



Department  
for Environment  
Food & Rural Affairs

# Avian Influenza

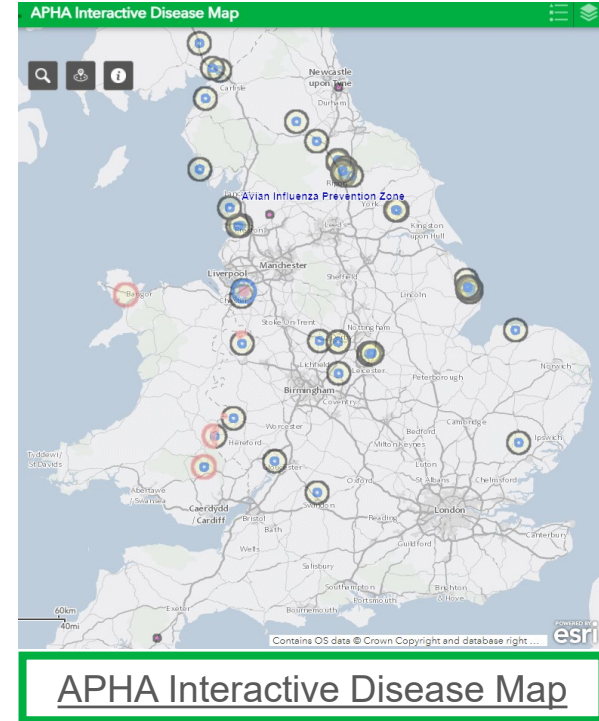
# Veterinary Practices Webinar

# Agenda

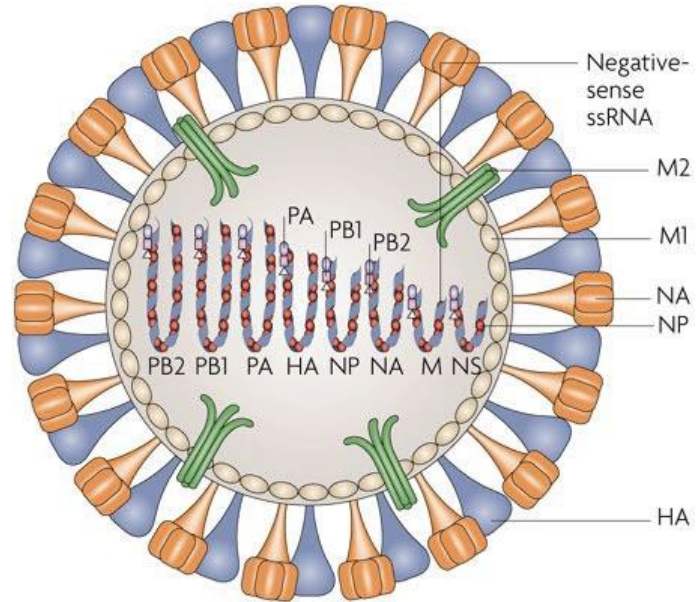
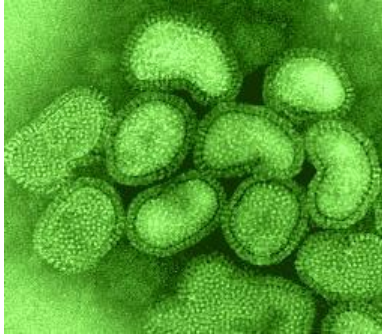
- Welcome and Introductions
- Avian Influenza Update – latest picture
- Detection Information for Vets
- Contact details and further information

# Latest Situation

- UK is experiencing its largest outbreak of avian influenza ('bird flu')
  - For the latest case numbers see [GOV.UK/Bird-Flu](https://www.gov.uk/bird-flu)
  - For locations of disease control zones currently in force in GB see the [APHA Interactive Disease Map](#)
- Compared to
  - 26 cases in 2020/2021
  - 13 cases in 2016/2017
- An **Avian Influenza Prevention Zone (AIPZ)** came into force across:
  - Great Britain on the 3 November 2021
  - Northern Ireland on the 17 November 2021
  - Additional housing measures in force across the UK from 29 November 2021
- Legal requirement – keep all birds indoors and follow strict biosecurity measures in order to limit the spread of and eradicate the disease.



# Influenza Virus



# Avian Influenza

- **Causative agent** – Influenza A virus sub-typed using surface antigens (H1-16 and N1-9).
- **Only influenza A virus of subtype H5 or H7 are Notifiable. Both HPAI and LPAI are Notifiable Diseases**
- **Affects** – wild and domestic bird species (transmission to mammals including humans can occur)
- **Incubation period** – 1-14 days, max OIE incubation 21 days
- **Transmission** – direct by contact with infected birds, faeces, body fluids, and indirect via feed/water, fomites.

# Avian Influenza

- **Virus survival** – weeks in the environment under certain conditions (low temperatures). Wild birds and waterfowl act as reservoirs of infection.
- **2 pathotypes** – Low Pathogenic AI (LPAI) and High Pathogenic AI (HPAI) both Notifiable
- **Indicator species** - clinical signs can vary between species and some species show minimal clinical signs. Chickens and turkeys are indicator species with ducks and geese showing fewer (if any) signs

# Pathotypes and Clinical Signs (in poultry)

## Low Pathogenic Avian Influenza (LPAI)

- Potentially asymptomatic
- Mild to moderate respiratory symptoms
- Drop in egg production
- Secondary infections
- Can be caused by any subtype
- LPAI could turn into an HPAI when in a flock

## Highly Pathogenic Avian Influenza (HPAI)

- Potentially caused by any subtypes
- Sudden mortality up to 100%
- Severe drop/stop in egg production
- Respiratory signs and swelling of sinuses
- Oedema and subcutaneous bleeding
- Diarrhoea and neurological signs
- PM findings highly variable but often petechiae and haemorrhage in carcase
- **HIGHLY CONTAGIOUS – DISEASE OF NUMBERS**

# General Summary of the 2020/21 and current outbreak

- **ALL of the IPs in the 2020/21 outbreak were attributed to direct contact or indirect contact with wild birds**
- **No evidence of longer distance spread between premises in 2020/21 or current outbreak so far, apart from when the premises were located close together and were part of the same business – THE BIOSECURITY WITHIN THE BUSINESS DID NOT WORK**
- **Usually the different components for biosecurity are ostensibly present, but they are not done well** - facilities are poorly maintained / incompletely / inconsistently e.g. vehicle washing, visitors book records



# Avian Influenza Biosecurity Overview

- There is **no rocket science** – do the basics of good practice and **do them all well**.
- **VIRDO** – our findings on risk factors.
- **Risk pathways** – we are not expecting laboratory levels of containment, but **keep the lessons of Covid in your mind** .....

  - Only **tiny doses** of virus are needed and these are then **amplified**
  - **Don't rely on a "hard outer shell"**

- **You need to do biosecurity best when you don't have disease**
- Biosecurity is not just for exotic outbreak prevention - **endemic disease benefits**
- **Licencing ....!!**
  - ... is **key to minimising impact** on the business – never a good thing to have disease.
  - ... **Licencing permits you to do something that is otherwise illegal.**
  - ... **Biosecurity key to licencing conditions.**
  - ... Depends on **EVIDENCE AND TRUST – YOU NEED GOOD RECORDS IN AN ACCESSIBLE FORMAT**
  - ... based on **risk assessment.**
- No easy answers –**requires real effort – IT NEEDS TO BE PART OF THE CULTURE OF THE BUSINESS**

# 'Key Issues' for biosecurity

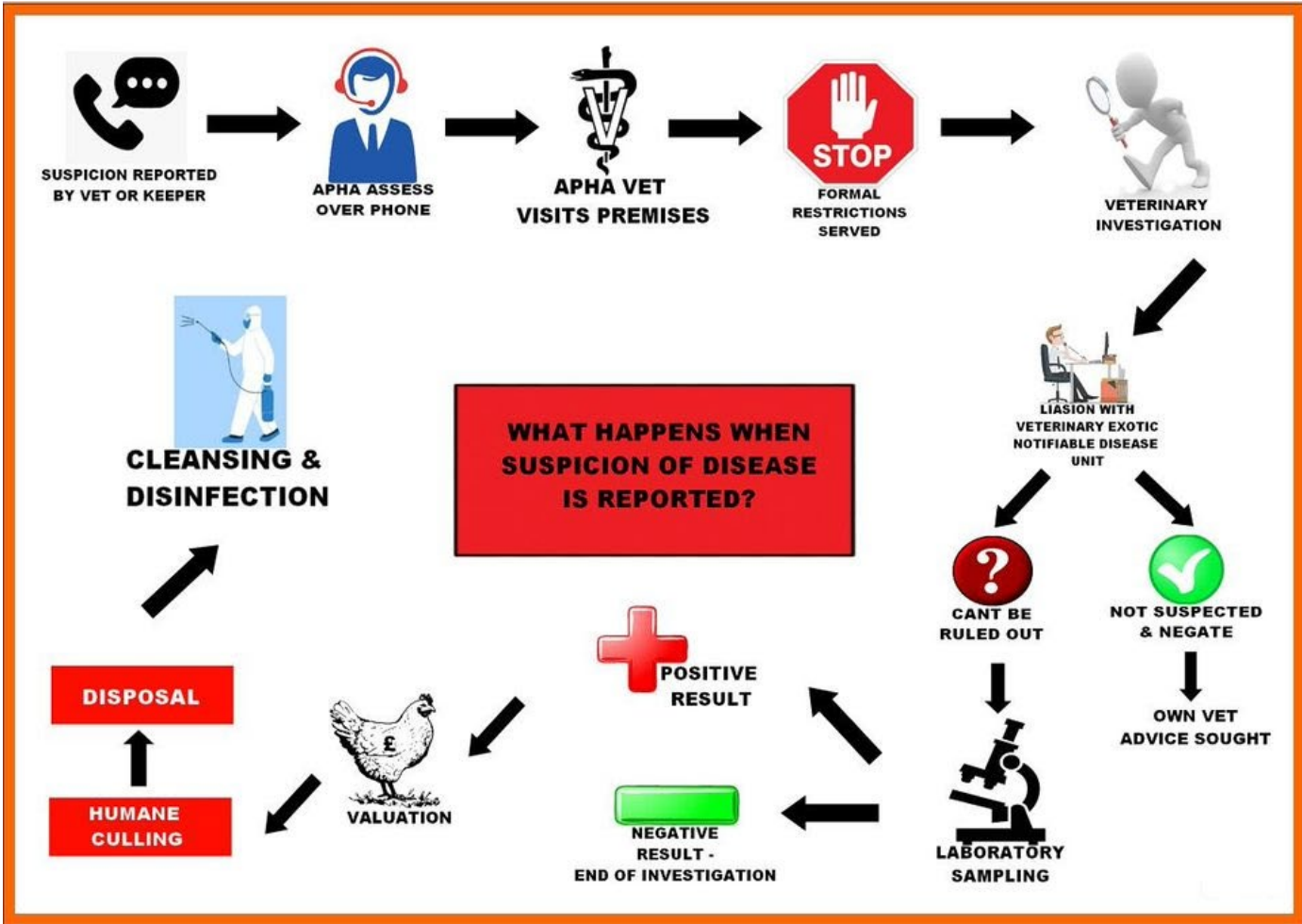
- **Perimeter biosecurity** – the hard outer shell
- **Bedding** management
- Building **maintenance** / design
- **Location** – near coast / wetlands migration routes / lakes
- Management and **the controlling mind – don't rely on your SOPs**
- **Record keeping** (especially for LPAI) – GOOD RECORDS & IN AN ACCESSIBLE FORMAT
- Pointless D (no C) – there is a C in **C&D**
- Staff / **PPE discipline**
- **Virus survival** is for weeks
- **Flooding**
- **Ponds** on site / in the ranges
- **Vehicles** - restrict access
- Separate **premises under same management** in close proximity
- **Co-location of infrastructure**
  - Resilience of your business
  - Contingency planning
  - CPHs
- **Licencing** – moves / restocking

**During your visits, if you suspect AI,  
please make sure that you call APHA**

**Tel 03000 200 301**

No matter how early or late in the day, please do call if you  
suspect a Notifiable Disease (AI or any other)

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# What happens when suspicion of disease is reported:

- Suspicion reported by Vet or Keeper
- Animal and plant health Agency (APHA) duty vet assess report during telephone conversation.
- If suspicion cannot be negated during the telephone conversation, formal restrictions are served on the premises
- APHA will initiate a veterinary investigation at the suspect premises
- APHA duty vet will liaise with their colleagues in the Veterinary Exotic Notifiable Disease Union (VENDU) and report of suspicion will either be:
  - Negated and the reporter informed of the decision and advised to contact their private veterinary surgeon for further advice; or
  - Suspicion cannot be ruled out and official samples will be taken for further investigation.
- If laboratory testing of official samples from birds at the suspect premises do not show any evidence of the presence of avian influenza the case will be negated, and the reporter informed of the decision and advised to contact their private veterinary surgeon for further advice
- If laboratory testing of official samples from birds at the suspect premises do show evidence of the presence of avian influenza and the Chief Veterinary Officer confirms a case of notifiable avian influenza actions which follow at infected premises include valuation of birds present, humane culling followed by biosecure disposal of carcasses and cleansing and disinfection of the premises.

# Differential diagnosis of negated cases

- Option of differential diagnostic testing by APHA in negated cases (negated clinically or in lab)
    - Surveillance value
    - Benefit to bird health and welfare
  - **Post-mortems** at APHA VI Centres, Lasswade or third party providers (see <http://apha.defra.gov.uk/vet-gateway/surveillance/index.htm> )
    - Or can also use other samples
  - Please contact Avian Expert Group via [SIU@apha.gov.uk](mailto:SIU@apha.gov.uk) to discuss an individual case
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# HPAI: Clinical Presentation

- Sudden mortality up to 100%
  - Severe drop/stop in egg production
  - Respiratory symptoms and swelling of sinuses
  - Oedema and subcutaneous bleeding
  - Diarrhoea and neurological signs
  - PM findings highly variable but often petechiae and haemorrhage in carcase
  - **HIGHLY CONTAGIOUS: IT REALLY IS A DISEASE OF NUMBERS!**
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In addition to the common signs of Avian Influenza, which may include respiratory, neurological and/or enteric presentation, you should consider reporting an avian notifiable disease when you have :

- **History of acute, high and rapidly escalating unexplained mortality and morbidity.**
  - **Large decrease in feed and water intake.**
  - **Considerable acute drop in egg production with an increased proportion of pale eggs or “seconds”**
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# Cyanosis Comb and Wattles



# High Mortality



# Differential Diagnosis of Respiratory Diseases in Poultry

	AI/ND	IB	ILT	Mycoplasmosis	Infectious Coryza
Spread of Spread	Rapid	Rapid	Moderate	Slow/ Persistent	Rapid / May become chronic
Duration	2 Weeks	2 Weeks	2-4 weeks	Weeks to months	Weeks to months
Egg Drop	0-100%	<50%	1-20%	1-20%	<50%
Mortality	0-100%	Low	High	Low	Negligible
Morbidity	0-100%	High	0-50%	High	High
Clinical Signs	Egg lay stops within 3 days; Acute Respiratory disease with CNS and high mortality; Egg quality	Acute epornitic respiratory disease without CNS signs but sharp egg drop and egg quality	Severe dyspnoea with bloody mucus high mortality	Chronic respiratory signs influenza by weather	Acute or chronic respiratory signs, facial oedema, copious nasal discharge

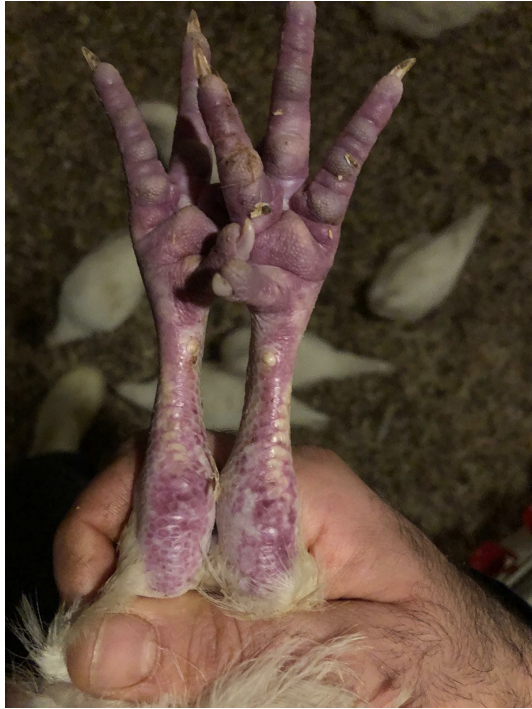
# AI Clinical and Post-mortem Findings



**HPAI- Generalized carcass and visceral congestion and organomegaly with multifocal haemorrhages and pancreatitis**

- Intense congestion and cyanosis of comb, nares and beak
  - Severe congestion and oedema of feet and shanks
  - Oral mucosal haemorrhages with hyperaemia of the beak, nares, wattles and skin
  - Multifocal pancreatic necrosis and haemorrhages
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# PME Findings



**Haemorrhages legs**



**Red trachea**



# Testing for Exclusion

- If avian notifiable disease not highly suspected but cannot be excluded from the differential diagnosis
- [APHA Vet Gateway: Testing for exclusion of notifiable avian diseases \(defra.gov.uk\)](#)

# Further Information

Description	Useful Link
Customer Advice	<a href="mailto:customeradvice@apha.gov.uk">customeradvice@apha.gov.uk</a>
APHA animal disease alert subscription service	<a href="https://www.gov.uk/guidance/apha-alert-subscription-service">https://www.gov.uk/guidance/apha-alert-subscription-service</a>
Register your poultry	<a href="https://www.gov.uk/government/publications/poultry-including-game-birds-registration-rules-and-forms">https://www.gov.uk/government/publications/poultry-including-game-birds-registration-rules-and-forms</a>
Latest Situation and Biosecurity Guidance	<a href="https://www.gov.uk/guidance/avian-influenza-bird-flu">https://www.gov.uk/guidance/avian-influenza-bird-flu</a>
Outbreak assessments for avian influenza	<a href="https://www.gov.uk/government/publications/avian-influenza-bird-flu-in-europe">https://www.gov.uk/government/publications/avian-influenza-bird-flu-in-europe</a>
Bird Gatherings Guidance	<a href="https://www.gov.uk/guidance/bird-gatherings-licences">https://www.gov.uk/guidance/bird-gatherings-licences</a>
Avian Influenza Vaccination Guidance	<a href="https://www.gov.uk/government/publications/avian-influenza-bird-flu-vaccination/avian-influenza-bird-flu-vaccination">https://www.gov.uk/government/publications/avian-influenza-bird-flu-vaccination/avian-influenza-bird-flu-vaccination</a>
Social Media	APHA Facebook <a href="https://www.facebook.com/APHAGov/">https://www.facebook.com/APHAGov/</a> APHA Twitter @APHAgovuk <a href="https://twitter.com/APHAgovuk?s=20">https://twitter.com/APHAgovuk?s=20</a> <a href="#">Defra Press Office Rolling News story</a>



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**Thank you for your time**