

UK VIRAL CHALLENGES: PAST, PRESENT & FUTURE

Andrew Walker

BVSc, CertPMP, Advanced Practitioner
in Poultry Health & Production, MRCVS



HOW TO SUMMARISE?

- Age
- Economic impact
- Alphabetical
- Vaccination programme
- Vertical vs horizontal transmission
- Conclusion: story of a jobbing vet!

PRODUCTION OVERVIEW

Industry Evolution Drivers

The UK poultry industry evolved due to consumer demands, production technology advances and animal welfare focus.

Integrated Supply Chains

Vertical integration links breeding, hatcheries, feed mills, growers, and processors enhancing efficiency and traceability.

Welfare and Regulatory Impact

Retailers & consumers push for higher welfare standards and transparency, prompting investment in nutrition, biosecurity, housing and disease control. Shift to lower stocking densities

Production Efficiency and Resilience

Despite cost challenges, producers improved growth rates and feed conversion, increasing output without more birds.

TRENDS IN THE SECTORS

MEAT

- - Integration – contract based
- - Shifting to on farm hatching
- - Increased growth rates and FCR
- - Pressure on terminal C&D
- - Pressure on growing space
- - Focus on biosecurity
- - Drive in technology



EGGS

- - Increased free range
- - Organic static
- - Change from colony but increasing barn units
- - Increased breeds variation – white & coloured eggs
- - Focus on biosecurity
- - Equipment & automation



PAST

- Funding for viral research in UK
- Research establishments
- People
- Acquisitions and mergers of pharma supply chain



PAST INDUSTRY TRENDS

- Shift to larger units
- Increased Free Range production
- Changes in stocking densities
- Changes in antibiotic usage
- Increased vaccination
- Mixed livestock farms & co-grazing
- Multiage vs single age

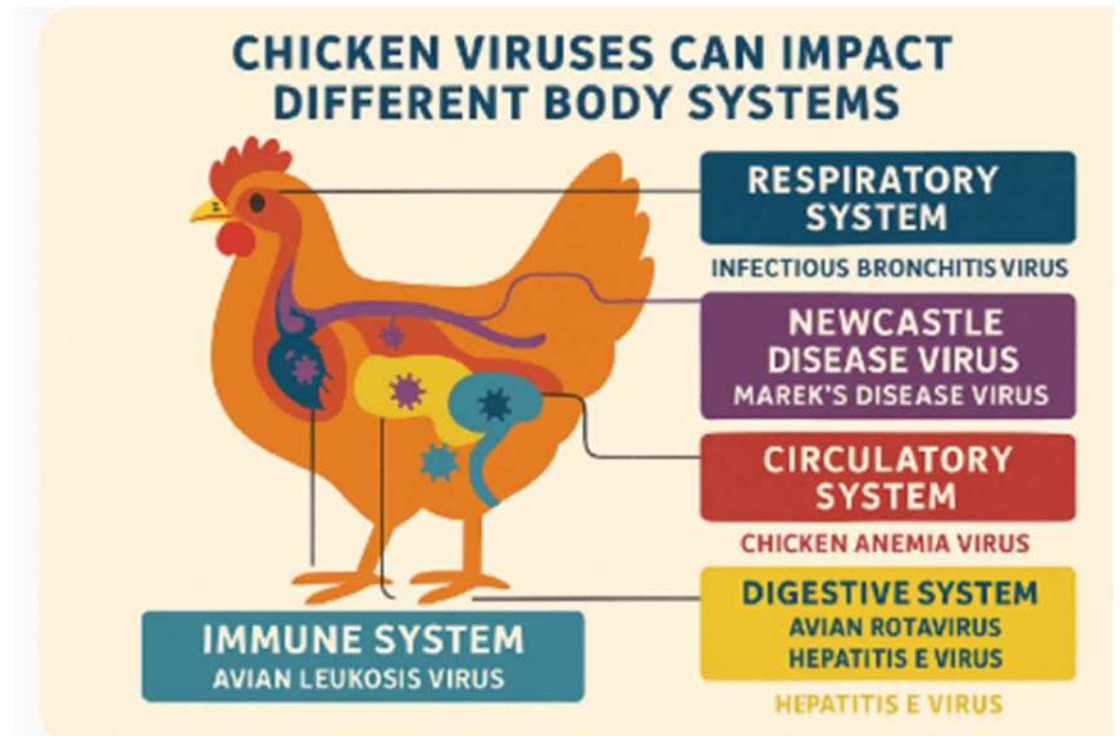


PRESENT

- More focus on welfare
- Better biosecurity- NCP, Assurance schemes, auditing, awareness, support
- Better understanding of viral transmission
- Better diagnostic testing
- More veterinary resource (decentralised services)
- Stricter regulation and legislation, welfare directives
- Vaccine development – Vector, Immune-complex, in-ovo, licence claims

WHAT ARE THE COMMON VIRAL CHALLENGES:

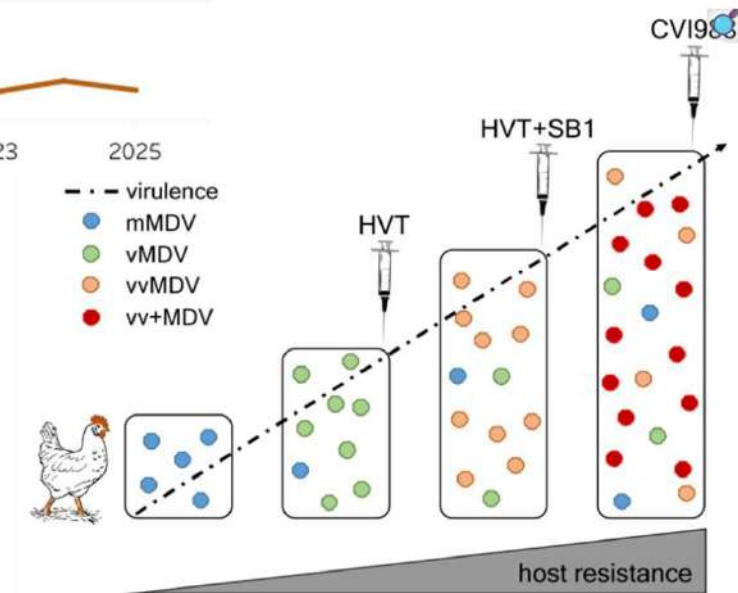
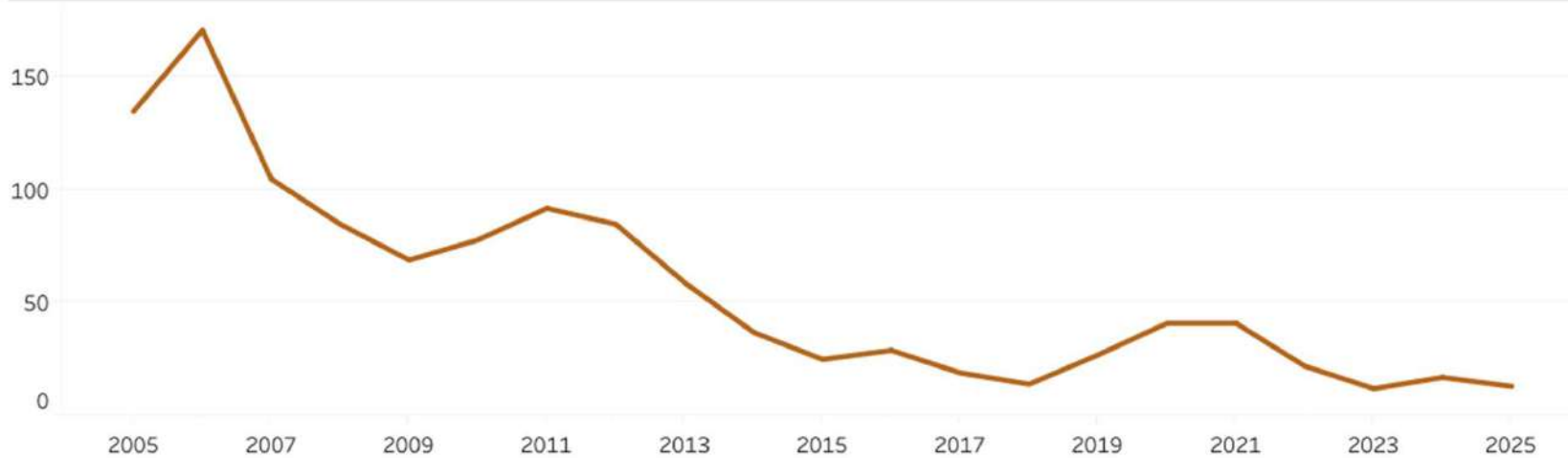
- Which viruses?
- Challenge impacts?
- Trends over time



- No focus on Avian Influenza!

MAREK'S DISEASE

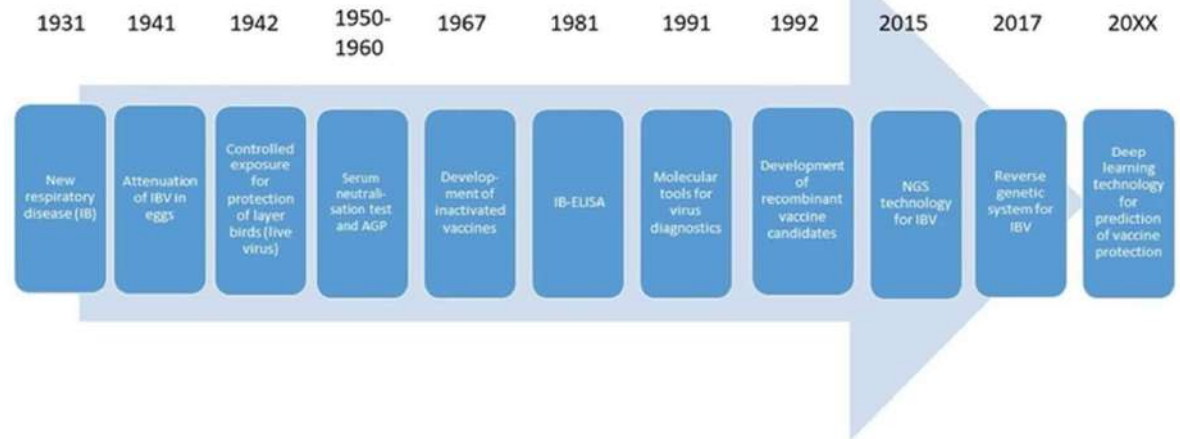
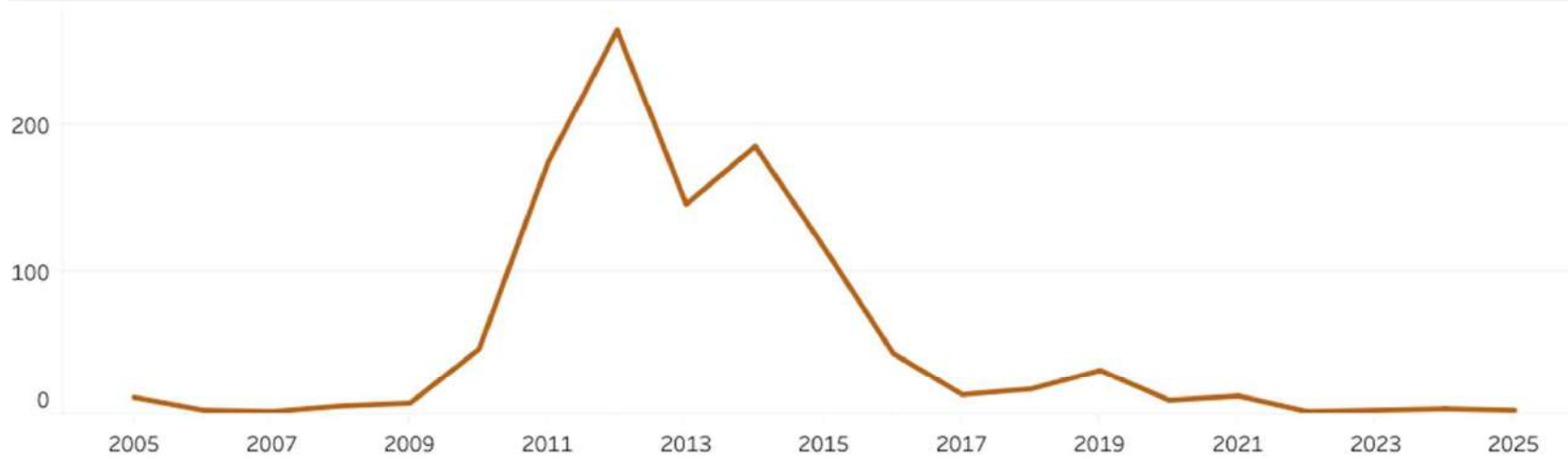
Distribution over the years / Seasonality APHA data



INFECTIOUS BRONCHITIS

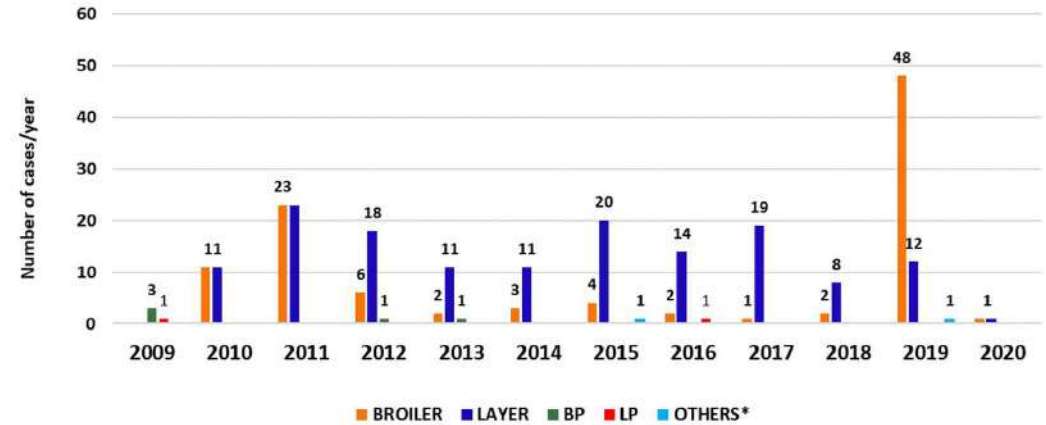
Distribution over the years / Seasonality

APHA Data

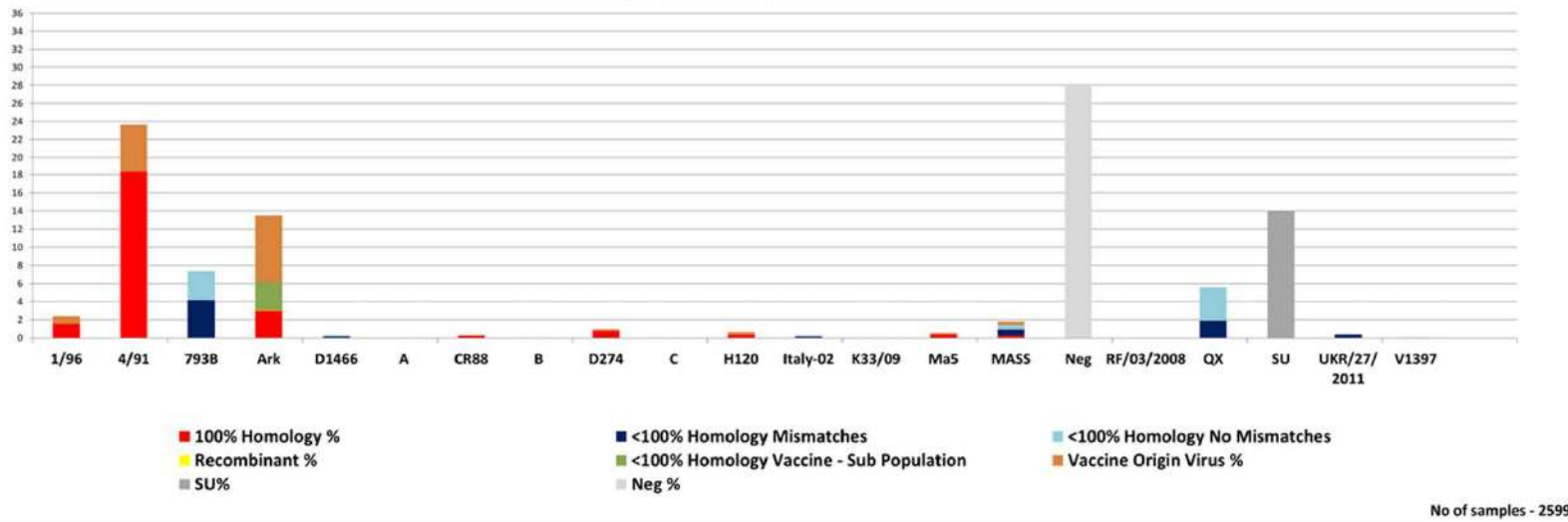


INFECTIOUS BRONCHITIS (MSD DATA)

B) Number of QX Field Viruses - Type of bird - The UK (2009-2020)

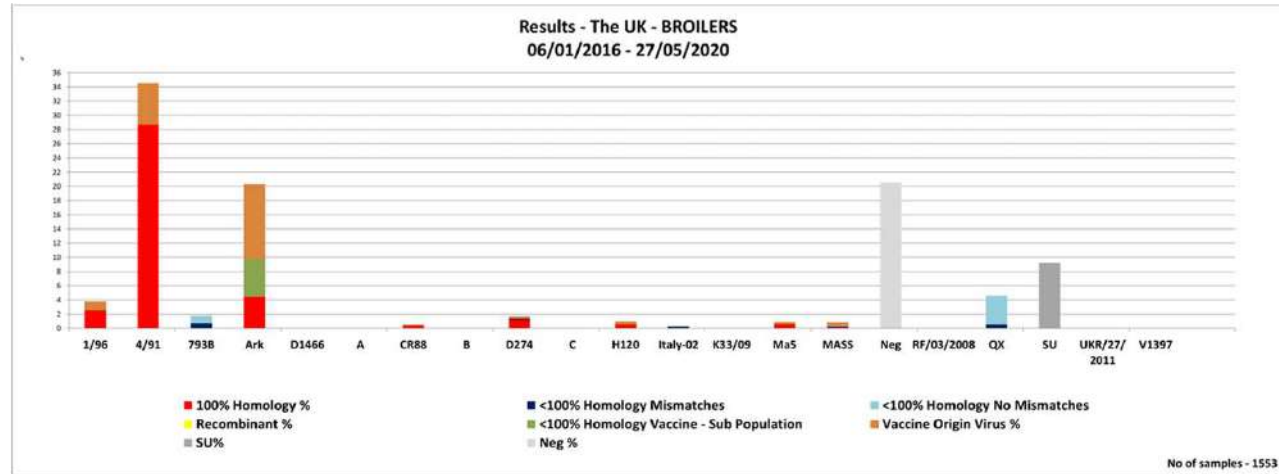
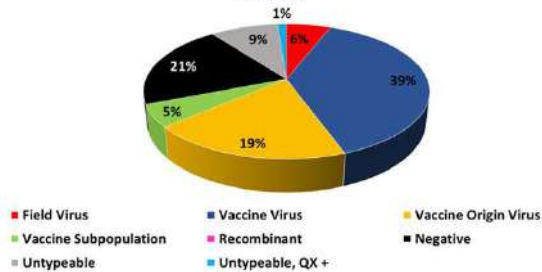


Results - The UK
06/01/2016 - 27/05/2020

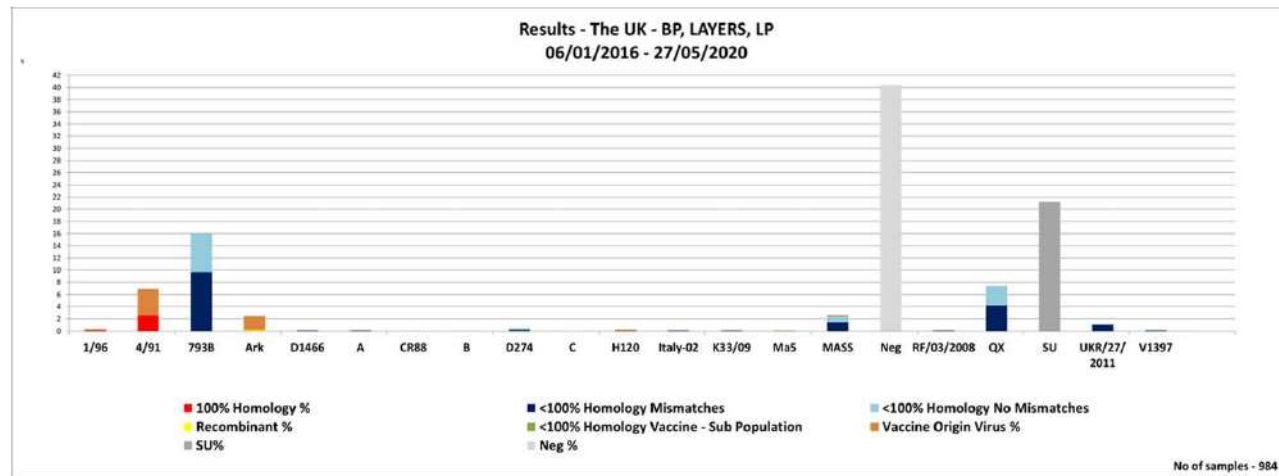
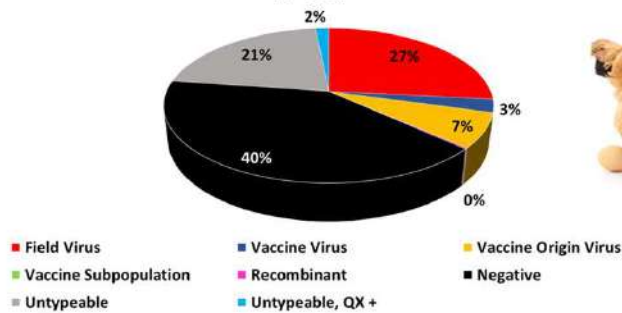


INFECTIOUS BRONCHITIS (MSD DATA)

IB field findings - The UK - BROILER (2016-2020)
(N= 1,553)



IB field findings - The UK - BP, LAYERS, LP (2016-2020)
(N= 984)



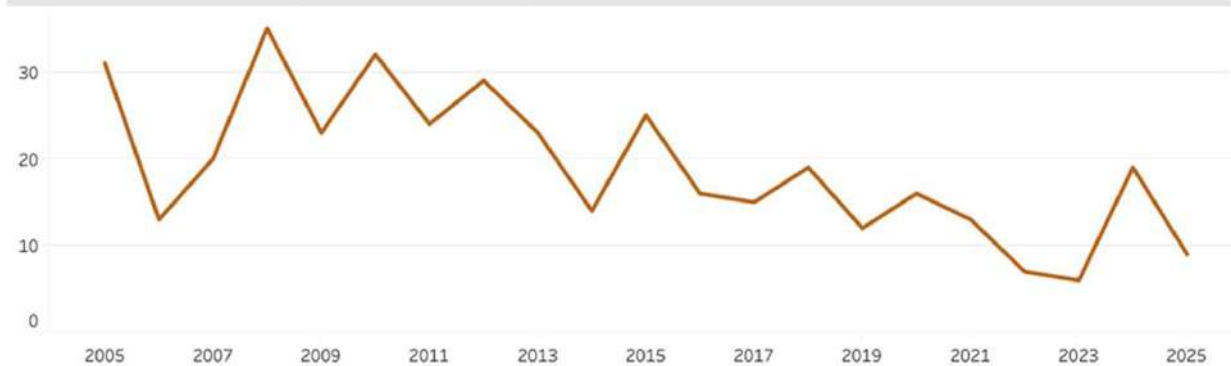
INFECTIOUS BURSAL DISEASE

- Less classical disease outbreaks
- Linked to poor performance
- Immunosuppression

- Live attenuated vaccines
- Intermediate & intermediate plus
- Vector vaccines
- Immune complex vaccines

Distribution over the years / Seasonality

APHA Data



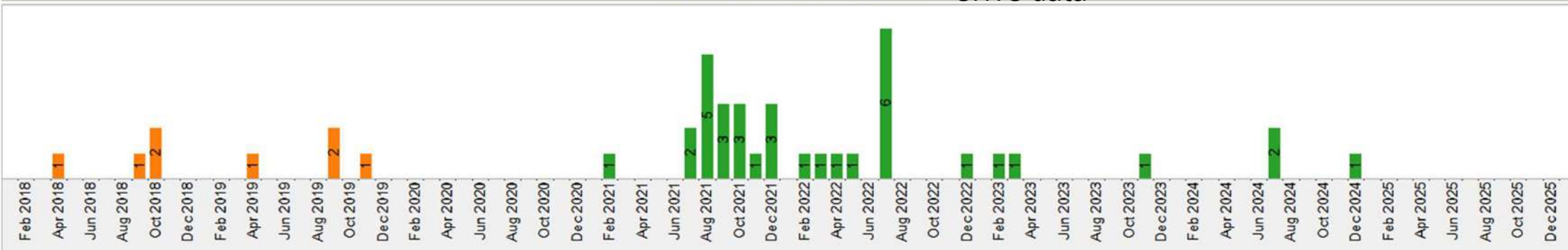
INFECTIOUS BURSAL DISEASE

- A consistent threat to performance!

- Cluster of clinical cases in 2021/2022
- UK 2019 strain
- Diagnosis changing to PCR/serology surveillance rather than post mortem findings.

Total number of diagnoses by month

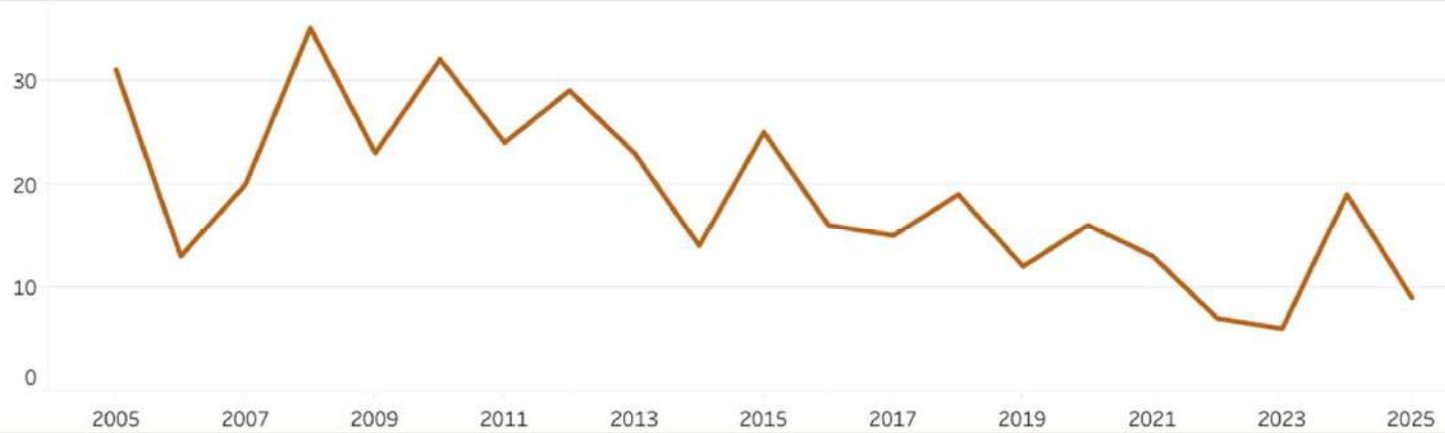
SHVS data



INFECTIOUS LARYNGOTRACHEITIS

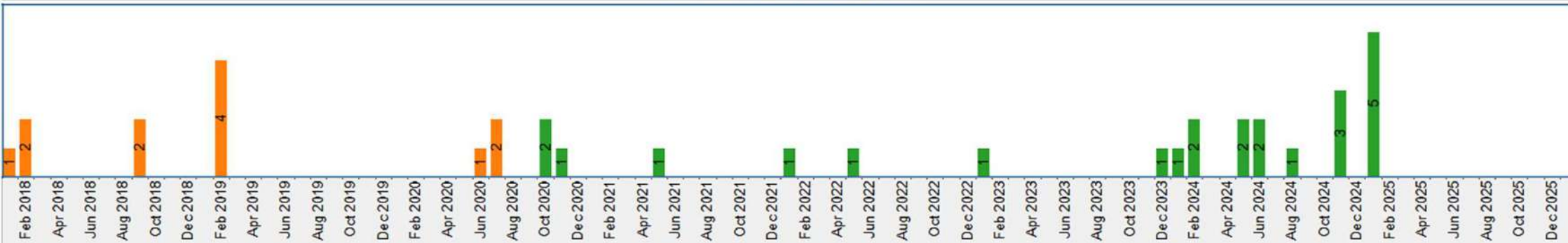
Distribution over the years / Seasonality

APHA Data



Total number of diagnoses by month

SHVS Data

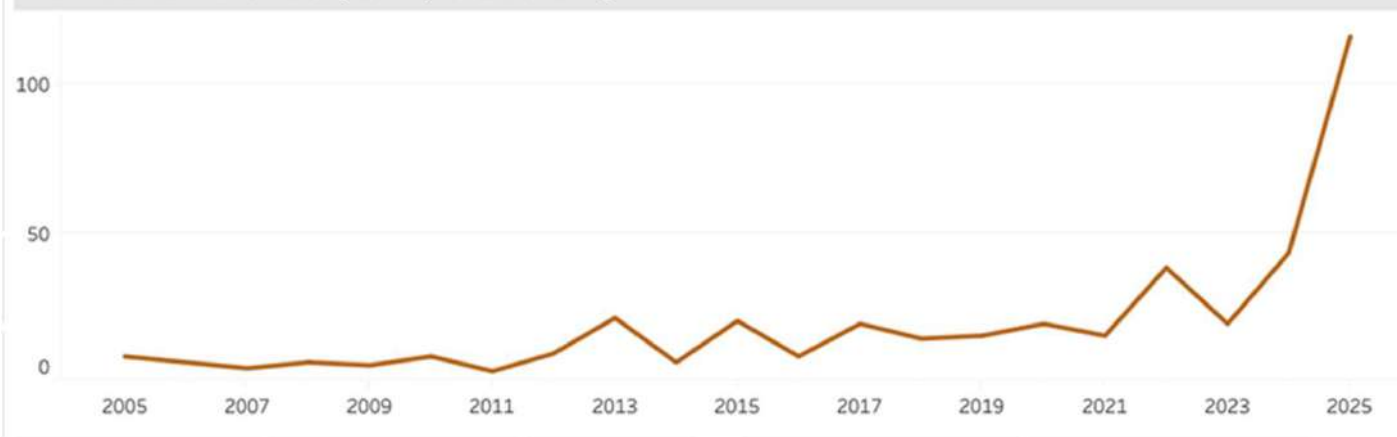


INCLUSION BODY HEPATITIS

- Adenovirus
- Vertical transmission
- Lateral spread
- Severe mortality
- Limited vaccination options

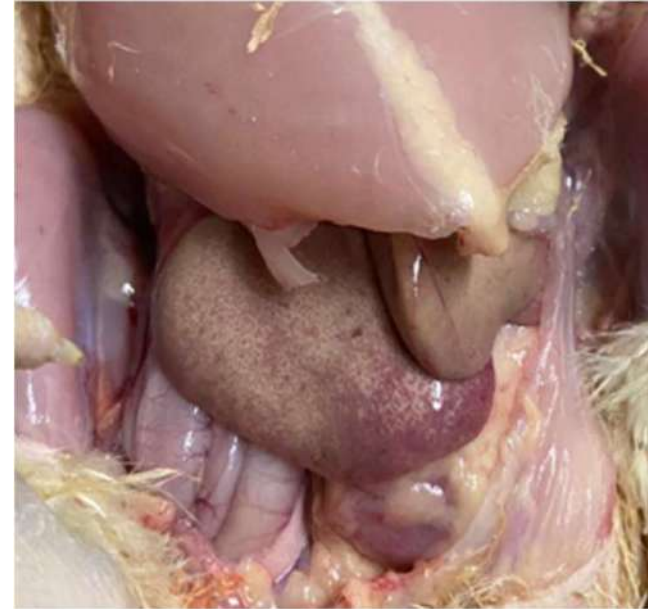
Distribution over the years / Seasonality

APHA data



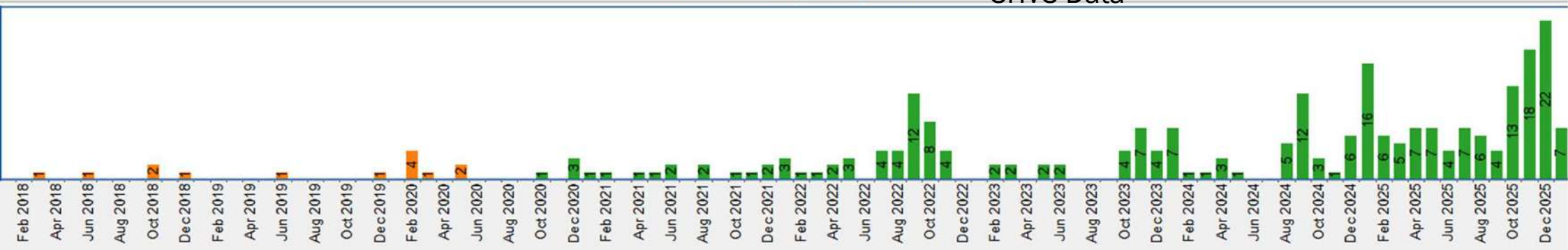
INCLUSION BODY HEPATITIS

- Very high mortality
- Onset of age variable



Total number of diagnoses by month

SHVS Data



OTHER VIRUSES

- Controlled by vaccines in UK

- Avian Encephalomyelitis
- Chicken Anaemia Virus
- Metapneumovirus
- Egg Drop Syndrome
- Newcastle Disease

OTHER VIRUSES

- Avian Influenza
- Reovirus – R&S, tendonopathy
- Chicken Astro Virus
- Avian Nephritis Virus
- Avian Hepatitis E virus
- Rotavirus
- Birnavirus - TVP

FUTURE

- Further diagnostic innovation
- Molecular manipulation and modelling?
- AI – disease modelling and machine learning
- Farm size- continued consolidation and scale of unit size?
- Building infrastructure and technology
- Environmental monitoring
- New disease challenges due to climate change- vector borne
- Geopolitics- Imports, product & poultry movements.



THANK YOU

- APHA
- MSD
- Past- previous mentors and colleagues
- Present - Slate Hall Colleagues
- Future- next generation joining the sector to continue to invigorate and challenge the status quo