



OFFLU Annual Report 2019

In 2019, avian influenza (AI) outbreaks continued to threaten animal health worldwide. More than 25 countries of the Asian, African, European, Middle Eastern and American Regions experienced highly pathogenic avian influenza (HPAI) outbreaks during 2019. The majority of H5 events were due to goose/Guangdong lineage (Gs/GD) H5 clade HPAI viruses (H5N1, H5N2, H5N5, H5N6, H5N8) in several countries, as well as H7N3 HPAI virus which continued to circulate in Mexico. Reports of the highly poultry adapted Asian H7N9 lineage was low since the fifth wave.

In response to these outbreaks, the OFFLU network experts participated in numerous teleconferences and meetings to share epidemiological and experimental data and diagnostic protocols needed to inform surveillance and control policies and build technical partnerships with Member Countries. OFFLU and WHO were in regular communication to share public health and animal health data so that risk assessments could be continually updated and to establish consensus on issues related to the animal-human interface, including pandemic preparedness.

Contribution of animal influenza data for pandemic preparedness

Every six months OFFLU coordinates inputs from OIE/FAO Reference Centres and national veterinary laboratories to provide animal influenza virus data for consideration during the WHO Vaccine Composition Meeting (VCM). These data are needed to update pre-pandemic candidate vaccine viruses for human vaccines against zoonotic viruses of concern, and to contribute to the WHO biannual report of “[Antigenic and genetic characteristics of zoonotic influenza viruses and development of candidate vaccine viruses for pandemic preparedness.](#)”

During the February and September 2019 WHO influenza VCM consultations, sequence data for over 200 H5, H7, and H9 viruses were contributed by OFFLU network experts representing 25 countries in Europe, Asia, Middle East, Africa, Oceania, and the Americas. Additionally, a summary of H1 and H3 global swine influenza A virus events with genetic and antigenic analyses was also submitted.

OFFLU proficiency testing

The OFFLU Influenza A PCR panel for the 2019 proficiency testing programme was received by ten international OFFLU reference or contributor laboratories and was designed to assess the capability of the laboratories to detect and characterise isolates of avian influenza. The round was coordinated by the Australian Animal Health Laboratory (AAHL) and conducted under their ISO 17043 accreditation.

Antigenic data generated by the haemagglutination inhibition (HI) assay using WHO-CC and OFFLU ferret-origin reagents was contributed by selected OFFLU reference laboratories namely Istituto Zooprofilattico Sperimentale delle Venezie in Italy (IZSve), Australian Animal Health Laboratory (AAHL) and the Animal and Plant Health Agency in the UK (APHA).

The OFFLU VCM team would like to specifically acknowledge the involved OFFLU network laboratories and Member Countries for their significant contribution of animal influenza virus data to help inform decisions impacting public health during the year 2019.

http://www.offlu.net/fileadmin/home/en/human-animal-interface/pdf/OFFLU_VCM_POST-REPORT_20190307.pdf

http://www.offlu.net/fileadmin/home/en/human-animal-interface/pdf/OFFLU_WHO_sept2019_summary.pdf

OFFLU conducts these proficiency testing rounds in support of the laboratories to facilitate international harmonization of testing capability and the proficiency test panel was designed to be challenging to allow laboratories the opportunity to fine tune their diagnostic capability. Laboratories with results divergent from the expected will investigate the causes as required under their quality assurance system accreditation and can be helped in this by requesting more specimen, if needed.

Guidance on Influenza A cleavage sites

OFFLU experts updated a guidance document that provides information regarding amino acid sequences at the influenza A cleavage sites for assistance in differentiation of low pathogenicity and high pathogenicity AI viruses through molecular analyses, as described in the OIE Terrestrial Animal Health Code. This document included molecular sequences for multibasic cleavage sites of H5N1 HPAI viruses from Asia, Africa and Europe; previously reported multibasic cleavage sites of other HPAI viruses (H5 and H7); and a list of unusual 2-3 residue multibasic cleavage sites. The document was

updated in March 2019 taking into account the reported HPAI outbreaks. Considering the importance of this information, the document has been referred to in the updated avian influenza chapter of the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*.

http://www.offlu.net/fileadmin/home/en/resource-centre/pdf/Influenza_A_Cleavage_Sites.pdf

OFFLU Swine influenza virus group activities

The OFFLU swine influenza group met for the annual technical meeting in February 2019 at the OIE Headquarters, Paris and shared data about the global swine influenza situation in pig populations by providing regional and country-specific reports from Australia, Japan, Vietnam, China, South Korea, Europe, United States of America (USA), Canada, Brazil, Chile, Guatemala, Colombia, Argentina and Africa. Participants included scientists conducting influenza surveillance and/or performing influenza research or diagnoses in swine and at the human-swine interface. Information on human infections due to Influenza A (H1N2)v and (H3N2)v was also shared by the public health experts.

An update on a swine risk assessment pipeline was provided. The project involves assessing antigenic relationships between swine and human seasonal viruses to predict potential for human risk.

The experts worked out various tasks and action points to follow up including sharing of data and reagents, organizing regional meetings, phylogeny and sequence analysis and publishing papers. Dr Gaelle Simon (Anses, France) was elected as the new co-chair of the group. Dr Taki Saito (NIAH, Japan) continues to be the Co-Chair of the group.

<http://www.offlu.net/?id=384>



Swine influenza experts meeting, February 2019, OIE Headquarters, Paris

Equine influenza update

Equine influenza (EI) is a respiratory disease of horses and has the potential to disrupt major equestrian events. EI can be controlled by vaccination but it has been demonstrated in the field that antigenic drift impacts vaccine efficacy. The Expert Surveillance Panel of EI comprising OFFLU and WHO influenza experts met at the OIE Headquarters in April 2019 and reviewed the EI virus activity, characteristics of the viruses isolated and vaccine performance. The panel studied EI (H3N8) viruses isolated and/or characterised from outbreaks in Argentina, Chile, China, France, Germany, Ireland,

Netherlands, Nigeria, Sweden, UK, Uruguay and USA in the past year and recommended that vaccines for the international market should contain both clade 1 and clade 2 viruses of the Florida sublineage.

Recent virus strains, including suitable vaccine candidates for clades 1 and 2, are available from the OIE reference laboratories.

<https://oiebulletin.com/?official=08-4-1-2019-2-panel-en>



Equine influenza experts meeting, April 2019, OIE Headquarters, Paris

OFFLU applied epidemiology technical working group

The OFFLU applied epidemiology technical experts were consulted on various occasions to provide advice and guidance on documents related to AI risk assessment and management. The documents reviewed and updated by the experts include the Chinese-Origin H7N9 Avian Influenza Spread in Poultry and Human Exposure and H5N8 HPAI assessment for Southern Africa.

<http://www.fao.org/3/CA3206EN/ca3206en.pdf>

http://www.fao.org/ag/againfo/programmes/en/em-pres/news_270319.html

OFFLU socio-economics technical working group

This technical activity will try to address the specific matters of understanding the social and economic impact of influenza viruses in animals and their impact on humans. Dr Jonathan Ruston, University of Liverpool, UK was appointed as the Chair of this activity. The Global Burden of Animal Diseases (GBADs) has been initiated by the University of Liverpool, with support from the OIE, FAO, International Livestock Research Institute (ILRI) and a group of international collaborating institutions

and organisations. This will create information on the economic burden of livestock diseases in order to support evidence-based decision-making. Influenza was included in the plans of the GBADs and OFFLU expertise will be provided.

<https://oiebulletin.com/?p=11531&lang=fr>

Changes in the OFFLU management structure

The new changes in the OFFLU Committees include Dr David Swayne (SEPRL, USA) as the new member of Steering Committee (SC), Dr Mia Torchetti (NVSL, USA) as the new Chairman of the OFFLU Executive Committee (EC) and Dr Frank Wong (AAHL, Australia) as the new member of EC.



Dr David Swayne
Steering Committee
member



Doctor Mia Torchetti
Executive Committee
Chairman



Dr Frank Wong
Executive Committee
member

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