

OIE Situation Report for Avian Influenza

Latest update: 08/05/2017

This report presents an overview of current disease events reported to the OIE by its Members. The objective is to describe what is happening currently, explain what we are seeing, and consider what might happen next. The epidemiology of avian influenza is complex. The virus constantly evolves and the behavior of each new type (and strains within types) and the risks they present can vary, as will the response in different countries. So the global situation must be considered as distinct epidemics that share some characteristics. We briefly present the key risks driving current events - how the strains are interacting with hosts (both wild birds and poultry, and sometimes humans) and the environment (season and climate, livestock husbandry systems, ecosystems) – and how the event may evolve in the months ahead.

Current Global Situation (ongoing outbreaks as of 08 of May 2017)

1. Avian Influenza strains causing disease events.

Strain	Count of countries affected	Increase /Decrease in countries from last report (24/04/2017)	# of ongoing outbreaks in poultry	# of ongoing outbreaks in wild birds	Increase/Decrease in ongoing outbreaks from last report (24/04/2017)	Aggregated count of poultry destroyed for ongoing outbreaks	Number of poultry destroyed since the last report (24/04/2017)
H5	1	0	1	0	0	0	0
H5N1	8	0	19	3	↑ 3	50 294	4 654
H5N2	1	0	135	1	↑ 1	1 229 329	5 566
H5N5	6	0	4	6	0	22	0
H5N6	4	↓ -1	409	0	↑ 271*	26 798 340	20 197 173
H5N8	17	↓ -4	258	215	↓ -233	2 532 848	148 595
H7N3	1	↑ 1	1	0	↑ 1	0	0
H7N9	2	0	10	0	0	299 135	0
Total	40	↓ -4	837	225	↑ 43	30 909 968	20 355 988

Table 1. Global situation for on-going outbreaks of Highly Pathogenic Avian Influenza in poultry and wild birds, by strain

*The big increase in the number of outbreaks for H5N6 is not due to the deterioration of the HPAI epidemiological situation but to an update of historical information through a follow up report. All the outbreaks started in previous months.

2. Regional situation

Region	Count of countries affected by ongoing outbreaks	Percentage of countries within the Region	List of countries	Difference regarding last report	List of Strains	Aggregated count of poultry destroyed for ongoing outbreaks	Number of poultry destroyed since the last report (24/04/2017)
Africa	5	9 %	Cameroon, Egypt, Niger, Nigeria, Uganda.	↓ -1	H5, H5N1, H5N8	10 555	0
Americas	2	7%	Mexico, United States of America	↑ 1	H7N3, H7N9	127 956	0
Asia and the Pacific	7	19%	China, Chinese Taipei, India, Korea (Rep. of), Lao, Nepal, Vietnam	↓ -1	H5N1, H5N2, H5N6, H5N8, H7N9	29 046 824	20 207 393*
Europe	12	23 %	France, Germany, Greece, Croatia, Italy, Montenegro, Netherlands, Russian Federation, Slovakia, Slovenia, Spain, Sweden.	↓ -4	H5N5, H5N6, H5N8	1 724 633	148 595
Middle East	0	0%				0	0
Total	26	13%				30 909 968	20 355 988

Table 2. Regional situation for on-going outbreaks of Highly Pathogenic Avian Influenza in poultry and wild birds

*The big increase in the number of destroyed birds is not due to the deterioration of the HPAI epidemiological situation but to an update of historical information through a follow up report. Most of the birds were destroyed in previous months.

3. Events declared closed since the last report

Country	No events closed since 24/04/2017	Species	Strain
Hong Kong (SAR-PRC)	1	Poultry	H5N6
Iran	2	Poultry and wild	H5N1 and H5N8
Macedonia (Former Yug. Republic of)	1	Poultry	H5
Malaysia	1	Poultry	H5N1
Romania	1	Poultry and wild	H5N8
Vietnam	1	Poultry	H5N6

4. Epidemic curve: Global epidemic curve of the number of outbreaks by week (since October 2016)

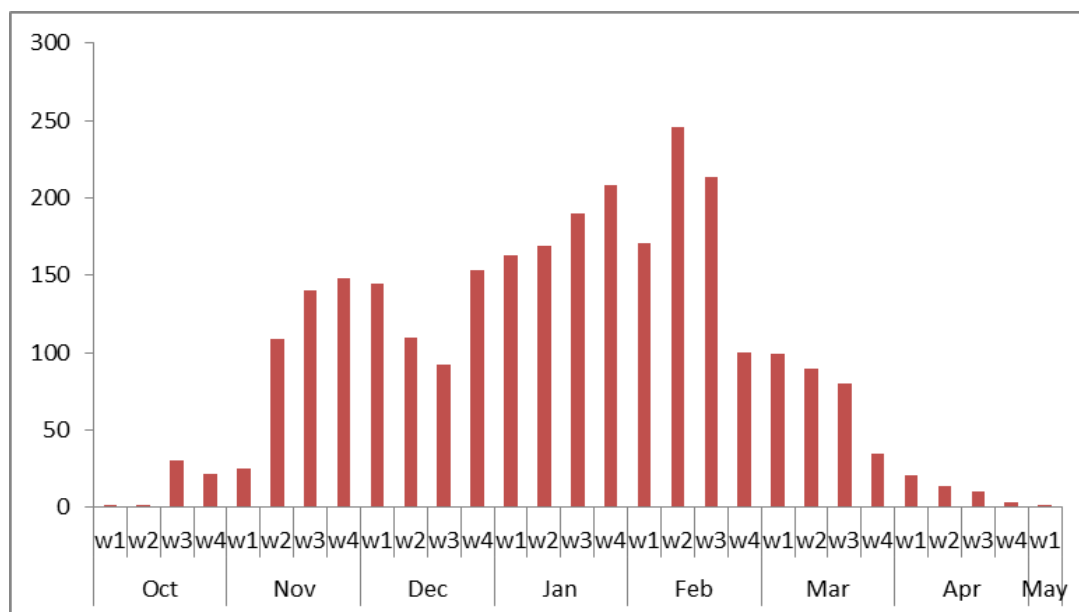


Figure 1. Epidemic curve showing the weekly incidence of outbreaks of Highly Pathogenic Avian Influenza since October 2016.

5. Global maps of ongoing outbreaks and special focus on the most reported strains

Figure 2. Map displaying the on-going outbreaks of Highly Pathogenic Avian Influenza in poultry and wild birds.

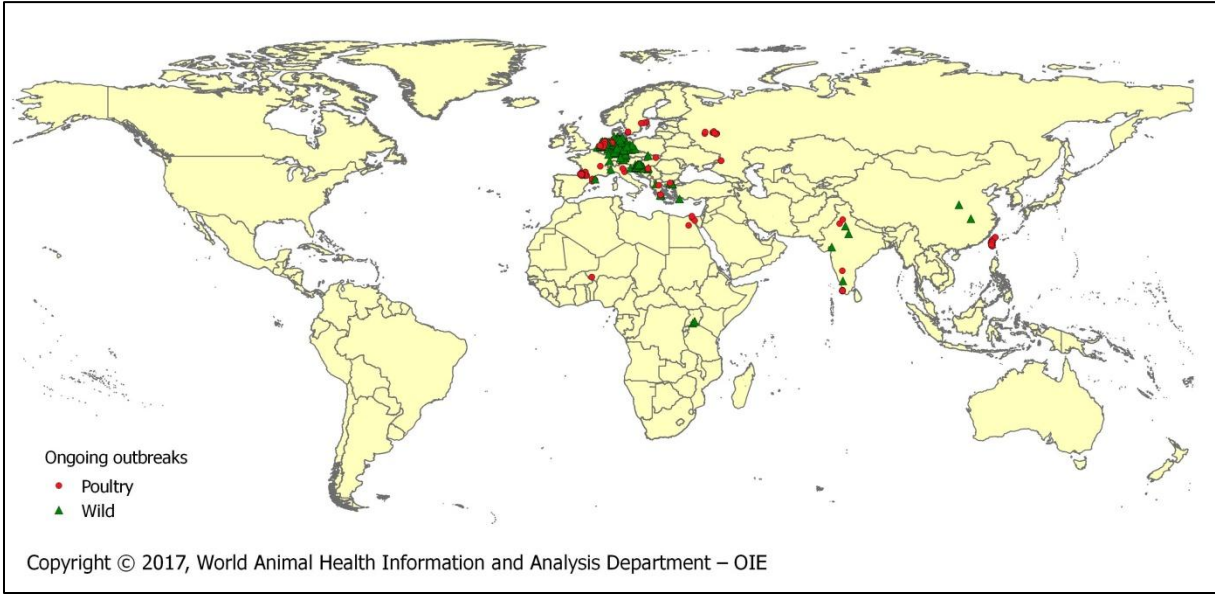
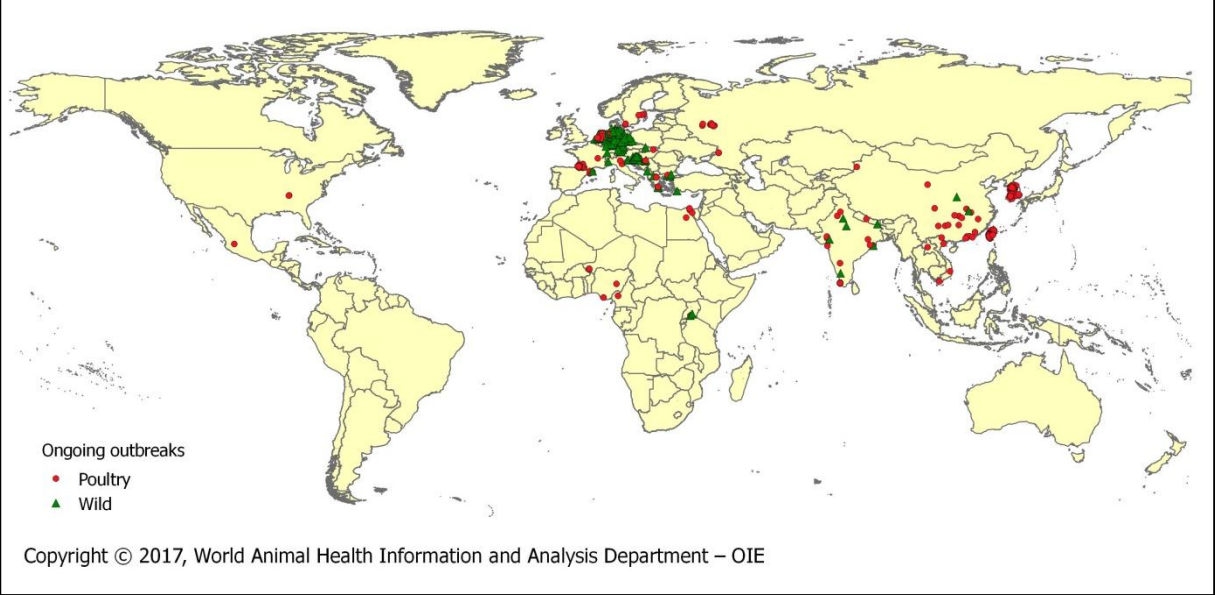


Figure 3. Map displaying the global distribution of on-going outbreaks of HPAI H5N8 in poultry and wild birds.

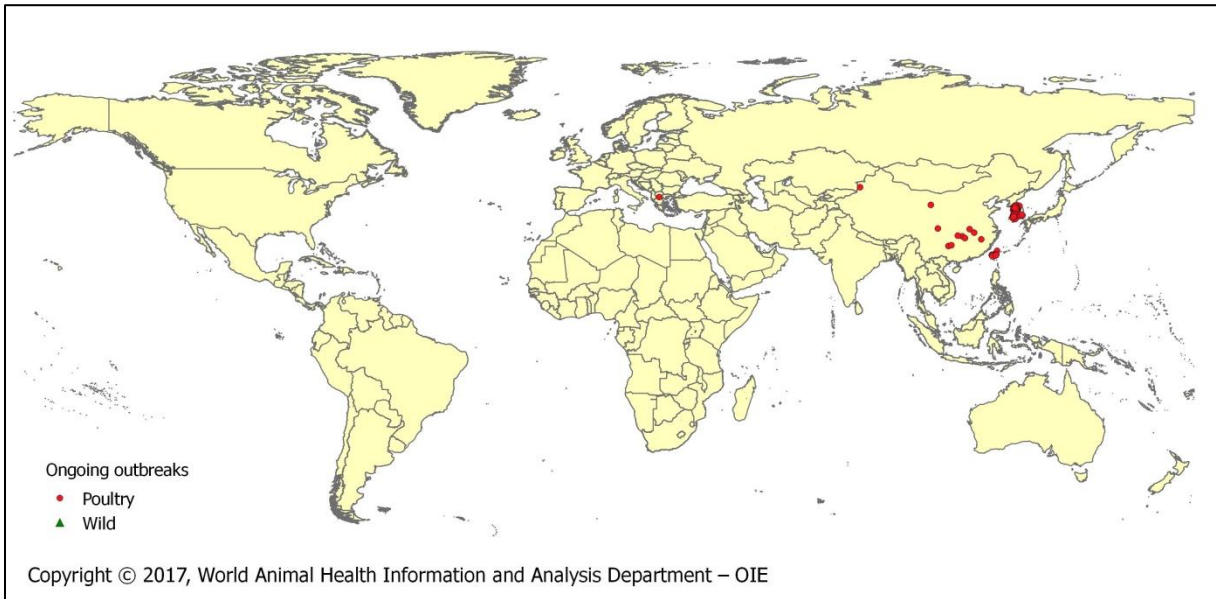


Figure 4. Map displaying the global distribution of on-going outbreaks of HPAI H5N6 in poultry and wild birds.

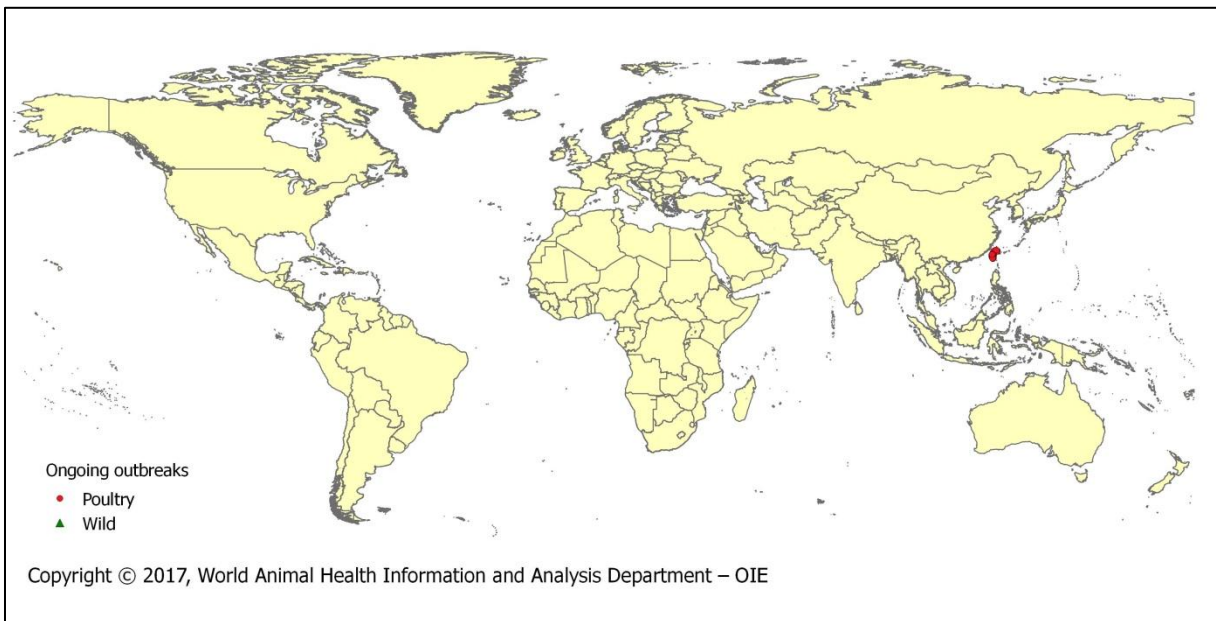


Figure 5. Map displaying the global distribution of on-going outbreaks of HPAI H5N2 in poultry and wild birds.

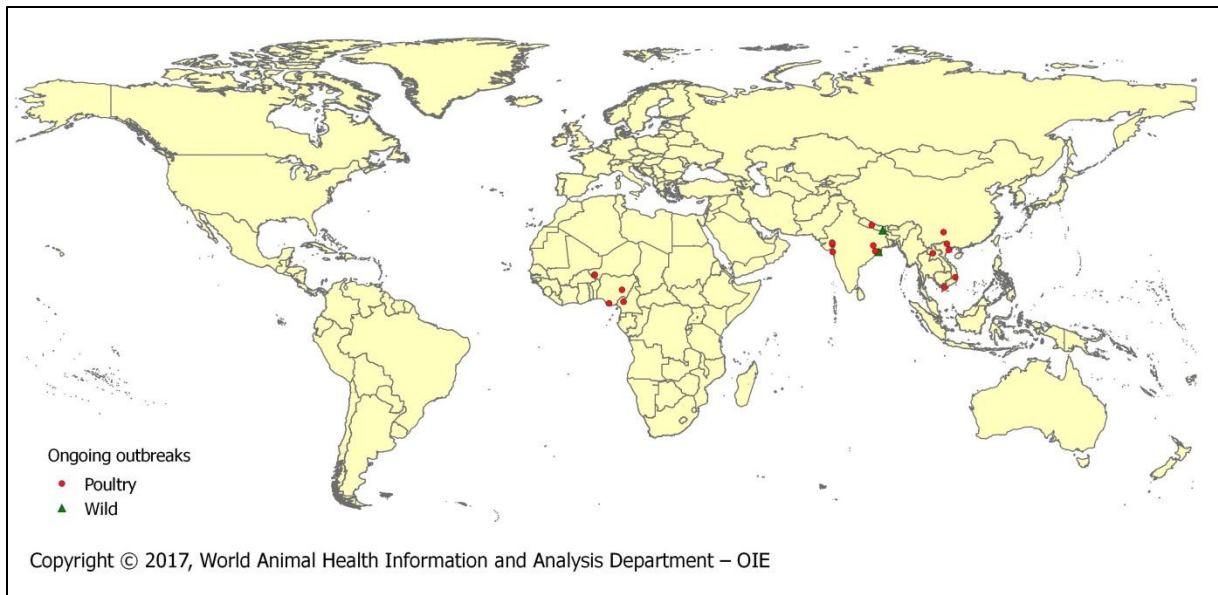


Figure 6. Map displaying the global distribution of on-going outbreaks of HPAI H5N1 in poultry and wild birds.

Understanding the Current Global Situation

1. H7N9

Since its origin in 2013, the H7N9 virus remained low pathogenic (LP) in poultry mainly in China but caused over 1400 human infections. Live bird markets remain the main source of virus spreading among poultry and from poultry to humans. Most human cases were reported during the period December to April in the past years.

From February to April 2017, the Chinese Delegate to the OIE reported that 40 samples mainly from live bird markets of Guangdong, Hunan, Guangxi and Fujian provinces tested positive for highly pathogenic avian influenza (HPAI) H7N9 virus. This indicates that the LP H7N9 virus has mutated to become HPAI H7N9 virus. Experimentally the virus is very lethal in chickens and the intravenous pathogenicity index of the virus is 2.8 to 3 (i.e. all experimentally inoculated birds died within 24 hours).

China conducted extensive surveillance in 445, 000 samples collected from all provinces to understand the extent of HP H7N9 distribution. There has been closure of live bird markets in affected provinces and stamping out of positive birds. Poultry movement control in affected provinces and biosecurity measures have increased. The highest risk of H7N9 introduction remains live poultry trade with affected areas. On the 09th of May 2017 China reported a [new detection of H7N9](#) on a poultry farm (not yet included in the tables of the present report) along with associated stamping out measures as a result of this heightened surveillance activity. Such detections may become more numerous and frequent following the mutation of H7N9 to HPAI which induces more detectable symptoms on poultry.

As long as humans are exposed to infected animals and their environments, further human cases can be expected.

USA also reported a different strain of HPAI H7N9 of North American wild bird lineage in a chicken broiler breeder flock. Based on full genome sequence analysis, this virus is NOT the same as the China H7N9 virus that has impacted poultry and infected humans in Asia. The United States H7N9 is a very different virus, genetically distinct from the China H7N9 lineage. Depopulation of the affected flock was done and enhanced surveillance was implemented.

2. H5N1

The Asian lineage HPAI H5N1 continued to be reported from few countries of Asia and Africa in poultry and wild birds. The virus has become enzootic in Asia and Africa and continues to cause outbreaks in poultry and sporadic human infections. All cases of H5N1 infection in people have been associated with close contact with infected live or dead birds, or H5N1-contaminated environments. Countries affected should focus on strengthening biosecurity measures to prevent introduction of disease into flocks and avoid contact of wild birds with poultry.

3. H5N8

Immediate notifications and follow up cases of HPAI H5N8 showed a decrease in the number of new and ongoing outbreaks over the past month from Europe and Africa. The new outbreak reported in a backyard flock in the United Kingdom illustrates the still ongoing risk. Genetic analysis of the European virus indicates that the incursion happened via wild birds through two separate geographical origins, northern and central Europe from Asia.

Since HPAI H5N8 subtypes of the virus cause high mortality in domestic poultry, Veterinary Services in at-risk countries have recommended increased prevention efforts through bio-security to minimize contact between wild birds and poultry and enhanced surveillance and preparedness. They are also strengthening their targeted wild bird surveillance activities in areas where viruses have been detected and in other areas where there are significant populations of migratory waterfowl.

The majority of wild bird migration across Europe, Africa and Asia subsides after the winter season. While wintering locations of these migratory birds are often stable, additional movement within a region may be affected by local weather conditions, food resources, access to open water, etc.

4. H5N6

Highly pathogenic avian influenza H5N6 continued to be reported from Asia in poultry and wild birds, particularly from China, Chinese Taipei, Japan, Korea and Vietnam. The Asian lineage H5N6 causes severe clinical signs in poultry and associated mortality. The continuing outbreaks in these countries have led to significant destruction of poultry with more than 20 million birds destroyed during these outbreaks for control measures by the veterinary authorities. Detection of HPAI H5N6 virus in migratory bird species poses a potential threat for the dissemination of this virus by wild birds outside Asia.

This group of H5N6 viruses has also been associated with human infection, including a number of deaths. A total of 16 laboratory-confirmed cases of human infection with influenza A(H5N6) virus, including six deaths, have been reported to WHO from China since 2014.

Greece is the first country in Europe to report an outbreak of H5N6 in 2017. The Greece H5N6 virus was described as a reassortant of the current H5N8 viruses present in Europe. It has no relationship to the zoonotic HPAIV H5N6 viruses detected in SE Asia.

5. H7N3

The new outbreak recently reported by Mexico of [H7N3](#) reflects the ongoing risks of avian influenza, the dynamic international and national contexts, and therefore the benefits of active surveillance to ensure early detection of outbreaks in commercial poultry. In this case, no clinical signs were reported and the detection was made by the Veterinary Services through their active surveillance programme. H7N3 has previously caused outbreaks in poultry in Mexico in 2013 and 2015.

Key messages

- The Northern Hemisphere winter season is typically associated with an increased avian influenza risk. In 2016-17 this risk has seen significant epidemics of H5N8 in Europe and H5N6 in Asia. Veterinary Authorities in some countries in Europe and Asia have responded to outbreaks in poultry with stamping out measures, heightened surveillance and recommendations to poultry owners to increase biosecurity. The outbreaks of H5N8 in Europe show encouraging signs of being brought under control through ongoing stamping out measures, with disease events being closed out, and new events less frequent. New outbreaks of H5N6 in Asia, in South Korea in particular, are as yet still being reported to the OIE along with significant culling of poultry during stamping out operations (although some of the recent significant increase in outbreaks and culling in this report reflects an artefact from delayed reporting).
- The zoonotic avian influenza strains that have become endemic in China (H7N9) and in parts of Africa and Asia (H5N1) create the most significant public health risks. Veterinary Authorities have struggled to get on top of the situation, which has allowed these viruses to circulate in poultry populations. This creates the risk of mutations from co-infections, and public health risks through exposure of people during rearing and slaughter. Although there are seasonal trends, the risk is year round since the viruses have become established and self-sustaining in bird populations. The role of commercially farmed poultry, backyard poultry, live bird marketing systems and wild birds of differing species in maintenance of the virus and transmission will have a local context that needs to be understood through epidemiological study. Heightened surveillance activity in China in the poultry sector is already contributing to control efforts and will lead to improved understanding of reservoirs of infection and transmission pathways.
- The OIE Standards and the transparency of reporting through the OIE's World Animal Health Information System provide the framework for Veterinary Services to implement effective surveillance, reporting and controls for avian influenza. Wild bird surveillance can indicate periods of heightened risk, and at these times measures to improve on-farm biosecurity will reduce the likelihood of exposure of poultry. The Veterinary Services of OIE Members respond to their national situations in accordance with their national policies and their economic and technical resources.
- Avian influenza is having a significant impact on national economies and food security through the disruption of trade in poultry genetics and poultry products. Some of this is unavoidable, whereas some impacts arise due to a lack of preparedness and risk mitigation or through the inappropriate reaction from trading partners when events are transparently reported. The OIE Standards provide the means through which Veterinary Services can work with their national poultry industry to proactively manage risks (for example, compartmentalization of the genetics sector; transparent demonstration of health and risk status through effective surveillance systems; regionalization during disease events; risk management standards for trade in poultry products). The OIE encourages its Members to harmonise their national systems with the OIE international standards they

have adopted, in relation to both their domestic programmes and their rules for imports, in order to minimize unwarranted impacts to trade.

- There is no scientific evidence that supports the killing or culling of free-ranging wild birds or other free-ranging wildlife to control avian influenza. Detections of avian influenza, including highly pathogenic avian influenza in wild birds only do not result in a country losing its status as free from Highly Pathogenic Avian Influenza, and there is no justification for imposition of measures on trade in poultry or poultry products for such countries.

Further Information Resources

- OIE Avian Influenza Portal www.oie.int/avianflu
- OIE Latest Notifications on Avian Influenza from Members www.oie.int/en/animal-health-in-the-world/update-on-avian-influenza/2017/
- OIE WAHIS Interface www.oie.int/wahis_2/public/wahid.php/Wahidhome/Home
- OFFLU - OIE and FAO Network of Expertise on Animal Influenza www.offlu.net/
- World Health Organization (WHO) influenza website www.who.int/influenza/en/
- Food and Agriculture Organization EMPRES website for Avian Influenza www.fao.org/avianflu/en/index.html
- Outbreak Assessment of "Highly Pathogenic Avian Influenza H5N8 in the UK and Europe" by UK DEFRA's Veterinary & Science Policy Advice Team
- https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/607559/uoaa-avian-flu-europe-update13.pdf Epidemiological status of HPAI viruses from the clade 2.3.4.4. in Europe since October 2016 <http://www.platforme-esa.fr/article/situation-epidemiologique-des-virus-iahp-issus-du-clade-2344-en-europe-depuis-octobre-2016-0>
- The Global Consortium for H5N8 and Related Influenza Viruses 2016. Role for migratory wild birds in the global spread of avian influenza H5N8. *Science*, 14 Oct 2016:Vol. 354, Issue 6309, pp. 213-217. DOI: [10.1126/science.aaf8852](https://doi.org/10.1126/science.aaf8852)