe took active part in the network of laboratories belonging to the Integrated Services for Infectious Disease Outbreak Research (ISIDORe) project, for which it has made available animal models of high translational value for the study of major respiratory diseases of viral aetiology. Specifically, during the reporting period the IZSVe was selected to support research activities using in-vivo models for the study of broad-spectrum antivirals against human respiratory diseases caused by Sars-Cov-2 and Influenza.
Epidemiology, surveillance, risk assessment, (true)	Surveillance of Invasive mosquitoes in “Points of entry”	Monitoring of the entry and spread of invasive species of mosquitoes of the genus Aedes in Italy, through the surveillance of selected "Points of entry" such as the port of Marghera (Venice), Trieste and Monfalcone and the airport of Venice, Verona, Treviso and Trieste. Aedes albopictus species has been collected in all sites, while Ae. japonicus and Ae. koreicus have been found at Monfalcone and Trieste airport, respectively. Aedes aegypti was not found.
Training, capacity building (true)	Hands on training, seminars, fellowships	To strengthen technical capacity and networks at international level
Zoonoses (true)	Zoonosis in dog and cat shelters: study and development of an integrated strategy for effective health management	To ensure the correct health and relational management of animals in shelters through training and communication actions, dogs and cats in shelters were screened for Influenza virus type A , Norovirus, Rotavirus, Cowpox virus, Reovirus, Hepatitis E virus, Dermatophytosis, Capnocytophaga

		canimorsus, intestinal parasites, antibiotic-resistant bacteria, Bartonella henselae, Leishmania, Leptospira, Brucella canis and SARS-CoV-2.
Wildlife (true)	One Health approach to understand, predict and prevent viral emergencies from bats	Bats are the most likely candidates to be host of the next emerging virus, due to their diversity and even higher diversity of their associated viruses. The OneBAT European granted project aims at investigating the different steps of the emergency process to define the hazard of selected bat viruses and define critical control points. To optimize resources, OneBAT will focus on a specific bat as its model: the common bent-wing bat Miniopterus schreibersii. In 2024, the group developed and harmonized one sampling protocol for the screening of viruses in selected colonies of Miniopterus schreibersii. Two populations were investigated (two and three times, respectively) in Italy, allowing for the detection of high prevalence and diversity of alphacoronaviruses belonging to the species Miniopterus coronavirus 1, HKU7 and HKU8. Miniopterus coronavirus 1 was more frequent in salivary swabs while HKU7 and HKU8 in faeces. We found few positivity on blood clots, including possible infection with the human virus 229E that needs to be further investigated. All samples, including salivary swabs, feces and blood clots were negative for the presence of lyssaviruses. In addition to virological screening, we monitored the roost for possible interactions between bats and other species.
Diagnosis, biotechnology and laboratory (true)	Detection of Trichinella spp. in domestic animals	Swine, equine and wild boars regularly slaughtered (n=7352) have been controlled for the presence of Trichinella spp. larvae in muscle samples. All samples were negative.
Epidemiology, surveillance, risk assessment, (true)	Entomological surveillance for West Nile and Usutu viruses in Italy	In 2024, 84 CDC-CO2 mosquito traps were placed in selected areas and 152,164 mosquitoes of 19 different species were collected. Virus detection was done in 2,928 pooled specimens. West Nile virus

		was detected in 47 pools of Culex pipiens, and in 1 pool of Aedes albopictus. USUTU virus was found in 10 pools of Cx. pipiens.
Epidemiology, surveillance, risk assessment, (true)	Surveillance of Aedes japonicus japonicus and Ae. koreicus in Italy	The invasive mosquito species, Aedes koreicus, and Ae. japonicus were detected in northeastern Italy for the first time in 2011 and 2015, respectively. Active monitoring has been carried out since their introduction to assess the spreading and occurrence of these species. The presence of invasive mosquitoes was checked in all possible breeding sites through collections of larvae. The mosquitoes were identified morphologically and molecularly. In 2024, Ae. j. japonicus was found in one out of 16 (10%) and Ae. koreicus in 10 out of 16 (62%) municipalities monitored. The mosquitoes were collected mainly in artificial containers located in small villages and in rural areas.
Epidemiology, surveillance, risk assessment, (true)	Surveillance of sand flies Phlebotomine for Leishmania and Toscana virus	In 2021, the first circulation of Toscana virus (TOSV) (Phlebovirus) was recorded in northeastern Italy, with three human cases and one pool of positive vectors to TOSV found in the same area. In 2024 two sites were monitored biweekly collecting sand flies by CDC-CO2 light traps. Insects were tested for TOSV and Leishmania screening. In total, 1,850 sand flies were collected and 128 pools were tested; one pool was positive for Toscana virus, one for TOSV and one for Phlebovirus. Circulation of TOSV was confirmed also in 2024 with 11 human cases and detection of virus in vectors in the same circulation area of previous year.
Epidemiology, surveillance, risk assessment, (true)	Monitoring of insecticide resistance in mosquito	Culex pipiens and Aedes albopictus mosquitoes have been collected in three Regions of Italy and tested by molecular techniques to evaluate the insecticide resistance to pyrethroids. To date, almost 1,800 molecular analyses have been carried out.
		With the objective of characterizing the specie-specific CoVs and detecting

Epidemiology, surveillance, risk assessment, (true)	Investigating the circulation of coronaviruses in swine farms	spillover cases from bats and humans, including SARS-CoV-2, 18 swine farms in Italy were investigated by applying pan-coronavirus molecular screening. Data on management, production strategies and biosafety measures were collected to investigate risk factors influencing the prevalence of detected coronaviruses. In addition, the diversity and frequency of bats within farms using bioacoustics were investigated too. Evidence was found only for swine coronaviruses, including PHEV and PRCV, while SARS-CoV-2 was not detected. The prevalence of both viruses was mostly influenced by farm size and animal category, with weaning animals being particularly affected. Bioacoustics showed that bats are widely circulating in most farms. Biodiversity ranged from 2 to 8 species, with Pipistrellus kuhlii and Hypsugo savii identified everywhere with highest activity. Two roosts of P. kuhlii within farms were detected and a high prevalence and frequency of coronaviruses in environmental faeces was revealed. The whole genome sequence of a previously unclassified alphacoronavirus found in P. kuhlii and on a MERS-related coronavirus associated with H. savii were obtained. Regardless of the possible interaction with bats and the frequency and diversity of associated coronaviruses, we found no molecular evidence for spillover events in swine.
Zoonoses (true)	Noroviruses (NoV) in domestic swine	The project aimed at improving the scientific data on the spread of genogroups and genotypes on the selected geographic area by developing new diagnostic and sequencing tools for the detection and characterization of NoVs affecting swine.
Zoonoses (true)	Lyssavirus in cats	Proposal for a diagnostic algorithm to include lyssaviruses infection in cats as a possible differential diagnosis in cases with specific clinical, epidemiological, and anamnestic features.
		To date, the distribution and the related

Zoonoses (true)	Mammalian Orthoreovirus (MRVs) in companion animals	health impact of MRVs in pets is unclear and needs to be elucidated. So far, the pet's role in the transmission of MRVs to other species, including humans, has not been investigated. The project aims to evaluate the circulation of MRV in dogs and cats through a screening of samples by means of molecular techniques, cellular isolation, followed by genetic characterization, sequencing, and phylogenetic analysis on the positives.
Zoonoses (true)	Understanding pathogen evolution and virulence across humans and animals	This activity aims to: (a) To build an unprecedented large and diverse global strain collection of Capnocytophaga canimorsus, C. canis, C. cynodegmi, and other Capnocytophaga species from different geographical regions and origins (dogs/cats and humans) addressing the one-health nature of this zoonotic disease; (b) To explore pathogen evolution at a global scale by studying spatiotemporal diversity, across different clinical settings such as infection vs. colonization. (c) To merge geno- and phenotypic data to determine most critical virulence factors and translate our key findings towards novel diagnostic targets with risk profiling of hyper-virulent strains and the potential identification of therapeutic and vaccine targets for humans and animals. (d) To form a global network to study a neglected infectious disease.
Wildlife (true)	Marine mammals as sentinel species of the marine ecosystem	Marine mammals serve as sentinel species, reflecting the health status of the marine ecosystem. A comprehensive regulatory framework, encompassing the Habitats Directive (Dir. 92/43/EEC), the Marine Strategy Framework Directive (Dir. 2008/56/EC), and the Barcelona Convention (Law 30 of January 25, 1979), protects these species and highlights the importance of data obtained through post-mortem investigations for biodiversity conservation. Diagnostic investigations on wild species such as marine mammals provide significant opportunities to study emerging

		infectious diseases, which can pose threats to human, animal, and environmental health. In the reporting period, this Collaborating Centre analyzed samples from nine cases of stranded cetaceans in Italy.
Wildlife (true)	Monitoring of the emergence of new viruses at the human-animal interface to identify potential spillover events from wildlife to humans.	In the reporting period surveillance was conducted to detect the presence of coronaviruses in wild mustelids, using lung samples collected from carcasses submitted to the IZSVe as part of passive rabies surveillance. Three hundred and twenty-eight (328) samples from 123 stone martens (Martes foina), 18 pine martens (Martes martes), 186 badgers (Meles meles), and 1 polecat (Mustela putorius) were analyzed using a nested RT-PCR method capable of identifying all known coronavirus genera. Coronaviruses were identified in 29 lung samples (8.8%) from 5 badgers (prevalence in the species: 2.7%) and 24 stone martens (species prevalence: %). Positive samples were sequenced and subjected to phylogenetic analysis and then compared to previously identified samples. The investigations confirmed the presence of divergent coronaviruses, belonging to the provisional genus Epsiloncoronavirus, recently described by the IZSVe. Specifically, MelesCoV was found in 5 badgers (Meles meles) and MartesCoV in 24 stone martens (Martes foina), confirming that species-specific tropism is a conserved feature in coronaviruses. Phylogenetic analyses revealed two distinct clusters for MelesCoV based on the region of origin. The next step aims at sequencng the entire genome of selected samples to uncover the taxonomy of these unknown microbes.
Diagnosis, biotechnology and laboratory (true)	Detection of Leptospira spp.	1292 farm animals' sera, 452 companion animals' sera were tested by MAT, and 403 samples (i.e. urine, organs, blood, culture) by real-time PCR.
		Skin specimens from pet and domestic

Diagnosis, biotechnology and laboratory (true)	Collection and molecular characterization of zoonotic dermatophytes, yeasts and other filamentous fungi of medical interest for animals and humans	animals (n=294) have been tested for the presence of dermatophytes. Trichophyton mentagrophytes (n=2), Microsporum canis (n=9) and Nannizia gypsea (n=4) were isolated and identified from companion animals (cats n=10; dog n=5). A total of 136 strains of filamentous fungi (genus Aspergillus, Penicillium, Fusarium, ect.) and yeasts (genus Candida, Debaryomyces, Yarrowia, ect.) were molecularly identified at species level and stored in the fungal collection at the IZSVe.
Diagnosis, biotechnology and laboratory (true)	Field validation of the PANPOC system based on RT-LAMP amplification for the detection of the target viruses in animal specimens.	PAIR project is a EU-funded project with 20 partners (including the IZSVe) from 7 EU countries. In the context of the activities of work package 4 coordinated by IZSVe, the field validation of the PANPOC system developed by the DTU and based on RT-LAMP amplification for the detection of the target viruses in animal specimens is included. In 2024, this collaborating centre (CC) collected and stored clinical samples (swabs from avian species, pigs, cattle and micromammals) positive and negative for the above-mentioned targets to be used for future validation. In addition, the CC supported the in silico development of RT-LAMP assays and provided the DTU with inactivated isolates of avian influenza, swine influenza and beta-coronavirus viruses to be used for a preliminary assessment of the PANPOC system.

TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main fucus area for which you were designated

Proposal title	Scope/Content	Applicable Area
	To prepare against possible future H5 HPAI 2.3.4.4b emergency scenarios in Europe, the European Commission (EC) promoted preparedness	

Wastewater testing for H5 HPAI viruses of clade 2.3.4.4b and type A influenza viruses	initiatives aiming at monitoring any possible spread of the virus in the human population. In this framework, the EC Joint Research Centre (JRC) and this IZSVe collaborating centre (CC) developed a two-target ddRT-PCR assay for the detection and quantification of H5 HPAI 2.3.4.4b viruses in urban wastewater. At a national level, the IZSVe CC collaborated with the National Center for Water Safety– National Health Institute (CeNSiA-ISS) in promoting a retrospective investigation for the detection of H5 HPAI 2.3.4.4b viruses in urban wastewater.	Laboratory Expertise Training and Education Health Management

3. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

4. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

No

TOR 4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH Collaborating Centre for Veterinary Biologicals Biobanks at the Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER).	Brescia, Italy	Europe	Biobanking, capacity building, research
WOAH Collaborating Centre for ELISA and molecular technics in animal in animal disease diagnosis (Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture)	Vienna, Austria	Europe	Research, capacity building

WOAH REFERENCE LABORATORY FOR FOOT-AND-MOUTH DISEASE	Brescia, Italy	Europe	Diagnostic confirmation, proficiency testing
WOAH Reference Laboratory for Brucellosis	Teramo, Italy	Europe	Diagnostic confirmation, research projects, proficiency testing
Mediterranean Animal Health Network (REseau MEditerranéen de Santé Animale – REMESA)	Algeria, Cyprus, Greece, Egypt, France, Italy, Jordan, Lebanon, Libya, Malta, Morocco, Mauritania, Portugal, Spain and Tunisia	Africa Europe Middle East	Improvement of prevention and control against the major transboundary animal diseases and zoonoses through the strengthening of the national and regional resources and capacities, the harmonization and coordination of surveillance and control activities.
National Reference Centre for Exotic Diseases of Animals	Teramo, Italy	Europe	Diagnostic confirmation
National Reference Laboratory for Arboviruses. Department of Infectious Diseases. National Institute of Health (Istituto Superiore di Sanità)	Rome, Italy	Europe	Research
National Reference Centre for Whole Genome Sequencing of microbial pathogens: database and bioinformatic analysis/ FAO Reference Centre for Zoonotic Coronaviruses, in collaboration with IZSVe	Teramo, Italy	Europe	Research, capacity buildng
Department of Clinical Microbiology, Aalborg University Hospital	Denmark	Europe	Research collaboration for diagnostic and scientific purposes
Department of Biomolecular Health			

Sciences, Faculty of Veterinary Medicine, Utrecht University	Netherlands	Europe	Research collaboration for diagnostic and scientific purposes
Institute of Medical Microbiology University of Zurich	Switzerland	Europe	Research collaboration for diagnostic and scientific purposes
Namur Research Institute for Life Sciences University of Namur	Belgium	Europe	Research collaboration for diagnostic and scientific purposes
Department of Molecular Medicine, University of Padova. Microbiology and Virology Unit, Padova University Hospital	Italy	Europe	Research collaboration for diagnostic and scientific purposes on arbovirus
Pandemic Information to support rapid Response (PAIR) (Horizon)	Denmark	Americas Europe Middle East	To strengthen the One Health strategy through the development of innovative point-of-care (POC) diagnostic tools and epidemiological modelling
National Reference Centre for Antrax (Centro di Referenza Nazionale per l'Antrace (Ce.R.N.A.)	Foggia, Italy	Europe	Diagnostic confirmation, proficiency testing
National Reference Centre for Leishmaniosis (C.RE.NA.L)	Palermo, Italy	Europe	Diagnostic confirmation, proficiency testing

TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAH?

Yes

Name of expert	Kind of consultancy	Subject

Fabrizio Montarsi	Expert opinion	Medical entomology
Olga Munoz	Participation in meeting (Samarkand, Uzbekistan 30/09-04/10/2024)	31st Conference of the WOAH Regional Commission for Europe. Title of the presentation: Pandemic preparedness in Europe: the role of Animal Health and Veterinary Services in One Health and pandemic preparedness

TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

No

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAH, to personnel from WOAH Members?

Yes

a) Technical visit : 8

b) Seminars : 0

c) Hands-on training courses: 2

d) Internships (>1 month) : 0

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
A	Theoretical and practical demonstration on procedures for sampling, sample transportation, sample labelling, software for sample traceability from the field to the laboratory and in the laboratory. Presentation of the Quality System and Communication Department of IZSVe. Essential requirements for biobanking – critical points to assure maintenance and vitality of reference materials, and to assure biosafety and biosecurity; MTA and general rules for international exchange.	Serbia	1
A	Surveillance of vectors and vector-borne pathogens	Thailand	4

A	Surveillance of sand flies and pathogens transmitted	Mozambique	1
A	Ticks identification	Italy	2
C	Laboratory training for the diagnosis of fungal disease in domestic and wild animals	Czech Republic	1
C	Training on surveillance, identification and pathogen screening of ticks	Serbia	1

TOR 8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAH?

No

TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAH that may be useful to Members of WOAH

a) Articles published in peer-reviewed journals:

31

1. Bellinati L, Ceglie L, Mazzotta E, Campalto M, Lucchese L and Natale A. One-year surveillance of Chlamydia spp. infection in stray cats from north-eastern Italy Front Vet Sci. 2025 Volume 12 - 2025 | doi: 10.3389/fvets.2025.1502642

2. Bernardini I, Poggi C, Porretta D, Máca J, Perugini E, Manzi S, Gabrielli S, Pichler V, Latrofa MS, Fourie J, Lia RP, Beugnet F, Otranto D, Pombi M. Population dynamics of sympatric Phortica spp. and first record of stable presence of Phortica oldenbergi in a Thelazia callipaeda-endemic area of Italy. Parasit Vectors. 2024 Nov 6;17(1):455. doi: 10.1186/s13071-024-06526-9. PMID: 39506857; PMCID: PMC11542218.

3. Berti M., Cavicchio L., Rosato I., Fletcher T., Pitter G., Russo F., Batzella E., Canova C. (2024) PFAS and menopause onset: is it just a matter of Reverse Causation? Cross-sectional and longitudinal analyses in highly exposed women in the Veneto Region. Environ.Res. :120305.

4. Bisaglia B, Castelli M, Soresinetti L, Negri A, Arnoldi I, Montarsi F, Gobbo F, Defilippo F, Callegari E, Di Luca M, Calzolari M, Mastrantonio V, Porretta D, Ficetola GF, Sassera D, Gabrieli P, Bandi C, Epis S. Barcoding of Italian mosquitoes (BITMO): generation and validation of DNA barcoding reference libraries for native and alien species of Culicidae. Parasit Vectors. 2024 Sep 28;17(1):407.

5. Bonelli P, Serra E, Dei Giudici S, Peruzzu A, Crotti S, Danesi P, Carvelli A, Piseddu T, Masala G. Molecular phylogenetic analysis of Echinococcus granulosus sensu lato infecting sheep in Italy. Acta Trop. 2024 Apr;252:107151. doi: 10.1016/j.actatropica.2024.107151. Epub 2024 Feb 16. PMID: 38367944.

6. Calzolari M, Mosca A, Montarsi F, Grisendi A, Scremin M, Roberto P, Tessarolo C, Defilippo F, Gobbo F, Casalone C, Lelli D, Albieri A.

Distribution and abundance of Aedes caspius (Pallas, 1771) and Aedes vexans (Meigen, 1830) in the Po Plain (northern Italy). Parasit Vectors. 2024 Nov 5;17(1):452.

7. Cavicchio L, Campalto M, Carrino M, Lucchese L, Ceglie L, Fincato A, Boscolo Cegion L, Mazzotta E, Beato MS and Natale A. Influenza in feral cat populations: insights from a study in North-East Italy. Front. Vet. Sci. 2024 Jul 19; 11:1439354. doi: 10.3389/fvets.2024.1439354

8. Coffey EL, Ma L, Cissé OH, Kovacs JA, Minor KM, Sukura A, Danesi P, Friedenberg SG, Cullen JN, Weissenbacher-Lang C, Nadeau JC, Graham AM, Granick MN, Branson NK, Branson KC, Blasi B, Jacobs CM, Furrow E. A Novel CARMIL2 Immunodeficiency Identified in a Subset of Cavalier King Charles Spaniels with Pneumocystis and Bordetella Pneumonia. J Fungi (Basel). 2024 Mar 5;10(3):198. doi: 10.3390/jof10030198. PMID: 38535207; PMCID: PMC10970956.

9. Da Re D, Marini G, Bonannella C, Laurini F, Manica M, Anicic N, Albieri A, Angelini P, Arnoldi D, Blaha M, Bertola F, Caputo B, De Liberato C, Della Torre A, Flacio E, Franceschini A, Gradoni F, Kadriaj P, Lencioni V, Del Lesto I, La Russa F, Lia RP, Montarsi F, Otranto D, L'Ambert G, Rizzoli A, Rombolà P, Romiti F, Stancher G, Torina A, Velo E, Virgillito C, Zandonai F, Rosà R. VectAbundance: a spatio-temporal database of Aedes mosquitoes observations. Sci Data. 2024 Jun 15;11(1):636.

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18. Graziosi G, Lupini C, Gobbo F, Zecchin B, Quaglia G, Pedrazzoli S, Lizzi G, Dosa G, Martini G, Terregino C. et al. Genetic Diversity of Avian Influenza Viruses Detected in Waterbirds in Northeast Italy Using Two Different Sampling Strategies. Animals 2024, 14,1018. https://doi.org/10.3390/ani14071017

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b) International conferences:
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1. Bellinati L., Lucchese L., Ceglie L., Mazzotta E., Marchione S., Bertasio C., Natale A. (2024) Updating he characterization of Leptospira spp. infecting symptomatic dogs: a possible role of intermediate strains? 13th Conference of the International Leptospirosis Society -ILS- and 4th Meeting of the European Leptospirosis and other rodent-borne haemorrhagic fevers Society –ELS, Brussel, Belgium 2- 5 September.
2. Bisaglia B, Lo Parrino E, Castelli M, Negri A, Soresinetti L, Barzagli B, Naro G, Montarsi F, Villa M, Gobbo F, Calzolari M, Defilippo F, Porretta D, Gabrieli P, Bandi C, Sassera D, Ficetola F, Epis S. Barcoding Italian mosquitoes: toward a biomonitoring eDNA approach. Abstract book of 9th International Barcode of life Conference, pag. 29.
3. Campalto M., Mazzotta E., Ceglie L., Lucchese L., Danesi P., Natale A. (2024) In-depth study of mammalian Orthoreovirus (MRV) in owned dog and cats in the Veneto region: preliminary results. 7th Congress of the European Association of Veterinary Laboratory Diagnosticians, Padova, Italia, 21-23 October 2024
4. Danesi P, Krockenberger M, Meyer W and Malik R. Cryptococcosis in companion animals and wildlife. Relazione ad invito. 12th International Mycological Congress - Maastricht, Netherlands, August 11-15 2024

5. Festa F.; Scaravelli D.;Cosentino F.;De benedictis P.; Maiorano L.;Leopardi S. (2024) Urban habits of the bent-winged bat (Miniopterus schreibersii) as a possible driver of lyssaviruses spillover in Italy. EWDA 2024 conference- European Wildlife Disease Association, Stralsund (DE). 9-14 September 2024

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9. Manzi S, Pazienza M, Zaccaria O, Abbate V, Nelli L, Fortuna C, Gradoni F, Toniolo F, De Santis R, Spagnolo F, Montarsi F, Lista F, Pombi M. Optimizing mosquito-borne disease surveillance with BG-Sentinel trap equipped with FTA card. The XIV European Multicolloquium of Parasitology Wrocław, Poland August 26–30, 2024. Annals of Parasitology 2024, 70 (Supplement 1). eISSN 2300-6706.

10. Manzi S, Vettore S, Bonetto D, Martini S, Gradoni F, Poletto E, Danca L, Toniolo F, Gobbo F, Russo F, Severino V, Vaia F, Ziprani C, Montarsi F. Strengthening the control of invasive mosquitoes at Points of Entry: a longitudinal monitoring in ports and airports of Northeastern Italy. Atti del 23rd European Society for Vector Ecology Conference, pag. 266.

11. Mazzariol, S., Casalone, C., Centelleghe, C., Mattioda, V., Cocumelli, C., Denurra, D., Di Donato, A., Di Francesco, G., Di Guardo, G., Di Nocera, F., Di Renzo, L., Gavaudan, S., Giorda, F., Lucifora, G., Marsili, L., Migliore, S., Pascucci, I., Petrella, A., Pintore, A., Puleio, R., Rubini, S., Terracciano, G., Toffan, A., Pietroluongo, G., Grattarola, C., Favole, A. (2024) Emerging zoonotic pathogens in cetaceans stranded along the Italian coastline between 2015 and 2020. 9th International Conference on Emerging Zoonoses. – Sicily (Italy) 9 - 12 June 2024.

12. Mazzotta E., Bernardini M., Natale A., Zago M., Crovato S., Campalto M., Marchione S., Fornasiero D., Vascellari M., Brocherel G., Lelli D., Leopardi S., De Benedictis P. (2024) Lyssavirus nel gatto: progetto CONNETTI-CAT e rafforzamento della sorveglianza sindromica. Congresso Internazionale Società Culturale Italiana Veterinari per Animali da Compagnia (SCIVAC), Rimini, Italy 24-26 May 2024

13. Mazzotta E., Menegotto N., Biscaro V., Vian E., La Spisa C., Pascotto E., Ceglie L., Bellinati L., Lucchese L., Zanardello C., Foiani G., Busa A., Natale A. (2024) Human-animal leptospirosis outbreak. Diagnostic approach in a One Health perspective. 7th Congress of the European Association of Veterinary Laboratory Diagnosticians, Padova, Italia, 21-23 October 2024.

14. Munoz Pogoreltseva, OS. (2024) Technical Item I - The role of Animal Health and Veterinary Services in One Health and pandemic prevention and preparedness. 31st Conference of the WOAH Regional Commission for Europe. 30 September 04 October 2024 Samarkand, Uzbekistan

15. Perugini E, Pichler V, Guelbeogo W.M, Micocci M, Poggi C, Di Maio F, Manzi S, Ranson H, della Torre A, Mancini E, Pombi M. Longitudinal survey of insecticide resistance in a village of central region of Burkina Faso reveals co-occurrence of 1014F, 1014S and 402L mutations in Anopheles coluzzii and Anopheles arabiensis. Atti del 23rd European Society for Vector Ecology Conference, pag. 145.

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17. Pinto A, Mascarello G, Crovato S, Mantovani C, Lenzo F, Zago M, Montarsi F, Bregoli M, Tick-borne encephalitis (TBE) in Italy: investigating the behaviour and risk perception of citizens living in high-risk areas. Book of abstracts of Risk in time & space, 2-5 June 2024 Athens. pag. 208.

18. Toniolo F, Gradoni F, Sgubin S, Manzi S, Danesi P, Montarsi F, Gobbo F. Occurrence of tick-borne pathogens in ticks collected from wildlife and domestic animals in northeastern Italy. Atti del 23rd European Society for Vector Ecology Conference, pag. 192.

c) National conferences:

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1. Bongiorno G, De Liberato C, Di Muccio T, Dottori M, Fortuna C, Montarsi F, Mosca A, Oliva G, Satta G, Vitale F, Gradoni L. Influence of climate drivers and mitigation towards Phlebotominae vectors distribution and the diseases they transmit. Atti del XXXIII Congresso SoIPa, pag. 23.

2. Carlin S, Obber F, Celva R, Poletto E, Chiarello G, Da Rold G, Assirelli G, Franzoso A, Mian G, Casara A, Montarsi F, Verin R, Gallo M, Rocca G, Michelotto E, Rocca M, Pozzato N, Citterio CV. Entomofauna composition and Post-Mortem Interval in wild boars – preliminary results in the framework of a preparedness strategy against African Swine Fever. Atti del XXXIII Congresso SoIPa, pag. 182.

3. Chiarello G, Gradoni F, Sgubin S, Danca L, Carlin S, Toniolo F, Poletto E, Porcellato E, Mazzucato M, Bortolami A, Monne I, Danesi P, Montarsi F, Favero L, Russo F, Sinigaglia A, Pacenti M, Barzon L, Gobbo F. Results of integrated surveillance system for West Nile Virus and Usutu Virus in Veneto Region, in 2022 and 2023. Atti del XXXIII Congresso SoIPa, pag. 324.

4. Danesi P, Sgubin S, Foiani G. Galleria mellonella larvae as a model for investigating aspergillus-host interactions. Atti del XXXIII Congresso SoIPa, pag. 109.

5. Danesi P. I farmaci in uso nella pratica veterinaria. Abstract Book del XVI Congresso Nazionale FIMUA 2024, relazione ad invito.

6. Drzewniokova, P., Bortolami, A., Bonfante, F., Bruno, F., Ramzi, S., Palumbo, E., Leopardi, S., Fusaro, A., Monne, I., De Benedictis, P., Terregino, C. (2024). Detection of avian influenza and novel coronaviruses in Italian wildlife – preliminary data. INF-ACT Meeting 2024, 11-12 September 2024, Pavia (Italy)

7. Fortuna C, Severini F, Marsili G, Toma L, Mancuso E, Amendola A, Venturi G, Argentini C, Casale F, Bernardini I, Boccolini D, Fiorentini C, Barzon L, Dal Molin E, Hapuarachchige HC, Montarsi F, Gobbo F, Di Luca M. Vector competence studies of Aedes and Culex mosquitoes for dengue and West Nile viruses. Atti del XXXIII Congresso SoIPa, pag. 17.

8. Gobbo F, Danca L, Toniolo F, Danesi P, Marsili G, Mangiapelo C, Fortuna C, Russo F, Montarsi F. Sand flies sampling and pathogens detection in Veneto Region (2022-2023). Atti del XXXIII Congresso SoIPa, pag. 288.

9. Gradoni F, Negri A, Soresinetti L, Arnoldi D, Corona C, Berrone E, Tessarolo C, Accorsi A, Listorti V., Sgubin S, Manzi S, Visentin P, Martini S, Rizzoli A, Mosca A, Gobbo F, Gabrieli P, Epis S, Montarsi F. Distribution and spreading of invasive mosquito Aedes japonicus japonicus and Aedes koreicus in Italy. Atti del XXXIII Congresso SoIPa, pag. 308.

10. Lazzarini L, Montarsi F, Cassini R, Simonato G, Scaggiante R, Colombo L. One health and one sciences: the experience of the Veneto Region in the prevention of vector-borne zoonitic diseases. Atti del XXXIII Congresso SoIPa, pag. 115.

11. Lenzo F., Giulia Mascarello G., Pinto A., Crovato S., Zago M., Elisa Mazzotta E., La Greca E., Natale A. (2024). Percezione del rischio, conoscenze ed esperienze dei cittadini italiani sulle malattie trasmesse da cani e gatti: risultati di un'indagine sociale. XLVIII – Congresso dell'Associazione Italiana di Epidemiologia (AIE) 2024. SALUTE NON SEMPRE UGUALE: studiare e gestire differenze e variabilità per comprendere le interAzioni. Riccione, Italy 16-19 April 2024.

12. Manzi S, Vettore S, Bonetto D, Martini S, Gradoni F, Poletto E, Danca L, Toniolo F, Gobbo F, Russo F, Severino V, Vaia F, Ziprani C, Montarsi F. Mosquito surveillance at points of entry: a longitudinal monitoring in port and airports of Veneto region. Atti del XXXIII Congresso SoIPa, pag. 355.

13. Manzi S, Zaccaria O, Abbate V, Pazienza M, Micocci M, Perugini E, Pichler V, Montarsi F, Caforio R, De Santis R, Lista F, Pombi M. Exploiting a xenosurveillance approach on non-vector mosquitoes to detect malaria pathogens in Djibouti City. Atti del XXXIII Congresso SoIPa, pag. 207.

14. Mazzariol S.; Casalone C.; Testori C.; Centelleghe C.; Cocumelli C.; Denurra D.; Di Francesco G.; Di Guardo G.; Di Nocera F.; Di Renzo L.; Gavaudan S.; Giorda F.; Lucifora G.; Marsili L.; Migliore S.; Pascucci I.; Petrella A.; Pintore A.; Puleio R.; Rubini S.; Terracciano G.; Toffan A.; Pietroluongo G.; Grattarola C. (2024). A virologic overview on the cetaceans stranded from 2015 to 2020 along the Italian coastline. 8th National Congress of the Italian Society for Virology (ISV-ISV) - One Virology One Health. PO 069 - OC 14, pag. 117. 07-09/07/2024, Bologna (Italy)

15. Micocci M, Bernardini I, Soresinetti L, Varone M, Di Lillo P, Severini F, Montarsi F, Epis S, Salvemini M, Manica M. della Torre A. Testing of novel Sensor for automatic count and identification of Aedes and Culex adults across Italy. Atti del XXXIII Congresso SoIPa, pag. 353.

16. Paccagnella M.; Salviato A.; Zamperin G.; Bell-Sakyi L.; Monne I.; Salata C. (2024). adaptation of Hazara orthonairovirus following few passages in Hyalomma-derived tick cells. 8th National Congress of the Italian Society for Virology (ISV-ISV) - One Virology One Health. PO 104, pag. 151. 07-09/07/2024, Bologna (Italy)

17. Peano A, Molinar A.R, Danesi P, Albanese F, Furiani N, Monaco M, Necci F, Noli C, Sgubin S, Varina A, Pasquetti M. Alcuni casi di pitiosi cutanea nei cani in Italia . Abstract Book del XVI Congresso Nazionale FIMUA 2024, pag. 23.

18. Perugini E, Pichler V, Guelbeogo W.M, Micocci M, Poggi C, Di Maio F, Manzi S, Ranson H, della Torre A, Mancini E, Pombi M. Longitudinal survey of insecticide resistance in a village of central region of Burkina Faso reveals co-occurrence of 1014F, 1014S and 402L

mutations in Anopheles coluzzii and Anopheles arabiensis. Atti del XXXIII Congresso SoIPa, pag. 293.
19. Severini F, Bongiorno G, Salata C, Montarsi F, Toma L, Maioli G, Di Luca M, Gentili D, Bertola M, and Mosquitoes/Ticks/Sandflies Working Group. Current distribution of arthropod of public health relevance in Italy: results from systematic reviews. Atti del XXXIII Congresso SoIPa, pag. 124.
20. Sgubin S, Orlandini P, De Lucia M ,Porcellato E, Peano A, Danesi P. Primo caso di pitiosi felina in Europa. Abstract Book del XVI Congresso Nazionale FIMUA 2024, pag. 49
21. Sgubin S, Orlandini P, De Lucia M, Cagnin V, Pasqualotto S, Matteucci G, Peano A, Danesi P. First description of feline pythiosis in europe. Atti del XXXIII Congresso SoIPa, pag. 218.
22. Toniolo F, Gradoni F, Sgubin S, Manzi S, Danesi P, Montarsi F, Gobbo F. Occurrence of tick-borne pathogens in ticks collected from wildlife and domestic animals in northeastern Italy. Atti del XXXIII Congresso SoIPa, pag. 181.
23. Vogiatzis S.; Dal Molin E.; Lucca C.; Sinigaglia A.; Pacenti M.; Giannella A.; Ceolotto G.; Bonfante F.; Bogacheva M.S.; Weinstein I.; Vapalahti O.; Trevisan M.; Barzon L. (2024). Modelling the neuropathogenicity of emerging West Nile Virus strains in human brain organoids. 8th National Congress of the Italian Society for Virology (ISV-ISV) - One Virology One Health. PO 090 - OC 24, pag. 137. 07-09/07/2024, Bologna (Italy)

d) Other (Provide website address or link to appropriate information):
Other scientific publications:
Petrillo, M., Buttinger, G., Corbisier, P., Leoni, G., Paracchini, V., Lambrecht, B., Panzarin, V., Terregino, C., Querci, M., & Marchini, A. (2024). In silico design and preliminary evaluation of RT-PCR assays for A(H5N1) bird flu surveillance (Versione v1). Zenodo. https://doi.org/10.5281/zenodo.1139569

Reports produced by other organisations in collaboration with IZSVe:
EU-EFSA The European Union One Health 2023 Zoonoses Report
https://www.efsa.europa.eu/en/efsajournal/pub/9106

Invited speakers at national training courses:

Leopardi, S. (2024) "Ecology of Zoonotic Infectious Diseases in Bats". Lecture at the Faculty of Veterinary Medicine, University of Padua 19/04/2024
Monne I (2024) "Epidemiology, evolution, and diagnostic features of avian-origin influenza viruses". Respiratory Viral Infections: Post-SARS-CoV-2 Scenarios. IRCCS Ospedale Sacro Cuore Don Calabria, 11-12/04/2024 Verona
Bonfante, F. (2024) "Phenotyping and the prioritization of risk pathogens for pandemic preparedness". 9th international conference on Emerging zoonoses. 10-12/06/2024 Palermo, Italy
Terregino, C. (2024) "One Health approach: integrated veterinary and human surveillance of emerging and re-emerging zoonotic pathogens". Development of a Genomic Monitoring System to tackle the COVID-19 Pandemic. UPO - University of Eastern Piemonte 24-25/03/2024 Novara, Italy

11. What have you done in the past year to advance your area of focus, e.g. updated technology?
- *Evaluation of the Prophylactic Efficacy of Monoclonal Antibodies Against SARS-CoV-2 EG.5.1 Infection in an Animal Model.*
- *Evaluation of the Efficacy of a Peptide-Mimetic Molecule in the Treatment of SARS-CoV-2 Infection in an Animal Model.*
- *Evaluation of the Therapeutic Efficacy of ARN19702 against West Nile Virus Infection in an Animal Model.*
- *Host-pathogen interactions: Isolation and characterization of primary cells derived from bats (Myotis myotis and Miniopterus schreibersii). Such cells will be used to compare the susceptibility of different hosts to emerging viral pathogens.*
- *Monitoring of invasive mosquitoes.*

- *Insecticide resistance studies.*
- *Development of new tools for mosquito catching and identification, iv) development of data/sample sharing platforms.*
- *Assessment of vectorial competence of autochthonous and invasive mosquitoes for endemic and exotic arboviruses such as experimental infections of Aedes koreicus and Ae. albopictus with dengue and West Nile virus and Cx. pipiens with West Nile virus (lineage 1 and 2).*
- *Assessment of molecular r-RT PCR protocols for the determination of WNV lineage 1 and WNV lineage 2 in mosquito matrix within the framework of the National Arboviruses Plan (PNA 2020-2025) to enhance rapid diagnosis of WNV circulation in vector (Early detection) and immediate activation of actions required to mitigate the risk of transmission to humans (Trigger factor).*
- *Assessment of molecular r-RT PCR protocols for the determination of DENV-1 and DENV-2 in mosquito matrix and application in vector competence studies or in field activities (i.e. surveillance in case of imported Dengue cases, autochthonous cases or epidemic emergency).*
- *Development of droplet digital PCR protocols for the determination of WNV lineage 1, WNV lineage 2, USUV and DENV-1 in different mosquito biological matrices.*

12. Additional comments regarding your report: