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National guidelines for avian influenza: protecting people who work with birds and wildlife

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Communicable Diseases Network Australia

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This document will be amended as pertinent new information on avian influenza becomes available. Readers are advised to visit the Australian Government Department of Health and Aged Care website (www.health.gov.au) to ensure that they have access to the most current and up-to-date version.

The document is provided as a useful starting point for consideration of the matters raised in it. While the document includes guidance for those involved in formulating occupational health and safety strategies, readers should not rely solely on the information contained in the document and should note that the information contained in the document is not intended to be a substitute for advice in each case from other relevant sources. No warranty is given in relation to the accuracy, currency or completeness of the information contained in the document. The members of the Communicable Diseases Network Australia (CDNA), the Australian Health Protection Committee (AHPC) and the Commonwealth of Australia (the Commonwealth) accept no liability or responsibility whatsoever for any injury, loss or damage arising from the use of the document, including but not limited to the use of, or reliance on, the information contained in the document, whether or not such injury, loss or damage is caused by reason of negligence, or otherwise on the part of the CDNA, the AHPC or the Commonwealth.

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Abbreviations

AUSVETPLAN	Australian Veterinary Emergency Plan
EADRA	Emergency Animal Disease Response Agreements
HPAI	High pathogenicity avian influenza
LPAI	Low pathogenicity avian influenza
P2/N95 face mask	Respirator face masks used for respiratory protection; P2 / N95 face masks are often used interchangeably
	P2 meets the performance requirements of Australian/New Zealand standards of AS/NZS 1716:2012 ‘Respiratory Protective Devices’
	N95 meets The United States (US) National Institute of Occupational Safety and Health (NIOSH) requirements
PAPR	Powered air purifying respirator
PCBU	Person conducting a business or undertaking
PHU	Public health unit
PPE	Personal protective equipment

1 Introduction

The information in these Guidelines is for employers or managers of workers[1] who may be exposed to birds or other animals[2] infected with avian influenza (also known as 'bird flu'). The purpose of the Guidelines is to protect the health of these workers from all types of avian influenza.

The best way to reduce the risk of avian influenza spreading to humans is to detect it early and minimise the risk of its spread among birds and other animals. See Appendix 1 for a list of biosecurity resources for a range of Australian workplaces from both national and state or territory agricultural authorities and wildlife agencies.

Easy-to-use information for workers, that can be displayed as posters in workplaces or distributed to workers, is available on the interim Australian Centre for Disease Control webpage on Avian Influenza and will be updated as needed (see Bird flu toolkit for people who work with birds | Australian Centre for Disease Control).

See birdflu.gov.au for more information on avian influenza in Australia.

1.1 Scope

These guidelines provide advice for employers or managers of:

- people who work on poultry farms or in related industries
- other workers who are exposed to birds
- wildlife and environment carers, workers and volunteers
- avian influenza outbreak responders.

These guidelines contain general advice that may be adapted for individual scenarios, based on a site-specific work health and safety risk assessment. A person conducting a business or undertaking (PCBU) must adhere to work health and safety (WHS) obligations to provide a safe work environment.

Due to outbreaks of avian influenza H5N1 clade 2.3.4.4b genotype B3.13 in cows and other farm animals overseas (see Section 2.1), people who work with cows and other livestock on Australian farms may also become at risk if the same genotype is detected in Australia.

Specific advice for laboratory workers, veterinary professionals and people who provide care for people infected with avian influenza are not within the scope of these Guidelines.

[1] For the purposes of these guidelines, 'worker' refers to an employee, contractor, or volunteer.
[2] For the purposes of these guidelines, exposure or contact with an infected bird or animal also includes exposure or contact with its products, materials or environments.

1.2 Legislative provisions

Any detection of avian influenza A in birds must be notified to the local state or territory animal health authorities (see Appendix 1). Government authorities will begin a risk assessment process to identify the risk to animal and public health and may trigger agreed plans such as the Australian Veterinary Emergency Plan (AUSVETPLAN) - Response strategy: Avian influenza and Emergency Animal Disease Response Agreement (EADRA). Evidence of rapid spread of avian influenza in other animals (e.g. mammals), such as mass mortality events, should also be reported to the state or territory animal health authorities.

Some avian influenza viruses that are a risk to humans (such as H5N1) are classified as Security Sensitive Biological Agents (SSBA), and may have regulatory requirements (e.g. for handling and reporting). See the Australian Veterinary Emergency Plan (AUSVETPLAN) - Response strategy: Avian influenza for more information.

Under the *National Health Security Act 2007*, avian influenza in humans is a national notifiable disease. There are requirements for state/territory health agencies to respond to human health threats of avian influenza. It is also internationally notifiable to the World Health Organization under the *International Health Regulations 2005*.

Work health and safety legislation and responsibilities

People who work (including volunteer) with or are exposed to birds or other animals at a workplace must be provided with a safe work environment. The model Work Health and Safety laws have been adopted by all states/territories (except Victoria). Victoria has retained its Occupational Health and Safety Act 2004.

Under the model WHS laws, a PCBU (e.g. employer) must ensure, so far as is reasonably practicable, that workers (including volunteers and contractors) and other persons (e.g. visitors, customers) are not exposed to risks to their health and safety. PCBUs must eliminate health and safety risks at work, or if that is not reasonably practicable, minimise these risks so far as is reasonably practicable. This includes the risks of avian influenza. PCBUs must consult workers and their health and safety representatives (if they have them) on health and safety. This includes when PCBUs are identifying and assessing risks and implementing control measures. PCBUs also have duties to consult, cooperate and coordinate with other PCBUs who have a duty in relation to the same workers or workplace.

Workers also have duties while at work, including taking reasonable care of their health and safety and complying with reasonable instructions, policies and procedures in relation to health and safety.

For specific advice about complying with your WHS duties, contact the WHS regulator in your state/territory (see Appendix 1).

2 General information

2.1 What is avian influenza?

Avian influenza mostly infects wild waterbirds but any bird species can be infected. It can spread to poultry from wild birds, and then spread rapidly through poultry flocks.

Avian influenza virus strains can be low pathogenicity avian influenza (LPAI) or high pathogenicity avian influenza (HPAI) based on the severity of illness in poultry. LPAI usually cause very mild or no disease in infected birds, but some LPAI strains can change and become HPAI strains when they spread amongst poultry. HPAI viruses can cause severe disease and death in up to 90-100% of infected poultry. Outbreaks can devastate the poultry industry and may result in severe trade restrictions.

Avian influenza viruses continually change. This can affect how easily the virus spreads from birds to other animals (including humans) and the severity of illness it causes. Since 2020, a strain of HPAI (H5N1 clade 2.3.4.4b) has been causing severe and widespread outbreaks in poultry, wild birds, and other animals (such as seals, dolphins, cows, goats, alpacas, foxes, and mice) internationally. Human infections have occurred, likely due to exposure to infected birds or other animals or contaminated environment, objects or equipment (e.g. farm machinery). Previous outbreak strains have not caused such widespread illness in wild birds, nor spread to other mammals.

For information on how avian influenza spreads amongst animals see AUSVETPLAN Response Strategy – Avian Influenza.

For information about signs of avian influenza in birds see Facts about avian influenza | Department of Agriculture, Fisheries and Forestry.

2.2 Can humans get avian influenza?

Yes. The spread of avian influenza viruses from animals to humans is rare but may happen with some strains.

Humans are at greatest risk of avian influenza infection when in close contact with infected animals, even if the animals are not showing signs of infection.

People can be infected with avian influenza by:

- **Inhalation:** breathing in contaminated dust or infectious particles in the air – some activities, such as slaughtering and butchering infected animals, may carry a higher risk of infection than standard duties (e.g. cleaning housing areas).
- **Direct contact:** touching infected animals, carcasses, animal secretions (e.g. faeces, respiratory secretions, or urine) or animal products (e.g. feathers, hides) without recommended protection (see Section 3.5) and then touching the eyes, nose, or mouth.

- **Indirect contact:** having contact with contaminated items (e.g. farm equipment) or environments where infected animals live, and then touching eyes, nose or mouth.

Typically, avian influenza does not easily spread among people. Rarely, person-to-person spread has happened after close, prolonged, contact with a person with avian influenza.

Avian influenza is not known to transmit to people via properly prepared food. It is safe to eat properly handled and cooked poultry meat, eggs, and egg products.

See Animal diseases, human health and food safety | Food Standards Australia New Zealand for more information on commercial food safety considerations.

2.3 Symptoms of avian influenza in humans

Avian influenza in humans can look and feel like seasonal human influenza infections.

Mild or asymptomatic infection (i.e. no symptoms) can occur. Signs and symptoms in humans generally appear between 1- and 10-days following contact with an infected bird or other animal, its products, materials or environment and include:

- fever (temperature ≥38°C), chills or shakes
- sore throat
- cough
- runny nose
- difficulty breathing (shortness of breath or respiratory distress)
- headache and muscle aches and pains
- diarrhoea
- nausea or vomiting
- red and/or sore eyes (conjunctivitis).

Some strains of avian influenza can cause severe illness in humans including lung infections (pneumonia), breathing difficulties (acute respiratory distress syndrome) and inflammation of the brain (encephalitis). Both HPAI and LPAI strains of avian influenza can cause serious illness in humans.

The following groups of people are at greater risk of severe illness:

- people with immunocompromising conditions, including cancer, cancer treatments and people on high-dose corticosteroids
- people with pre-existing respiratory, cardiac or endocrine diseases
- pregnant people, or people who think they may be pregnant
- young children
- elderly people (aged 65 years or older).

2.4 Impact on First Nations people

Aboriginal and Torres Strait Islander peoples may be at higher risk of being infected with, and experiencing poorer health outcomes from, avian influenza. This is due to a number of factors including limited access to culturally safe healthcare in remote and very remote locations, crowded living conditions, underlying chronic disease, and mistrust of Government related to the ongoing impacts of colonisation. Sharing an interconnected relationship with Country, including a connection to animals, may mean Aboriginal and Torres Strait Islander people are exposed more often to avian influenza. Working as rangers, land managers and researchers, particularly in regional locations, may also make exposure to avian influenza viruses more likely.

The needs of Aboriginal and Torres Strait Islander peoples are diverse and unique, with each individual and community facing distinct challenges and priorities. This means when developing prevention or response measures in any work setting, co-design should be prioritised wherever possible to ensure culturally appropriate and effective solutions. When exposures to, or cases of, avian influenza occur among Aboriginal and Torres Strait Islander peoples and communities, employers and managers should notify their local public health unit (PHU) (see Appendix 1). PHUs will collaborate with Aboriginal Community Controlled Organisations and may collaborate with Aboriginal community leaders. This approach will prioritise co-design, cultural safety and the involvement of Aboriginal and Torres Strait Islander knowledge and perspectives.

3 Human health recommendations

3.1 General

Do not approach or touch sick or dead animals unless necessary for your job. Consider control measures and wear appropriate personal protective equipment (PPE) if you must touch them.

Report any unusual signs of disease or death in birds or wildlife to the Emergency Animal Disease Hotline on 1800 675 888.

Vaccination

All people in Australia aged ≥6 months are recommended to receive the seasonal influenza (human) vaccination every year. See Influenza (flu) | The Australian Immunisation Handbook (health.gov.au) for more information.

Although the human seasonal influenza vaccine will not protect against avian influenza, it reduces the risk of being infected with both human and avian influenza at the same time. If a person is infected with both types of viruses at the same time, there is a small chance of the viruses mixing to create a new virus that can be more serious for human health.

Avian influenza vaccination is not currently recommended for humans in Australia.

3.2 Before an outbreak

In order to prepare and protect your workplace and workers from a potential outbreak of avian influenza, a PCBU (e.g. employer) needs to:

- Understand your duties under the work health and safety laws in your state/territory (see Appendix 1 – information of work health and safety).
- Ensure health and safety risks in the workplace are identified and control measures are in place to minimise risks, so far as is reasonably practicable. This may be operationalised through a site-specific risk assessment that considers the work environment, activities and hazards (see 3.5 Infection prevention and control and Appendix 1 – workplace hazard identification and hazard control).
- Familiarise yourself with biosecurity and recommendations for general protection of human health (see Appendix 1 for resources).
- Make sure appropriate infection prevention and control and biosecurity measures are in place, accessible, and well understood in your workplace to reduce the risk of avian influenza to your employees, contractors, volunteers, visitors and animals.
- Keep up to date with communications from industry, animal health and health authorities, or wildlife health agencies about avian influenza in your local area (Appendix 1).

- Maintain accurate rosters and contact details for management, workers, contractors, volunteers, visitors and residents of the property.

PCBUs should assess their ability to manage the human health aspects of an outbreak, including suitability of PPE items, provision of PPE information and training, and availability of sufficient PPE stock for workers, contractors, volunteers and visitors. See Personal protective equipment (PPE) - WHS duties | Safe Work Australia), 3.5 Infection Prevention and Control – PPE and Appendix 2 for a sample outbreak checklist.

For information and resources for managing an avian influenza response in animals, see Animal Health Australia's 'Avian influenza emergency responder – Toolbox'. Managers of wildlife workers and volunteers should also be familiar with Wildlife Health Australia's advice to prevent the spread of avian influenza. See the resources in Appendix 1 – Information on avian influenza in wildlife.

3.3 During an outbreak

In the event of an outbreak, to protect the health of workers PCBUs should:

- Follow the direction of the local authority leading the outbreak response, as well as the local public health authority.
- Ensure workers avoid unnecessary contact with infected[3] birds and other animals (alive or dead).
- Ensure infection prevention and control measures are implemented, informed by a site-specific risk assessment, based on the work environment, activities and hazards (see Section 3.5 – Infection prevention and control precautions).
- Provide information to workers on what to do if they get symptoms in a format best understood and utilised by workers (see Section 3.4 - 'What to do if a worker is exposed to avian influenza and become sick').
- Promote immediate vaccination to all workers who have not had a seasonal flu vaccination this year – noting the vaccine takes around two weeks to be effective.
- Support people with any influenza-like illness (and especially when the illness is known to be human influenza) to avoid any contact with avian influenza infected birds or other animals.
- Be familiar with internal protocols and procedures, as well as the AUSVETPLAN Response Strategy – Avian Influenza and AUSTVETPLAN Operational Manual - Decontamination. AUSVETPLAN will be use by the local animal authority to guide the outbreak response.
- Where applicable, ensure any other associated facilities (e.g. abattoirs in the production chain) have decontamination procedures to be considered in conjunction with the AUSVETPLAN manual.

[3] Poultry or other affected animals present on an infected premises, as defined in AUSVETPLAN Response Strategy – Avian Influenza, should be considered infected for the purpose of human health protection measures.

- Immediately notify the WHS regulator if you become aware a worker has contracted avian influenza in the course of their work. See Incident notification | Safe Work Australia for information on incident notification requirements.

During an avian influenza outbreak, prompt provision of names and contact details assists PHUs in providing timely public health advice, such as how to monitor for symptoms for at least 10 days after last exposure and when to contact a doctor. PHUs may regularly contact the exposed worker to check if any symptoms have developed and will provide the person with important information, including whether antiviral medication for prevention is recommended.

3.4 What to do if a worker is exposed to avian influenza and becomes sick

If a worker has been exposed to avian influenza and becomes sick with signs and symptoms (see Section 2.3) within 10 days of their last exposure, they should:

- Contact their local PHU (Appendix 1) and advise them they have developed symptoms after exposure to avian influenza. The PHU will ask questions, provide advice and may help arrange testing for avian influenza or link them in with medical care. The PHU may advise them to call their doctor (general practitioner. [GP]) for medical care. If this happens, the worker should tell the GP clinic that they have been exposed to avian influenza.
- Isolate as much as possible (except when seeking healthcare) until advice is received from the PHU. If symptoms develop whilst at work, they should go home and call their PHU.
- Wear a surgical face mask if they cannot isolate from other people, to reduce the risk of passing the virus onto others. If a surgical face mask is unavailable, wear a non-medical face covering.
- Practice good respiratory hygiene (i.e. cough or sneeze into elbow, discard used tissues immediately and perform hand hygiene).
- Practice good hand hygiene (see Section 3.5), cleaning hands regularly with soap and water or an alcohol-based hand rub.
- Report the illness to their PCBU (e.g. employer).

If urgent medical help is needed, call Triple Zero (000)

3.5 Infection prevention and control precautions

The PCBU must identify and aim to eliminate health and safety risks at work. If risks cannot be eliminated, control measures must be implemented to minimise risks, so far as is reasonably practicable, to workers, contractors, volunteers, or visitors. This includes appropriate infection prevention and control precautions for exposure to avian influenza (see Managing Risks | Safe Work Australia).

Ventilation

Proper ventilation (i.e. circulating clean, outdoor air in buildings, sheds or areas) can help reduce worker exposure to avian influenza by diluting the concentration of microbes, including avian influenza, in the air. Ventilation can also control ambient temperature and humidity. Depending on the set-up of the worksite or indoor area, improving ventilation may require careful planning and appropriate advice from experts, such as mechanical or ventilation engineers and occupational hygienists.

Enabling infection prevention and control practices

PCBUs should set up the workplace in a manner that supports easy adherence with infection prevention and control measures such as hygiene practices, and safe use of personal protective equipment. PCBUs should:

- Provide hand washing and alcohol-based hand sanitiser stations (touch-free design, if possible) in many locations, particularly in and around animal areas.
- Consider other ways to promote hygiene practices and safe PPE use like building additional short breaks into worker schedules for bathroom or hydration breaks.
- Provide facilities for breaks and meals in a clean, non-contaminated area away from animal areas.
- Ensure dedicated, clearly distinct locations for putting on (clean area) and taking off PPE (dirty area) are available. These two distinct areas should be physically separate, have clear signage and be well ventilated.
- Provide storage locations for workers' personal items (including food and clothing worn off-site) in clean areas and prohibit personal items in all potentially contaminated areas.
- Plan worker movement to flow in one direction, i.e. from clean to dirty when entering, and dirty to clean when leaving, the work area.
- Display signs with instructions for PPE use in the clean and dirty areas.
- Establish procedures, and posters to remind workers, to remove used PPE before moving to clean areas, including bathrooms and break areas.
- Ensure bins for disposal of single-use, disposable PPE and collection of reusable PPE are well labelled and available in the dirty area.
- See personal protective equipment (PPE) for additional information about the safe use of PPE.

Hygiene practices

Workers should be trained and supported in routine hygiene practices:

- Frequent and thorough hand hygiene[4] (see Hand washing | healthdirect and Hand Washing – 5 Easy Steps), especially during and after contact with animals or contaminated objects.
- If there is any visible soiling on hands, soap and clean water must be used to wash hands before they can be considered properly cleaned. An alcohol-based hand rub will not clean soiled hands.
- Cover open wounds with a water-resistant dressing or bandaging.
- Not eating, drinking, chewing nails, or placing other items near the mouth until PPE is removed and hands are washed.

Personal protective equipment (PPE)

Safe use of PPE

If workers are required to wear PPE, they must be **trained in and demonstrate an understanding** of when and what PPE to use; how to properly put on, use, take off, dispose of, and maintain PPE.

As a work health and safety requirement, PCBUs must:

- select and provide sufficient stock of suitable PPE, ensuring correct size and fit, for workers and their tasks.
- provide workers with information, training and instruction in proper PPE use and wearing of the PPE.
- check and fix any problem a worker may be having with their PPE prior to them undertaking at-risk tasks.
- support workers in safely putting on and taking off PPE each time they use PPE.

In order to prevent incidental PPE breaches, the same PPE protocols are recommended for all areas of a premises at which an outbreak has been detected, whether infected animals have been at those areas or not (e.g. feed or equipment stores).

PPE and working in hot conditions

PPE increases the risk of heat-related illness, particularly when combined with physical work, outdoor work environments, and warmer weather. PCBUs have a duty to keep workers safe while working in heat and should appropriately adapt existing, or adopt additional, controls (such as increasing the frequency of breaks) to reduce the risk of heat stress. If workers cannot maintain comfortable temperatures while wearing PPE, they may not be able to use recommended PPE correctly. This may place workers at

[4] Hand hygiene refers to washing hands with soap and water, or the use of alcohol-based hand rub (ABHR) with 60-80% ethanol concentration. ABHR is only effective if hands do not have visible dirt on them.

higher risk of exposure to avian influenza and should be considered when determining appropriate control measures, such as PPE selection.

Cooling mechanisms that improve airflow and ventilation require careful planning and appropriate expert advice to limit impact on transmission risk (see Section 3.5 – Ventilation). For more information see Working in heat | Safe Work Australia.

Safely putting on and taking off PPE

The sequence for putting on and taking off the selected PPE items must minimise self-contamination and not put workers at risk of exposure

Appropriately putting on and taking off PPE is paramount to worker health and safety. Tailored sequences to put on and take off PPE should be suitable for the selected PPE items, be provided in workplace procedures and be completed in the same manner each time a worker uses PPE. The sequences should be part of PPE training, which is a WHS requirement (see PPE – WHS duties | Safe Work Australia).

A trained observer should be used to supervise each worker putting on and taking off their PPE to ensure workplace protocols are correctly maintained. The observer should also ensure used PPE is placed in the correct bin (i.e. separate bins for disposable to be discarded and reusable PPE to be decontaminated). A process should be developed for observers to record any PPE breaches.

To minimise self-contamination when taking off PPE, workers should:

- Perform hand hygiene after removing the last PPE item. Hand hygiene should also be performed between removing PPE items if contamination of the hands is likely. Additional hand hygiene steps may be recommended in workplace procedures.
- Touch the least contaminated part of each PPE item.
- Take care to ensure contaminated surfaces do not come in contact with their skin or other clean items.
- After removing PPE, if possible, shower at the end of the work shift and put on uncontaminated clothing. Ensure there is a designated location to leave used clothes that were worn under PPE at the worksite for laundering.
- If showering is not possible, instruct workers to clean up as much as possible, put on clean clothing, leave used clothing onsite, immediately go to an offsite shower, put on clean clothing once washed and follow appropriate laundering instructions.

PPE recommendations to protect human health

PPE must be worn when in contact with infected animals, their products or their materials (e.g. litter). To protect against avian influenza, the selected PPE should:

- protect against the viruses from coming into direct contact with the eyes, nose, or mouth, or being inhaled, and
- protect the hair, skin, and clothing from contact with viruses that could later be transferred to the eyes, nose, or mouth.

The recommended PPE* includes:

- protective clothing: coveralls and (if required) apron
- protective footwear
- gloves
- respiratory protection: P2/ N95 face mask
- eye protection: goggles (preferred) or face shield
- head or hair cover.

* PPE may be adapted based on a site-specific risk assessment that considers work environment, activities and hazards. Of note, PPE selection should include gloves, and prioritise protection of the eyes, nose and mouth.

Disposable PPE is preferred, where possible. If reusable PPE must be used, it must be cleaned, disinfected and stored appropriately after every use. PCBUs are encouraged to review applicable Australian Standards and manufacturer's instructions with regard to proper fit, use and maintenance of PPE items selected for use. Additional information about PPE items and associated Australian Standards is available in the AUSVETPLAN Operation manual – Decontamination.

Protective clothing (coveralls and apron)

- Wear disposable or reusable coveralls; consider if fluid-resistant coveralls are appropriate.
- Select coveralls that are easy to put on and take off without self-contamination.
- Use a single-use disposable, or reusable waterproof apron over the coveralls where heavy soiling of clothing is anticipated.

Footwear

- Use single-use disposable waterproof enclosed footwear, or,
- Reusable rubber or polyurethane boots that can be thoroughly cleaned and withstand disinfection, or,
- Boot covers, as appropriate for the worker, task and setting.

Gloves

- Gloves may be single-use disposable gloves (preferred) or reusable heavy-duty gloves that can withstand cleaning and disinfection.
- If heavy duty gloves are required for job task, heavy duty gloves may be used over disposable gloves.
- If gloves are damaged, remove, wash hands and put on a new, undamaged set.

Respiratory protection

- Wear a single-use disposable P2/N95 face mask[5] (see Appendix 3).
- Each worker is recommended to undergo fit-testing[6] for selection of an appropriate P2/N95 mask. Initial and subsequent quality checks for mask fit are detailed in AS/NZS 1715:2009.
- PCBUs should also ensure each worker is trained to perform a fit check (i.e. checking the face seal on their own face mask) each time a P2/N95 face mask is put on or adjusted. This training can be incorporated with induction fit testing and subsequent quality checks for face mask fit.
- A powered air purifying respirator (PAPR) with P3 filters offer a higher level of protection than P2/N95 face masks, and may be more suitable for:
    - high-risk activities (such as poultry depopulation and field postmortems)
    - situations where a P2/N95 respirator is impractical or unsuitable (e.g. for people with beards) or where there is significant risk of disposable P2/N95 respirators getting wet.

IMPORTANT TO NOTE: Goggles and face shields are not a substitute for respiratory protection with a P2/N95 face mask

Eye protection

- Goggles (preferably with anti-fog coating) provide reliable, practical eye protection from splashes and sprays from multiple angles.
- Goggles do not provide splash or spray protection to other parts of the face; a face shield can provide protection to other parts of the face as well as the eyes.
- Face shields that extend from chin to crown as well as wrap around the sides provide the best face and eye protection from splashes and sprays.
- Face shields may be used for eye protection instead of or in addition to goggles depending on the circumstance.
- Face shields should be used in addition to goggles in damp environments.
- Prescription glasses are **not** sufficient protection and should be worn underneath goggles and/or face shields.

Head or hair cover

- If coveralls do not have an inbuilt hood, consider wearing a disposable head or hair covering (with long hair tied back or up).

[5] P2 and N95 are particulate respirators and are often used interchangeably. P2 meets the requirements of Australian/New Zealand standards of AS/NZS 1716:2012 'Respiratory Protective Devices' (see Appendix 3 for further information). N95 meets the United States National Institute of Occupational Safety and Health (NIOSH) requirements.
[6] Fit testing assesses whether a respirator face mask forms an adequate seal around the wearer's face to provide sufficient protection.

Cleaning or disposal of PPE

- Wear fresh, clean PPE (e.g. P2/N95 face mask, protective eyewear, coveralls (consider fluid-resistant as appropriate), gloves, footwear, and head cover) while cleaning or disposing of used PPE.
- Discard all disposable PPE according to AUSVETPLAN instructions (see AUSVETPLAN Operational Manual - Disposal.
- Seek advice from state/territory environmental protection or animal health authorities about how and where to dispose PPE waste.
- Clean and disinfect reusable PPE using effective detergent and disinfectant products after each use (see AUSVETPLAN Operation Manual on Decontamination). Follow manufacturer instructions as certain chemicals may present a hazard if mixed.
- If an item cannot be effectively cleaned and disinfected according to above guidance, discard according to local state or territory authority advice and requirements.
- After cleaning and disinfecting reusable PPE items, allow to dry in a designated clean area and store dry PPE in a designated clean location on the premises.

Laundry

- Wear PPE including a face mask, gloves, and protective outerwear when handling used laundry, while avoiding direct contact with contaminated material. After handling contaminated items, perform hand hygiene.
- To reduce the risk of cross contamination, there should be strict delineation of dirty and clean laundry areas.
- Launder used clothing on site, with standard laundry detergent and hot laundering.
- If no laundry on site, use disposable PPE options as a preference.
- If clothing or used PPE is to be laundered elsewhere, controls and communications must be in place to ensure appropriate handling of potentially contaminated items. Items should be transported in a sealed plastic bag. Keep separate from other items, and thoroughly machine-dry at the highest temperature suitable for the material.
- Potentially contaminated items should not be washed with other uncontaminated items.

Appendices

Appendix 1. Resources for further information

For easy-to-use posters for workers

Bird flu toolkit for people who work with birds | Australian Centre for Disease Control

For up-to-date information on avian influenza in Australia

www.birdflu.gov.au

For information on animal biosecurity

The Department of Agriculture, Fisheries and Forestry

Protect your animals and plants from pests and diseases

Information on bird and poultry biosecurity

National Farm Biosecurity Manual - Poultry Production

National Water Biosecurity Manual - Poultry Production

On-farm biosecurity measures and risk management tools

Farm Biosecurity

Farmsafe Australia - Resources

Information on avian influenza in wildlife

Wildlife Health Australia - Incident Information - high pathogenicity avian influenza

National Wildlife Biosecurity Guidelines

WHA Risk Mitigation Toolbox for Wildlife Managers and Wildlife Care Providers

Zoo Aquarium Biosecurity

Zoo and Aquarium Association Australasia - Zoo and Aquarium Biosecurity

National Zoo Biosecurity Manual

State/Territory Agriculture Authorities

Australian Capital Territory	www.environment.act.gov.au
New South Wales	www.dpi.nsw.gov.au/biosecurity/animal
Northern Territory	nt.gov.au/industry/agriculture
Queensland	www.daf.qld.gov.au
South Australia	www.pir.sa.gov.au
Tasmania	nre.tas.gov.au/agriculture
Victoria	agriculture.vic.gov.au

Western Australia	www.agric.wa.gov.au

AUSTVETPLAN

Animal Health Australia - AUSVETPLAN

EADRA

Animal Health Australia - Emergency Animal Disease Response Agreement

Animal disease outbreaks

Australian Government - Outbreak - Animal and plant pests and diseases

To report concerns of potential emergency animal diseases

Emergency Animal Disease Hotline **1800 675 888**

Through this national toll-free number, you will be connected to your state or territory animal health authority. This number does not provide advice for general animal health.

For more information about the hotline, visit: Animal Health Australia

For information on work health and safety

WHS regulators

Australian Central Territory	www.worksafe.act.gov.au
New South Wales	www.safework.nsw.gov.au
Northern Territory	www.worksafe.nt.gov.au
Queensland	www.worksafe.qld.gov.au
South Australia	www.safework.sa.gov.au
Tasmania	www.worksafe.tas.gov.au
Victoria	www.worksafe.vic.gov.au
Western Australia	www.worksafe.wa.gov.au

WHS national policy body

Safe Work Australia	www.safeworkaustralia.gov.au

For information on workplace hazard identification and control

SafeWork Australia

Model Code of Practice - how to manage work health and safety risks

State/Territories Health Authorities

Australian Capital Territory	Reporting notifiable diseases - ACT Government
New South Wales	NSW Health – Contact Details for Public Health Units
Northern Territory	NT Health - Centre for Disease Control Contacts
Queensland	Queensland Health – Public Health Units
South Australia	SA Health – Communicable Disease Control Branch
Tasmania	Tasmanian Public Health Hotline
Victoria	Vic Health Local Public Health Units
Western Australia	WA Health - Contact Details for Public Health Units

For information on avian influenza around the world

World Organisation for Animal Health (WOAH)

WOAH - Avian Influenza

World Health Organization (WHO)

WHO - Situation Reports - Avian Influenza

For information on avian influenza in humans

Australian Government Department of Health and Aged Care

Avian Influenza in Humans (bird flu)

Appendix 2. Sample checklists for farm producers or other organisations in preparedness for an outbreak of avian influenza

Checklist for workplaces to prepare for outbreak

Availability of personal protective equipment (PPE) (consider appropriate PPE items based on a site-specific occupational risk assessment, and consider minimum stock levels based on number of workers or farm size, and future availability from supplier)

Aprons	Single-use disposable Number: _____
	Reusable Number: _____
Footwear	Single-use disposable Number: _____
	Reusable Number: _____
Coveralls	Single-use disposable Number: _____
	Reusable Number: _____
Face shields	Single-use disposable Number: _____
	Reusable Number: _____
Gloves	Single-use disposable Number: _____
	Reusable Number: _____
Goggles	Single-use disposable Number: _____
	Reusable Number: _____
Head/hair covers (if using unhooded coveralls)	Single-use disposable Number: _____
P2/N95 face masks	Single-use disposable Number: _____

Powered air purifying / P3 respirators	Reusable Number: _____

Facilities and amenities	
Soap available	**Yes / No**
Alcohol based hand rub (60-80% ethanol concentration)	**Yes / No**
Disinfectant wipes	**Yes / No**
Single-use paper towels available	**Yes / No**
Waste bin with liner available for general contaminated waste	**Yes / No**
Waste bin (lined) for disposable PPE	**Yes / No**
Waste bin (lined) for reusable PPE	**Yes / No**
Written procedures available and displayed on the use of PPE (including mask fit checking, putting on and taking off PPE), handwashing and personal decontamination protocols (per AUSVETPLAN)	**Yes / No**
Showering facilities	**Yes / No**
Washing machine and dryer with hot cycles	**Yes / No**

Records for training and vaccination	
Workers PPE trained (appropriate putting on (including mask fit checking), use, taking off, disposal, showering, getting in clean clothes)	**Yes / No**
Trained PPE observer(s) assists workers to put on and take off PPE	**Yes / No**
Workers fit tested	**Yes / No**
PAPR trained (including correct cleaning and maintenance), if relevant	**Yes / No**

Records for training and vaccination	
Workers trained in hand hygiene	**Yes / No**
Workers seasonal influenza* vaccination record kept	**Yes / No**

*workers may choose not to disclose vaccination status

Appendix 3. Respirator face mask information

Respirators (referred to as face masks elsewhere in this document) are designed to protect the wearer from harmful agents (including germs, chemicals, bacteria and viruses) which may be inhaled through the mouth or nose.

Each respirator type provides a different level of protection based on its design. Below are the different types:

- Powered air-purifying respirator (PAPR) are reusable and often have a hood or helmet that covers the nose, mouth, and eyes. A battery-powered blower pulls air through filters or cartridge. These can be available as either loose fitting or tight fitting PAPR.
- Elastomeric full facepiece respirators are reusable and cover the nose, mouth, and eyes.
- Elastomeric half mask respirator are reusable respirators and cover the nose and mouth.
- Particulate filtering facepiece respirator (respirators, P2/N95) are disposable respirators that cover the nose and mouth.

To note: Loose-fitting PAPRs, in which the hood or helmet is designed to form only a partial seal with the wearer's face or hoods which seal loosely around the wearer's neck or shoulders, do not require fit testing7.

The level of protection afforded by a respirator is affected by multiple factors, including:

- the class and type of filter,
- the adequacy of training8 in fitting, fit checking and fit testing the respirator to an individual
- whether the person always uses the device as directed, and
- the environment and tasks to be undertaken.

Under the Australian/New Zealand Standard AS/NZS 1716:2012, respirator particle filters are classed as P1, P2 or P3. The minimum level of respiratory protection for working with birds or their associated products which might be infected or contaminated with avian influenza is a half face particulate respirator with a P2 classification. Availability of an N95 United States National Institute for Occupational Safety and Health approved respirator performs similarly to a P2 and where available, is also suitable for use. Where a P2/N95 is not available or conditions require higher protection level, a respirator with a P3 filter (a higher level of filtration) should be used. The Australian Therapeutic Goods Administration is responsible for regulating face masks and respirators.

Respirators that meet the minimum filtration requirement (P2 standard) are available in many different designs, including half face piece disposable (sometimes called

[7] Respirator fit testing is a validated method to determine whether the respirator being worn provides an adequate seal with a person's face. There are two methods of fit testing that meet Australian Standards (as per AS/NSZ 1715:2009).
[8] Fit-testing for P2/N95 face mask use is required as per AS/NSZ 1715:2009.

‘maintenance free’) respirators; some of these have one way exhalation valves for extra comfort. These are available as a ‘cup’ style or ‘flat fold’, which looks similar to a surgical face mask in some respects, and a ‘duck bill’, which has a peak extending out from the nose and mouth of the wearer. Reusable plastic or silicon respirators with replaceable filter cartridges are also available with or without one way exhalation valves. The wearer should be fitted for the most suitable device and must be clean-shaven to achieve a seal for tight-fitting respiratory protective equipment.

Powered air purifying respirators (PAPRs) are used for specialist applications and may be used in conjunction with full body suits. PAPR with hoods may also be selected for use by individuals with beards and/or those who cannot achieve a suitable fit with tight fitting respirators.

Respirators which meet P2/N95 or P3 filtration standards are available from several suppliers in Australia. The style and design most suitable for a particular application is a matter for consultation between the industry concerned and the relevant state health department, as needs vary considerably in different workplaces and individuals who are fit tested to a specific brand, type and size of respirator.