



OFFLU STEERING AND EXECUTIVE MEETING BY ZOOM TELECONFERENCE
21 and 22 April 2020 (13h to 15h Paris time each day)

Participants: Ian Brown (APHA, UK), Billy Karesh (EcoHealth Alliance, USA), David Swayne (SEPRL, USA), Mia Torchetti (NVSL, USA), Nicola Lewis (RVC/APHA, UK), Frank Wong (AAHL, Australia), Jiming Chen (CAHEC, China), Cristian DeBattisti (FAO), Gregorio Torres (OIE), Patricia Pozzetti (OIE), Gounalan Pavade (OIE).

The OIE Deputy Director General, International Standards and Science, Dr Matthew Stone provided opening comments to the Committees, thanking the experts for their continued contribution in the network technical activities coordination. He valued the importance of OFFLU network contribution across various domains covering all animal influenzas including updating of avian influenza cleavage sites, harmonising diagnostic techniques through proficiency testing exercise, swine and equine influenza data sharing and zoonotic animal influenza data to WHO vaccine update process. The current COVID-19 situation forced this physical meeting to be converted into a zoom teleconference and he appreciated the OFFLU committee efforts in discussing and progressing on the OFFLU technical activities.

1. Broad overview of OFFLU committee changes and strategic direction/main activities:

Professor Ian Brown, the OFFLU Steering Committee Chairman provided an overview of OFFLU achievements in the year 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. In response to these outbreaks, the OFFLU network experts participated in numerous teleconferences and meetings to share epidemiological and experimental data and updated diagnostic protocols needed to inform surveillance and control policies and build technical partnerships. 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. Professor Brown concluded that the goal is to continue to project OFFLU value to the global community and deliver focused timely outputs through the network of technical activities.

SC / EC members term and accession plan:

The committees reviewed the terms of the members of the Steering Committee (SC) and Executive Committee (EC) as per the table below.

	Start date	First term end	Second term end
SC members :			
Ian Brown	8 October 2018	7 October 2021	
Billy Karesh	23 September 2014	22 September 2017	22 September 2020
David Swayne	2 October 2019	1 October 2022	
4th member vacant			
EC members :			
Mia Torchetti	18 October 2019	17 October 2022	
Frank Wong	13 October 2019	12 October 2022	
Jiming Chen	19 December 2014	18 December 2017	18 December 2020
Nicola Lewis	8 December 2015	7 December 2018	7 December 2021

The Committee noted the need to fill in the vacant membership of the Steering Committee and the terms of some members that ends in 2020. The Committee agreed to take suitable actions to fill in these memberships as per agreed protocols.

Brief update from each technical activity:

a) Avian influenza including proficiency testing

Dr Frank Wong provided an overview of OFFLU proficiency testing (PT) strategy for external quality assurance for avian influenza PCRs. The PT is currently focused on avian influenza to assess diagnostic capability across the OFFLU global lab network using their respective molecular diagnostic approaches for type A avian influenza on AIV strains from different hemispheres. The participation to OFFLU PT is limited to OIE/FAO Reference Centres and major OFFLU contributing labs.

The panel for the 2018 proficiency testing programme was received by twelve laboratories and was designed to assess the capability of the laboratories to detect and characterize isolates of avian influenza. The round was coordinated by the Australian Animal Health Laboratory (AAHL) and conducted under their ISO 17043 accreditation. The panel consisted of 15 inactivated samples sent to each participating laboratory with instructions to test the samples using their standard diagnostic matrix PCR assay. Any positive samples were to be tested for both low and high pathogenic AI analysis, as appropriate. The participating laboratories returned the testing results to AAHL, Australia for analysis and the results were shared with the committee. Laboratories with inconsistent results will investigate the causes as required under their quality assurance system accreditation and will be helped, if needed.

b) OFFLU WHO Vaccine composition meeting (VCM) contribution

Dr Nicola Lewis, the current OFFLU representative to the WHO VCM provided an update on the September 2019 to February 2020 VCM contribution to the committees. In the last two VCMs, OFFLU data submission was expanded to include swine influenza data in addition to avian influenza on the request of WHO.

On the avian influenza side, there was an overall increase in reports compared to the previous period with a total of 235 H5, H7 and H9 AI events reported from 30 countries/territories. Of these, 194 reports were in domestic birds with 27 reports attributed to H5 low pathogenic AI and 150 reports to H5 HPAI. The majority of H5 events were due to goose/Guangdong lineage (Gs/GD) H5 clade HPAI viruses. Sequence data for 89 H5, 3 H7, and 139 H9 were contributed to OFFLU by animal health laboratories in countries representing Europe, Asia, Africa, Oceania, and the Americas to which was added sequences from Genbank and GISAID. Substantial antigenic data was also contributed by selected OFFLU reference laboratories.

On the swine influenza side, a summary of H1 and H3 global swine influenza A virus events with genetic and antigenic analyses was also submitted in the last two meetings.

WHO is pleased with the contributions made by the OFFLU network covering wider geographical areas.

Action: *New H5 nomenclature to be posted on the OFFLU website. Efforts to increase wider geographical contribution of data from labs to be continued.*

c) Wildlife / Wild bird group update

Dr Karesh provided an update on the OFFLU wildlife technical activity. The group is led by Dr Andrew Breed from Australia. The members of the group met once in June 2019 by teleconference to discuss the outbreak situation in wild birds and responded to questions raised on outbreaks. An interesting paper on contrasting effects of host species and phylogenetic diversity on the occurrence of HPAI H5N1 in European wild birds was shared within the group.

Action:

- *Group membership to be reviewed and energized.*
- *Drafting an OFFLU position paper on wild bird surveillance that could be used for funding opportunities. A call to be arranged involving Andrew Breed, Billy Karesh and Nicola Lewis.*

d) Swine influenza technical activity

Dr Nicola Lewis provided an update on the recent outputs of Swine influenza group technical activity. The group is currently co-led by Taki Saito (Japan) and Gaelle Simon (France).

The potential for African countries involvement to gather swine influenza surveillance data is underway. Dr Yohannes Berhane (Canada) in parallel to an OIE twinning project is working to collect samples in live animal markets and farms in Ghana for surveillance. Contacts were also made with investigators in Nigeria, Kenya, Uganda and Cameroon. Further networking is planned during the meeting of African Network for Influenza Surveillance and Epidemiology (ANISE) later in 2020 which was postponed due to COVID-19 situation.

Plans to have an OFFLU swine influenza side meeting during the rescheduled International Pig Veterinary Society (IPVS) meeting in Brazil later in 2020 is on table.

Two published articles on swine-human interface by the members of the group was shared with the committee. To widen geographical coverage of swine influenza surveillance, the group made efforts to receiving virus isolates at USDA (USA) or APHA (UK) for testing with the CDC ferret antisera against CVV and human seasonal vaccine strains.

e) Equine influenza update

Dr Nicola Lewis provided an update on the equine influenza technical activity group. The group is led by Dr Ann Cullinane from Ireland. An update on the 1 to 3-year work plan of this group was presented to the committee.

- The equine influenza expert panel met at the OIE Headquarters in April 2019 to discuss the current virus strain circulating globally and their impact on vaccinated and unvaccinated Equidae. The experts exchanged the surveillance information and generated genetic and antigenic characterization of recent strains with both ferret and equine specific sera and updated the vaccine recommendations for equine industry.
- The experts reviewed and updated the OIE Manual chapter with validated RT-PCR and the chapter was adopted in May 2019.
- An update to the OIE Terrestrial Code Chapter was provided based on a recent publication from the group.
- Generated equine serum against clade 1 strain.
- Availability of reference serum for clade 2 strain.
- Reference reagents for RT-PCR was distributed to Morocco, Senegal, Nigeria, Cameroon, Burkina Faso, Ghana, and Niger in response to handling of outbreaks.
- The group expanded the geographical coverage for surveillance in Asia (India, Bangladesh) and African (Nigeria, Cameroon, Ghana, and Niger) countries.
- The Japan Race Academy and Animal Health Trust (UK) generated specific equine antisera against 2019 isolates and the neutralization method technique was circulated and established in several laboratories.
- Whole genome sequencing is now routinely performed in many laboratories and the sequences are deposited in GISAID.
- Experts were involved in investigation of outbreaks and vaccine breakdowns and collaborated for several research purposes.

f) Epidemiology group update

Dr DeBattisti provided an update on the epidemiology TA. The group is led by Dirk Pfeiffer (Hong Kong). The experts of this group reviewed and updated two risk assessment documents. Qualitative risk assessment update of Chinese origin H7N9 avian influenza spread in poultry and human exposure and H5N8 HPAI assessment for Southern Africa. It was informed that many of the experts of this group were involved in other disease commitments like African Swine fever and COVID-19 which led to reduced activities from this activity.

g) Socio economics group update

Dr Gounalan Pavade provided an update on the socio economics TA. The group is led by Dr Jonathan Rushton (UK). 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 initiative 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 through this technical activity.

h) OFFLU STAR IDAZ animal influenza research agenda update

The committee discussed the need in moving forward to the revision of the OFFLU STAR IDAZ global animal influenza research agenda (2014) document. Based on the feedback received on its usefulness and traction, it was evident that the document was more of an academic value rather than used by researchers and funders. In view of this, the Committee decided that OFFLU does not want to put efforts on updating this document as it is not having an interest and impact. It was also noted that the WHO update of public health research agenda for influenza (2017) covers the zoonotic influenza and many of the OFFLU experts already provided input to this exercise.

Action: A formal letter to be sent to STAR-IDAZ informing about the suspension of updating the animal influenza research agenda.

i) Update of the influenza A cleavage site document for 2019

The task of updating the influenza A cleavage site document for the year 2019 was first reviewed by SEPRL (USA) and then by APHA (UK). The recent updates included reformatting and simplification to make a single list for ease and also included some new sequences from last 1-2 years. The updated document was then shared with the other OIE/FAO References Centres for avian influenza for comments and finalisation.

The committee discussed the expertise issues for updating this document. In previous years, FAO hosted OFFLU scientist used to do the first update and then share with the OIE/FAO Reference Centres for comments. Additionally, the OFFLU scientist also used to contribute molecular virological expertise for WHO VCM tasks in collaboration with the lead OFFLU representative expert and attend its meetings. Without a recognized OFFLU scientist, this put a huge burden on the lead OFFLU representative expert and Reference Labs in executing these activities. In response to this, the FAO focal point officer Dr DeBattisti informed the committee that FAO is currently in the process of recruiting an OFFLU scientist with necessary molecular virological expertise who will be able to contribute to WHO VCM activities and also additionally involved in the technical virological expertise for other animal influenza activities in OFFLU network.

Action: *Once finalized, the updated version of the influenza A cleavage site document to be posted on OFFLU website.*

The current system for review of the cleavage site document will remain in place until the appointment of an OFFLU scientist with necessary skills and scope to support is obtained.

In recruiting the OFFLU scientist with necessary technical skill sets, the Committee agreed to to update the profile and terms of reference for OFFLU scientist and also expressed its desire to have a dialogue with FAO before the selection process to choose the right candidate.

**j) Avian Influenza Virus Characterization activity for H9N2, H5Nx and H7Nx
[i.e. Avian VCM]**

Dr Nicola Lewis delivered a presentation on antigenic characterization in birds - towards a avian VCM. It was evident from the VCM data using ferret sera, there is substantial antigenic variation particularly in areas where there is co-circulation of H5, H7 and H9. There is evolutionary complexity in avian hosts as internal genes being acquired from low pathogenic AI more readily. The next steps would be the need to formalize a pipeline for risk assessment by H5, H7 and H9 enhanced characterization. This will provide timely analyses to multiple stake holders including national and international advisory and policy bodies, poultry industry and vaccine manufacturers to inform pre-pandemic and poultry vaccine strain selection. To achieve this Dr Lewis proposed to copy the existing swine influenza pipeline analyses and combine the equine influenza expert panel weighting of antigenic, genetic and epidemiology to have the building blocks of a decision tree. The Committee appreciated this proposed activity and suggested to take it forward by contacting the NIAH program officers to present this future work plan and its significance.

Dr Frank Wong, the lead of the Avian influenza technical activity added by providing an update on reference lab perspectives from Southeast Asia by referring to the circulating clades in the region, antigenic analysis of HPAI viruses using prime chicken antisera raised against different clades and recommendations drafted in the OIE regional expert group meeting in Sapporo, Japan. Based on this information, he presented the objectives which OFFLU could consider focusing on through the AI technical activities as follows:

- Improving H9N2 guidance (diagnostics for specific regions, lineage nomenclature and antigenic characterization),
- H5/H7/H9 chicken antisera characterization (avian VCM)
- Continuing OFFLU molecular proficiency testing
- Annual update of HA cleavage site
- Need for regional guidance on avian diseases next generation sequencing and bioinformatics
- Better structured contribution to WHO public health risk assessments like TIPRA

Action: *The committee felt the necessity for broadening the antigenic characterization particularly focusing on H9 over the next 12 months as the network received lot of questions from regions where these viruses pose problems. A team of experts (labs) involving Frank Wong, David Suarez, Nicola Lewis and Mia Torchetti to lead and follow up on the antigenic characterization activities of H9N2.*

k) OFFLU email and website discussion

The OFFLU Secretariat with the assistance of OIE IT department will work on the project of redesigning the OFFLU website to give a modern look.

On another issue, the Secretariat expressed the difficulties in operating the current email address secretariat@offlu.net as the email service is provided by external provider and lacks various functions in managing large volumes of emails. The OIE IT unit proposed a solution to change the email address to secretariat@offlu.org so that it could be managed efficiently internally through OIE system.

Action: *The members of the Committees were requested to send ideas/examples to the Secretariat on possible structure/layout of documents about the OFFLU website home page.*

The Committee endorsed on the proposal to change the OFFLU email address to secretariat@offlu.org. Additionally the Committee also asked to purchase the domain www.offlu.org for OFFLU website to align it with the new OFFLU email address.

l) OFFLU Annual report 2019

The OFFLU Secretariat drafted and circulated the OFFLU annual report 2019 to the Steering and Executive Committee for comments before wider circulation.

Action: *To circulate the approved version of the OFFLU annual report widely more than experts to all stakeholders involving the OIE and FAO network distribution channels.*

m) Review of future work plans for the executive committee; steering committee assessing strategic vision and future priorities for OFFLU

Based on the updates from each technical activities and discussions, the Committee agreed on the below future work plans to be followed up by the Executive Committee in consultation with the leader of each technical activity.

Avian influenza – Broadening the antigenic characterisation activities focussing on H9N2 viruses, advancing on H5 nomenclature system, continuing the proficiency panel exercise among Reference Centres, updating the cleavage site document and guidance on H9 diagnosis.

Swine influenza – Feeding more swine influenza data into the WHO VCM by better engagement with more regional labs and following up on the action points agreed in the group meeting.

Equine influenza – continuing the expert panel activities on updating vaccine recommendations for equine influenza and following up the planned activities.

Wildlife – Refresh the membership of the group and write an OFFLU position paper on wild bird surveillance.

Epidemiology – continue to provide advice and guidance on documents related to AI risk assessment and management. The Chair of the Executive Committee and the lead of the AI technical activity will discuss with the group to get assistance on planned H9N2 activities.

Socio economics – Professor Ian Brown and the Secretariat will hold discussion with the lead of this technical activity to discuss on how the group expertise could be used to address the specific matters of understanding the social and economic impact of influenza viruses in animals and their impact on humans.

The Chair of the Executive Committee will hold talks with the leader of all technical activities to discuss and move forward on the planned future work plans.

n) Future Steering/Executive Committee meetings:

- Due to the Covid-19 situation, the planned physical meeting was converted to a shorter teleconference meeting. Once the situation returns to normal, the Committee felt the necessity to hold a longer format face to face meeting.
- Additionally, the Committee find the value in holding 1 – 2 hours discussion by teleconference at quarterly basis for following up on essential items. The Secretariat will identify the date for the next teleconference in October and inform the Committee to save the date.
- The Executive Committee will convene separately in July to discuss the future work plans involving the technical activity lead experts.