Management of the biosecurity risk

The purpose of this procedure is to define the surveillance actions that are to be undertaken in the event of an outbreak of highly pathogenic avian influenza (HPAI) or low pathogenic avian influenza (LPAI) H5/H7 in New South Wales (NSW) in accordance with the AUSVETPLAN Disease Strategy Avian Influenza.

The purpose of surveillance in the initial phase of an outbreak of avian influenza (AI) is to identify the source of infection, determine the extent of spread and assess the impact of control activities. Later in the outbreak, the purpose is to give confidence that all infection has been eradicated proof of freedom from disease established allowing the lifting of biosecurity restrictions.

Scope

The Biosecurity Act 2015 (the Act) promotes biosecurity as a shared responsibility between government, industry and the community. This procedure is a State Priority for NSW and must be read in conjunction with the Surveillance for Animal Pests and Diseases policy.

The procedure applies to the NSW Department of Primary Industry (NSW DPI), an office within the NSW Department of Industry, and Local Land Services (LLS) in performance of their roles as authorised officers under the Act.

Biosecurity legislation summary

AI is notifiable under schedule 1 of the Biosecurity Regulation 2017. This means that a person who owns or is in charge of birds, or a person such as a veterinarian in their professional capacity, has a duty to notify an authorised officer within one working day if they suspect, or are aware, that the birds have AI.

HPAI is listed as prohibited matter under schedule 2 of the Act. This means that a person who owns or is in charge of birds, or a person such as a veterinarian in their professional capacity, has a duty to immediately notify an authorised officer if they suspect, or are aware, that the birds have HPAI.

Under section 28 of the Act it is an offence for people to deal with prohibited matter. In the context of HPAI, this means that it is an offence for people to do anything that is described in section 12 of the Act as dealing with which includes moving, selling or treating birds infected with HPAI, unless the person could not have reasonably known that they were dealing with HPAI. Note that the Secretary (or delegate) can issue a prohibited matter permit that authorises specific dealings with prohibited matter, such as birds infected with HPAI, subject to specific conditions.

In the case of an outbreak of AI the Secretary (or delegate) may issue an emergency order under section 44 of the Act. This would declare a biosecurity emergency and establish measures to respond to that biosecurity emergency.
The collection, use and disclosure of information in accordance with this procedure, including any internal or external discussion or distribution of information, must be in compliance with the Privacy and Personal Information Protection Act 1998 or be exempted by the operation of section 387 of the Act.

Section 387 (2) of the Act provides authority for the disclosure of information about a person, without the consent of the person: to a public sector agency, or to any other person, but only if the disclosure is reasonably necessary for the purpose of exercising a biosecurity risk function.

Work health and safety

The Work Health and Safety Act 2011 places an obligation on the agency (NSW DPI and LLS) as a person conducting a business or undertaking and workers to provide a safe and healthy workplace. Safe Work Method Statements that support activities included in this procedure must be used in identifying, assessing and controlling risks.

NSW DPI and LLS will work together to create a safe and supportive work environment when undertaking any activities for this procedure.

The agency and workers also have a responsibility to provide a safe and healthy workplace for non-government workers (e.g. poultry owners, poultry workers, private veterinarians, contractors) delegated to perform tasks during a response.

All AI viruses have the potential to infect people. Workers must be protected from infection with AI viruses wherever they have contact with infected poultry, products and poultry enterprises. Protection includes vaccination with the currently available seasonal influenza vaccine and wearing appropriate personal protective equipment (PPE), in accordance with the national Work Health and Safety (WHS) guidelines for AI.

The agency is responsible for providing instructions in the use of appropriate PPE to non-government personnel tasked with sampling birds as per these procedures. Non-government personnel will be responsible for supplying their own PPE.

Workers involved in response activities will require training and supervision to ensure that all activities are managed appropriately in relation to WHS. Workers showing symptoms consistent with influenza must not contact potentially infected birds.
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Avian Influenza - generic surveillance procedure

1. Roles and responsibilities - NSW DPI and LLS

Undertake emergency management roles in the event of an avian influenza outbreak as per the AUSVETPLAN control centre management manuals part 1 and part 2.

2. Surveillance principals

2.1 Highly pathogenic avian influenza

In line with the AUSVETPLAN Disease Strategy Avian Influenza, available at https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/, active surveillance must be initiated as soon as HPAI is suspected. Initially, the location of all commercial and backyard poultry, zoo birds and large aggregations of caged birds, and pigs in the Restricted Emergency Zone (REZ), and all commercial and large aggregations of caged birds in the Control Emergency Zone (CEZ) must be identified and mapped. A sample of birds of any domestic species that die in the REZ must be investigated for AI, with specimens submitted to the NSW DPI Laboratory Services for virus isolation.

Intensive surveillance aims to identify potential new cases of AI. All suspect cases of HPAI must be notified immediately, even within the REZ and CEZ. Due to the risk of spread of the AI virus by workers, equipment and vehicles measures must be adopted to enable continuing surveillance while minimising multiple visits by authorised officers and other authorised workers to premises in the REZ and CEZ.

Measures must include:

- monitoring of dead bird pick-ups (laboratory submissions for suspicious cases)
- health reporting by telephone, fax, email or text messages
- telephone surveys, and
- serological and/or virological sampling.

Field investigation visits can then be arranged to any potential new cases identified.

Surveillance of free-range poultry flocks of chickens, turkeys, ostriches and ducks in the CEZ, will serve as effective sentinels for the passage of AI viruses from waterfowl to poultry.

All reports of a decline in the health of birds (e.g. decrease in feed or water consumption, decrease or cessation in egg production, increase in mortality/morbidity, depression, respiratory disease) must be investigated.

Note: Domestic ducks, geese, emus and ostriches often do not show clinical signs so active surveillance is needed, even in the absence of reports of clinical signs or mortality.

Note: Waterfowl generally have a shorter shedding period for HPAI viruses compared to LPAI viruses.

2.2 Low pathogenic avian influenza (H5/H7)

In line with the AUSVETPLAN Disease Strategy Avian Influenza, if LPAI H5/H7 is detected in NSW poultry flocks, or in caged or zoo birds, the following risk factors will need to be assessed prior to a control/eradication and surveillance program being implemented:

- species involved
- nature and severity of clinical disease
- zoonotic potential Rapidity with which the AI virus is spreading within or between flocks
- proximity to commercial poultry or other significant avian establishments
- density of bird populations (especially poultry) in the area of the outbreak
- possibility of spread to other areas
- possibility of a mixed population of AI viruses being present, with apparent LPAI (H5/H7) viruses masking sub-populations of HPAI viruses
• impact that the disease will have on the marketing of poultry products
• possibility of creating a vaccination zone and process slaughtering of infected poultry flocks when major disease control activities can be undertaken, such as in the favourable, low-spread, summer months
• costs and impacts of alternative response options.

Note: the appearance of clinical signs as a trigger for investigations is unlikely to be effective even in species that are clinically susceptible because infection may not produce clinical signs or only very mild clinical signs in poultry.

Note: most chickens excrete LPAI viruses for a week; a minority of chickens excrete LPAI viruses for up to two weeks.

3. Surveillance priorities
The priority risk premises include:
• commercial poultry premises and large aggregations of caged birds within the REZ and CEZ
• premises involved in the potential movement of fomites or poultry products from Infected Premises (IPs)
• backyard poultry and zoo bird premises in the REZ.
Priority premises for surveillance are, in order, premises in the same ownership as IPs, Suspect Premises (SPs), Dangerous Contact Premises (DCPs), Trace Premises (TPs), At-Risk Premises (ARPs) within the RA, Premises of Relevance (POR) within the CEZ, and selected wild duck or other wild bird populations in contact with poultry populations in the REZ and CEZ.

4. Information management
Laboratory reports can be accessed directly through Sample Manager. Veterinary Investigations must request that they are added to the laboratory report distribution list if they do not have direct access to Sample Manager.

The Livestock Health Management System (LHMS) must be used to record information collected on each property and to produce response statistics, surveillance schedules and tracing schedules. Each risk premises in the RA, CEZ or Outside Area (OA), where necessary, will have a status consistent with the AUSVETPLAN guidance document for declared areas and allocation of premises classifications in a response.

Surveillance data for the first visit must be added as a Surveillance Event. Record as much information as possible for each of the tabs under ‘adding a surveillance event’ to the LHMS emergency response component, as shown in the two images below.
All animal health and testing data must be recorded in LHMS as soon as possible with appropriate uses of primary status and relevant qualifiers. When testing of premises results in the use of the Assessed Negative (AN) qualifier, indicate the number of rounds of testing that relates to that qualifier e.g. a classification TPAN2 would indicate a trace premises that has had two negative tests. The status and
The location of all commercial and large aggregations of caged birds in the REZ and the CEZ must be identified and recorded in LHMS. This means that they need to be entered as individual holdings.

5. Surveillance procedures

5.1 Restricted emergency zone
As a priority, clinical investigation and appropriate sampling and testing must be undertaken on all DCPs, SPs and TPs. Where clinical examination findings and diagnostic testing results are negative, telephone surveys +/- field visits must be conducted at least every other day to confirm absence of disease.

Passive surveillance must also be conducted to complement the active surveillance. This must involve investigation of disease reports from the public, poultry owners/workers, veterinarians, zoos or cage-bird owners. Reports of a decline in the health of birds (e.g. decrease in feed or water consumption, decrease or cessation in egg production, increase in mortality/morbidity, depression, respiratory disease) must be investigated immediately. A sample of birds, of any domestic species, that die in the RA must be checked for gross AI lesions and appropriate samples submitted to the NSW DPI Laboratory Services for diagnostic testing.

A risk assessment must be done on other susceptible species (e.g. domestic pigs) to identify likelihood and consequence of infection. Active and/or passive surveillance can then be recommended.

### 5.1.1 Infected premises emergency zone

Surveillance is not generally conducted on infected poultry flocks prior to destruction on IPs. However, depending on the sampling protocol conducted that confirmed AI, additional sampling may be requested by the epidemiology unit to assess virus levels and the extent of spread. The epidemiology unit will provide advice on the numbers of birds to sample. Any available mortality or production data from the IPs must be provided to the epidemiology unit.

Additional sampling will require collection of tracheal and cloacal swabs from individual birds into individual tubes with labels that allow the laboratory to identify which samples are from individual birds e.g. tubes must be labelled 1T, 1C, 2T, 2C etc.

Surveillance of wild birds must be commensurate with the level of assessed risk posed to domestic and wild bird populations, and to public health based on epidemiologically based investigations.

During the 21-day period after the final satisfactory decontamination audit, and before sentinel or restocker birds are placed, reconstruction work can be carried out and the premises made re-habitable for stock. Movement and biosecurity protocols must remain in place during this period.

Following completion of destruction, disposal and decontamination, IPs will become Resolved Premises (RPs). Surveillance on RPs will follow the requirements for proof of freedom. Movements from RPs are not restricted unless restocker birds become sick.

### 5.1.2 Sentinel or restocker birds

Sentinel or restocker birds must be tested within 48 hours prior to placement of the birds to demonstrate that these birds are AI negative (serology and polymerase chain reaction (PCR)) when placed on RPs. Selected sentinels must then be separated from the source flock after testing.

Sampling must include tracheal and cloacal swabs and whole blood for serology. Sample sizes to test must be as per 5.1.

All sentinels must be sampled, including an allowance for losses unrelated to AI that may occur over the 21-day observation period to ensure the required number of birds are available for testing at the end of this period.

Laboratory results must be available to authorities promptly; liaise with the virology laboratory at the Elizabeth Macarthur Agricultural Institute to ensure a short turnaround for results.

It is essential that sentinel birds have the opportunity to be exposed to the AI virus if it is still present. For example, sentinel birds allowed to move freely in cage sheds is preferable to caged birds. However, consideration must be given to the type of flooring and any potential animal welfare issues.

When restocking, there are three options:

1. **Commercial restocking without sentinels** – the total number of birds to be restocked must be at least the minimum sample size as per 5.1 plus extra birds (3-5% of sample size)
to allow for any mortalities. An ideal minimum number in this situation would be 200 birds per shed. For testing, the birds must be selected at random within the shed(s) with no requirement to retest the same birds.

2. **Commercial restocking plus sentinels** – in a barn/litter shed, sentinels must ideally be identified and free to roam with the flock. If necessary, sentinels can be placed in penned areas in two or more corners of a restocked commercial shed. The number of sentinels required must be as per 5.1 plus extra birds (3-5% of sample size) to allow for any mortalities. For testing, all sentinels must be sampled. In a caged bird shed, the sentinels must be placed randomly throughout the shed in identified cages < 1 metre off the floor. For testing, all birds in identified cages must be sampled.

3. **Sentinels only** – in a barn/litter shed, the sentinels must be allowed to roam on the floor. The number of sentinels required must be as per 5.1 plus extra birds (3-5% of sample size) to allow for any mortalities. In a caged bird shed, the sentinels must ideally roam freely on the floor, but if this is not feasible then they must be placed randomly throughout the shed in identified cages < 1 metre off the floor. For testing, all sentinels in identified cages must be sampled.

In some situations restocking may occur over several days. If restocking takes more than seven days, on the last day of restocking birds on the source property must also be sampled, as per 5.1, which will ensure that if RPs break down it is not due to the source property.

Twenty-one days after restocking RPs tracheal and cloacal swabs must be collected for PCR testing. Blood samples must also be collected from all sentinels for serological testing for options 2 and 3 above, and an appropriate sample size for option 1, and submitted to the NSW DPI Laboratory Services.

During the 21-day period, any unusual health incidents must be fully investigated. Tracheal and cloacal swabs for PCR testing must be collected from all dead birds and any live birds showing clinical signs indicative of AI.

**5.1.3 Commercial poultry flocks**

A surveillance officer must contact the owner or person-in-charge of each commercial poultry flock premises to arrange health monitoring of birds.

Tracheal and cloacal swabs for PCR testing must be collected from all dead birds on each commercial flock premises for 21 days after destruction and disposal of all the birds on IPs.

Daily sampling of live healthy birds, including serology, may be necessary with HPAI in avian species that are not clinically susceptible to infection (e.g. ducks, geese) where mortality is unlikely to be a feature.

Daily sampling of live healthy birds, including serology, may be necessary with LPAI H5/H7 in all poultry.

If all testing is negative, premises will revert to a status of ARP with the appropriate qualifier.

Any report of disease or increased mortality must be investigated immediately.

**Note**: positive serology from ducks and geese with the likely absence of clinical signs may only indicate that the birds have been exposed to AI virus sometime in the past, but not necessarily related to the current outbreak.

**5.1.4 Backyard poultry, pigs, cage or zoo birds**

A surveillance officer must contact the owner or person-in-charge of each backyard poultry, pigs, and at-risk cage or zoo bird premises to arrange health monitoring of birds and pigs.

Consideration must be given to the size and type of bird before a decision is made as to whether tracheal and/or cloacal swabs for PCR testing are the appropriate methods of sample collection. It may
be necessary to collect an appropriate level of environmental samples i.e. faecal samples. The timing of sample collection must be based on species and AI virus pathogenicity.

All domestic pigs must be monitored for disease consistent with influenza (e.g. high morbidity, low mortality, coughing, watery nasal discharge, laboured breathing, inappetence, fever, depression, stiffness). Testing will be necessary on any pigs showing clinical signs consistent with influenza infection.

The action to be taken following the detection of active infection with LPAI (H5/H7) virus in cage or zoo birds must be determined after an assessment of the situation.

If all testing is negative, premises will revert to a status of ARP with the appropriate qualifier.

Any report of disease or increased mortality must be investigated immediately.

5.2 Control emergency zone

Surveillance must rely on health monitoring/reporting as well as collection of appropriate samples. In the event of clinical signs suggestive of AI, samples must be collected and results recorded immediately in LHMS.

All reports of a decline in the health of birds (e.g. decrease in feed or water consumption, decrease or cessation in egg production, increase in mortality/morbidity, depression, respiratory disease) must be investigated immediately.

5.2.1 Commercial poultry flocks

A surveillance officer must contact the owner or person-in-charge of each commercial poultry flock premises to arrange health monitoring of birds.

Tracheal and cloacal swabs for PCR testing and blood for serology must be collected from meat chickens and spent hens at abattoirs on a weekly basis for three weeks after all birds on IPs have been destroyed.

If all testing is negative, premises will revert to a status of POR with the appropriate qualifier.

Any report of disease or increased mortality must be investigated immediately.

5.2.2 Backyard poultry, pigs, cage or zoo birds

A surveillance officer must contact the owner or person-in-charge of backyard poultry, pigs, and cage or zoo bird premises to arrange health monitoring of birds and pigs.

Consideration must be given to the size and type of bird before a decision is made as to whether tracheal and/or cloacal swabs for PCR testing are the appropriate method of sample collection. It may be necessary to collect an appropriate level of environmental samples i.e. faecal samples.

The timing of sample collection must be based on species and AI virus pathogenicity.

All pigs must be monitored for disease consistent with influenza (e.g. high morbidity, low mortality, coughing, watery nasal discharge, laboured breathing, inappetence, fever, depression, stiffness). Testing will be necessary on any pigs showing clinical signs consistent with influenza infection.

If all testing is negative, premises will revert to a status of ARP with the appropriate qualifier.

Any report of disease or increased mortality must be investigated immediately.

5.3 Outside area

5.3.1 Commercial poultry flocks, backyard poultry, pigs, cage or zoo birds

When TPs are identified, a risk assessment must be conducted by the Veterinary Investigations Manager or delegated person. This will result in the following categorisations:

- zero susceptible stock premises (ZP) - a premises that has no susceptible species
- at-risk - e.g. tracing because of bird/truck/feed movements.

No further action is generally taken on ZP premises.
A surveillance officer must contact the owner or person-in-charge of each stocked at-risk TP in the OA to arrange:

- daily health monitoring for 21 days after the last trace contact, and
- tracheal and cloacal swabs for PCR and blood sampling as soon as practicable after the trace is identified and 21 days after the last trace contact.

Consideration must be given to the size and type of bird before a decision is made as to whether tracheal and/or cloacal swabs for PCR testing are the appropriate method of sample collection. It may be necessary to collect an appropriate level of environmental samples i.e. faecal samples. The timing of sample collection must be based on species and AI virus pathogenicity.

All pigs must be monitored for disease consistent with influenza (e.g. high morbidity, low mortality, coughing, watery nasal discharge, laboured breathing, inappetence, fever, depression, stiffness). Testing will be necessary on any pigs showing clinical signs consistent with influenza infection.

Once negative results are available, the premises must be qualified as TPAN1 in LHMS. When monitoring and surveillance is complete the TP status is resolved.

Premises that have tested negative must be classified as Assessed Negative(AN) with an appropriate qualifier.

Any report of disease or increased mortality must be investigated immediately.

**5.3.2 Other premises**

There are no special surveillance requirements for non-traced premises.

**5.4 Health monitoring**

**5.4.1 Poultry**

Health monitoring refers to the routine monitoring and reporting of the health of poultry flocks by the owner or person-in-charge of the premises.

A reporting procedure that includes the following observations must be established.

- Review of records and interviews of owners/persons-in-charge for the following:
  - a sudden increase in deaths
  - a sudden decline in feed and/or water consumption
  - unusually quiet birds
  - unusually depressed birds
  - any decline in egg production from normal to cessation or the sudden appearance of eggs without shells or pale shell eggs
  - any birds with swollen heads/combs/wattles
  - any birds with nervous signs e.g. head shaking, head and neck tremors
  - abnormal position of head and neck in a reasonable % of birds
  - respiratory disease e.g. breathing difficulties, coughing, sneezing
  - watery diarrhoea
  - purplish patches on the legs and unfeathered skin.

Mortality and production data must be provided to the epidemiology unit if suspicion of infection becomes apparent.

- Field autopsy findings, which include any of the following:
  - severe swelling of combs and wattles
  - cyanosis of the comb
  - haemorrhage and necrosis of the comb
  - peri-orbital oedema
  - swelling of the shanks and feet
  - petechial haemorrhages on the viscera
  - catarrhal tracheitis
  - tracheal oedema
o petechial tracheal haemorrhages
o caseous tracheal exudate.

The owner or person-in-charge must email, fax or text this information daily or provide a verbal report in accordance with the schedule defined by the surveillance officer monitoring the premises.

5.4.2 Pigs

Health monitoring refers to the routine monitoring and reporting of the health of pigs by the owner or person-in-charge of the premises.

A reporting procedure that includes the following observations must be established. Review of records and interviews of owners/persons-in-charge for the following:

- any decline in feed and/or water consumption
- morbidity rates and the relationship of the daily figures to normal
- respiratory disease e.g. sneezing, coughing, nasal discharge, laboured breathing
- unusually depressed pigs
- stiff gait in a reasonable % of pigs
- fever.

The owner or person-in-charge must email, fax or text this information daily or provide a verbal report in accordance with the schedule defined by the surveillance officer monitoring the premises.

5.5 Status qualifiers

A qualifier may be applied to premises previously defined as DCP, SP, TP or ARP that have been cleared of suspicion at the time of designation. It is a description to document progress in the response and in the proof of freedom phase.

6. Sampling procedures

6.1 Sample size and selection

Sample sizes for barn/litter and caged bird premises are outlined in the table below:

<table>
<thead>
<tr>
<th>Population per shed</th>
<th>Sample size (per shed*)</th>
<th>Sample size per shed</th>
<th>Sample size per shed</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 40</td>
<td>All</td>
<td>All</td>
<td></td>
</tr>
<tr>
<td>41-60</td>
<td>31</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>61-100</td>
<td>33</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>101-200</td>
<td>35</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>&gt; 200</td>
<td>40</td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>

*For surveillance purposes, sheds are to be treated as separate epidemiological units. Thus, a barn/litter bird premises with 10 sheds each with 10 000 birds would require 400 birds to be sampled.

On the day of sampling, collect birds that are recently dead or sick, but if there are insufficient numbers of these birds sample other live birds to make the required sample size. These live birds need to be collected from different parts of the shed.

The lower design prevalence (10%) is used for caged birds due to the lower "within-shed" contact rates.
See Appendix 1 for a simplified version of sampling numbers and techniques for people in the field.

6.2 Sample type, collection and dispatch

6.2.1 Tracheal and cloacal swabs

For diagnostic investigations, sample 10 to 15 birds per shed targeting, where possible, sick or recently dead birds. For surveillance purposes, the sample size must be as per 5.1.

Collect both tracheal and cloacal swabs in PBGS transport medium, which can be obtained from the NSW DPI (Laboratory Services). These swabs must be kept separate and labelled in a manner that will link them to the individual bird e.g. 1T, 1C. Shed identification must also be added (e.g. S1T1 or S1C1 for a tracheal or cloacal swab from the first bird in shed 1) unless the samples are packed into separate secondary containers with labelling for the shed.

Complete the specimen advice form and ensure samples are labelled and packaged such that the shed and premises for each sample is clear. Ensure there is suitable coolant included. Samples must be kept cool, but not frozen.

Submit samples to the NSW DPI (Laboratory Services).

Sample collection routines must be managed with the aim that samples are collected, dispatched and tested within a working day.

Sample types may be varied in accordance with advice from the epidemiology unit or virology staff depending on local circumstances.

6.2.2 Blood samples

Blood samples must be collected aseptically. Contamination of the container and stopper must be avoided. Blood and faecal matter must be removed prior to despatch, to reduce the risk of contamination of laboratory staff handling the specimens.

Use a separate sterile needle to avoid mechanically transmitting infectious agents from one bird to another.

Haemolysis can occur with poor collection techniques, use of contaminated equipment or poor handling of the sample once it is collected.

Common causes of haemolysis include:

- use of non-sterile containers for collection or storage
- contamination by faecal and other material due to faulty aseptic techniques
- contamination of the sample by water
- a slow flow from the needle due to obstruction of the needle or failure to insert into mid-vein
- forcibly expelling blood through a needle
- heating of samples, usually in car boots or through back windows of cars, or after prolonged exposure to direct sunlight during collection
- freezing.

Samples must be labelled serially (e.g. from 1 to 30) with a waterproof pen, preferably on an adhesive label. Do not label the stopper, which is removed during testing.

Samples must be allowed to clot before transporting them over any distance. Once the clot has retracted, blood samples must be held chilled to reduce contamination, haemolysis and autolysis.

All specimens must be clearly labelled and sent in a leak-proof container. Check that screw caps are tight.

All samples must be packed in insulated containers with sufficient ice bricks to ensure that they are still cold when received at the laboratory. However, care must be taken to prevent direct contact between coolant bricks and specimens, which may otherwise become frozen.

6.2.3 Clinical examination
If health monitoring raises concerns regarding the disease status of birds, a LLS veterinarian +/- an industry-nominated poultry veterinarian must visit the premises +/- conduct autopsies.

When examining health monitoring records and inspecting birds, note the following:

- a sudden increase in deaths
- a sudden decline in feed and/or water consumption
- unusually quiet birds
- unusually depressed birds
- any decline in egg production from normal to cessation or the sudden appearance of eggs without shells or pale shell eggs
- any birds with swollen heads/combs/wattles
- any birds with flaccid pale combs or very dark combs and wattles
- any birds with nervous signs e.g. head shaking, head and neck tremors
- abnormal position of head and neck in a reasonable % of birds
- respiratory disease e.g. breathing difficulties, coughing, sneezing
- watery diarrhoea
- purplish patches on the legs and unfeathered skin.

Mortality and production data must be provided to the epidemiology unit if suspicion of infection becomes apparent.

### 6.2.4 Post-mortem examination

If autopsies are conducted, note the following:

- petechial haemorrhages on viscera, skin and musculature
- catarhal tracheitis
- tracheal oedema
- petechial tracheal haemorrhages
- caseous tracheal exudate.

Veterinarians must collect a range of samples for virology and histopathology.

### 7. Premises classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>How resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved Processing Facility (APF)</td>
<td>An abattoir, knackery, milk processing plant or other such facility that maintains increased biosecurity standards.</td>
<td>N/A</td>
</tr>
<tr>
<td>At-risk Premises (ARP)</td>
<td>A premises in a REZ that contains a live susceptible animal(s), but is not considered at the time of classification to be an IP, DCP, DCPF, SP or TP.</td>
<td>When a REZ is abolished.</td>
</tr>
<tr>
<td>Dangerous Contact Premises (DCP)</td>
<td>A premises, apart from an abattoir, knackery or milk processing plant (or other such facility) that, after investigation and based on a risk assessment, is considered to contain a susceptible animal(s) not showing clinical signs, but considered highly likely to contain an infected animal(s) and/or contaminated animal products, wastes or things that present an unacceptable risk to the response if the risk is not addressed, and that therefore requires action to address the risk.</td>
<td>If the presence of an infected animal(s) or contaminated animal products, wastes or things is confirmed, the premises would be designated as an IP. If the presence of an infected animal(s) is not confirmed, but the likelihood is considered to remain high, the premises would continue to be designated as a DCP.</td>
</tr>
<tr>
<td>Classification</td>
<td>Definition</td>
<td>How resolved</td>
</tr>
<tr>
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</tr>
<tr>
<td>Dangerous Contact Processing Facility (DCPF)</td>
<td>An abattoir, knackery, milk processing plant or other such facility that, based on a risk assessment, appears highly likely to have received infected animals, or contaminated animal products, wastes or things, and that requires action to address the risk.</td>
<td>If the presence of infected animals or contaminated animal products, wastes or things is confirmed, the premises would be designated as an IP. If the presence of infected animals is not confirmed, but the likelihood is considered to remain high, the premises would continue to be designated as a DCPF.</td>
</tr>
<tr>
<td>Infected Premises (IP)</td>
<td>A defined area (which may be all or part of a property) on which animals meeting the case definition are or were present, or the causative agent of the Emergency Animal Disease is present, or there is reasonable suspicion that either is present, and that the relevant Chief Veterinary Officer or their delegate has declared to be an infected premises.</td>
<td>The premises becomes a RP 21 days (or shorter period if agreed by the Consultative Committee for Emergency Animal Diseases) after completion of decontamination following full depopulation.</td>
</tr>
<tr>
<td>Non-assessed Premises (NAP)</td>
<td>A temporary status for a premises located in the OA where the current presence of a susceptible animal(s) and/or risk products, wastes or things is unknown.</td>
<td>Following investigation(s), a NAP that contains a susceptible animal(s) not known to have been exposed to the AI virus, but showing clinical signs similar to the case definition becomes a SP. Following investigation(s), a NAP that contains no live susceptible animals or risk products, wastes or things becomes a ZP.</td>
</tr>
<tr>
<td>Premises of Relevance (POR)</td>
<td>A premises in a CEZ that contains a live susceptible animal(s), but is not considered at the time of classification to be an IP, DCP, DCPF, SP or TP.</td>
<td>When a CEZ is abolished.</td>
</tr>
<tr>
<td>Resolved Premises (RP)</td>
<td>An IP, DCP or DCPF that has completed the required control measures and is subject to the procedures and restrictions appropriate to the area in which it is located.</td>
<td>Remains a RP until POF testing completed with negative results.</td>
</tr>
<tr>
<td>Suspect Premises (SP)</td>
<td>A temporary classification of a premises that contains a susceptible animal(s) not known to have been exposed to the disease agent, but showing clinical signs similar to the case definition, and that therefore requires investigation(s).</td>
<td>Following investigation(s), a SP becomes an IP if it meets the case definition or, if not, an ARP if in a REZ or a POR if in a CEZ.</td>
</tr>
<tr>
<td>Trace Premises (TP)</td>
<td>A temporary classification of a premises that contains susceptible animal(s) that tracing indicates may have been exposed to the disease agent, or contains contaminated animal products, wastes or things, and that</td>
<td>Following investigation(s), a TP becomes an IP if it meets the case definition or, if not, an ARP if in a REZ or a POR if in a CEZ.</td>
</tr>
<tr>
<td>Classification</td>
<td>Definition</td>
<td>How resolved</td>
</tr>
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</tr>
<tr>
<td><strong>Classification</strong></td>
<td><strong>Definition</strong></td>
<td><strong>How resolved</strong></td>
</tr>
<tr>
<td><strong>Unknown status Premises (UP)</strong></td>
<td>A premises within a declared area where the current presence of susceptible animals and/or risk products, wastes or things is unknown.</td>
<td>Following investigation(s), an UP that contains a live susceptible animal(s), but is not considered at the time of classification to be an IP, DCP, DCPF, SP or TP becomes an ARP if in a REZ or a POR if in a CEZ. Following investigation(s), an UP that contains no live susceptible animal(s) becomes a ZP.</td>
</tr>
<tr>
<td><strong>Zero susceptible species Premises (ZP)</strong></td>
<td>A premises that does not contain any susceptible animals or risk products, wastes or things</td>
<td>If restocked and located in a REZ or a CEZ it becomes an ARP or a POR respectively</td>
</tr>
</tbody>
</table>

8. Definitions and acronyms

**AI**  
Avian Influenza

**Approved Processing Plant**  
A plant designed to render dead bird carcases that has been assessed as low risk, on the basis that it follows approved protocols

**AN**  
Assessed negative (AN)  
A qualifier that may be applied to ARP, POR and premises previously defined as SPs, TPs, DCPs or DCPF that have undergone an epidemiological and/or laboratory assessment and have been cleared of suspicion at the time of classification, and can progress to another status

**ARP**  
At risk premises

**CEZ**  
Control Emergency Zone  
A part of New South Wales that has been declared, pursuant to an Emergency Order under section 45b of the Biosecurity Act 2015 to be a control emergency zone in relation to avian influenza.

**Caged birds**  
Birds that are confined within an enclosure and maintained for purposes other than food production. Zoo birds are cage birds that are maintained at a zoo premises.

**DCP**  
Dangerous contact premises

**DPI**  
NSW Department of Primary Industries

**DCPF**  
Dangerous contact processing facility

**HPAI**  
Highly pathogenic avian influenza

**IP**  
Infected premises

**LLS**  
Local Land Services

**LPAI**  
Low pathogenic avian influenza

**NAP**  
Non assessed premises

**OA**  
Outside Area (OA)  
The area of Australia outside the declared areas

**PCR**  
Polymerase chain reaction

**POR**  
Premises of relevance

**Poultry**  
For the purposes of these procedures, poultry means one or more chickens, turkeys, guinea fowl, ducks, geese, quails, pigeons, pheasants, partridges, emus, and ostriches
REZ Restricted Emergency Zone A part of New South Wales that has been declared, pursuant to an Emergency Order under section 45b of the Biosecurity Act 2015, to be a restricted emergency zone in relation to avian influenza

Risk enterprises Private avian laboratories, cull hen collectors, dead bird pick-ups (but not processing plants)

Sample Manager NSW DPI Laboratories specimen and test result database

SP Suspect premises

TP Trace premises

UP Unknown status premises

ZP Zero susceptible stock premises

9. Documentation

Policy - Principles for Management of Animal Biosecurity and Welfare in NSW

Policy - Prohibited Matter Exotic Animal Pests and Diseases

Policy - Surveillance for Animal Pests and Diseases

Policy: Biosecurity collection, use and disclosure of information

Procedure – Prohibited Matter Animal Pests and Diseases – Investigation and Alert Phase

Procedure - Reporting notifiable pests and diseases of animals

Procedure - Biosecurity collection, use and disclosure of information

Policy - Records Management Policy (IND-I-177)

Policy - Information Security Policy (IND-I-197)

Policy - Classified Information Policy (IND-I-196)

Policy - Government Information (Public Access) Policy (IND-I-178)

Procedure – Highly Pathogenic Avian Influenza

Primefact - Recognising exotic diseases of birds

AUSVETPLAN Disease Strategy Avian Influenza

AUSVETPLAN control centre management manuals part 1 and part 2

Work Health & Safety Act 2011

Biosecurity Act 2015

10. Records

Records created as a result of this procedure are stored in the Livestock Health Management System (LHMS).

Records relating to properties placed under biosecurity restrictions must be maintained for at least ten years.

11. Revision history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date issued</th>
<th>Notes</th>
<th>By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/07/2017</td>
<td>New procedure developed from HPAI Young Procedure - developed in response to the Biosecurity Act 2015.</td>
<td>Animal Biosecurity and Welfare</td>
</tr>
</tbody>
</table>

12. Contact

Biosecurity NSW – General Enquires
1800 808 095 or biosecurity@dpi.nsw.gov.au
Appendix 1: Avian influenza – guide to sample collection

Samples required for virus isolation are from the back of the throat/trachea and the cloaca of the bird. Each bird sampled must have a corresponding set of samples e.g. bird 1 – sample vials labelled T1 and C1.

Birds must be chosen evenly from within the various sheds to be a representative sample across each shed. Samples must either be labelled in a manner that will identify the shed of origin (e.g. S1T1) or packed separately (e.g. separate sealed bag) to samples from other sheds.

Swab sick or dead birds as a priority and then make up the required numbers with live birds. If collecting samples for diagnostic purposes i.e. suspect AI, and need to prove it, then sample 10 to 15 birds from each shed.

If collecting samples for surveillance purposes in the REZ, CEZ or TP i.e. AI has been proven on IPs and need to monitor for infection, then the following sample numbers are required

- For sheds with 40 birds, sample all birds/shed (barn/litter and caged)
- For sheds with 41-60 birds, sample 31 birds/shed (barn/litter) or 41 birds/shed (caged)
- For properties with 61-100 birds, sample 33 birds/shed (barn/litter) or 55 birds/shed (caged)
- For sheds with 101-200 birds, sample 35 birds/shed (barn/litter) or 60 birds/shed (caged)
- For sheds with > 200 birds, the maximum sample size required is 40 birds/shed (barn/litter) or 64 birds/shed (caged).

Tracheal sampling procedures

To collect tracheal/throat swab samples, hold the bird's head up in a nearly vertical position with wings and feet restrained.

The bird must face the person swabbing the trachea.

Remove swab from package and handle the swab aseptically always (i.e. do not touch the fabric tip or allow it to come into contact with anything else).

Insert tip of the swab into the back of the throat near or into the opening to the trachea (windpipe).

Rotate swab tip against tracheal lining two or three times, and place directly into the liquid transport medium (PBGS) provided.

With the swab in the liquid medium, break the stem of the swab off by clamping it under the lid of the vial, leaving the swab tip in the tube. Ensure that the screw top on the vial is fully sealed and that the swab remains immersed in the liquid.

Repeat this procedure until all birds have been swabbed.

Cloacal sampling procedures

- Hold the bird's head down in a nearly vertical position with wings and feet restrained
- Face the bird’s vent towards the person swabbing
- Locate and grasp tail feathers at the base and reflect away from you to locate cloaca
- Remove swab from package and handle the swab aseptically always (i.e. do not touch the fabric tip or allow it to come into contact with anything else)
- Insert tip into cloacal orifice (1 cm)
- Rotate swab tip against cloacal lining two or three times
- Remove swab, shake off excess faecal material, and place directly into the PBGS provided
- With the swab in the liquid medium, break the stem of the swab off by clamping it under the lid of the vial, leaving the swab in the tube
- Ensure that the screw top on the vial is fully sealed and that the swab remains immersed in the liquid
- Repeat this procedure until all birds have been swabbed
Blood collection procedures

The maximum amount of blood that can be safely collected from a clinically healthy bird is 1.5% of its body weight. Less blood must be collected from sick birds.

1. **The large vein under the wing (brachial vein)**
   - Place the bird on a table, setting it on its side
   - Lift the wing with one hand and part the feathers along the wing (water can be used to help keep the feathers separated)
   - Place the needle at a slight angle, bevel up, against the vein on the underside of the wing (the bevel is the side of the needle with the angle and the hole)
   - Insert the needle into the vein and slowly withdraw blood
   - Remove the needle and apply pressure to the vein for a few seconds (this will help to minimise the development of large haematomas, which can be common with poultry)
   - Fill the appropriate vial 1/3 to 1/2 of its full volume (allow the vacuum in the vial to empty the syringe rather than pushing on the plunger as this will prevent haemolysis)

2. **The vein on the side of the outstretched neck (jugular vein)**
   - Place the bird on a table, setting it on its side
   - Stretch out the neck with one hand and part the feathers along the neck (the right jugular vein is usually larger)
   - Place the needle at a slight angle, bevel up, against the vein
   - Puncture the vein and slowly withdraw blood
   - Remove the needle and apply pressure to the vein for a few seconds
   - Fill the appropriate vial 1/3 to 1/2 of its full volume

3. **The vein on the inner leg, above the hock (medial metatarsal vein)**
   - Place the bird on a table, setting it on its side
   - Stretch out the leg with one hand and part the feathers along the hock joint
   - Place the needle at a slight angle, bevel up, against the vein
   - Puncture the vein and slowly withdraw blood
   - Remove the syringe and apply pressure to the vein for a few seconds
   - Fill the appropriate vial 1/3 to 1/2 of its full volume
To obtain serum, place the blood vial on a slanted surface for 10 to 15 minutes to allow for clotting. The serum sample can now be spun for centrifugation. Vials containing the blood samples must be refrigerated and sent to the NSW DPI Laboratory Services as soon as possible.