

OIE Reference Laboratory Reports Activities

Activities in 2019

This report has been submitted : 2020-01-15 10:47:15

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Highly and low pathogenic avian influenza
Address of laboratory:	OIE Reference Laboratory for Avian Influenza disease Istituto Zooprofilattico Sperimentale delle Venezie (IZSve) Viale dell'Università 10 - 35020 Legnaro (PD) - Italy
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Website:	www.izsvenezie.it
Name (including Title) of Head of Laboratory (Responsible Official):	Calogero Terregino, Head of the EU/National Reference Laboratory for AI/NDV. Director of the Research and Development Department/acting Director of the Specialized Virology and Experimental Research Unit (IZSve)
Name (including Title and Position) of OIE Reference Expert:	Isabella Monne, DVM PhD, Head of the Innovative diagnostic laboratory, Division of Research and Innovation (IZSve) (on maternity leave)
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
Haemoagglutination inhibition (HI)	Yes	13300	20
Neuraminidase inhibition	Yes	14	0
C-ELISA (AI-type A)	Yes	11101	20
AGID	Yes	315	0
Direct diagnostic tests		Nationally	Internationally
Virus Isolation	Yes	242	20
PCR	Yes	18183	472
Sequencing of AIV gene	Yes	29	3
IVPI - Intravenous Pathogenicity Index	Yes	2	2
WGS - Whole Genome Sequencing	Yes	52	34

**ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.**

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by the OIE?

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Control positive antigens	HI serological test	11.602/1.107 ml	532 ml	575 ml	17	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Control positive sera	HI/AGID serological test	1.236/1.283 ml	803 ml	480 ml	15	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Control negative serum	HI serological test	2.495/1.221 ml	1.125 ml	96 ml	8	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
NIGERIA	January	20	0
DENMARK	January	1	0
NIGER	February	38	0
HUNGARY	March	1	0
BULGARIA	April	0	2
BELGIUM	May	1	0
RUSSIA	June	0	1
BELGIUM	June	2	0
THE NETHERLANDS	June	2	0
FRANCE	October	0	20
GUINEA	October	25	0
BELGIUM	November	53	0
LIBYA	December	7	0

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
KOREA (REP. OF)	To provide information on: Avian Influenza reference centers (EU, FAO, OIE and OIE collaborating center): diagnostic workflow of the reference laboratory for Avian Influenza;Epidemiological approach to Avian Influenza control in Italy	Meeting at IZSVe
SOUTH AFRICA	Pan-African 2016-2018 spread of H5N8 highly pathogenic avian influenza (HPAI)	Remote assistance
ITALY	Opinion on Chapter 10.4. "Infection with high pathogenicity avian influenza viruses" of the OIE to Manual of Diagnostic Tests and Vaccines for Terrestrial Animals	Remote assistance to the National Focal Point upon request of the European Commission
IRAN	To provide information on incidence of H5N8 and investigation on the reasons of its ending in some areas.	Remote assistance
RUSSIA	To provide information on: Avian Influenza e Newcastle disease; prevention and control of AI and ND at national and regional level	Meeting at IZSVe

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Highly and low pathogenic avian influenza - Isabella Monne - italy

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
ARIMNET2-AVIAMED	3 years	Avian viral disease prevention and control with plant vaccines for the Mediterranean area	IZSVE (Italy), Agricultural Genetic Engineering Research Institute, Agricultural Research Center (Egypt), Institut Agronomique et Vétérinaire Hassan II (Morocco), Institut National de la Recherche Agronomique (Morocco), Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Italy)	EGYPT ITALY MOROCCO
HORIZON 2020: DELTA-FLU Dynamics of avian influenza in a changing world	5 years	Study of the key viral, host-related, and environmental factors that determine the dynamics of avian influenza (AI) in poultry and other host species, with the goal of improving prevention and control strategies against this disease	1)Friedrich- Loeffler- Institut (FLI) (Germany),2) Erasmus Universitair Medisch Centrum Rotterdam (The Netherlands),3) The Secretary of State for Environment, Food and rural Affairs (UK), 4) IZSVE (Italy), Universiteit Gent (Belgium),5) The University of Edinburgh (UK), 6) Linneuniversitetet (Sweden), 7) The University of Hong Kong (People's Rep. of China), 8) Southeast Poultry Research Laboratory (SEPRL), U.S. National Poultry Research Center, Agricultural Research Service, U.S. Department of Agriculture (USA), 9) Canadian Food Inspection Agency (CFIA) - Canada (associated partner)	BELGIUM CANADA CHINA (PEOPLE'S REP. OF) GERMANY SWEDEN THE NETHERLANDS UNITED KINGDOM UNITED STATES OF AMERICA
EFSA - Working Group on Avian Influenza	(for the time needed)	Avian influenza wg meeting - monitoring	IZSVE (Italy), APHA - Animal and Plant Health Agency (UK), Friedrich- Loeffler- Institut (Germany) (see EFSA https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2018.5493)	GERMANY ITALY UNITED KINGDOM
The Joint FAO/IAEA Programme - Nuclear Techniques in Food and Agriculture	12 months	In vivo challenge studies Evaluation of an Irradiated Influenza Vaccine in SPF Chicken and Comparison to a Traditional Vaccine in a Vaccination Challenge Trial	IZSVE (Italy), FAO and IAEA - Agricultural and Biotechnology Laboratories, Animal Production Health Laboratory (Austria)	AUSTRIA ITALY
OIE TWINNING between IZSve and the National Veterinary Research Institute (NVRI), (Regional Support Laboratory for Animal Influenzas and other Transboundary Animal Diseases) Nigeria	2 years	Improving NVRI laboratory capacity for a better control of the Avian Influenza virus at National and Regional level	IZSVE (Italy); National Veterinary Research Institute (NVRI), Regional Support Laboratory for Animal Influenzas and other Transboundary Animal Diseases (Nigeria)	ITALY NIGERIA
Studies on general avian virology and genetics	5 years	Exchange of scientists and technicians through short to medium term missions; sharing of knowledge and expertise	IZSVE (Italy); Avian Virology and Immunology service of Sciensano (Belgium)	BELGIUM ITALY

Collaboration in diagnostic and scientific research on host range, interspecies transmission and pathogenicity of influenza viruses	5 years	Training of research personnel; sharing of viruses, reagents, facilities and expertise	IZSVE (Italy); Philipps Universität Marburg (Germany)	GERMANY ITALY
Strengthening, promoting and developing research studies in the field of zoonotic viral agents	(for the time needed)	Collaboration in diagnostic and scientific research on host range, interspecies transmission and pathogenicity of human and animal viral diseases (including but not limited to influenza viruses) and other projects of mutual interest; training of research personnel.	IZSVE (Italy); The Department of Veterinary pathology and public health (DVPPH) of the Institute of Veterinary Science (IVS), University of Liverpool, UK	ITALY UNITED KINGDOM
Research studies relating to zoonotic viral agents including animal influenza viruses	5 years	Encouraging and promoting co-operation in the following areas: diagnostic and vaccine developments for influenza viruses; training of research personnel; sharing viruses, reagents, facilities and expertise. Training of research personnel	IZSVE - National Centre for Foreign Animal Disease - "NCFAD" (Canada)	CANADA ITALY
UNESCO Fellowship Programme	1 month	Sequencing and phylogeny of influenza viruses by performing Sanger and Illumina (NGS) sequencing of avian influenza viruses. Using public databases to analyze, download and deposit sequence data; learning to interpret a phylogenetic tree	IZSVE - The International Center Abdus Salam for Theoretical Physics" - ICTP, Morocco	ITALY MOROCCO

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
Collection and analysis of the information generated by epidemiological surveillance: ° National/regional surveillance programmes in poultry with reference to circulation of avian influenza viruses in domestic reservoir. In addition the RI supported a specific regional surveillance programme targeting areas of high sampling intensity and at a high risk of infection; ° Active Surveillance for avian influenza virus infection in wild birds and analysis of avian fecal samples from the environment in collaboration with the Italian National Institute for Environmental Protection and Research (ISPRA) and the hunting organisations; ° Regional passive surveillance programmes in wild birds performing analyses on dead specimens.

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:
° Publication of the study "Integration of genetic and epidemiological data to infer H5N8 HPAI virus transmission dynamics during the 2016-2017 epidemic in Italy" (Mulatti, P. et al. Dec 2018); https://www.izsvenezie.com/2016-2017-avian-influenza-epidemic-italy/ ° Publication of the study "Disentangling the role of Africa in the global spread of H5 highly pathogenic avian influenza" (Fusaro, A. et al. Nov 2019) https://www.izsvenezie.it/ruolo-africa-diffusione-globale-virus-influenza-aviaria/ (english under construction) ° National Information Systems: regular reporting of epidemiological data to the Ministry of Health and the European Commission; ° Supporting the OFFLU VCM network: the aim of the network is to identify animal influenza viruses with zoonotic potential, and to speed up production of human vaccines against zoonotic influenza, or pandemic viruses that have emerged from animals and that could have negatively impact on humans. ° Remote assistance to EU NRLs by email and through Mattermost, a flexible, open source messaging platform that enables secure team collaboration and enhances an active collaboration between veterinary/public health laboratories and scientists from the European Union (EU). This allows rapid dissemination of Avian Influenza and Newcastle disease updates.

13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)

a) Articles published in peer-reviewed journals: 9

Alarcon, P., Brouwer, A., Venkatesh, D., Duncan, D., Dovas, C.I., Georgiades, G., Monne, I., Fusaro, A., Dan, A., Smietanka, K., Ragias, V., Breed, A.C., Chassalevris, T., Goujgoulova, G., Hjulsager, C.K., Ryan, E., Sanchez, A., Niqueux, E., Tammiranta, N., Zohari, S., Stroud, D.A., Savic, V., Lewis, N.S., & Brown, I.H. (2018). Comparison of 2016-17 and Previous Epizootics of Highly Pathogenic Avian Influenza H5 Guangdong Lineage in Europe. *Emerging infectious diseases*, 24, 2270-2283.

Awuni, J.A., Bianco, A., Dogbey, O.J., Fusaro, A., Yingar, D.T., Salviato, A., Ababio, P.T., Milani, A., Bonfante, F., & Monne, I. (2019). Avian influenza H9N2 subtype in Ghana: virus characterization and evidence of co-infection. *Avian pathology: journal of the W.V.P.A.*, 1-65.

Boumart, Z., Bamouh, Z., Jazouli, M., Zecchin, B., Fusaro, A., Salviato, A., et al. (2019). Pathogenicity and Full Genome Sequencing of the Avian Influenza H9N2 Moroccan Isolate 2016. *Avian Diseases*, 63(1), 24-30.

Di Teodoro, G., Bortolami, A., Teodori, L., Leone, A., D'Alterio, N., Malatesta, D., et al. (2019). Replication kinetics

and cellular tropism of emerging reoviruses in sheep and swine respiratory ex vivo organ cultures. *Veterinary microbiology*, 234, 119-127.

Fusaro, A., Zecchin, B., Vrancken, B., Abolnik, C., Ademun, R., Alassane, A., Arafa, A., Awuni, J.A., Couacy-Hymann, E., Coulibaly, M.â.B., Gaidet, N., Go-Maró, E., Joannis, T., Jumbo, S.D., Minoungou, G., Meseko, C., Souley, M.M., Ndumu, D.B., Shittu, I., Twabela, A., Wade, A., Wiersma, L., Akpeli, Y.P., Zamperin, G., Milani, A., Lemey, P., & Monne, I. (2019). Disentangling the role of Africa in the global spread of H5 highly pathogenic avian influenza.10, 5310. *Nature Communications*, 11/22 doi:10.1038/s41467-019-13287-y

Fusaro,A.; Zecchin,B.; Vrancken,B.; Abolnik,C.; Ademun,A.R.; Akpeli,Y.P.; Alassane,A.; Awuni,J.A.; Couacy-Hymann,E.; Coulibaly,M.; Go-Maró,E.; Joannis,T.; Jumbo,S.D.; Minoungou,G.; Meseko,C.; Moutari,S.M.; Ndumu,D.B.; Twabela,A.; Wade,A.; Wiersma,L.; Zamperin,G.; Milani,A.; Lemey,P.; Monne,I.
Global origins of African highly pathogenic avian influenza H5Nx viruses and intracontinental spread
Int.J.Infect.Dis., 2019, 79, Suppl 1, 9-10, ELSEVIER SCI LTD, OXFORD; THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND, Vienna, Austria

Natima, N., Okurut, A., Ssentumbwe, J., Ilukor, J., Kirumira, M., Muwanga, E., Muwanga, F.N.,F., Ndumu, D., Kiconco, D., Arinaitwe, E., Monne, I., Pavade, G., Kamata, A., & von Dobschuetz, S. (April 2019). Managing the challenges of highly pathogenic avian influenza H5N8 outbreaks in Uganda: case study. *OIE Scientific and Technical Review*, 38

Nguyen, G.T., Rauw, F., Steensels, M., Ingraó, F., Bonfante, F., Davidson, I., & Lambrecht, B. (2019). Study of the underlying mechanisms and consequences of pathogenicity differences between two in vitro selected G1-H9N2 clones originating from a single isolate. *Veterinary research*, 50, 18-019-0635-1.

Twabela, A.T., Okamatsu, M., Tshilenge, G.M., Mpiana, S., Masumu, J., Nguyen, L.T., Matsuno, K., Monne, I., Zecchin, B., & Sakoda, Y. (2019). Molecular, antigenic, and pathogenic characterization of H5N8 highly pathogenic avian influenza viruses isolated in the Democratic Republic of Congo in 2017. *Archives of Virology*, 11/09 doi:10.1007/s00705-019-04456-x

b) International conferences: 4

Azzolini A., Gobbo F., Scolamacchia F., Cunial G., Gavazzi L., Bessi O., Terregino C., Bonfanti L. 2019. Two A/H1N1pdm cases in turkey breeders in Northeastern Italy. 13th EPIZONE Annual Meeting "Breaking Walls" 26-28 August 2019, Berlin, Germany, Pag 110

Bianco, A., Joannis, T., Ellero, F., Laleye, A., Inuwa, B., Olawuyi, K., Meseko, C., Shittu, I., Mazzucato, M. & Monne, I. (2019). OIE Twinning project between Italy and Nigeria: a valuable tool for sustainable capacity building and networking in West Africa for better control of Avian Influenza. In Anonymous Proceedings of the (p. 104). European Congress of Virology - ECV2019, Abstract book 28-04-2019 Rotterdam, NL

Bortolami, A., Gobbo, F., Zecchin, B., Fusaro, A., Leardini, S., Cecchetti, K., Pastori, A., Zamperin, G., Monne, I., Bonfante, F. & Terregino, C. (2019). A reverse zoonotic transmission event: A/H1N1/pdm (09) in a turkey breeder flock. 1st ICEVIM - 1st International Conference of the European College of Veterinary Microbiology, Abstract Book, (p. 33). 26-27 September, Athens, Greece

West, J., Röder, J., Beicht, J., Baumann, J., Doedt, J., Mounogou Kouassi, M., Zamperin, G., Gastaldelli, M., Salviato, A., Monne, I., Matrosovich, T., Bonfante, F. & Matrosovich, M. (2019). Phenotypic effects of human-type substitutions in the hemagglutinin of the 1968 pandemic influenza virus. In Anonymous Proceedings of the (p. 95). European Congress of Virology - ECV2019, Abstract book 28-04-2019 Rotterdam, NL

c) National conferences: 2

Fusaro, A., Milani, A., Cavicchio, L., Pastori, A., Schivo, A., Zamperin, G., Monne, I., Mion, M. & Beato, M.S. (2019). Inter- and intra-farm genetic diversity of swine influenza viruses in northeastern Italy. 3rd National Congress of the Italian Society Virology "One Virology One Health"(SIV-ISV Società Italiana di Virologia, Italian Society for Virology), Abstract book, (p. 98). 10-12 September 2019, Padova, Italy

Gobbo, F., Bortolami, A., Zecchin, B., Fusaro, A., Pastori, A., Zamperin, G., Monne, I. & Terregino, C. (2019). A/H1N1pdm(09) in a turkey breeder flock: occurrence of reverse zoonosis. 3rd National Congress of the Italian Society Virology "One Virology One Health"(SIV-ISV Società Italiana di Virologia, Italian Society for Virology), Abstract book, (p. 36). September 10-12, 2019, Padova, Italy

d) Other:

(Provide website address or link to appropriate information) 10

IZSVE website, OIE & FAO activities:

<https://www.izsvenezie.com/reference-laboratories/avian-influenza-newcastle-disease/oie-fao-activities/>

IZSVE website, European Union Reference Laboratory (EURL) for Avian Influenza and Newcastle Disease

<http://www.izsvenezie.com/reference-laboratories/avian-influenza-and-newcastle-disease/>

IZSVE's Study on Integration of genetic and epidemiological data during the 2016-2017 avian influenza epidemic in Italy

<https://www.izsvenezie.com/2016-2017-avian-influenza-epidemic-italy/>

IZSVE's contribution to the OIE Twinning Project between the IZSVE and the National Veterinary Research Institute of Nigeria

<https://www.izsvenezie.com/oie-twinning-project-izsve-nvri-nigeria-first-year/>

AVIAMED-ARIMNET2 - Avian viral disease prevention and control with plant vaccines for the Mediterranean area

<http://arimnet2.net/index.php/researchprojects/projects-2nd-call/aviamed>

DELTA-FLU Dynamics of avian influenza in a changing world

<https://delta-flu.fli.de/de/dynamics-of-avian-influenza-in-a-changing-world/>

Twitter: DELTA-FLU Annual Meeting 2019- Padova

https://twitter.com/delta_flu?ref_src=twsrc%5Etfw%7Ctwcamp%5Eembeddedtimeline%7Ctwtterm%5Eprofile%3Adelta_flu&ref_url=https%3A%2F%2Fdelta-flu.fli.de%2Fde%2Fdynamics-of-avian-influenza-in-a-changing-world%2F

WHO - Global Influenza Surveillance and Response System (GISRS)

http://www.who.int/influenza/gisrs_laboratory/en/

OIE -FAO OFFLU - Network of expertise on animal influenza

<http://www.offlu.net/index.php?id=51>

Global Collaboration on H5N8 and Related Influenza Viruses

<https://www.gisaid.org/collaborations/global-collaboration-on-h5n8/>

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries

To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 16

b) Seminars: 5

c) Hands-on training courses: 0

d) Internships (>1 month): 1

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
a	Austria	2
a	Austria	3
a	South Korea	11
c	Nigeria	3
c	Ghana	1
c	Morocco	1
d	Italy	1

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	certificato accreditamento 2017.pdf
ISO 17043	Accreditamento 0004 rev 3 Proficiency Testing Provider.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Avian Influenza Viruses isolation and differential diagnosis	ACCREDIA - Italian Accreditation System
Avian Influenza Viruses Antibodies agar gel immunodiffusion test	ACCREDIA - Italian Accreditation System
Avian Influenza Viruses Antibodies emoagglutination assay	ACCREDIA - Italian Accreditation System
Avian Influenza Virus subtype H5 RT-PCR	ACCREDIA - Italian Accreditation System
Avian Influenza Virus H5 sequence analysis	ACCREDIA - Italian Accreditation System
Avian Influenza Virus subtype H7 RT-PCR	ACCREDIA - Italian Accreditation System
Avian Influenza Virus H7 sequence analysis	ACCREDIA - Italian Accreditation System
Avian Influenza virus subtype H5 rRT-PCR	ACCREDIA - Italian Accreditation System
Avian Influenza Virus subtype H7 rRT-PCR	ACCREDIA - Italian Accreditation System
Avian Influenza Virus Antibodies serological enzyme-linked immunosorbent assay (ELISA)	ACCREDIA - Italian Accreditation System
Proficiency testing provider	ACCREDIA - Italian Accreditation System

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4*)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

20. Did your laboratory exchange information with other OIE Reference Laboratories designated for the same pathogen or disease?

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
European Proficiency Test on AI and ND	Organiser	36	Information available at IZSVe
OFFLU Proficiency Test on AI	Participants	Information available from organiser (OFFLU consortium)	Information available from organiser (CSIRO Newcomb - Australian Animal Health Laboratory (AAHL))

¹ validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
OFFLU VCM Consultation on the Composition of Influenza Virus Vaccines for the Northern Hemisphere	Antigenic and genetic characteristics of zoonotic influenza viruses and candidate vaccine viruses developed for potential use in human vaccines	1) EU Reference Laboratory, the Animal and Plant Health Agency (APHA) Surrey, UK; 2) National Avian Influenza Reference Laboratory Animal Influenza Laboratory of the Ministry of Agriculture, Harbin People's Rep. of China; 3) Hokkaido University Research Center for Zoonosis Control, Sapporo, Japan; 4) Indian Council of Agricultural Research (ICAR) National Institute of High Security Animal Diseases (NIHSAD), Bhopal, India.
European Food Safety Authority (EFSA)	EFSA Panel on Animal Health and Welfare (AHAW) - WG on Avian influenza	1) EU Reference Laboratory, the Animal and Plant Health Agency (APHA) Surrey, UK; 2) Friedrich- Loeffler- Institut (FLI) (Germany) See also https://www.efsa.europa.eu/en/topics/topic/avian-influenza
HORIZON 2020: DELTAFLU Dynamics of avian influenza in a changing world	Study of the key viral, host-related, and environmental factors that determine the dynamics of avian influenza (AI) in poultry and other host species, with the goal of improving prevention and control strategies against this disease	Friedrich- Loeffler- Institut (FLI) (Germany)
GISAID	The GISAID initiative promotes the international sharing of all influenza virus sequences, related clinical and epidemiological data associated with human viruses, and geographical as well as species-specific data associated with avian and other animal viruses, to help researchers understand how the viruses evolve, spread and potentially become pandemics	Information available from GISAID network

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at:
<http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
National Proficiency Test for Avian Influenza and Newcastle Disease (organiser)	20	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
VLADIA232 (participant)	Information available from organiser GD Animal Health (The Netherlands)	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency Test in the frame of the OIE Twinning Project "Improving NVRI laboratory capacity for a better control of the avian influenza virus at national and regional level" (organiser)	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency Test for Avian Influenza (organiser)	3	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency Test for Avian Influenza (organiser)	2	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency Test for Avian Influenza and Newcastle disease (organiser)	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Training on topics in the framework of the OIE TWINNING project on avian influenza between IZSve - National Veterinary Research Institute (NVRI)	Legnaro, Padova (Italy)	Training at IZSve of 4 participants from the National Veterinary Research Institute, Vom-Nigeria (NVRI)
Opinion on Chapter 10.4. "Infection with high pathogenicity avian influenza viruses" of the OIE to Manual of Diagnostic Tests and Vaccines for Terrestrial Animals	Italy	Remote assistance

25. Additional comments regarding your report: