

OIE Reference Laboratory Reports Activities

Activities in 2019

This report has been submitted : 2020-01-15 19:20:29

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Newcastle disease
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Website:	https://www.gov.uk/government/organisations/animal-and-plant-health-agency https://science.vla.gov.uk/fluglobalnet/
Name (including Title) of Head of Laboratory (Responsible Official):	Mr Christopher Hadkiss, 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	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
HI	Yes	2711	6
Direct diagnostic tests		Nationally	Internationally
Real-time RT-PCR L gene	Yes	1277	561
Real-time PCR RT-PCR for pathotyping	No	0	121
NDV genetic analysis by Sangar sequencing	Yes	19	8
Next Generation Sequencing	No	0	42
ICPI	Yes	0	0
Egg inoculation/HA	Yes	540	30

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	14ml	27ml	5	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	HI	Provide	47ml	163ml	5	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" 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?

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.)
<p>Alternative approaches for virus isolation We are assessing the growth of samples obtained from pigeons (likely to be PPMV-1) in embryonated pigeon eggs and pigeon embryo fibroblasts to potentially increase the sensitivity of culture leading to successful genetic sequencing of PPMV-1.</p>	<p>Awaiting publication</p>
<p>Reduction in the length of the rapid passage virus isolation protocol Further studies have indicated the potential for a reduction of the rapid passage in eggs, OIE standard length from the '2+4' (six days) protocol to the shorter total overall length of three to four days duration without loss of test sensitivity.</p>	
<p>Detection of Avian Orthoavulavirus Type 1 by Real Time PCR (new improved fully validated method)</p>	<p>Sutton D., Allen D., Fuller C., Mayers J., Mollett B., Londt B., Reid S., Mansfield K., Brown I. (2019) Development of an avian avulavirus 1 (AAvV-1) L-gene real-time RT-PCR assay using minor groove binding probes for application as a routine diagnostic tool; Journal of Virological Methods, Volume 265, Issue March 2019, pp 9-14. https://doi.org/10.1016/j.jviromet.2018.12.001</p>

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
BULGARIA	January	0	2
BANGLADESH	July	121	0
GHANA	July	24	0
AFGHANISTAN	July	5	0
NEPAL	August	2	0
CROATIA	September	0	92
KAZAKHSTAN	November	8	0
GEORGIA	November	308	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
GEORGIA	Protocols for ND	Email
RUSSIA	ND Russia - Full gene F sequence analyses	Email
IRELAND	Query regarding Newcastle disease	Email
BOTSWANA	Botswana	Email
DENMARK	Diagnostic algorithms and interpretation	Email
KAZAKHSTAN	ND outbreak Kazakhstan	Email
GHANA	Query on sequencing and shipping samples	Email
AFGHANISTAN	ND and IA sample from CVDRL Afghanistan	Email
CAMBODIA	Query on shipping panels	Email
BULGARIA	Sending NDV samples to APHA	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
Member of International Avian Orthoavulavirus (APMV) Nomenclature Group	2019	To review the nomenclature systems in use for Avian Orthoavulavirus Type 1, and to develop an improved and unified classification system which incorporates all known lineages/genotypes. Published paper Dimitrov et al (2019) Updated unified phylogenetic classification system and revised nomenclature for Newcastle disease virus, Infection, Genetics and Evolution, Volume 74, Issue October 2019, 103917. https://doi.org/10.1016/j.meegid.2019.103917	Luxembourg Italy USA France Germany	FRANCE GERMANY ITALY LUXEMBOURG UNITED STATES OF AMERICA
Balzac	2018-2019	UK expertise has strengthened Bangladesh's national NDV diagnostic capabilities to provide quicker and more accurate diagnosis of NDV, and to improve biosafety and biosecurity practices in the Bangladesh animal health sector through a series of best-practice workshops and training sessions in country. Improvements in these capabilities have allowed outbreaks to be more quickly and effectively identified and controlled, thus preventing the wider spread of disease.	Bangladesh Livestock Research Institute (BLRI) Chittagong Veterinary and Animal Sciences University (CVASU)	BANGLADESH
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	KAZAKHSTAN
CRDF/Kurdistan (Fellowship placement at APHA)	2018-2019	The fellowship enabled technology transfer and training of a fellow from Kurdistan with the aim of developing regional connection and follow on funding to support capability building and epidemiological assessment of avian pathogens circulating within Kurdistan with focus on Newcastle Disease	Iraq within region of Kurdistan	IRAQ

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:
Laboratory Reports

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:
Laboratory Reports

**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: 2

1. Dimitrov K.M., Abolnik C., Afonso C.L., Albina E., Bahl J., Berg M., Briand F.X, Brown I.H, Choi K.S., Chvala I., Durr P.A, Ferreira H.L., Fusaro A., Gil P., Goujgoulova G.V, Grund C., Hicks J.T, Joannis T.M., Torchetti M.K., Kolosov S., Lambrecht B., Lewis N., Liu Ha., Hualei Liu Hu., McCullough S., Miller P.J., Monne I., Muller C.P, Munir M., Pchelkina I., Reischak D., Sabra M., Samal S., Servan de Almeida R., Shittu I., Snoeck C.J., Suarez D.L., Van Borm S., Wang Z., Wong F. (2019) Updated unified phylogenetic classification system and revised nomenclature for Newcastle disease virus, *Infection, Genetics and Evolution*, Volume 74, Issue October 2019, 103917. <https://doi.org/10.1016/j.meegid.2019.103917>

2. Sutton D., Allen D., Fuller C., Mayers J., Mollett B., Londt B., Reid S., Mansfield K., Brown I. (2019) Development of an avian avulavirus 1 (AAV-1) L-gene real-time RT-PCR assay using minor groove binding probes for application as a routine diagnostic tool; *Journal of Virological Methods*, Volume 265, Issue March 2019, pp 9-14. <https://doi.org/10.1016/j.jviromet.2018.12.001>

b) International conferences: 0

c) National conferences: 1

1. J. Seekings, N. Wali, S. Reid, R. Hansen, S. Essen & I. Brown (2019) Newcastle Disease virus in the Middle East. AVTRW Annual Conference, Edinburgh 16th - 17th September 2019

d) Other:

(Provide website address or link to appropriate information) 2

1. Ian H. Brown, Peter Cargill, Ralph Woodland and Thierry Van den Berg. IN PRESS Newcastle disease virus IN *Veterinary Vaccine for Livestock*, 1st Edition: Editors; Samia Metwally, Ahmed ElIdrissi, Gerrit Viljoen. FAO publishing.

Flu Global Net website: <https://science.vla.gov.uk/fluglobalnet/>

12 laboratory protocols are available on the above website is support of laboratory diagnosis of Newcastle Disease

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: 0
 c) Hands-on training courses: 1
 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
C	Republic of Korea	1
D	Kurdistan	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)
ISO17025	UKAS certificate 2019.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Haemagglutination inhibition test	UKAS
L-gene real-time PCR	UKAS
Newcastle disease virus nucleotide sequencing	UKAS
ICPI	UKAS
Virus isolation in tissue culture for AOA-V1 (formally APMV-1)	UKAS
Virus isolation in SPF eggs (via allantoic cavity)	UKAS
Antibody typing of ND isolates	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?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	OIE AI/ND Twinning Project	KazSRVI	12/19	Nur-Sultan, Kazakhstan	7

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?

No

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?

No

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	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" 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)
Coordinated review of Newcastle Disease Chapter in Manual for Diagnostic Tests and Vaccines for Terrestrial Animals submitted in 2019, amongst OIE reference laboratories for Newcastle Disease.	N/A	Newcastle Disease Chapter in Manual for Diagnostic Tests and Vaccines

25. Additional comments regarding your report:

N/A