Common risk factors identified from the 2020/21 AI outbreak

Factors increasing the likelihood of introduction and increasing the impact on your business

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Monday 13 September 2021
Summary of points in the presentation

1. There is **no rocket science** – do the basics and **do them all well**.

2. **VIRDO** – our findings on risk factors.

3. **Risk pathways** – we are not expecting SAPO 4 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”**

4. The Charts - **The Top 10** issues.

5. **Mutual assistance** – things we can do to help each other.

6. **You need to do biosecurity best when you don’t have disease**

7. Biosecurity is not just for exotic outbreak prevention - **endemic disease benefits**

8. **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**.
   - ... based on **risk assessment**.

10. No easy answers – **good biosecurity requires real effort**.
General summary of the 2020-2021 outbreak

1. **ALL of the IPs** in the current outbreak were **attributed to direct contact or indirect contact with wild birds**

2. **No evidence of long distance spread between premises** in this outbreak, **apart from when the premises were located close together and were part of the same business** – **THE BIOSECURITY WITHIN THE BUSINESS DID NOT WORK**

3. 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

   • You don’t notice that dripping tap at home
   • You need to look at your business with an external pair of eyes / mindset

Commercial IPs:

1. 10% good
2. 50% average
3. 40% unimpressive
Risk pathways

**Only three main pathways** on to your site:

1. In and out your **gate** – control your gate
2. Through the **air** – faecal contamination
3. Over / through the **fence or wall**

You must think about individual each shed in the same terms – **infection often walked or driven in.**

Don’t rely on a “hard outer shell”
ABP

Risk pathways

......not the London Underground
Key point – **tiny infectious dose**

- Multiple points of entry, but **it's got to reach a susceptible bird**
- Tiny amounts of virus introduced to the birds
  - One or more birds infected
  - Amplification of infection
  - Potential spread from the site

- There is always a weakest link
- E.g. Entrances are consistently poor
- The entrance advertises the expectations / standards for your business to visitors and staff
- E.g. still wearing a face mask for Covid – this is my acceptable level of risk
Key issues – the “Top 10” (no ranking)

1. **Bedding** management
2. Building **maintenance** / design
3. **Location** – near coast /wetlands migration routes / lakes
4. Management and **the controlling mind**
5. **Record keeping** (especially LPAI)
6. Pointless D (no C) – there is a C in **C&D**
7. **Flooding**
8. **Staff / PPE discipline**
9. **Ponds** on site / in the ranges
10. **Vehicles** - restrict access
11. Separate **premises under same management** in close proximity
12. **Co-location of infrastructure**
   - Resilience of your business
   - Contingency planning
13. **Licencing** – moves / restocking
VIRDO - Veterinary Information Required During Outbreaks

- 24 IPs – but too little to analyse statistically
- **Common risk factors**, but these were IPs - bias
- Circumstantial evidence, but lots of common themes
- **Risk score** premises and rank (**benchmarking**)
- Provides a **risk profile** for premises
- Identify **general trends in different sectors**
**VIRDO - Veterinary Information Required During Outbreaks**

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<tr>
<td>Method of disposal of household refuse</td>
<td>Other contractor collection</td>
<td>Other contractor collection (specify)</td>
<td>Local Council collection</td>
<td>Other (specify) - BFPA container on site, no further details known</td>
<td>Other contractor collection (specify)</td>
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<td>Number of staff who have contact with livestock on farm</td>
<td>Full-time</td>
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<td>Full-time</td>
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<td>Can wastewater treatment plant treat livestock waste?</td>
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<td>Are wastewater/wastewater treatment processes shared with neighboring land?</td>
<td>Yes</td>
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<td>Could affected livestock have access to water/wastewater system?</td>
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<tr>
<td>Vehicles visibly clean/decontaminated on entering premises</td>
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<td>Yes</td>
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<td>Use of other house specific hygiene barriers (specify)</td>
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<td>Physical separation between public access areas and livestock areas</td>
<td>Yes</td>
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#1 Bedding management

- This is achievable
- Storing bedding outside, unwrapped / damaged wrapping, inadequate,
- Should be **double wrapped** and **C&D’d before moving into the housing**
- **Discard** damaged bales?
- **Topping up** - moving bedding into the housing using vehicles which can potentially bring in contamination from the surrounding area and in two cases appear to have done so.
- Bring the bedding in at the **beginning of the production cycle**
- **Mechanical straw choppers** appear to have caused a massive point-in-time introduction on at least one IP, and contributed to others.
- **No mini epidemic** within the shed
Doesn’t look much, but many infectious doses

Viral soup on the menu
Building design

• Some designs are inherently less biosecure even when well maintained
• Normal management practices, such as ventilation
Building maintenance

- Don’t make the site attractive to wild birds and vermin
- Roofs and moss
  - Attractive to birds – ornithologists
    1. Hides leaks and plugs leaks
    2. In some cases the internal spread of disease followed a pattern that was consistent with introduction of infection via a leaking roof at one point.
- Holes in walls and air vents allowing for entry of vermin – important for many other diseases e.g. Salmonella
- House doors (internal or external) significant gaps / left open - allow entry of wild birds
- EXAMPLE ....... In 2016/17 a poorly maintained internal door would blow open once ventilation fans came on, allowing birds to roost in service area beyond the intended hygiene barrier
Location - siting of the buildings / ornithology

- Waterbodies – The **majority of the IPs were within 100m of a large water body** (not just a small pond) e.g. gravel pits
- A remarkable proportion have **on-site water bodies**, some even in the free-range range areas – **net and fence off**
- Wetlands / coastal sites
- **Flight paths** for birds from landfill to the coast
- **Uninsurable** c.f. House insurance – high crime / flood risk area
- Big investment - **Ornithological survey**
- But **reality** - planning permission e.g. fire brigade requirements etc.
The controlling mind

• 2001 FMD case control study

• Management
• Its like health and safety – it needs to be the culture
• Set an example from the top down
• Just because nothing happens, it doesn’t mean that you are doing it well
• Do it and be seen to do it
Staff PPE

- **Do the right thing** and **be seen to doing the right thing** – managers
- PPE (boots / overalls) not dedicated to particular sites or even not confined to individual sheds in some high biosecurity units – poorly controlled and not enforced
- Aerial photo
- Egg collection rounds – using non-dedicated and non-disinfectable gloves (e.g. leather) between different sites, variation in use of dedicated PPE by others e.g. feed deliveries
ABP

- Unlocked
- Open containers attract wild birds and vermin and allow scavenging
- Vehicle access inside the controlled area of the site – must be at the edge and controlled
- Leakage
- No hard standing
- ABP piled around the containers in bags
Staff facilities

- Shower in-shower out facilities **poorly designed and not constructed properly**
- Not used – **dry showers**, staff in buildings
- Incorrectly sited hygiene barriers.
- **Not kept tidy or maintained**
- **Cluttered** – used as a store.
- **No PPE discipline – make it easy to comply**
Site maintenance

• Site entrance / gates - **poorly maintained, muddy, potholed**
• Cleansing impossible – you must **clean before disinfection**.
• Hardcore surrounds to buildings and site entrance better.
• **Rubbish between sheds** and **long grass** encourages rodents and birds to become resident.
• **Unlocked gates** allowing uncontrolled access by delivery and collection vehicles and unauthorised visitors.
• **Inadequate fencing**, allowing free access to even one of the high disease status sites.
• **Rodent control** better done by outside contractors.
Flooding

• Almost **certainly a source in several outbreaks** over the years

• It is an breach of biosecurity that **requires immediate action** to clear up and prevent

• **Too late when it has happened**

• **Washes a viral soup in from outside**

• “Splash a bit of Virkon” around not enough
Visitors' book

• This is **key tracings information**.
• It protects the rest of your integrated company.
• **All visitors** must be recorded.
• Even **staff members** need to be recorded somewhere - rotas.
• Many visit **unrecorded or incomplete detail – manager visits**.
• Issues with **legibility**.
• Doesn’t give confidence in the “controlling mind”.
• If on doubt we will go for the precautionary principle
• If you are asking for licencing this is **part of the evidence of activity for the risk assessment**
Hatcheries

• **Normal good practice** is **very effective** at risk mitigation
• **Economic driver** to do the right things
• **Designation criteria** area especially good
Record keeping

• Epi (and the laboratory testing) underpins all operational activity

• **Source and spread tracings** are **the most important** thing that we do

• Records are key for **rapid tracings**

• Tracings **drive the operational response**
How to help us ........

- Records
  - Mortality
  - Feed
  - Water
  - Egg production
  - Visitor book

- Three months minimum – especially LPAI

- Electronic & downloadable – no white boards

- Same time of day – changes can be very subtle

- REVIEW YOUR PRODUCTION RECORDS

- Many outbreaks were apparent before they are reported

- Description of your business
  - On site
  - Important contacts
  - How it works

- Disturb you as little as possible when you are dealing with culling, valuation etc.

- Real time graphing
  - trends easier to spot than in tables

- Trigger points & doubling

- Highlighted cells

- Especially at a time of heightened awareness
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**Assumptions**

- Detection of viral nucleic acid in birds indicates that infection took place within the last 14 days, after this only antibody is present.
- Spread of infection within a flock is generally rapid once established, but can vary depending on virological, epidemiological and environmental factors.
- Assume earliest onset of detectable seroconversion is from 7-9 days post-infection.
- Incubation period is 2-14 days, up to 21 days from onset of earliest clinical signs for the purposes of the OIE Terrestrial Animal Health Code.
- Incubation period is generally considered most likely to be around 48-72 hours.
And finally – the importance of biosecurity for contingency planning

- Often no **contingency planning as to how integrated businesses would operate in the face of AI restrictions** or **RECOVER** from a confirmed incursion of disease.
- Often **on-site or closely associated feed mills, hatcheries, egg packing stations etc**
- Plan for C&D required.
- Plan for restocking required.
- Ensure that you can **provide the evidence needed for licencing.**
END