OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-19 12:39:31

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Avian influenza
Address of laboratory:	Animal and Plant Health Agency New Haw Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM
Tel.:	+44 208 026 9680
Fax:	
E-mail address:	ian.brown@apha.gov.uk
Website:	https://www.gov.uk/government/organisations/animal-and-plant-health-agency
Name (including Title) of Head of Laboratory (Responsible Official):	Mr Ian Hewett , Acting Chief Executive
Name (including Title and Position) of OIE Reference Expert:	Professor Ian Brown Director of OIE/FAO International Reference Laboratory for Avian Influenza, Newcastle Disease and Swine Influenza
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	
Indirect diagnostic tests		Nationally	Internationally
HI	Yes	9882	192
AGP	Yes	10474	0
ELISA	Yes	0	0
Direct diagnostic tests		Nationally	Internationally
Real-time RT-PCR M gene	Yes	11073	320
Real-time RT-PCR H5	Yes	4633	233
H5 genetic analyses by Sanger sequencing	Yes	488	0
Real-time RT-PCR N5	Yes	3	0
Next Generation Sequencing	Yes	128	196
Real-time RT-PCR N7	Yes	0	0
Real-time RT-PCR N8	Yes	59	19
Egg inoculation/HA	Yes	1288	230
Real-time RT-PCR N1	Yes	1679	34
Real-time RT-PCR H7	Yes	3348	81

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
Antisera	HI	Provide	66ml	180ml	6	☒Africa ☐Americas ☒Asia and Pacific ☒Europe ☐Middle East
Antigen	HI	Provide	508ml	1065ml	7	☒Africa ☐Americas ☒Asia and Pacific ☒Europe ☐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?

Yes

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

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
Real-time RT-PCR (RRT-PCR) for the universal detection of all influenza A virus (IAV) subtypes of all species origins, specifically developed and extensively validated for sensitive and specific IAV detection to reflect the “One Health” initiative at the animal / human interface.	Alexander Nagy, Lenka Černíková , Kateřina Kunteová, Zuzana Dirbáková, SAUMYA S THOMAS, MAREK J SLOMKA, Ádám Dán, Tünde Varga, Martina Máté, Helena Jiřincová, IAN H BROWN. (2021)A universal RT-qPCR assay for ‘One Health’ detection of influenza A viruses. PLoS One. doi: 10.1371/journal.pone.0244669
Real-time RT-PCR (RRT-PCR) for the specific detection of AIV subtype H6 is validated and available for use as front-line diagnostic tools for avian influenza disease response and for wild bird surveillance in conjunction with the M-gene influenza A screening. Awaiting quality assurance to ISO 17025 standard.	Manuscript in preparation. This method has been shared on request with third parties.
Real-time RT-PCR (RRT-PCR) for the pathotyping of AIV subtype H5 is fully validated, accredited to the ISO17025 standard and being applied to frontline testing in conjunction with the M-gene influenza A screening for confirmation of high pathogenicity virus without the need for HA cleavage site sequencing in accord with the updated OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals. Information disseminated to partners . This methodology also being applied to wild bird surveillance for clade 2.3.4.4b H5 HPAI viruses	Joe James, Amanda H Seekings, Paul Skinner, Katie Purchase, Sahar Mahmood, Ian H Brown, Rowena DE Hansen, Ashley C Banyard, Scott M Reid. 2021. Rapid and sensitive detection of high pathogenicity Eurasian clade 2.3. 4.4 b avian influenza viruses in wild birds and poultry Journal of Virological Methods, 114454

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
GEORGIA	1/21	0	24
UKRAINE	1/21	0	4
KAZAKHSTAN	1/21	0	73
KUWAIT	1/21	0	6
NORWAY	2/21	0	5
AFGHANISTAN	3/21	0	2
UKRAINE	3/21	0	49
BANGLADESH	4/21	2348	0
IRELAND	4/21	0	2
KAZAKHSTAN	7/21	3	0
BOTSWANA	8/21	3	0
BOTSWANA	9/21	21	0
IRAQ	9/21	6	0
BOTSWANA	9/21	7	0
GEORGIA	10/21	81	0
KAZAKHSTAN	10/21	5	0
GEORGIA	11/21	79	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
ETHIOPIA	Outreach and engagement -Offer of assistance	Email
MALI	Outreach and engagement -Offer of assistance	Email
TAJIKISTAN	Outreach and engagement -Offer of assistance	Email
GUINEA	Outreach and engagement -Offer of assistance	Email
COTE D'IVOIRE	Outreach and engagement -Offer of assistance	Email
TANZANIA	Outreach and engagement -Offer of assistance	Email
GHANA	Outreach and engagement -Offer of assistance	Email
PAKISTAN	Outreach and engagement -Offer of assistance	Email
BANGLADESH	Outreach and engagement -Offer of assistance	Email
BOTSWANA	Outreach and engagement -Offer of assistance	Email

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

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Use of Stable Isotopes to Trace Bird Migrations and Molecular Nuclear Techniques to Investigate the Epidemiology and Ecology of the Highly Pathogenic Avian Influenza (Phase II). IAEA project code: D32034	2018-2023	To employ stable isotope analysis (SIA) to monitor the geographic origins of AIV-infected migratory birds which are infected with AIV, in particularly the clade 2.3.4.4 H5Nx HPAIVs which are currently epidemiologically important and have incurred from Asia to Europe and onwards into Africa in recent years.	The project is funded by the International Atomic Energy Agency (IAEA) Animal Production and Health Section. The partner labs include: Western University, London, Ontario, Canada (to do the SIA), but collection of wild bird specimens is sourced from partners in: Novosibirsk State University, Novosibirsk, Russian Federation University of Jos, Nigeria Agricultural, Medical and Industrial Research School (AMIRS-NSTRI), Karaj, Iran Institute for Diagnosis and Animal Health, Bucharest, Romania APHA (UK) and FLI (Germany) have an AIV consultancy role, with the Leibniz Institute for Zoo and Wildlife Research (Berlin, Germany) providing similar consultancy for the SIA elements of the project.	GERMANY
DELTA-FLU: Dynamics of avian influenza in a changing world	June 2017 – Nov 2022 (60 months but extended due to COVID pandemic)	DELTA-FLU aims to determine 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 Erasmus University Medical Center (EMC), Netherlands Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe), Italy University of Ghent (UGENT), Belgium Roslin Institute, University of Edinburgh (UEDIN), United Kingdom Linnaeus University (LNU), Sweden University of Hong Kong (UHK), Hong Kong Southeast Poultry Research Laboratory, United States Department of Agriculture (SEPRL), United States Canadian Food Inspection Agency (CFIA), Canadag	ITALY

Antigenic characterisation of H5 HPAI	2017-2020	To develop methods to map and define the antigenic properties of H5 HPAI Asian lineage viruses. The data will be used to map predicted vaccine match in order to improve vaccination control strategies.	OFFLU Global Animal Influenza network AI subgroup	
One Health Poultry Hub	2019-2024	Hub researchers are characterising the networks through which chickens are produced and chickens and chicken products distributed to identify points of high disease risk as well as where and how interventions to mitigate disease risk are best made. Hub researchers are assessing how pathogens and genes can transmit between chickens and from chickens to people and back again - focusing in particular on how this is influenced by how chickens are kept and traded. This is vital information to inform potential interventions. https://www.onehealthpoultry.org	Our Hub is led by the Royal Veterinary College (RVC) London, and comprises partners in Asia, Europe and the UK. 27 partners in total. Key focus for programme Vietnam, India, Sri Lanka and Bangladesh	BANGLADESH
Ecology and evolution of avian influenza A virus in wild and domestic birds in the Caucasus.	2014-2021	A project to develop a pipeline from sample collection through to both genetic and antigenic characterisation. This project aims to sample and define viruses present at the wild bird: poultry interface in the Caucasus region	National Institute of Allergy and Infectious Diseases Centers of Excellence for Influenza Research and Surveillance (CEIRS) Program, Georgia.	UNITED STATES OF AMERICA
Kazakhstan OIE Twinning on AI and ND	2019-2022	The Twinning Project’s goal is to enhance the technical expertise and skills of the Candidate Institute’s personnel and demonstrate that it possesses the competency required of an OIE reference laboratory for Avian Influenza and Newcastle disease.	Kazakh Scientific Research Veterinary Institute KazSRVI , Almaty, KZK	KAZAKHSTAN
Avian Flu Study in local production systems (HIVE)	2019-2022	Avian Influenza surveillance with relevance to food security in Africa	Coordinated with University of Surrey (Nigeria, Tanzania, Uganda, Ethiopia)	
OFFLU VCM	Ongoing annual	APHA has contributed, reagents, data and expertise to the biannual WHO VCM activities. During 2020, APHA currently holds the chair for OFFLU VCM activities.	OFFLU network	
Development of a Central Asian hub for AI and NDV	2020-2022	Organisation of a workshop to evaluate the current burden of AI and NDV across Central Asia	Ministry of Defence and OIE	

Centers of Excellence for Influenza Research and response (CEIRR)	2021-2029	Development of pipelines for evaluation of the emergence of avian influenza viruses of pre-pandemic or pandemic risk.	NIAID funded programme. APHA supported via interactions with RVC and PennCEIRR. CEIRR Network (ceirr-network.org)	

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:
Genetic sequencing and characterisation of viruses circulating in a range of countries requesting assistance.

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:
Genetic sequencing and characterisation of viruses circulating in a range of countries requesting assistance.

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: 18
Verhagen, J. H., Fouchier, R. A. M. and Lewis, N. (2021) 'Highly Pathogenic Avian Influenza Viruses at the Wild–Domestic Bird Interface in Europe: Future Directions for Research and Surveillance', Viruses, 13(2), p. 212. doi: 10.3390/v13020212.

Joe James, Amanda H Seekings, Paul Skinner, Katie Purchase, Sahar Mahmood, Ian H Brown, Rowena DE Hansen, Ashley C Banyard, Scott M Reid. 2021. Rapid and sensitive detection of high pathogenicity Eurasian clade 2.3. 4.4 b avian influenza viruses in wild birds and poultry. Journal of Virological Methods, 114454.
Joanne Marie M Del Rosario, Kelly AS da Costa, Benedikt Asbach, Francesca Ferrara, Matteo Ferrari, David A Wells, Gurdip Singh Mann, Veronica O Ameh, Claude T Sabeta, Ashley C Banyard, Rebecca Kinsley, Simon D Scott, Ralf Wagner, Jonathan L Heeney, George W Carnell, Nigel J Temperton. 2021. Exploiting Pan Influenza A and Pan Influenza B Pseudotype Libraries for Efficient Vaccine Antigen Selection. Vaccines 9 (7), 741

Fabian ZX Lean, Alejandro Núñez, Ashley C Banyard, Scott M Reid, Ian H Brown, Rowena DE Hansen. 2021. Gross pathology associated with highly pathogenic avian influenza H5N8 and H5N1 in naturally infected birds in the UK (2020–2021). Veterinary Record, e731

REID S; BROOKES S; HANSEN R; WELCHMAN D; Irvine R; BROWN IH (2021)
Testing for exclusion of avian notifiable disease: six-year review.
Veterinary Record 189 (5) 193-195.

https://doi.org/10.1002/vetr.902

REID SM; BROOKES SM; HANSEN RDE; BROWN IH; Irvine RM; WELCHMAN D (2021)
Testing to exclude notifiable disease in birds in Great Britain (letter).
Veterinary Record 189 (5) 207.
https://doi.org/10.1002/vetr.909

LEWIS NS; BANYARD AC; WHITTARD E; Karibayev T; Kafagi TA; Chvala I; BYRNE A; Akberovna SM; King J; Harder T; Grund C; ESSEN S; REID SM; BROUWER A; Zinyakov NG; Tegzhanov A; Irza V; Pohlmann A; Beer M; Fouchier RAM; Akievich SA; BROWN IH (2021)
Emergence and spread of novel H5N8, H5N5 and H5N1 clade 2.3.4.4 highly pathogenic avian influenza in 2020 (letter).
Emerging Microbes and Infections 10 (1) 148-151.
https://dx.doi.org/10.1080/22221751.2021.1872355

Nagy A; Cernikova L; Kunteova K; Dirbakova Z; THOMAS SS; SLOMKA MJ; Dan A; Varga T; Mate M; Jirincova H; BROWN IH (2021)
A universal RT-qPCR assay for “One Health” detection of influenza A viruses.
PLoS ONE 16 (1): e0244669.
https://doi.org/10.1371/journal.pone.0244669

Al-Beltagi S; Preda CA; Goulding LV; JAMES J; Pu J; SKINNER P; Jiang Z; Wang BL; Yang J; BANYARD AC; Mellits KH; Gershkovich P; Hayes CJ; Nguyen-Van-Tam J; BROWN IH; Liu J; Chang K-C (2021)
Thapsigargin is a broad-spectrum inhibitor of major human respiratory viruses: coronavirus, respiratory syncytial virus and influenza a virus.
Viruses 13 (2) 234.
https://doi.org/10.3390/v13020234

SEEKINGS AH; WARREN CJ; THOMAS SS; MAHMOOD S; JAMES J; BYRNE AMP; WATSON S; BIANCO C; NUNEZ A; BROWN IH; BROOKES SM; SLOMKA MJ (2021)
Highly pathogenic avian influenza virus H5N6 (clade 2.3.4.4b) has a preferable host tropism for waterfowl reflected in its inefficient transmission to terrestrial poultry.
Virology 559, 74-85.
https://doi.org/10.1016/j.virol.2021.03.010

Lewis NS; BANYARD AC; ESSEN S; WHITTARD E; Coggon A; HANSEN R; REID S; BROWN IH (2021)
Antigenic evolution of contemporary clade 2.3.4.4 HPAI H5 influenza A viruses and impact on vaccine use for mitigation and control.
Vaccine 39 (29) 3794-3798.
https://doi.org/10.1016/j.vaccine.2021.05.060

Madslien K; Moldal T; Gjerset B; Gudmundsson S; Follestad A; WHITTARD E;
Tronerud O-H; Dean KR; Akerstedt J; Jorgensen HJ; das Neves CG; Romo G (2021)
First detection of highly pathogenic avian influenza virus in Norway.
BMC Veterinary Research 17, Article number: 218.
https://doi.org/10.1186/s12917-021-02928-4

FLOYD T; BANYARD AC; LEAN FZX; BYRNE AMP; FULLICK E; WHITTARD E;
MOLLETT BC; Bexton S; SWINSON V; MACRELLI M; Lewis NS; REID SM; NUNEZ A; DUFF JP; HANSEN R; BROWN IH (2021)
Encephalitis and death in wild mammals at a rehabilitation center after infection with highly pathogenic avian influenza a(H5N8) virus, United Kingdom.
Emerging Infectious Disease 27 (1) 2856-2863.
https://doi.org/10.3201/eid2711.211225

DUFF P; HOLMES P; AEGERTER J; MAN C; FULLICK E; REID S; LEAN F; NUNEZ A; HANSEN R; TYE J; STEPHAN L; BROWN I; Robinson C (2021)
Investigations associated with the 2020/21 highly pathogenic avian influenza epizootic in wild birds in Great Britain.
Veterinary Record 189 (9) 356-358.
https://doi.org/10.1002/vetr.1146

Sealy JE; HOWARD WA; Molesti E; Iqbal M; Temperton NJ; BANKS J; SLOMKA MJ; Barclay WS; Long JS (2021)
Amino acid substitutions in the H5N1 avian influenza haemagglutinin alter pH of fusion and receptor binding to promote a highly pathogenic phenotype in chickens.
Journal of General Virology 102 (11) 001672.
https://doi.org/10.1099/jgv.0.001672

Zecchin B; Goujgoulova G; Monne I; Salviato A; Schivo A; Slavcheva I; Pastori A;
BROWN IH; Lewis NS; Terregino C; Fusaro A (2021)
Evolutionary dynamics of H5 highly pathogenic avian influenza viruses (clade 2.3.4.4B) circulating in Bulgaria in 2019-2021.
Viruses 13 (10) 2086.
https://doi.org/10.3390/v13102086

Ripa RN; Sealy RE; Raghwani J; Das T; Barua H; Masuduzzaman Md; Saifuddin AKM;
Huq R; Uddin MI; Iqbal M; BROWN I; LEWIS NS; Pfeiffer D; Fournie G; Biswas PK (2021)
Molecular epidemiology and pathogenicity of H5N1 and H9N2 avian influenza viruses in clinically affected chickens on farms in Bangladesh.
Emerging Microbes and Infection 10 (1) 2223-2234.
https://doi.org/10.1080/22221751.2021.2004865

Alexander M. P. Byrne , Scott M. Reid *, Amanda H. Seekings, Alejandro Nunez , Ana B. Obeso Prieto , Susan Ridout , Caroline J. Warren, Anita Puranik , Vanessa Ceeraz , Stephen Essen , Marek J. Slomka , Jill Banks, Ian H. Brown, Sharon M. Brookes (2021) H7N7 avian influenza virus mutation from low to highly pathogenic on a layer chicken farm in the UK
Special Issue Evolution and Pathogenesis of Avian and Animal Influenza Viruses doi: 10.3390/v13020259
https://www.mdpi.com/1999-4915/13/2/259/htm
I.H.Brown, M.J.Slomka, C.A. Cassar, L.M.Mcelhinney, & A.Brouwer IN PRESS The role of national and international veterinary laboratories Chapter 10 In Diagnostic test validation science: a key element for effective detection and control of infectious animal diseases", OIE Scientific and Technical Review

b) International conferences: 9
A Banyard. 2021. International Scientific and Practical Conference "Modern ways of preventing the most common infectious and invasive diseases of animals" July 23, Tajik Academy of Agricultural Sciences, Rudaki Avenue 21a, Dushanbe

A Banyard, I Brown, N. Lewis- Meeting on the formation of Avian influenza and Newcastle disease diagnosis and surveillance subnetwork- OIE International Workshop organised by A Banyard and OIE regional representatives and involving presentations from all Central Asian countries. Avian Influenza and Newcastle disease network - OIE - Europe

N. Lewis- Autumn 2021: BBC World Service programme on avian influenza- BBC Radio 4 Inside Science "The Jump". Broadcast March 2021

N Lewis- September 2021:WHO Influenza Virus Vaccine Composition Meeting, Geneva

N Lewis- February-March 2021: WHO Influenza Virus Vaccine Composition Meeting, Zoom including zoonotic candidate vaccine viruses

Ian Brown representing OIE : Committee on Global Coordination, Partnerships, and Financing Recommendations for Advancing Pandemic and Seasonal Influenza Vaccine Preparedness and Response; USA national academies of Science, Engineering and Medicine; 10th March 2021

Ian Brown- WVPA-South Africa, 20-22/4/21; Growing threat from H5 HPAI

Ian Brown; The drivers of emergence and spread of avian disease epidemics. Towards a New Mindset for Epidemic Diseases; Berbetos Seminar 1/9/21

Ian Brown; Repeated threat to Europe from H5 HPAI and options for control; Emerging Animal Infectious Disease Conference; College of Agricultural Science, Penn State 10/12/21

c) National conferences: 0

d) Other:
(Provide website address or link to appropriate information) 0

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?

No

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/IEC 17025:2017	Acrobat Document.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Haemagglutination inhibition test	UKAS
AGIDT	UKAS
Matrix (M)-gene PCR	UKAS
H5 real-time PCR(HA2)	UKAS
H5 real-time PCR(Pathotyping)	UKAS
H7 real-time PCR (cleavage site)	UKAS
Real-time RT-PCR N5 to N9	UKAS
Next Generation Sequencing	UKAS
H7 real-time PCR (HA2)	UKAS
Avian influenza virus nucleotide sequencing	UKAS
Neuraminidase inhibition	UKAS
Virus isolation in goose eggs (via allantoic cavity)	UKAS
Virus isolation in SPF chicken eggs (via allantoic cavity)	UKAS
IVPI	UKAS

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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
WHO VCM for avian viruses	02/21	virtual	Nicola Lewis led on analytics and presented on behalf of OFFLU	AI OFFLU VCM report
WHO VCM for avian viruses	11/21	virtual	Nicola Lewis led on analytics and presented on behalf of OFFLU	AI OFFLU VCM report
OFFLU joint steering and executive committees	04/21	Virtual	Ian Brown chaired Nicola Lewis - speaker	Standard agenda
OFFLU joint steering and executive committees	11/21	Virtual	Ian Brown chaired Nicola Lewis - speaker	Standard agenda
Central Asian animal health network	1/21	Virtual	Ashley Banyard organised, chaired and presented; Ian Brown and Nicola Lewis presented	IRL activities AI genetics work

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.
OFFLU lab harmonisation test	Participant	12	CSIRO, Australian Animal Health Laboratory, AAHL, Geelong, Australia Laboratório Nacional Agropecuário, LNA, Campinas, Brazil National Center for Foreign Animal Disease, Canada Friedrich Loeffler Institute, FLI, Riems, Germany National Institute of High Security Animal Diseases, ICAR, Bhopal, India Istituto Zooprofilattico Sperimentale delle Venezie, IZSV, Legnaro, Italy Research Center for Zoonosis Control, RCZC, Sapporo, Japan National Veterinary Services Laboratory, NVSL, Ames, USA Southeast Poultry Research Laboratory, SPRL, Athens, USA Laboratory C, undisclosed/confidential FGBI, Federal Centre for Animal Health, Russia
EURL Proficiency test	Participant	40	All EU members states, Belarus, Bosnia and Herzegovina, Montenegro, Norway, Russia, Serbia, Switzerland, North Macedonia, Turkey, Ukraine, UK

[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
Production of data for use at WHO VCM meeting (February and September)	Produced antigenic and genetic data to inform candidate vaccine preparedness for protecting human health.	APHA-Weybridge; Friedrich Loeffler Institute, Riems, Germany; Istituto Zooprofilattico Sperimentale delle Venezie, IZSVe, Legnaro, Italy; CSIRO, Australian Animal Health Laboratory, AAHL, Geelong, Australia; National Veterinary Services Laboratory, NVSL, Ames, USA

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
PT exercise (extended to other OIE member countries) Conventional and molecular panels for NRLs	31	☒Africa ☐Americas ☒Asia and Pacific ☒Europe ☒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)
OFFLU meetings to develop and apply strategic programme of work	Vitrual	Provision of data to the WHO Vaccine Composition Meeting; attendance at OFFLU coordination teleconferences, provision of advice and laboratory data as part of the OFFLU dossier for submission for VCM (February and September meetings). Leading OFFLU representation at September WHO VCM meeting.

25. Additional comments regarding your report: