

AUJESZKY'S DISEASE (AD) CONTROL STRATEGY FOR NORTHERN IRELAND

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Department of
**Agriculture, Environment
and Rural Affairs**

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1. Foreword and Introduction

1.1. Purpose of document

[The Aujeszky's Disease Order \(NI\) 2012](#) provides the legal powers to allow the control of Aujeszky's Disease (AD). This control strategy describes how an outbreak of Aujeszky's Disease (AD) in Northern Ireland would be managed. The primary purpose of this control strategy is to set-out the measures to be applied in the event of an outbreak of AD. The strategy also summarises the wider framework aimed at preventing and monitoring for AD.

It is the aim of this strategy that all affected during an outbreak of AD will be able to be better prepared to respond quickly and effectively to controls and limit the outbreak, thereby mitigating the likely impact of the control measures described.

A glossary of terms and acronyms used in the strategy is contained in Annex 1.

1.2. Approach

NI is recognised as a separate epidemiological unit from the rest of the UK and would liaise with the Republic of Ireland during an outbreak of AD in either or both jurisdictions. It is recognised by the Department of Agriculture, Environment and Rural Affairs (DAERA) and the Department of Agriculture, Food and Marine (DAFM) that co-operation between both administrations would help reduce the further spread of AD.

1.3. Strategic fit

This control strategy is consistent with the following:

- Compliance with European law and international obligations to trading partners.
- Ongoing obligations for the welfare of animals.
- DAERA's epizootic disease contingency plans

1.4. Disease strategic control framework

1.4.1. Disease management principles

Managing epizootic diseases is primarily about managing risk. Epizootic diseases are defined as those not present or endemic in the country and therefore risk management in this case consists of:

- Reducing the likelihood of outbreaks of AD by putting in place appropriate preventive measures.
- Ensuring such diseases are rapidly detected if an incursion does occur
- Rapid eradication of such diseases

- Taking preparatory measures to reduce the impact of such an incursion.

Whilst the majority of the elements in this control strategy will only come into force if AD is detected, readiness to operate these measures and minimise their impacts needs to be put in place in advance. One aim of this document is to assist all parties in their contingency planning and preparation

1.4.2. Disease control objective

If AD is detected within NI the key objective is to:

- Contain and eradicate any incursion into the domestic pig population.

In achieving this objective, and in accordance with the Department's Contingency Plans for Epizootic Diseases, the disease control strategy aims first and foremost to restore Northern Ireland's (NI) disease free status as quickly as possible. In doing so, DAERA seeks to select control strategies which:

- Minimise the number of premises affected;
- Minimise the number of pigs required to be slaughtered;
- Protect the welfare of healthy domestic pigs;
- Minimise any impact on pig producers, meat processors and other related industries and to domestic and international trade in pigs and pig products;
- Minimise the impact on tourism, the environment and the rural and wider economies;
- Support sustainability within industry; and
- Minimise the burden on taxpayers.

1.4.3. Approach to disease control

Key principles include:

- Early detection and reporting of suspicion of AD to limit the extent to which disease can spread before controls are brought into force, thereby reducing the extent of the outbreak;
- Containing disease at premises where it is detected and eradicating it swiftly and effectively;
- Limiting the risk of any further spread of disease from premises connected with the infected premises (IP);
- Limiting the risk of any further spread of disease to other premises in the vicinity of the IP;
- Undertaking thorough epidemiological investigation to detect possible spread and source of disease
- Undertaking veterinary risk assessments before easing restrictions;
- Continuing heightened surveillance before easing restrictions;
- Complying with European legislative obligations.

2. Aujeszky's Disease

AD, also known as pseudorabies, is caused by porcine herpes virus. It is a notifiable disease which primarily affects pigs, but other species, e.g. cattle, sheep, dogs, cats and rodents are susceptible. This means, any suspicion or occurrence of AD must be notified to DAERA.

Clinical signs and mortality will vary dependant on the age of the pigs affected and the strain of virus involved.

The disease is characterised by respiratory, reproductive and nervous signs. Piglets will have incoordination, recumbency and convulsion. Older pigs suffer from coughing, sneezing and nasal discharge. Infection of sows can cause abortion and stillbirths.

Young piglets are highly susceptible to AD with mortality rates reaching 100% during the first 2 weeks of age. When pigs are older than 2 months (grower-finisher pigs), the respiratory forms become predominant with hyperthermia, anorexia, mild to severe respiratory signs: rhinitis with sneezing and nasal discharge may progress to pneumonia. The frequency of secondary bacterial infections is also high, depending on the health status of the infected herd. In this group of pigs, the morbidity can reach 100%, but in cases of the absence of complicated secondary infections, mortality ranges from 1–2% (Pejsak & Truszczynski, 2006). Sows and boars primarily develop respiratory signs, but in pregnant sows, the virus can cross the placenta, infect and kill the foetuses inducing abortion, return to oestrus, stillborn foetuses.

In the other susceptible species, the disease is fatal, the predominant sign being intense pruritus causing the animal to gnaw or scratch part of the body, usually head or hind quarters, until great tissue destruction is caused. For that reason, the disease was named in the past as “mad-itch”.

The most recent confirmed serological positives of AD in Northern Ireland were detected in 2009 following routine sampling protocols. Northern Ireland was declared officially free of this disease in 2012 following a detailed submission to the European Commission in March 2012.

2.1. How to recognise the disease

2.1.1. What to look for

Pigs are the only natural host for the Aujeszky's virus, although it can infect cattle, sheep, cats, dogs and rats causing fatal disease. It is not transmissible to humans. Clinical signs of the disease in pigs vary depending on the age of the animals involved, their immune status and the strain of virus involved:

- In neonatal pigs the incubation period is two to four days and signs of central nervous system disease (shivering, incoordination and hind leg weakness) are seen. Losses may reach 100% in piglets less than seven days old
- In weaned pigs, respiratory disease is the predominant problem. Sneezing, coughing and

laboured breathing is accompanied by fever and weight loss

- Signs in gilts and sows include abortion, stillbirth and mummified foetuses, in addition to the respiratory and febrile signs seen in growing and finishing pigs.

If a pig keeper or a private veterinary surgeon (PVP) suspects that the disease may be present they must inform DAERA as soon as possible so that appropriate measures can be initiated to either confirm or dispel the presence of disease.

Information on the disease and its history is readily available from many sources and some useful links are included here:

- DAERA animal disease website: www.daera-ni.gov.uk/articles/aujeshky%E2%80%99s-disease
- Defra website: www.gov.uk/guidance/aujeshkys-disease

2.2. Modes of transmission

2.2.1. Live animals

An outbreak will most likely originate from the introduction of infected pigs or semen to a susceptible herd. Humans are not carriers of AD and have not been implicated in the spread of the disease other than by the use of contaminated equipment, such as hypodermic needles and syringes contaminated with blood from infected animals and contaminated clothing.

The most important method of disease spread within a herd is via oral and nasal secretions from infected pigs. AD virus is spread principally by nose-to-nose contact. Other methods of spread are via:

- semen or vaginal secretions (see below)
- transplacental infection
- the colostrum or in milk

Transmission to other susceptible species, can occur via direct contact or consumption of head or offal tissue. Very rarely has AD virus been detected in muscle tissue. Animals other than pigs are generally regarded as 'dead-end' hosts, as infection in these animals is usually short and self-limiting. Most die after an illness of short duration, usually 2–3 days after the appearance of clinical signs.

Rats and wildlife may have some role as reservoirs, but this requires further study.

2.2.2. Animal products and by-products

Although it can be isolated from the tissues of infected pigs after death (Heard 1980, Pensaert

and Kluge 1989), AD virus is not considered a high-risk contaminant of pigmeat products. It does not appear in the OIE review by Farez and Morley (1997) of 'potential animal health hazards of pork and pork products'. DAFF (2004) has reviewed the literature on infectivity of AD virus in pigmeat, citing papers that report detection of very low virus titres in the muscle of experimentally infected pigs and the transmission of infection through the consumption of carcasses of infected animals. Offal (head and neck tissues, and thoracic and abdominal viscera) presents a higher risk of disease transmission than meat.

The dose of virus necessary to infect pigs orally is much greater than the dose required for infection via the respiratory route (Wittmann and Rziha 1989).

The virus has been spread from animals (e.g. cats and rodents) that have died from the disease and contaminated grain bins (Kluge et al 1999).

2.2.3. Equipment and personnel

Spread via veterinary instruments within and between herds has been reported (Kluge et al 1999). Vehicular spread has not been documented.

2.2.4. Vectors

AD virus has no insect vectors. There are no reliable reports that the virus survives in or on birds, in biting insects or on flies beyond 24 hours, or that it is mechanically transmitted by them.

2.2.5. Semen and embryos

Acutely infected boars can transmit virus through semen, and it would be expected that carriers would also intermittently excrete the virus in semen. Acutely and chronically infected sows can be expected to excrete the virus into the reproductive tract and have been shown to infect naive boars.

2.2.6. Windborne spread

Under certain favourable conditions in densely populated pig-farming areas, windborne spread of the virus from farm to farm can occur over distances of more than 2 km (Gloster et al 1984). The disease spread from northern Germany to Denmark in the air over a distance of 15–40 km and, in one case, 80 km (Christensen et al 1990). Windborne spread over substantial distances (up to 80 km) can be modelled and the distribution predicted (Christensen et al 1990).

The specific prerequisites for windborne spread are:

- large amounts of virus (i.e. large herds infected)
- the correct strain of virus
- appropriate environmental conditions (i.e. low temperature and high humidity)

- topography suitable for windborne spread
- the close proximity of other pig herds (Pejsak and Truszczynski 2006).

2.3. **Laboratory Service**

The laboratory for Aujeszky's Disease is the Agri-Food and Biosciences Institute (AFBI). AFBI provide their animal disease diagnostic service at AFBI Stormont, Stoney Road, Belfast, BT4 3SD Tel: 028 905 20011. Fax: 028 905 25773. E-mail: info@afbini.gov.uk

3. Maintaining Disease Freedom and Surveillance

3.1. Introduction

Where appropriate, or required by European legislation, countermeasures are put into place which aim to reduce the risk of the introduction of AD to NI.

3.2. Vigilance and prompt reporting

Early detection of AD in pigs is key to lessening the extent of disease spread. Keepers of pigs are strongly encouraged to remain vigilant for clinical signs of AD in their herds and must promptly notify suspect cases to their local Divisional Veterinary Office (DVO).

3.3. Trade / imports

It would not be proportionate or cost effective to check every animal regularly for disease. A system of surveillance is practiced which targets highest risk routes of incursion and makes use of cost effective opportunities to check for continued disease freedom.

All EU Member States import animals and animal products from other EU Member States and third countries. Our trading partners must comply with the strict controls operating to govern the import of animals and animal products to reduce the risk of an animal disease being introduced. The risk from legal imports is considered to be low.

The UK has enhanced import controls to protect against pigs, pork and pork products being imported illegally from outside of the EU to reduce the risk of disease incursion by this route. However, there remains a threat from illegal activity. All breeding and production pigs imported from regions which are not AD free will be required to meet additional health and certification requirements.

3.4. Biosecurity

Good farming practice, in particular biosecurity is a vital part of keeping disease away from pig herds and spreading to others. All keepers of pigs need to maintain high biosecurity standards for protection from disease (not just those that are notifiable). There are also a number of specific controls in force which help minimise this risk and these are outlined below.

Routes of undetected spread and relevant mitigating controls include:

- If a pig becomes infected, but disease is not yet detected, the risk of further disease spread is reduced by movement and stand-still controls¹
- Where pigs mix, or where vehicles or equipment come into contact with other pigs (such as at

¹ The Pigs (Records, Identification and Movement) Order (Northern Ireland) 2012

markets or slaughterhouses) cleansing and disinfection of vehicles minimises the risk of further spread of the disease.

- Pig keepers being precautionary in only sourcing animals from known and reliable sources, in particular taking care if considering sourcing from areas outside the UK and Ireland;
- Pig keepers implementing and operating good biosecurity practices at all times to reduce likelihood of disease entering premises or spreading rapidly within separate epidemiological units within the premises;
- Pig keepers being vigilant for signs of disease, and reporting any suspicion early.

3.5. Pigs living in the wild

There are no known populations of feral pigs or wild boar in Northern Ireland.

3.6. Surveillance

From 1st March 2013 a new surveillance scheme was phased in to ensure Northern Ireland maintains its status as an AD free zone.

To maintain regional freedom from disease an annual surveillance of the national pig herd must be undertaken, which will require low level sampling of breeding and finishing herds up to a maximum of 14 pigs per separate epidemiological unit.

For breeding herds, sampling of breeding pigs is carried out by the nominated Private Veterinary Practitioner (PVP) on farm.

For standalone finishing holdings, sampling of pigs may be carried out on farm by a nominated PVP, or alternatively at slaughter with the samples taken either by an authorised member of slaughterhouse staff or a nominated PVP.

3.7. Preventive vaccination

The Aujeszky's Disease Order (Northern Ireland) 2012 bans the use of vaccine except under licence by DAERA in the event of a future disease outbreak. In such a scenario limited vaccination could be used to limit the spread of the disease in herds considered at risk from an IP.

3.8. Movement records

Article 4 of the Pigs (Records, Identification and Movement) Order (NI) 2012 requires all persons who intend to keep a pig on a holding shall inform the Department in writing beforehand. On receipt of a completed holding application form, DAERA officers will inspect and approve or reject the registration of a pig holding number. All registered pig holdings are issued with a movement book which is

specifically for licencing moves off to other holdings/abattoirs/markets within N. Ireland. In addition, owners / keepers of pigs are required to keep records of pigs on the holding. These records must be held for 3 years. In addition, pig keepers must submit an annual inventory return to DAERA stating the number and type of pigs in their holding on a specified date as well as a list of the premises on which they keep pigs.

The above legislation also requires pig keepers to notify DAERA of all moves off their holding within 7 days and pigs being transported must be accompanied by movement documentation.

3.9. Raising stakeholder awareness

Advice on maintaining disease free herds is made available to pig keepers on DAERA's website, including the following:

- [Biosecurity - reducing disease risks](#)
- [Aujeszky's Disease](#)

Pig keepers are encouraged to consult PVPs as soon as possible if they are concerned about their herd's health, biosecurity practices or disease risk.

4. Suspicion of Aujeszky's Disease in Northern Ireland

4.1. General principles

DAERA's surveillance or the reporting of clinical signs consistent with those of AD in pigs or other animals may lead to suspicion being raised regarding the presence of disease on a premises. Veterinary investigations are triggered, with laboratory analysis being carried out on blood or tissue samples where disease cannot be ruled out on clinical grounds. Measures may also be imposed on the premises declaring them as suspect infected premises with restrictions on the movement of all pigs or carcasses on and off. The strategic aim of these measures is to:

- Establish whether AD is present
- Establish the origin and any potential routes of spread if disease is confirmed
- To put in place appropriate measures to prevent disease spread.

4.2. Notification to DAERA

Anyone in possession of a pig or pig carcass which they suspect may be infected by AD must immediately notify their DVO. Avenues of notification include the following:

- Directly by the owner / person responsible for the pigs in question;
- By a PVP employed by the owner / person responsible for the pigs in question to assess or treat these pigs;
- By an inspector attending the premises on other business (e.g. animal welfare grounds);
- As a result of active DAERA surveillance;
- By laboratory personnel following submission of blood samples or carcasses for analysis;
- By Veterinary Service (VS) staff at a slaughterhouse suspecting disease as a result of ante / post-mortem inspections (NB the following section (and Section 4.3) does not apply if this is the case – see Section 4.6 specific to slaughterhouses).

Upon notification, the Epizootic DVO will decide on the level of suspicion. The Epizootic DVO will action a Veterinary Officer (VO) to visit via the Field DVO and/or provide other instructions. The Epizootic DVO may be able to make an initial assessment of the level of suspicion at this stage; this assessment will be subject to change as more information becomes available. DAERA also operates several out-of-hours services to provide assistance, and information, out of normal working hours, to those involved in an Epizootic Disease response. The services are directed at different groups including DAERA staff, PVP's, the PSNI and indeed the general public. An Epizootic Team Member (ETM) is on call out of hours 365 days a year, including week-ends, bank holidays and every week-night to offer advice and assistance when epizootic disease is suspected by a Veterinary Officer.

4.3. Actions at suspect premises

4.3.1. Suspect premises

Upon notification that there is a suspect AD case, DAERA will orally inform the keeper reporting

the suspect animal / carcass that further investigation is necessary. The keeper will also be told that no pigs, carcasses or anything suspected of being infected or contaminated with AD virus should be moved off or to the premises in order to minimise the risk of disease spread. On arrival at the premises, the VO will serve the keeper with a written restriction notice designating the premises as suspect premises. (form AD2)

If the VO determines, through further investigation, that the presence of AD on the premises is not suspected (i.e. disease can be negated on clinical grounds), these controls will be removed.

If the VO cannot rule out the suspicion of AD being present on the premises on clinical grounds, clotted blood samples will be taken and submitted for laboratory analysis. Pig carcasses may also be submitted.

No pigs, carcasses or anything suspected of being infected or contaminated with AD will be allowed to move off the premises. However, the restrictions may in some cases be modified such that the movement on and off the premises of people, vehicles, equipment, or other animals (not pigs) or things that might spread disease may be licensed.

4.3.2. Veterinary inquiry

An epidemiological investigation will begin to establish, as far as possible:

- How long the disease may have been present on the premises.
- The likely source of infection.
- Whether the disease is a potential primary case or whether it originated from another premises.
- Whether any other premises may have been exposed to the disease as a result of the suspect case.

This will inform any initial further investigations to be carried out (e.g. if pigs were moved to/from the premises during the incubation period).

The test results will either negate or confirm infection. If negated all AD restrictions are lifted. If AD is confirmed, the infected premises will remain under restrictions (see below).

4.4. Diagnostic investigation at the Agri-Food and Biosciences Institute

AFBI at Stoney Road, Belfast, provide the diagnostic testing service for AD. The results of the test are reported by AFBI to VS.

Results from blood samples, demonstrating that AD is present or not can be expected within 48

hours of the serological analysis beginning. (bearing in mind that it takes at least 1 week for seroconversion so a second batch of sampling may be required.)

4.5. Suspicion at slaughterhouses

Legislation sets out different rules if pigs or pig carcasses at a slaughterhouse are suspected of being infected by AD. Notification must be made in the usual way to the local DVO and Epizootic DVO. A further investigation will then be necessary and the following legal requirements apply:

- No pig may be moved into the slaughterhouse unless approved by VO.
- Parts of the slaughterhouse used to slaughter and store carcasses of the pigs suspected of being infected with AD should not be used unless cleansed and disinfected to the satisfaction of a VO.

Simultaneously, an investigation at the premises of origin will be carried out as described in Section 4.3.

On arrival at the slaughterhouse the Epizootic VO will examine the pigs or pig carcasses. If the VO cannot rule out AD on clinical grounds, a notice is served on the operator setting out the restrictions that apply. After inspection and the taking of samples, the following will be required to be slaughtered separately from other pigs:

- All suspect pigs
- All pigs from the same premises as the suspect pigs
- Any pigs that have had contact with the suspect pigs.

Carcasses of these pigs should be stored separately from carcasses of others. During this period if the occupier completes cleansing and disinfecting in accordance with instructions from the VO (i.e. of areas potentially contaminated by infected pigs or pig carcasses), live pigs may be allowed to enter the slaughterhouse again for slaughter.

Laboratory testing as described in Section 4.4 will be carried out. If the test results are negative, the VO will inform the occupier in writing that the measures above cease to apply. Throughout the investigation, the slaughterhouse operator remains responsible for maintaining the carcasses in line with food hygiene regulations. Where disease is negated and restrictions are lifted, and subject to compliance with food hygiene regulations and official checks throughout the period of restrictions, pig meat may enter the food chain.

4.6. Special cases – establishments and animal gatherings

Since pigs are not resident at establishments (slaughterhouses, knackery yards, game handling establishments) or other temporary gatherings (markets, shows, collection centres) special procedures apply where disease is suspected. It is likely (but not certain) that the animals arrived at the location already diseased. The establishment / premises is restricted and further movements

prohibited whilst investigations take place – including tracing and investigating the source of animals and tracing any that have already left. As the VO considers necessary, restrictions will be served at source and destination premises.

If disease is suspected at a gathering, it is treated like any other suspect premises, and animal gatherings have contingency plans in place in order to care for animals during this time. Approximately 48 hours is needed to allow a preliminary assessment of the disease situation and to obtain initial test results.

Movement of other species of animal that are present at the gathering will be licensed immediately following appropriate C&D measures. The destination premises may be restricted if pigs are present.

4.7. Suspicion of AD during transportation

Where disease is suspected in transport (such as a roadside inspection of a livestock vehicle) the vehicle and pigs will be placed under restrictions. The vehicle is unlikely to be the disease source and therefore the vehicle route(s) will be traced and the source and contact premises placed under restrictions.

This scenario is unusual and unlikely. The pigs will be moved to an appropriate location where they will (if appropriate) be detained until test results are received, or culled on suspicion. If disease is confirmed by test results, the vehicle (and receiving premises) will be cleansed and disinfected as directed by a VO.

4.8. Communication

Since the time from initial report to confirming disease is normally within 48 hours (although it can take up to an extra week to allow for seroconversion) the policy is not to publicise the investigation. Many investigations prove negative and unnecessary publicity can prove disruptive to the farm.

Therefore, it is not usual practice to make public statements about premises that are under investigation for suspect disease. However, general communications to stakeholders may be necessary in certain circumstances e.g. to raise awareness about the international disease situation, the general disease status and the need for increased vigilance and biosecurity. This communications will be made using existing and appropriate government and industry channels. Biosecurity advice is made available to those in control of pigs. This includes information on typical signs of disease.

5. Confirmation of Aujeszky's Disease in Northern Ireland

5.1. Confirming Aujeszky's Disease

AD is confirmed by the Chief Veterinary Officer (CVO) upon laboratory confirmation of the presence of AD. Once disease is confirmed a series of actions is initiated through the implementation of DAERA Contingency Plans. These include activation of Central and Local Epizootic Disease Control Centres, declaring relevant protection zones, confirming measures within the zones and carrying out certain actions at the IP.

5.1.1. International Notification obligations

The CVO notifies the CVO in Defra and the CVO in DAFM. The CVO in Defra notifies the OIE of the presence of AD in the UK. The EC is also notified. The OIE, Commission must be kept informed of further outbreaks of AD and be updated with progress on the outbreak by the submission of regular reports.

5.1.2. Trade and Safeguard measures

On notification of disease to the EU and OIE, NI (as a region of the UK) will lose its disease free status for AD. Export health certificates for pig and pig by-products will be withdrawn and importing countries will be notified.

In an AD outbreak the UK may seek, or have imposed, an EU safeguard measure. This will impose additional controls on the export to the EU of live animals, or other related products from certain areas and may place additional restrictions on areas of UK which are outside of the protection zones. These will depend on the disease situation and their content cannot be predicted with any certainty.

5.2. Disease Control Measures

Please see Section 6 for details on the control measures on infected premises. Protection zones will be declared around the infected premises in line with EC obligations and to limit the risk of local spread. The control measures in these zones are described in Section 7.

5.2.1. Controls outside infected areas

Legislation does not require any specific controls outside of the declared protection zones. General advice will be issued to stakeholders to increase vigilance for disease and to report suspicion. It is likely that there will be increased surveillance as a result of this increased awareness. There are no plans for increased random or targeted surveillance beyond that required following tracings, in infected areas and to provide evidence of disease freedom

Cross-border zones

Where disease is confirmed and control zones are established in the Republic of Ireland (ROI), the protection zones may be applied in Northern Ireland if deemed necessary

5.2.2. Communications and raising stakeholder awareness

During an outbreak, information must be provided for all pig keepers, veterinary practitioners and other stakeholders, particularly within the protection zones. The key information provided will vary during the course of the outbreak, but key elements will include:

- Clinical signs of AD;
- Action to take if the disease is suspected;
- The current disease situation;
- Current control measures in place; and
- Legislative and licensing procedures that must be complied with.

Livestock owners must be made aware of their responsibilities and the requirements to supply information from premises within zones, for example, recording existing animals, illness, deaths and births.

Owners must be made aware of the results of AD tests performed on their pigs and the implications of those results.

Livestock owners outside zones must be made aware of their responsibilities, kept informed of the disease situation, told how restrictions may impact on them and be provided with information about the disease, biosecurity and reminded of the need for increased vigilance.

The general public will be kept informed about the disease, the outbreak and the control measures being implemented. The public will be re-assured that AD does not infect humans and has no public health implications. This information should be disseminated in partnership with the Department of Health. Advice about food safety should be delivered by the Food Standards Agency.

6. Actions at infected premises

6.1. Definition of an infected premises (IP)

For disease control purposes premises means any place. An Infected Premises is a place where disease has been confirmed and an infected premises notice served (form AD5).

The Infected Premises Restriction Notice will make it clear what constitutes the Infected Premises in each case (this takes into account factors such as the presence of highways). Separate Notices will be served on each premises if epidemiological advice indicates a link with other premises, even if the premises are in the same ownership.

Note if disease is confirmed on common land, the common would be treated as an IP and the same restrictions would be applied as for farmed pig premises. This may extend to restrictions on in-by land.

6.2. Overview of controls at an IP

Different control and eradication options are applicable, depending on the type and magnitude of the risks that need to be managed. These will be influenced by how early an outbreak is detected, the extent to which the disease has spread when initially diagnosed, the virulence of the virus, the location of the affected premises and the prevalence of infection within IPs.

The default policy, to control and then eradicate the disease will be to cull pigs on the infected premises. This will apply if AD is not known to be widespread, the infected and suspect population is discrete and able to be controlled, and the destruction and disposal of infected herds is manageable.

A modified policy will apply if circumstances allow the safe slaughter of pigs (including seropositive animals not showing clinical signs) for human consumption, provided that processing capacity is available at approved abattoirs.

Vaccination may be used in certain circumstances – for example to minimise the spread of virus within at risk populations and to protect genetically valuable herds.

Actions at premises where disease is confirmed are, in summary:

- The infected premises will be placed or remain under restrictions prohibiting the movement of things liable to transmit disease on and off the premises;
- In order to eradicate AD, pigs at the infected premises will be culled and resultant risk material disposed of safely and the owner will be compensated for animals slaughtered;
- Semen, ova and embryos at the premises will be destroyed;
- Any other things at the premises likely to harbour disease will be disposed of or cleansed and

disinfected.

- Preliminary cleansing and disinfection (C&D) is completed once culling is completed and carcasses removed;
- Secondary C&D is completed as directed by the VO;
- Further epidemiological investigations will take place to establish how long disease has been present, the likely source and whether disease originated at the premises or whether disease originated from elsewhere;
- Animals, vehicles and other fomites that may have brought disease to the premises or taken disease out of the premises will be traced and investigations undertaken at the contact premises. These contact premises may be placed under restrictions and subjected to serological testing;
- Once all cleansing is complete and other conditions are met, restrictions at the premises may be eased;

6.3. Movement and access controls at IP

Where AD is confirmed pigs, carcasses or *anything* suspected of being infected or contaminated with AD virus must not be moved.

Once assessed by a VO, the movement of people, vehicles, equipment or other animals (excluding pigs) on and off the premises may be licensed.

Upon entry and prior to leaving the premises any vehicles allowed to move will require cleansing and disinfection.

6.4. Slaughter of pigs at an IP

Where disease is found on a premises or where there is a strong epidemiological link which requires slaughter on suspicion:

- all pigs on the IP will be culled, whether or not they currently show signs of disease, as soon as possible;
- culling is usually undertaken by licensed slaughter-men under the supervision of a veterinary inspector;
- pigs on dangerous contact premises will be killed where the risk of exposure to the disease is high;
- carcasses will be destroyed under official supervision (rendering being the option with other disposal routes available subject to public health, environmental and land use/planning considerations).

6.5. Destruction of Semen, Ova and Embryos

Semen, ova and embryos of pigs collected from the premises during the period between the probable

introduction of disease into the premises and the taking of official measures shall be traced and destroyed under official supervision in such a way as to avoid the risk of spread of virus

6.6. Cleansing and disinfection

Cleansing and disinfection (C&D) of premises, vehicles, equipment and anything likely to have been contaminated with AD will be carried out under the supervision of a VO and in accordance with his instructions. Disinfection must be carried out with a disinfectant approved for use under the Diseases of Animals (Approval of Disinfectants) Order (NI) 2008.

Vehicles on the premises will need to be unloaded and/or cleansed and disinfected (this may be under the supervision of a VO). Vehicles on the premises will remain there until they have completed full C&D and been licensed to move off the premises by DAERA VS.

Any equipment, bedding etc from the IP will either be destroyed under official supervision or have full C&D. Parts of the premises that cannot be cleansed and disinfected will remain under restriction for an extended period, until notified by the VO.

There will be some items that cannot be cleansed, disinfected and re-used, for example contaminated feed, farm waste products and slurry. In this case the items will have to be destroyed or disposed of appropriately. For instance, manure and used bedding should be stacked, sprayed with disinfectant and left for at least 15 days before spreading (Wittman 1985) or destroyed by burning or burying. Slurry from an IP should be stored for at least 2 months in winter and 1 month in summer after the last addition of infective material before allowing spreading (Wittman 1985). A reduced storage period may be allowed if an official veterinarian has given instructions to treat the slurry e.g. by altering the PHfirst. Slurry from an IP should not be used for spreading.

Preliminary C&D is carried out by DAERA and at DAERA's expense.. This involves a full cleansing and spray down with approved disinfectant of the areas in which infected animals have been and the areas used for culling.

Owners are responsible for undertaking and paying for secondary C&D, irrespective of whether or not they intend to restock the premises.

6.7. Tracing of dangerous contacts

The movement of pigs, other animals, people, vehicles and other fomites on or off the premises prior to the first identified case will be traced. The period under review will be prescribed by epidemiological evidence. Backward tracings are intended to identify the likely course of disease and forward tracings to identify where it may have been transmitted.

The extent of the investigation on the contact premises (to which pigs are traced and identified as having originated from the farm of origin) will be assessed using a risk-based approach. The following actions may be taken:

- The contact premises will be placed under restrictions and monitored for a specified period of time.
- Traced pigs will be clinically examined (and others inspected or examined);
- Samples from traced pigs will be submitted for AD testing; The clinical and movement records of the traced animals will be reviewed;
- Subsequent re-testing should take place if epidemiological evidence suggests that this is appropriate;
- Movement restrictions will be put in place as appropriate;
- Semen, ova and embryos that have moved during the period disease may have been present will be traced (and may be destroyed as appropriate).

If considered to be a high risk, the pigs at the premises can be culled out as dangerous contacts (as described in Section 6.4).

6.8. Compensation

In accordance with Schedule 2 of the Diseases of Animals (Northern Ireland) Order 1981 compensation for an animal infected with AD will be at half its value immediately prior to infection. For pigs slaughtered in order to control AD the compensation will be the value of the animal immediately prior to slaughter. Compensation is not paid for consequential losses.

Premises culled out as a dangerous contact premises would normally be eligible for compensation for animals slaughtered. DAERA maintains a list of approved valuers. Only approved valuers may value animals slaughtered for the control of AD.

6.9. Repopulation of premises

Pigs may be reintroduced on to premises after the satisfactory completion of C&D.

6.10. Communications

General information will be made available to pig keepers explaining what happens if disease is confirmed on their holding.

7. Measures in Disease Protection Zones

7.1. General principles

Where disease is confirmed at an IP, there is an increased risk of disease spreading to pig premises in the vicinity. Therefore, Protection zones (PZ) are declared around the IP in accordance with the legislation.

Within these zones, restrictions are placed on premises containing pigs. Movements of pigs and other things likely to transmit disease, from and within the zone are also liable to be subject to restrictions. The aim of these zones is to reduce the likelihood of onward spread of disease and to rapidly establish whether this already occurred prior to confirmation at the initial IP. Pigs at such premises within the zones may be subject to inspection or examination by a VO.

7.2. Zones encompassing Northern Ireland and Republic of Ireland

When disease is suspected or confirmed, in either Northern Ireland or the Republic of Ireland, notification between the respective Departments will take place as soon as is practicable. Co-operation between both administrations will be essential to reduce the further spread of disease.

Close communication will be maintained throughout the outbreak to ensure consistency of approach and measures wherever possible (e.g. the issuing and conditions of movement licences, the ending of zones).

In such events where zones are imposed up to the border but are not required to extend further, there will be close dialogue between each Department to discuss the extent of the zones. Any decisions on extending zones beyond borders (or not) will be based on an assessment of the risk of disease spread and also a consideration of any potential economic implications of movement controls.

7.3. Size of zones

The PZs will have a minimum radius of 5km around the IP. Expert advice regarding measures within the zones and their size is sought during the course of an outbreak as more information regarding the disease situation becomes available.

Where new IPs are detected within an existing PZ, the zones will be reshaped and extended as necessary to comply with the minimum size requirements as set out in legislation. They may be sized larger than the minimum size where this improves disease control or improves practical control on the ground. If an IP is detected in a geographically distinct area a new PZ will be declared.

National Movement Ban

Imposition of a ban on movements of pigs across Northern Ireland is not proposed for AD. The nature

of AD suggests a short lived ban adds little benefit in terms of disease control. The practical impacts on industry of a longer ban, and the complexities of determining when the ban should be lifted, argue against any other national movement ban at the start of an outbreak of AD.

7.4. Surveillance within the zones

Legislation determines the level of surveillance carried out within the zones for further cases of AD in order to rapidly establish if disease has spread within the zones. This is carried out in addition to the tracing activities described in Section 6.7. The following key principles apply in disease PZs:

- Premises within the zone containing pigs will be identified as soon as possible;
- Such premises are initially identified using the APHIS and other sources of data;
- Such premises may be subject to visits by DAERA staff. During visits, pigs may be examined. If AD is suspected, the principles and measures described in Section 4 **Error! Reference source not found.** will apply;
- Visits are prioritised according to the type of premises (e.g. large commercial premises) and associated risk factors (e.g. proximity to IP; outdoor/free-range units). Several visits may be made over the course of an outbreak.

7.5. Duration of zones

Legal requirements determine the minimum duration of zones in terms of the completion of initial cleansing and disinfection at IP within the zone.

In addition to this minimum requirement, a zone will not be ended if there remain suspect premises (see Section 4) within the zone at which veterinary inquiries are ongoing or for which laboratory results are pending.

7.6. Movement prohibitions and derogations in control zones

Within a PZ certain actions that are liable to spread disease are prohibited. During the early phase of an outbreak (detection phase) very tight controls are necessary to prevent spread of, as yet undetected disease.

Over time the disease situation stabilises and confidence in the situation in that area increases (Disease Stability Phase). Once in the disease stability phase and taking account of a number of factors including the epidemiological situation in the area and nationally, and progress with tracings and other measures, a decision may be taken centrally that some control measures in the area may be eased. This will give the green light to commence issuing certain movement licenses.

Derogations will take the form of a licence, either a Specific Licence issued to authorise a specific movement, or a General Licence allowing all movements of a certain type. Licenses may include

conditions with which the licensee must comply.

There is no clear cut stage when there is a move from Detection to Stability phase and further diseases cases may require a move back to the more restrictive Detection phase.

In “force majeure” situations, such as flooding at a pig premises, special licences may be issued for animal welfare reasons.

The following paragraphs consider the prohibitions that apply to various scenarios and include comment on the derogations that may become available.

7.6.1. Movement restrictions and licenses – live pigs

Pigs cannot be moved off or onto premises in the PZ except under the authority of a licence granted by DAERA.

Derogations may become available during the Disease Stability phase for movement of pigs off premises in the PZ:

- For immediate slaughter;
- To another premises within the zone, if welfare problems cannot be alleviated by management or husbandry practices at the premises;
- Of pig carcasses to a rendering plant for processing;
- Pigs may be licensed from outside the control zones onto premises within zones. However, any increase in the numbers of the susceptible pigs in a control zone is undesirable and would only be authorised in very exceptional circumstances.

Generally derogations will not be available unless:

- A premises has been in a PZ for more than 30 days because of further outbreaks in the zone, and welfare problems at the premises cannot be alleviated by management or husbandry practices.
- A serious welfare situation has arisen at premises as a result of a situation that could not be reasonably anticipated (*force majeure*) then in exceptional circumstances a licensed movement may be granted prior to 30 days.

Pigs may be moved within premises. The movement of pigs directly across a public or private road that divides two contiguous pieces of land that belong to the same premises will also normally be allowed subject to conditions. Movement *along* a road between two pieces of contiguous land of the same premises may be considered on a case-by-case basis. Movement *along* a road between two pieces of non-contiguous land of the same holding where the

movement does not pass any other pig premises is not permitted (although it may be considered exceptionally on a case-by- case basis). In all instances, the pigs will be transported by vehicle.

7.6.2. Movement restrictions and licenses – vehicles

Trucks and vehicles that have carried live pigs are prohibited from leaving premises in the PZ unless they have undergone C&D. In the PZ, C&D must be inspected and authorised by a VO.

Such vehicles can continue to be used within the premises.

7.6.3. Movement restrictions and licenses – feed

Feed should not be moved off a pig holding, unless the feed mill is a separate epidemiological unit. This will be determined by a VO.

Transportation of feed in the PZ is not prohibited but deliveries should avoid entry to pig premises. Best practice C&D should be employed both on entry and exit. Deliveries should be scheduled to high health status premises before other premises.

7.7. Biosecurity at pig premises

The movement control measures on pigs, vehicles and other material likely to spread AD significantly reduce the risk of disease entering or leaving premises in the zones. Good practice within the premises should continue to be employed. As usual good personal biosecurity should be maintained.

Outdoor pigs are at greater risk of exposure to disease incursion from wildlife, public access and other fomites making physical contact with outdoor pigs. Infected outdoor pigs would pose a risk of onward transmission of disease in the same way disease may get in. Thus during an outbreak of disease, outdoor units are encouraged to upgrade their biosecurity and access controls and to seek to separate their pigs from wildlife threats.

7.8. Control of Establishments (slaughterhouse and meat processors)

Pigs originating outside the PZ and slaughtered at a slaughterhouse outside the PZ will not be subject to any additional controls. There is no requirement for the slaughterhouse to be designated or for the meat to be controlled or (heat) treated. The normal practice of allowing C&D of vehicles away from the slaughterhouse may be suspended if the disease situation justifies this.

The movement of pigs from outside the PZ to a slaughterhouse located within the zones may be licensed from early in the outbreak (including during the Detection phase) as the movement is from a low risk disease area to a slaughterhouse for immediate slaughter. Slaughterhouse operating within a control zone must be designated. However, there are no controls on meat produced from pigs

originating from outside the zones. The normal practice of allowing C&D of vehicles away from the slaughterhouse will be suspended in these circumstances.

It will be a condition of the movement license for pigs coming from inside the zones for slaughter that the slaughterhouse must be designated to receive such animals. There is no requirement to control premises receiving carcasses or meat from animals originating outside the PZ but slaughtered within the PZ.

Where slaughterhouses requiring designation (either located within a PZ to process pigs originating from outside the zones, or any slaughterhouse wishing to handle pigs originating from within the PZ), they must have certain capabilities, such as suitable C&D capacity.

Note, in some circumstances the EC may take additional safeguard measures that apply to pigs, pork and pork products produced within the UK or in NI. Should this happen, additional measures, such as special marking and trade restrictions may be imposed. Where a special stamp is proposed to indicate meat is restricted to the domestic market, it is likely a round stamp will be adopted. These requirements will be communicated at the time the Commission take such safeguard measures.

7.9. Controls outside zones

Legislation does not require any specific controls outside the declared zones, although as described in Section 6, contact premises will be identified and these may be located outside existing control zones.

7.10. Communications

Throughout the various stages of a disease outbreak, steps are taken to ensure that all (and especially those in charge of pigs) are made aware of the restrictions and requirements in force in the area. In conjunction with key stakeholders, DAERA will inform keepers/owners of pigs, PVPs and other stakeholders of:

- The disease situation.
- The measures being implemented within zones.
- The need for vigilance for and prompt reporting of clinical signs of disease in pigs.
- The need to maintain strict biosecurity.

Communication methods will vary according to the messages required. For example, signs must be displayed by DAERA in and around IP. Premises in protected zones will be notified of any restrictions or the need for increased vigilance and an appraisal of biosecurity measures on site. Web updates will also be made regularly to reflect the changing disease situation and measures being implemented within PZs. Regular email updates will be sent to key stakeholders groups and meetings set up as

and when required.

7.11. Impact of controls

The restrictions set-out in this will impact day-to-day farm business operations. These measures are necessary to reduce the risk of disease spread and therefore reduce the overall size and duration of an outbreak. These controls are set-out here to allow government, delivery agents, pig producers and processors and related sectors to prepare contingency plans in advance of any outbreak of AD. Such action can help alleviate the overall impact on businesses and will help manage expectations.

It is recognised that, due to the nature and structure of pig production systems in NI movement restrictions will have different impacts depending on the structure and set-up of different operations. Controls may affect the businesses ability to move pigs in and out of farrowing, to move weaned pigs to growing accommodation or to move finished pigs to slaughter.

This strategy is not intended to directly address such impacts. However, Government and industry are committed to working through mitigating and contingency actions that might alleviate some of the pressures during an outbreak. Pig producers and processors are encouraged to put in place appropriate contingency plans in place. Government will be working with its delivery agents to ensure they are adequately prepared to respond effectively.

8. Vaccination

8.1. General principles

A person may only administer AD vaccine to a pig if authorised to do so by DAERA.

Vaccination is not a routine control measure and is unlikely to be considered as an appropriate control measure in the initial stages, or during a controlled, outbreak. The use of vaccination may be considered during a prolonged epidemic or where there is a dramatic increase in the number of premises where disease is being confirmed each day and it may also be used in areas of very high pig density or for traditional breeds. Its most likely application is to reduce the risk of infection and spread.

We will consider the case for/ against vaccination of breeds at risk on a case by case basis but only as part of an emergency vaccination plan.

8.2. Controls if vaccination is used

Vaccination zones would be put in place and some restrictions would apply primarily to control the application of vaccine and the movement of pigs out of the zone and to slaughter. Export restrictions would also apply to vaccinated pigs.

9. Gaining disease freedom

9.1. Removal of the zones

Zones will remain in place until they are amended or revoked by the DAERA. This will require demonstration of disease freedom based on epidemiological evidence.

PZs will not be ended until:

- all necessary C&D has been carried out at all infected premises in the zone to the satisfaction of a veterinary inspector;
- pigs on all holdings have undergone clinical and laboratory examinations carried out in accordance with the diagnostic manual in order to detect the possible presence of AD virus.

It is likely zones will remain in place for at least x months even for the smallest outbreaks and considerably longer if ongoing sporadic cases continue to appear in the area.

9.2. Trade

Trade within the EU is regulated and the restrictions only apply to pigs or pig products which come from the areas under restrictions. These restrictions lapse when the area restrictions are withdrawn subject to compliance with EC law.

Where safeguard measures have been imposed by the EC, evidence will be provided to the Commission to seek removal of these safeguards once the area restrictions have been lifted.

9.3. Recovery of AD-free status

Annex I officially disease free status may be restored if:

- following an emergency plan, all pigs in the affected holding were slaughtered and,
- during and after the application of this measure, an epidemiological investigation including clinical examination and serological and/or virological testing has been carried out in:
 - all pig holdings which have directly or indirectly come into contact with the infected holding; and
 - in all pig holdings located within a 5 kilometre radius of the outbreak, demonstrating that these holdings are not infected. The minimum number of blood samples to be taken in a holding must allow the detection of <5% prevalence with 95% confidence in breeding animals. However, in the case of holdings that contains no breeding pigs, the minimum number of samples to be taken must allow the detection of <10% prevalence with 95% confidence.
- within this period of investigation the movement of pigs from these holdings is banned except to a slaughterhouse for immediate slaughter but not before laboratory investigations demonstrate the

absence of infection.

Alternatively the free status may also be restored if:

- all the pigs in the affected holding have been slaughtered;
- all pigs within at least 5 kilometre radius of the outbreak are vaccinated with deleted virus strains according to the recommendations of the manufactures and a serological testing procedure (differential ELISA) has been applied twice 30 days apart to demonstrate the absence of infection (gE-negative). However, depending on the epidemiological situation and the pig density, the vaccination radius can be increased to 10 kilometres;
- within this period of investigation, the movement of pigs from these holdings is banned except to a slaughterhouse for immediate slaughter, but not before laboratory investigations demonstrate the absence of infection;
- during and after the application of the measures described above, a thorough epidemiological investigation including clinical examination and serological and/or virological testing has been carried out in all pig holdings which have directly or indirectly come into contact with the infected holding.

During the application of the measures mentioned above, the AD-free status is suspended.

Annex A: Glossary/ Acronyms

AD	Aujeszky's Disease
AFBI	Agri-Food and Biosciences Institute
C&D	Cleansing and disinfection
CVO	Chief Veterinary Officer
DAFM	Department of Agriculture, Food and Marine
DAERA	Department of Agriculture, Environment and Rural Affairs
DEFRA	Department for Environment, Food and Rural Affairs
DVO	Divisional Veterinary Office
EC/ EU	European Community/ European Union
ETM	Epizootic Team Member
Fomites	Any object or material capable of carrying infectious agents such as AD virus. For example, vehicles, equipment, feed stuffs, clothing, footwear etc. May also include scavenging animals, vermin etc.
GB	Great Britain
IETS	International Embryo Transfer Society
IP	Infected premises
NI	Northern Ireland
OIE	Office International des Epizooties (World Organisation for Animal Health)
Primary case	The case that introduces the disease into the population described
PSNI	Police Service for Northern Ireland
PVP	Private Veterinary Practitioner
PZ	Protection Zone
ROI	Republic of Ireland
UK	United Kingdom
VO	Veterinary Officer
VS	Veterinary Service