

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-18 10:50:07

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Avian influenza
Address of laboratory:	CSIRO Australian Centre for Disease Preparedness 5 Portarlington Road East Geelong Victoria 3219 AUSTRALIA
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E-mail address:	Frank.Wong@csiro.au
Website:	www.csiro.au
Name (including Title) of Head of Laboratory (Responsible Official):	Prof Trevor Drew Director
Name (including Title and Position) of OIE Reference Expert:	Dr Frank Wong Senior Research Scientist
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
cELISA	Yes	990	0
HI Test	Yes	0	0
Direct diagnostic tests		Nationally	Internationally
Real-time PCR	Yes	4902	487
Virus Isolation	Yes	193	8
PCR / Sequencing	Yes	120	58
Immunohistochemistry	No	9	0
HI Typing	Yes	17	6
IVPA	Yes	0	0
IVPI	Yes	0	0

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
National Quality control (NQC) for LEADDR network (PCR)	PCR	Produced and provided	55ml	140ml-Singapore and New Caledonia	2 (Australia and New Zealand)	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
National Quality control (NQC) for LEADDR network (ELISA)	ELISA	Produced and provided	10ml		2 (Australia and New Zealand)	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input 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
NEPAL	July	15	0
PHILIPPINES	July	0	12
CHINA (PEOPLE'S REP. OF)	November	0	76

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
INDONESIA	Laboratory Strengthening focusing on building diagnostic capacities for DIC Wates to become a national reference centre for Avian Influenza, and for application of NGS & bioinformatics to EID Investigations for ASEAN.	Remote by teleconferences, workshops and email communications
NEW CALEDONIA	Supported and advised on diagnostic investigation and test protocols	Remote by teleconferences and email communications
PAPUA NEW GUINEA	Laboratory Strengthening focusing on building diagnostic capacities for the national veterinary lab at PNG National Animal Health & Quarantine Inspection Authority, towards quality assurance and ISO 17025 laboratory standards	Remote by teleconferences, workshops and email communications
THAILAND	Proficiency Testing provider training to the National Institute for Animal Health for swine and avian diseases	Remote by teleconferences and email communications
VIETNAM	Laboratory Twinning with the Regional Animal Health Office No. 6 (RAHO-6) in Ho Chi Minh City, focusing on building diagnostic and reference lab capacities for swine respiratory diseases, diagnostic quality assurance and ISO 17025 laboratory standards	Remote by teleconferences and email communications

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
Facilitation and implementation of the Influenza Virus Monitoring (IVM) Network and provision of related laboratory support and training in Indonesia	1 year (ongoing)	ACDP provides technical assistance to the continued facilitation of a FAO supported project fostering development of a molecular surveillance information management system through a national influenza virus monitoring network, to detect and monitor the detection of variants of the H5N1 HPAI virus.	FAO-ECTAD Indonesia/Government of Indonesia Ministry of Agriculture, DGLAHS DIC laboratory network in Indonesia	INDONESIA
Diagnostic preparedness for circulating and emerging avian influenza strains from disease outbreaks and surveillance	1 year (ongoing)	In partnership with the OFFLU and Reference Centre networks, ACDP receives AI samples and AIV isolates from the region and evaluates the performance of diagnostic tests, fine tuning tests here needed, validating new tests, and preparing and distributing reagents regionally for surveillance and diagnosis	OFFLU & national animal health laboratories in multiple member countries	CAMBODIA CHINA (PEOPLE'S REP. OF) INDONESIA NEPAL NEW CALEDONIA PAPUA NEW GUINEA PHILIPPINES
Virus characterization and risk assessment of endemic and emerging avian and swine influenzas in Indo-Pacific Countries	1 year (ongoing)	Review the antigenic and genetic characteristics of recently detected avian and swine influenza viruses including A(H5), A(H7) and A(H9) and other subtype viruses for the OFFLU contribution to the WHO GISRS VCM Technical Activity to assess candidate Pandemic vaccine seed viruses. ACDP is a core contributor to the OFFLU WHO VCM Technical Activity.	WHO, OFFLU, animal health laboratories in multiple countries	CAMBODIA CHINA (PEOPLE'S REP. OF) INDONESIA NEPAL PHILIPPINES
Virus characterization and risk assessment of endemic and emerging zoonotic avian influenza and other infectious animal diseases in Cambodia.	1 year (ongoing)	Determine and review the antigenic and genetic characteristics of recent zoonotic avian influenza viruses including A(H5), A(H7) and A(H9) viruses received from Cambodia.	Institute Pasteur Cambodia (IPC), WHO Collaborating Centre for Reference and Research on Influenza (WHOCCRI), Melbourne, and NaVRI Cambodia	CAMBODIA

EID surveillance at the wildlife interface	2 years	Development of eDNA and virologic EID surveillance pipelines at the wildlife-livestock interface	Australian Government DFAT Indo-Pacific Centre for Health Security and Government of Indonesia Ministry of Research at BRIN Research Center for Biology	INDONESIA
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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:
Avian influenza sample epidemiological data and virus genetic and antigenic characterization data

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:
Avian influenza sample epidemiological data and virus genetic and antigenic characterization data

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

1. Annand, E., High, H., Wong, F., Phommachanh, P., Chanthavisouk, C., Happold, J., Dhingra, M., Eagles, D., Britton, P & Alders, R., (2021) Highly pathogenic avian influenza in Sekong province Lao PDR 2018-Potential for improved surveillance and management. *International Journal of Infectious Diseases*, 101(S1), 336-383.

2. Bowden, T., Crowther, J. & Wang, J., (2021) Review of critical factors affecting analytical characteristics of serological and molecular assays. *Revue Scientifique et Technique*, 40 (1), 53-73.

3. Caraguel, C.G.B. & Colling, A., (2021) Diagnostic likelihood ratio the next-generation of diagnostic test accuracy measurement. In *Diagnostic test validation science: a key element for effective detection and control of infectious animal diseases*. *Rev. Sci. Tech. Off. Int. Epiz.*, 40 (1), 299-309. doi:10.20506/rst.40.1.3226. (A. Colling & I.A. Gardner, eds).

4. Hobbs, E.C., Colling, A., Gurung, R.B. & Allen, J., (2021) The potential of diagnostic point-of-care tests (POCTs) for infectious and zoonotic animal diseases in developing countries: Technical, regulatory and sociocultural considerations. *Transbound Emerg Dis*, 68(4): 1835-1849.

5. Mara, K., Dai, A., Brice, A.M., Alexander, M.R., Tribolet, L., Layton, D.S. & Bean, A.G.D., (2021) Investigating the Interaction between Negative Strand RNA Viruses and Their Hosts for Enhanced Vaccine Development and Production. *Vaccines (Basel)*, 9(1).

6. Newberry, K. & Colling, A., (2021) Quality standards and guidelines for test validation for infectious diseases in veterinary laboratories. In Diagnostic test validation science: a key element for effective detection and control of infectious animal diseases. Rev. Sci. Tech. Off. Int. Epiz., 40 (1), 227-237. doi:10.20506/rst.40.1.3220. (A. Colling & I.A. Gardner, eds).

7. Tong, Z. W. M., Karawita, A.C., Kern, C., Zhou, H., Sinclair, J.E., Yan, L., Chew, K.Y., Lowther, S., Trinidad, L., Challagulla, A., Schat, K.A., Baker M.L. & Short K.R., (2021) Primary Chicken and Duck Endothelial Cells Display a Differential Response to Infection with Highly Pathogenic Avian Influenza Virus. Genes (Basel), 12(6).

8. Waugh, C., & Clark, G.A., (2021) Factors affecting test reproducibility among laboratories. In Diagnostic test validation science: a key element for effective detection and control of infectious animal diseases. Rev. Sci. Tech. Off. Int. Epiz., 40 (1), 131-143. (I.A. Gardner & A. Colling, eds).

9. Wille, M., Grillo, V., Ban de Gouvea Pedroso, S., Burgess, G.W., Crawley, A., Dickason, C., Hansbro, P.M., Hoque, M.A., Horwood, P.F., Kirkland, P.D., Kung, N.Y.H., Lynch, S.E., Martin, S., McArthur, M., O'Riley, K., Read, A.J., Warner, S., Hoye, B.J., Lisovski, S., Leen, T., Hurt, A.C., Butler, J., Broz, I., Davies, K.R., Mileto, P., Neave, M., Stevens, V., Breed, A., Lam, T.T.Y., Holmes, E.C., Klaassen, M., Wong, F.Y.K., (2021) Australia as a global sink for the genetic diversity of avian influenza A virus. bioRxiv 2021.11.30.470533; doi: <https://doi.org/10.1101/2021.11.30.470533>

b) International conferences: 6

1. FAO virtual consultation on non-avian zoonotic influenza in Asia, FAO-RAP Bangkok, Thailand on 20 January, 26 January, 3 February & 10 February 2021. ACDP experts presented and participated.

2. OIE 3rd Regional Meeting for OIE Reference Centres in Asia & the Pacific (virtual), OIE-RRAP Tokyo, Japan on 24-25 February 2021. ACDP experts presented and participated.

3. Chinese Academy of Agricultural Science (CAAS) and CSIRO Theme Workshop on Animal Sciences and Veterinary Medicine, CSIRO on 7 May 2021. ACDP experts presented and participated.

4. OIE Regional Expert Network Meeting for Avian Diseases in Asia & the Pacific (virtual), OIE-RRAP Tokyo, Japan on 29-30 February 2021. ACDP experts presented and participated.

5. FAO Expert Group Consultation Towards Mitigating Pandemic Influenza Risk, FAO-RAP Bangkok, Thailand on 30 November - 3 December 2021. ACDP experts chaired and presented.

6. OIE Regional Expert Network Meeting for Avian Diseases in Asia & the Pacific (virtual), OIE-RRAP Tokyo, Japan on 10 December 2021. ACDP experts presented and participated.

c) National conferences: 1

1. National Avian Influenza in Wild Birds (NAIWB) Surveillance Program Annual Conference (extended virtual meetings by Zoom), Wildlife Health Australia, Sydney on 21 September & 28 October 2021. ACDP experts presented and participated.

d) Other:

(Provide website address or link to appropriate information) 5

1. Wong, F.Y.K., & Readford, P., (2021) DFAT Indo-Pacific Centre for Health Security Laboratory Twinning Biosafety Training and Laboratory Placements Project Milestone 5 Report: Strengthening the capacity and creating a Sustainable Animal Health Laboratory Network in the Indo-Pacific through targeted technical laboratory twinning, biosafety training and laboratory placements. CSIRO, 17 March 2021.

2. Readford, P., & Wong, F.Y.K., (2021) DFAT Indo-Pacific Centre for Health Security Laboratory Twinning Biosafety Training and Laboratory Placements Project Milestone 5 Report: Strengthening the capacity and creating a Sustainable Animal Health Laboratory Network in the Indo-Pacific through targeted technical laboratory twinning, biosafety training and laboratory placements. CSIRO, 30 September 2021.

3. FAO-ECTAD Indonesia High Level Avian Influenza Surveillance and Vaccination Consultation Meeting, Government of Indonesia, Jakarta, Indonesia on 13-14 December 2021. ACDP expert presented and participated.

(Provide website address or link to appropriate information)

4. Contributions to OFFLU (<https://www.offlu.org/>) guidance notes on:

- OFFLU Zoom call on notifications of H5 HPAI in seal and fox in the United Kingdom on 30 March 2021

- OFFLU Zoom call for avian influenza global situation updates 8 November 2021 (chair)
- OFFLU avian influenza statement 10 November 2021
- OFFLU statement on H5N1 in Newfoundland, Canada 23 December 2021
- OFFLU Influenza A cleavage site updates
- OFFLU Executive & Steering Committees Meetings as member of EC and Chair of Avian Influenza

Technical Activity

- Contributions to the OFFLU-WHO VCM on zoonotic influenza by ACDP expert
https://www.who.int/influenza/vaccines/virus/characteristics_virus_vaccines/en/

5. Contributions to WHO TIPRA by ACDP expert

https://www.who.int/influenza/human_animal_interface/tipra/en/

***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: 0
- b) Seminars: 9
- c) Hands-on training courses: 7
- d) Internships (>1 month): 0

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
B, C (virtual)	Indonesia	6
B (virtual)	Indonesia	13
B, C (virtual)	Indonesia	10
B (virtual)	Indonesia	13
B (virtual)	Indonesia	5
B, C (virtual)	Indonesia	9
C (virtual)	Brunei, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand	26
B (virtual)	Cambodia, Indonesia, Laos, Myanmar, Papua New Guinea, Philippines, Timor-Leste, Vietnam	100
C (virtual)	Indonesia, New Zealand, Philippines, Singapore, Thailand, United Arab Emirates, Vietnam	18
B, C (virtual)	Cambodia, Indonesia, Laos, Papua New Guinea, Thailand, Timor-Leste, Vietnam	13
B, C	Cambodia, Indonesia, Laos, Papua New Guinea, Timor-Leste, Thailand, Vietnam	11

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 & ISO 17043	NATA ISO 17025 & 17043 Certificates.pdf
ISO 9001	BSI ISO 9001 Certificate.pdf
ISO 14001	BSI ISO 14001 Certificate.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Testing for sterility and freedom from contamination of biological materials intended for veterinary use - Innocuity (Bacterial culture - Biphasic medium, mycoplasma broth; Dark field microscopy; Embryonated egg culture; Enzyme linked immunosorbent assay (ELISA); Fluorescent antibody test; Haemagglutination; PCR - Quantitative (qPCR); Polymerase chain reaction (PCR); Virus isolation)	NATA (ILAC affiliated)
Testing for sterility and freedom from contamination of biological materials intended for veterinary use - Innocuity (Embryonated egg culture; Enzyme linked immunosorbent assay (ELISA); Fluorescent antibody test; Bacterial culture - Biphasic medium, mycoplasma broth; Dark field microscopy; PCR - 16S Universal; Virus isolation; Haemagglutination; Indirect fluorescent antibody; Polymerase chain reaction (PCR); PCR - Quantitative (qPCR))	NATA (ILAC affiliated)
Detection and identification of viruses (PCR - Quantitative (qPCR))	NATA (ILAC affiliated)
Necropsy services (Microscopic examination; Anatomical pathology)	NATA (ILAC affiliated)
Molecular analysis - Bioinformatic analysis and interpretation (To be determined; Analysis of DNA alignment; DNA alignment to reference sequence)	NATA (ILAC affiliated)
Molecular analysis - Sequencing (Sanger sequencing)	NATA (ILAC affiliated)
Microbiology - Serology of infection - Microbial antibody and/or antigen detection and/or quantitation (Haemagglutination inhibition)	NATA (ILAC affiliated)
Microbiology - Serology of infection - Microbial antibody and/or antigen detection and/or quantitation (Agar gel immunodiffusion (AGID))	NATA (ILAC affiliated)
Microbiology - Serology of infection - Microbial antibody and/or antigen detection and/or quantitation (Enzyme linked immunosorbent assay (ELISA))	NATA (ILAC affiliated)
Detection and identification of viruses (Embryonated egg culture; Haemagglutination Inhibition)	NATA (ILAC affiliated)
Accreditation No: 13546 (scope last change 2021)	

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
FAO/CDC/USAID Virtual Consultation on Non-avian Zoonotic Influenza in Asia	01/21	Remote by Zoom	short communications	Overview of current landscape of non-avian zoonotic influenza A viruses in Asia
FAO/CDC/USAID Virtual Consultation on Non-avian Zoonotic Influenza in Asia	01/21	Remote by Zoom	short communications	Surveillance of non-avian influenza A viruses with zoonotic potential
FAO/CDC/USAID Virtual Consultation on Non-avian Zoonotic Influenza in Asia	01/21	Remote by Zoom	short communications	Applied Research of non-avian influenza A viruses with zoonotic potential
FAO/CDC/USAID Virtual Consultation on Non-avian Zoonotic Influenza in Asia	02/21	Remote by Zoom	short communications	Regional collaboration and ways forward
3rd Regional Meeting for OIE Reference Centres in Asia and the Pacific	02/21	Remote by Zoom	speakers, short communications	Discussion on establishing & improving networking among RCs - MCs
OFFLU discussion on recent notification of AI in UK - seal, fox and its significance	03/21	Remote by Zoom	short communications	Discussion of significance of notified detection of H5 HPAI in mammals
WHO 1st meeting on H5 clade 2.3.4.4b analysis	06/21	Remote by Zoom	short communications	TIPRA risk scoring discussions for H5 clade 2.3.3.4b
WHO 2nd meeting on H5 clade 2.3.4.4b analysis	07/21	Remote by Zoom	short communications	TIPRA risk scoring discussions for H5 clade 2.3.3.4b
OFFLU Steering and Executive Committee Meeting	07/21	Remote by Zoom	short communications	OFFLU TA updates and strategic planning discussions (member of EC)
FAO Regional Expert Group Meeting on Avian Influenza Virus (REG-AI)	08/21	Remote by Zoom	short communications	Revision of regional testing algorithm
FAO Regional Expert Group Meeting on Avian Influenza Virus (REG-AI)	08/21	Remote by Zoom	short communications	Integration of Novel Technologies and Protocols
OIE Regional Expert Network Meeting for Avian diseases in Asia and the Pacific	09/21	Remote by Zoom	speaker, short communications	ACDP OIE Reference Laboratory update on surveillance activities for AI and ND

FAO Regional Expert Group Meeting on Swine Diseases	10/21	Remote by Zoom	short communications	Regional updates on swine diseases
OFFLU zoom call for AI situation update in poultry and wild birds	11/21	Remote by Zoom	short communications	OFFLU Avian Influenza TA international updates for avian influenza activity
FAO Consultation Toward Mitigating Pandemic Influenza Risk	11/21	Remote by Zoom	short communications	Regional consultation on zoonotic animal influenza surveillance in Asia
OFFLU Steering and Executive Committee Meeting	11/21	Remote by Zoom	short communications	OFFLU TA updates and strategic planning discussions (member of EC)
OIE Regional Expert Network Meeting for Avian diseases in Asia-Pacific	12/21	Remote by Zoom	speaker, short communications	ACDP OIE Reference Laboratory update on surveillance activities for AI and ND

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 Molecular PT for detection of avian influenza A to inform on the capability of the OFFLU contributing laboratories to detect and characterize isolates of AIV from different lineages and regions	Organiser & participant	11	OIE Ref. Labs - (Australia, Italy, Brazil, Canada, Russia, India, Germany, UK, Japan, USA)/CSIRO ACDP - Australia (Organiser)
FAO/OIE sponsored PT to assess detection of avian diseases, including avian influenza matrix and HA-subtypes, and avian paramyxoviruses, in the Asia-Pacific Region	Organiser & participant	2	Australia & India (25 other country non-OIE reference labs in Asia and the Pacific)/CSIRO ACDP - Australia (Organiser)

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 contribution to the WHO Consultation on the Composition of Influenza Virus Vaccines (WHO VCM)	Collate, analyze and review the antigenic and genetic characteristics of recent zoonotic avian influenza viruses including A(H5), A(H7) and A(H9) viruses received at ACDP as the OIE AI Reference Laboratory for Indo-Pacific for the OFFLU contribution to the WHO Global Influenza Surveillance & Response System (GISRS) to assess needs for new pandemic influenza preparedness candidate vaccine seed viruses.	Contributing OIE Reference Laboratories for Avian/Swine Influenza & the OFFLU VCM Technical Activity network chaired by the OIE Reference Laboratory at APHA, United Kingdom
OFFLU Avian Influenza Technical Activity	Produce and contribute to epizootiological and surveillance data and analyses for global Avian Influenza surveillance and risk assessments	Contributing OIE Reference Laboratories for Avian Influenza & the OFFLU Avian Influenza Technical Activity network chaired by the OIE Reference Laboratory at ACDP, Australia
OFFLU Swine Influenza Technical Activity	Produce and contribute to epizootiological and surveillance data and analyses for global Swine Influenza surveillance and risk assessments	Contributing OIE Reference and OFFLU member laboratories for Swine Influenza & and the OFFLU Swine Technical Activity network chaired by the National Reference Laboratory at ANSES, France
WHO Tool for Influenza Pandemic Risk Assessment (TIPRA)	Contribute to H5Nx and H9N2 pandemic risk guidance and scoring updates for the WHO Tool for Influenza Pandemic Risk Assessment (TIPRA)	Contributing OIE Reference Laboratories for Avian Influenza & the H5 Reference Laboratories of the WHO GISRS
OIE Regional Expert Network Meeting for Avian Diseases in Asia & the Pacific	Updates and data sharing on regional and national avian diseases notifications and surveillance	Australia, China, India, Japan, Republic of Korea, Russia

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
Provision of PT for state jurisdictional laboratories in Australia and NZ (LEADDR) for detection of AIV by PCR	8	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Provision of PT for state jurisdictional laboratories in Australia (LEADDR) for detection of AIV by ELISA	7	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Regional PT for avian diseases, detection of AIV by PCR	27	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input 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)
Invited participant	Virtual via Zoom	The 9th Asia-Pacific Workshop on Multisectoral Collaboration at the Animal-Human-Ecosystems Interface
Invited participants, presenters	Virtual via Zoom	Laboratory Capacity Building Workshop – Experience from Asia Pacific to share with the Americas
Member	Virtual via Zoom	Scientific Committee for Animal Diseases
Member	Virtual via Zoom	AHG on Sustainable Laboratories: briefing on PVS Lab data and OIE Equipment Management Survey on 26 April 2021
Member	Virtual via Zoom	3rd Meeting of the OIE Ad Hoc Group on Sustainable Laboratoires on 1-4 June 2021
Invited participants and presenters	Virtual via Zoom	3rd Regional Meeting for OIE Reference Centres in Asia and the Pacific, Tokyo Japan on 24-25 February 2021
Member of the OIE/FAO Network of Expertise on Influenza (OFFLU) Executive Committee, invited participant	Virtual via Zoom	OIE/FAO Network of Expertise on Influenza (OFFLU) Steering & Executive Committee Meetings; https://www.offlu.org/index.php/offlu-organisation/
Chair and member of the OIE/FAO Network of Expertise on Influenza (OFFLU) Avian Influenza Technical Activity, invited participant	Virtual via Zoom	Coordination and update meetings (virtual) for the OIE/FAO Network of Expertise on Influenza (OFFLU) Avian Influenza activities
Invited participant and the OIE/FAO Network of Expertise on Influenza (OFFLU) representative	Virtual via Zoom	FAO/CDC/USAID virtual consultation on non-avian zoonotic influenza in Asia, FAO-RAP Bangkok, Thailand on 20 January, 26 January, 3 February & 10 February 2021
Invited participants and presenters	Virtual via Zoom	OIE Regional Expert Network Meeting for Avian Diseases in Asia & the Pacific (virtual), OIE-RRAP Tokyo, Japan on 29-30 February 2021

25. Additional comments regarding your report:

Due to COVID-19, ACDP has continued to work with limited operational capacity throughout 2021 (for example, adopting roster arrangements for staff site access, reduced site access to ensure physical distancing, no international travel and visitors unable to attend site for most of the year). This has significantly limited ACDP's capacity to carry out planned research and conduct training and has limited some types of diagnostic submissions to the laboratory.

Question 24 - due to limited space we could not complete the table. Here are the remaining activities, all took place virtually:

Invited participant and the OIE/FAO Network of Expertise on Influenza (OFFLU) representative: OFFLU virtual short call on recent notification of AI in UK - seal, fox and its risk significance on 30 March 2021.

Invited participant and OIE Reference Laboratory for Avian Influenza representative: WHO Tool for Pandemic Influenza Risk Assessment (TIPRA) scoring exercise on H5 clade 2.3.4.4b on 17 June and 9 July 2021.

Invited OIE Reference Laboratory for Avian Influenza participant and the OIE/FAO Network of Expertise on Influenza (OFFLU) representative: FAO Regional Expert Group on Avian Influenza Virus (REG-AI) Working Group 2 Meeting (virtual) on Revision of the Regional Testing Algorithm for Avian Influenza on 26 August 2021.

Invited OIE Reference Laboratory for Avian Influenza participant and the OIE/FAO Network of Expertise on Influenza (OFFLU) representative: FAO Regional Expert Group on Avian Influenza Virus (REG-AI) Working Group 3 Meeting (virtual) on Integration of Novel Technologies and Protocols for Avian Influenza on 27 August 2021.

Meeting organiser and co-chair; as Chair of the OIE/FAO Network of Expertise on Influenza (OFFLU) Avian Influenza Technical Activity: OFFLU AI situation virtual meeting for updates in poultry and wild birds as response to ongoing H5 HPAI clade 2.3.4.4b epizootic;
<https://www.offlu.org/wp-content/uploads/2021/11/OFFLU-November2021-Final.pdf>

Invited participant and the OIE/FAO Network of Expertise on Influenza (OFFLU) representative: FAO Expert Group Consultation Towards Mitigating Pandemic Influenza Risk, FAO-RAP Bangkok, Thailand on 30 November-3 December 2021.

Invited participant and presenter: OIE Regional Expert Network Meeting for Avian Diseases in Asia & the Pacific (virtual), OIE-RRAP Tokyo, Japan on 10 December 2021.

Technical review by OIE Expert: Review of Avian Influenza chapter of OIE Terrestrial Manual