Swine influenza in Pigs: Code of Practice

Contents

1. Introduction

This document was first produced in response to the outbreak of influenza in humans caused by pandemic (H1N1) 2009 virus known as H1N1/09v).

The aim is to provide guidance on how to minimise the risk of introducing swine influenza A virus to your pig herd and options for control of infection should it infect your pigs. Your veterinary surgeon is best placed to provide specific advice for your herd.

The advice and guidance are applicable to all strains of swine influenza A virus in pigs.

The principles of biosecurity and disease control set out in this document will also aid prevention and control of other infectious pig diseases.

This document has been produced in partnership with APHA, SRUC, the Pig Veterinary Society, Defra, Welsh Government and Scottish Government and is supported by the pig industry.

2. Key Information About Influenza in Pigs

- Swine influenza is a contagious viral disease that affects many animal species. Influenza infection is considered to be present (endemic) in pigs in most pig-producing countries.

- Swine influenza is not a notifiable or reportable disease in pigs in Great Britain.

- There is Government funding for swine influenza surveillance which monitors strains causing respiratory disease in pigs in Great Britain in partnership with Government-funded pig disease surveillance and veterinarians attending pig farms.

- **There is no evidence that swine influenza A viruses can spread to humans from eating pig meat or meat products.**

- As is the case with any sick pigs, those with clinical signs of swine influenza MUST NOT be sent to slaughter for human consumption.

- In acute outbreaks of respiratory disease in pigs where swine influenza could be involved, use of face coverings (to cover nose and mouth) for staff in addition to usual personal protective equipment (PPE) and heightened hygiene measures are advisable pending exclusion or confirmation of the diagnosis. Farmers have a duty of care to protect staff against potential zoonotic infections.

- Those keeping pigs, farm staff or visitors showing or developing influenza-like symptoms should avoid all contact with pigs. The welfare of pigs must be ensured at all times.

- Within the European pig population, swine influenza A viruses of subtypes pandemic H1N1/09, 'avian-like' H1N1, H1N2 and H3N2, circulate widely.

- Unlike swine influenza in pigs, the viruses that cause avian influenza in poultry are notifiable in pigs and other mammalian livestock as well as birds. When premises are found to have poultry infected with a notifiable avian influenza virus, disease control zones are put in place, with restrictions that can affect pig movements if poultry and pigs are kept on the same premises. If there are no birds on a pig-keeping premises within an avian influenza control zone, no restrictions will apply to the pigs. The National Pig Association has provided detailed Q and A for pig producer members on this subject: http://www.npa-uk.org.uk/Avian_Influenza_restrictions_in_place.html

3. Swine influenza A virus infection in pigs

- Swine influenza A virus infection in pigs may result in clinical signs of respiratory disease including fever, lethargy, reduction in appetite, sneezing, nasal discharges, coughing, and reddening of eyes. Severe cases can show respiratory distress due to pneumonia and pigs affected in this way may die, although this is not common in uncomplicated influenza in pigs.

- In some cases, the disease may go undetected, but typically, influenza in pigs causes respiratory signs that spread rapidly in susceptible groups of pigs in contact and within shared air space. The mortality rate is generally low if the health status and environmental conditions are good. Affected individual pigs usually recover within 5-7 days, however, if there are intercurrent infections or other issues, disease can be more severe with a longer recovery period and increased mortality rates, usually due to secondary infections.

- In breeding pigs, signs are more variable than in growing pigs and range from subclinical to transient lethargy and inappetance, to obvious respiratory disease. Fertility problems, abortions and stillbirths can occur due to the effects of the swine influenza A virus infection on the sows. There have also been reports of reduced milk production and delay in return to fertility after farrowing in affected sows.

- Swine influenza A viruses are spread from infected pigs in droplets of respiratory and oral secretions, mostly through direct contact, but also by short distance spray. Virus can also be transferred on equipment, clothing

or other items contaminated by infected secretions, including through watering points and troughs.

- On outdoor units or on large indoor units with well-separated groups of pigs, swine influenza A virus may move more slowly between groups of pigs and take longer to spread through the unit.

- Humans infected with certain influenza A viruses can also be a source of infection to pigs through similar routes.

- The length of time that swine influenza A virus circulates in a herd depends on the type of pig unit and management, and biosecurity measures in place. Influenza can persist in a herd for prolonged periods if there are susceptible pigs (i.e. pigs not previously exposed to virus) regularly present or introduced, for example in breeder-finisher herds or continuous growing units. It can be difficult to eliminate virus from infected herds, therefore it is ideal to prevent introduction of the virus where possible.

- In herds where influenza is persisting and endemic, typical clinical signs of swine influenza outbreaks may be less obvious and the swine influenza A virus infection may contribute with other pathogens to porcine respiratory disease complex in growing pigs.

- If your pigs are showing clinical signs which may be due to influenza, it is recommended you discuss diagnostic testing with your vet to determine if swine influenza A virus is present and, if possible, which influenza strain is involved.

- There are two vaccines licensed for use in UK pigs. These are targeted to protect against selected swine influenza A virus strains so it is important that the strain infecting your herd is identified when considering using a vaccine for control. Your vet will help you decide if vaccination is appropriate for swine influenza control in your herd.

- Your vet can submit diagnostic samples from pigs with respiratory or other disease to the Animal and Plant Health Agency (APHA) or to SRUC Veterinary Services. Diagnostic testing for swine influenza A virus in pigs also takes place through some commercial laboratories.

- Specific testing for swine influenza A virus in pigs is available at no charge through Government-funded surveillance at APHA – information about how veterinarians can access this is available here: http://apha.defra.gov.uk/documents/surveillance/diseases/Swine%20influenza%20surveillance%20vets%20Dec2020.pdf

- Early identification of the causes of disease in pigs, including influenza, allows targeted interventions and a better chance of successful disease

control. Swine influenza can exacerbate disease due to other pathogens. Always follow your vet's advice on vaccination in disease situations.

- People working with pigs should follow existing guidance aimed at protecting them from diseases that can pass from pigs to humans. https://www.hse.gov.uk/agriculture/topics/zoonoses.htm.

- People also need to protect the pigs they work with from diseases. The assurance scheme guidelines under which most commercial pig farms operate provide biosecurity standards and recommendations required in relation to people. These includes controlling visitors, the use of clean clothing and footwear dedicated to the pig farm, and regular handwashing.

- People with respiratory illness should not enter a pig premises. A new RT standard (from November 2021) requires visitors to confirm that they have had no flu-like symptoms in the 24 hours prior to visiting.

- If you have questions or concerns related to the human health aspects of influenza infection, more information is available from: https://www.gov.uk/government/collections/seasonal-influenza-guidance-data-and-analysis

4. Keeping Swine Influenza Out of Your Pig Herd

The introduction of influenza into pig herds is a continual risk. The following measures will help prevent entry of the virus into your herd. Details should be discussed with your veterinary surgeon and align with the requirements of any assurance scheme under which your herd operates.

Control people in contact with pigs

- **Anyone with clinical signs which could be due to influenza, or who is in close contact with someone with influenza, should avoid contact with pigs.** This includes farm staff, vets and other visitors. Pig keepers must, of course, ensure that the health and welfare needs of pigs under their care are met by suitably skilled staff if they are unable to care for the animals themselves.

- People working with pigs known to be actively infected with influenza, should not have contact with other pigs and should utilise PPE that is cleaned and disinfected after use. If contact with other pigs cannot be avoided, you should ensure that there is at least an overnight break between contact with the known infected herd and a 'clean' herd together with a shower, hair wash, and a change of clothes.

- Do not allow unnecessary personnel or vehicles onto your pig farm. Keep records of visitors and ensure they follow biosecurity protocols.

- Swine influenza A viruses are transmitted in respiratory and oral secretions, mostly via direct contact, and short distance aerosol spread. Aerosols from humans typically travel for 1-2 metres. If you have pigs in close proximity to the general public such as on an outdoor unit by a public footpath or open farms you are advised to ensure a distance of 3 metres between the public and the pigs using perimeter fencing or other appropriate barriers.

- Some farmers and pig companies encourage seasonal influenza vaccination of personnel having close contact with pigs (farm staff, vets) to assist in reducing the risk of pigs acquiring infection from humans. NHS on influenza vaccination for people is available here: https://www.nhs.uk/conditions/vaccinations/flu-influenza-vaccine/.

Control movement of pigs onto farms

- Only source pigs from herds of comparable health status to your own. When seeking pigs from a fresh source it is strongly advised that there is liaison between your vet and the supplier vet to highlight any areas where health status may not be compatible.

- You should not move pigs onto a holding to join other pigs if they are showing clinical signs suspicious of influenza.

- Pigs imported from outside UK should follow any statutory requirements. There is guidance in the National Pig Association live pigs import protocol which includes details on isolation facilities and the isolation period and is available on this link: http://www.npa-uk.org.uk/NPA_updates_Import_Protocol.html. The period of time in isolation greatly reduces the risk of introducing influenza into the herd that the imported pigs join.

- Use of isolation facilities for a quarantine period of at least four weeks before pigs are introduced into a herd is advised. The isolation facility should ideally be more than 300m from any other pig buildings and operated to minimise the risk of disease spread (protocols for staff; all-in, all-out policy; cleaning and disinfection).

- If you are not sure of the health status of pigs entering your unit, it is recommended that you impose a voluntary movement ban of at least 10 days (excluding movements to slaughter) to allow any clinical signs of influenza to develop, even if the unit is exempt from the compulsory 20 day standstill.

- Be vigilant for signs of disease and seek veterinary advice if clinical signs or deaths are seen.

- If your pigs have clinical signs of respiratory disease, you should make buyers aware of their health status.

Review biosecurity practices

- Swine influenza A viruses are spread from infected pigs in droplets of respiratory and oral secretions, mostly through direct contact, but also by short distance spray and on equipment, clothing or other items contaminated by infected secretions, including through watering points and troughs. Humans infected with certain swine influenza A viruses can also be a source of infection to pigs through similar routes.

- There are good sources of general biosecurity advice for pig keeping premises listed below. Implementing good biosecurity practices consistently will help prevent introduction and spread of swine influenza and well as other diseases of pigs:
  - https://www.gov.uk/guidance/disease-prevention-for-livestock-farmers
  - https://gov.wales/biosecurity-guidance
  - https://www.gov.scot/publications/biosecurity-practices-for-animal-health-guidance/pages/hygiene/
  - https://pork.ahdb.org.uk/pig-production/biosecurity/
  - https://biocheck.ugent.be/en/about-biosecurity-pig

- Ensuring that all those involved in caring for pigs on a premises are trained in, and understand, the principles and benefits of biosecurity is key to the practices being effectively implemented.

- The assurance scheme guidelines under which most commercial pig farms operate have specific biosecurity standards and recommendations that are required.

5. If You Suspect Swine Influenza in Your Pig Herd

Swine influenza A virus infection in pigs may result in clinical signs of respiratory disease including fever, lethargy, reduction in appetite, sneezing, nasal discharges, coughing, and reddening of eyes. Severe cases can show respiratory distress due to pneumonia and die, however this is not common in uncomplicated influenza in pigs.

Further information on the clinical aspects of influenza in pigs in the section “Key Information About Influenza in Pigs”. If your pigs are showing clinical signs suspicious of influenza, it is recommended you discuss investigation and testing with your vet to determine if swine influenza A virus or other diseases are present.

A guide to diagnostic sampling and testing for disease in livestock, including pigs, is available here: http://apha.defra.gov.uk/documents/surveillance/sub-handbook.pdf.

Free testing for swine influenza A virus in pigs is available

Your vet can submit samples for swine influenza A virus testing at no charge to APHA from pigs with respiratory disease from pig premises in England, Wales, Scotland and Northern Ireland. Information about how vets can access this testing is provided here:
http://apha.defra.gov.uk/documents/surveillance/diseases/Swine%20influenza%20surveillance%20vets%20Dec2020.pdf

Influenza testing is also undertaken where appropriate as part of free diagnostic testing on pigs submitted for post-mortem examination within the GB surveillance network which includes APHA and partner post-mortem providers for pigs in England and Wales, and SRUC-CVS for pigs in Scotland.
http://apha.defra.gov.uk/vet-gateway/surveillance/diagnostic/pme.htm
https://www.sruc.ac.uk/business-services/what-is-your-goal/veterinary-laboratory-services/veterinary-diagnostics/

Testing for influenza in samples from pigs is also available on a chargeable basis at SRUC-CVS and some commercial laboratories.

Early identification of the cause of disease in pigs, including influenza, allows targeted interventions and a better chance of successful disease control and prevention of spread.

While waiting for test results, you should discuss with your veterinary surgeon what disease control measures to implement.
It is especially important to submit samples for influenza testing in the following situations:

- Where there is significant respiratory disease affecting health and welfare of pigs.

- When you, or anyone else in contact with your pigs, develop clinical signs of influenza and the pigs show signs of influenza at a similar time.

6. Controlling Swine Influenza in Your Pig Herd

The aims of controlling swine influenza A virus on the farm are to:

- Stop infection leaving the infected unit
- Minimise negative health and welfare impacts on the pigs
- Enable elimination of the virus from the farm

You should discuss with your veterinary surgeon the most appropriate way to manage infected pigs and control the virus in your herd. The optimal strategy will vary between herds but may involve identification of the influenza strain(s), consideration of vaccination and adjustments to pig management. Medication may be required to treat secondary infections. Anti-inflammatory and antipyretic treatments may be useful in acute disease.

The strategy for virus control and, where possible, elimination should take full account of the welfare of your pigs.

The probability of eliminating swine influenza A virus from a herd will vary and is affected by multiple factors such as the herd size and type, pig management, pig sourcing and pig flow. The time taken for resolution of a swine influenza outbreak also varies and your vet will discuss the need for ongoing control measures, including vaccination. They may advise regular sampling to track the swine influenza A virus and monitor for new strains. Ongoing vaccination may be required. Where management or environmental aspects are contributory factors (for example, moving and mixing groups of pigs, ventilation issues) then correction of these is important.

Enhance biosecurity

- Strengthen biosecurity protocols for staff and visitors on infected farms (see biosecurity advice and links above).

- Infected units should not be part of multi-pick up/drop-off routes.

- Work with your vet to determine the likely source of virus introduction onto your farm as this will help to rectify any gaps in biosecurity.

Moving pigs off a swine influenza-infected farm

- Pigs showing clinical signs of illness MUST NOT be sent to slaughter for human consumption.

- Healthy pigs (including previously infected pigs) can move to slaughter as normal.

- Pigs showing clinical signs of illness should not be transported to other premises

- Influenza infection persists in some herds for a long period and use of vaccine does not necessarily eliminate the virus. These herds will continue to trade healthy pigs. Pigs may need to be moved from premises with swine influenza infection to other premises, mainly at weaning and/or to finish. These movements are often within an integrated company. Prior to any movements, the health status of the pigs should be understood, and movements discussed with the vet to

mitigate the risk of spread of infection. Where movements occur between herds under different ownership, liaison between the vets of the supplier and recipient herds is strongly recommended to discuss pig health status in each herd.

- Thorough cleansing and disinfection after a batch of pigs that have shown signs of influenza leave their accommodation should be normal practice. This will minimise risk of transmission of virus to the next pigs that enter that building.

Moving pigs onto an infected farm

- Avoid moving pigs likely to lack prior immunity (so are naive) to influenza onto premises known to have active swine influenza A virus infection. The introduction of pigs that lack immunity to swine influenza A virus assists the persistence of infection on the unit. Where this cannot be avoided, quarantine and vaccination prior to entry may be appropriate (see page 11).

Surveillance

- If animals have moved from your unit to another unit within the 10 days prior to clinical signs of influenza developing in your herd, you should inform farms to which pigs have moved. These farms should be vigilant for signs of respiratory disease, and contact their vet if pigs develop respiratory disease.

- Swine influenza in pigs is not a notifiable or reportable disease, however, if a novel swine influenza strain was detected in pigs with features making it of greater concern in relation to pig and/or human health, APHA (England or Wales) or SRUC-VS (Scotland) can work together with your vet, to provide advice on understanding the source and spread of infection, and the impact on pig health and welfare, at least for the first few cases.

- With the farmer's permission, support from public health colleagues may be requested to assess human health if a swine influenza strain with greater zoonotic potential is identified

- If an influenza virus of avian origin were to be detected in pigs, as this is notifiable, this must be reported to APHA by the testing laboratory or person receiving the report and an official investigation would follow

Vaccines for swine influenza in pigs

- There are two vaccines licensed for use in UK pigs at the time of writing (July 2021). These are targeted to protect against selected swine influenza A virus strains infecting pigs so it is important that the

strain infecting your herd is identified when considering use of vaccines for control. Your vet will help you decide if vaccination is appropriate for swine influenza control in your herd.

- One vaccine targets the pandemic H1N1/09 influenza strain, the other is multivalent and targets three virus strains present in European countries (avian-like H1N1, H1N2 and H3N2).

- Vaccines can be used to protect the pigs which are themselves vaccinated and, when used in sows, to provide colostral (passive) protection to their piglets during their first few weeks of life. Vaccines promote establishment and stabilisation of immunity to influenza in a pig herd. Vaccination of replacement breeding pigs before they enter the herd can protect them from influenza infection if present in the main herd.

- Vaccination alone is unlikely to fully control disease and transmission of swine influenza A virus. Other control measures such as improvements and/or changes in management and biosecurity should be implemented alongside vaccination for effective and long-term control.

- Pigs need to be vaccinated prior to being exposed to the swine influenza A virus to allow time for an immune response to develop, so the value of use in the face of an ongoing infection may depend on how quickly infection is spreading in the herd.

- Influenza A virus in pigs, as in humans, can undergo genetic change, so it is important to monitor circulating virus strains to assess the match to vaccine strains.

7. Where to Look for More Advice

- Your private veterinary practitioner
- The Animal and Plant Health Agency (APHA): http://apha.defra.gov.uk/documents/surveillance/diseases/Swine%20influenza%20surveillance%20vets%20Dec2020.pdf http://apha.defra.gov.uk/documents/surveillance/sub-handbook.pdf
- SRUC Veterinary Services (SRUC-VS) https://www.sruc.ac.uk/business-services/what-is-your-goal/veterinary-laboratory-services/
- Defra https://www.gov.uk/guidance/swine-influenza
- Scottish Government https://www.gov.scot/publications/swine-influenza/
- Welsh Government https://gov.wales/animal-health
- Pig Veterinary Society (PVS) www.pigvetsoc.org.uk
- AHDB Pork https://ahdb.org.uk/pork
- National Pig Association (NPA) www.npa-uk.org.uk/

- British Pig Association (BPA) www.britishpigs.org.uk
- Quality Meat Scotland (QMS) https://www.qmscotland.co.uk/
- HCC Meat Promotion Wales www.hccmpw.org.uk/index.aspx
- British Meat Processors Association (BMPA) https://britishmeatindustry.org
- Department of Health & Social Care (DHSC) www.gov.uk/government/organisations/department-of-health-and-social-care
- Public Health England (PHE) www.gov.uk/government/organisations/public-health-england
- Public Health Scotland https://www.publichealthscotland.scot/
- Health and Safety Executive (HSE) www.hse.gov.uk
- Food Standards Agency (FSA) www.food.gov.uk
- Food Standards Scotland https://www.foodstandards.gov.scot/