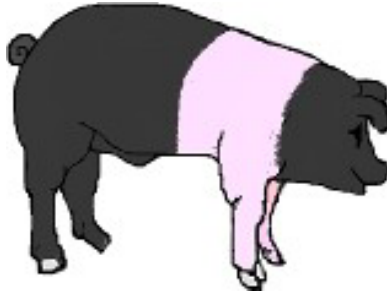




Animal &  
Plant Health  
Agency



# Great Britain pig quarterly report: disease surveillance and emerging threats

Volume 34: Quarter 3 of 2025 (July to September)

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# Introduction and overview

This quarterly report reviews potential disease threats for the third quarter of 2025 (July to September). A full explanation of [how data are analysed](#) is provided in the annexe available on GOV.UK. Submissions to and diagnoses made through the Great Britain (GB; England, Wales and Scotland) scanning surveillance network can be interrogated further using the interactive pig [disease surveillance dashboard](#). Diagnostic submissions are voluntary and subject to several sources of bias.

This report is compiled using data available at the time of writing. It contains disease findings gathered from APHA, Scotland's Rural College (SRUC) Veterinary Services and surveillance pathology partners, as well as intelligence gathered through the Pig Expert Group networks. In addition, links to other sources of information including reports from other parts of the APHA and Defra agencies are included.

There is [guidance available for veterinarians](#) on sampling and testing pigs affected with different disease presentations. Veterinarians are encouraged to contact their regional Veterinary Investigation Centre (VIC) to discuss disease investigations with Veterinary Investigation Officers at APHA and SRUC.

## Unusual diagnoses or presentations

### Diagnostic investigation of negated swine fevers – case 1

A finisher pig was received dead on arrival at an abattoir, presenting with red, blotchy skin lesions (Figure 1) which prompted the official veterinary surgeon to report the case to APHA as suspect swine fever. The animal originated from a wean-to-finish unit and was part of a consignment of approximately 200 pigs, which represented the final load. No abnormalities were reported in the remainder of the pigs. Biosecurity measures on the farm were considered satisfactory and the mortality rate had not been above expected parameters.

APHA field staff conducted an official investigation which included assessment of the consignment of pigs and post-mortem examination of the dead pig. An APHA field veterinary visit to the farm of origin was also completed, although the farm was empty, in which medical and mortality records were reviewed. Notifiable diseases, including classical and African swine fevers, were excluded on the basis of clinical and pathological findings allowing restrictions to be lifted. A valvular vegetative endocarditis was found which explained the pig's death and skin lesions.

The heart valve lesion was submitted for culture as part of the differential diagnoses of a negated report case (DDNRC) investigation, funded through pig disease surveillance. Culture yielded a heavy mixed bacterial growth, in which no causative pathogen was

identified. The most likely causes of bacterial septicaemia and valvular vegetative endocarditis in pigs are *Erysipelothrix rhusiopathiae*, *Streptococcus suis* and other streptococci.

**Figure 1: Red, blotchy skin lesions over scrotal area of a finisher pig with valvular vegetative endocarditis.**



## Diagnostic investigation of negated swine fevers – case 2

Five piglets aged two to three days were submitted to the Shrewsbury VIC from a litter of 14 piglets on an indoor breeding unit. The whole litter had been found dead, with one piglet seen having seizures the previous day. The parity one sow for this litter had also died. A second litter from another parity one sow was found dead, though the sow appeared healthy.

Post-mortem examination of the piglets showed petechial haemorrhages on kidneys and lungs; dark red to black spleens with firmer areas (Figure 2); and dark red lymph nodes. The clinical and pathological findings raised suspicion of swine fevers and the case was reported to APHA prompting an official investigation.

An APHA field veterinary visit found that the farm had experienced an increase in mortality over the previous two months among farrowing sows and piglets over the previous five weeks. Another sow showed lethargy, pyrexia and red discolouration of the neck and legs. There were no other clinical signs of concern on the unit. Samples were collected and tested negative for classical and African swine fevers, which ruled out these notifiable diseases and allowed restrictions to be lifted within 72 hours.

Once restrictions were lifted, differential diagnostic testing was progressed. Cultures from the meninges of two piglets yielded mixed flora containing heavy growths of *Klebsiella pneumoniae* subsp. *pneumoniae* (*Kpp*). Histopathology of spleens and hearts was suggestive of septicaemia, with acute fibrinosuppurative inflammation and bacterial emboli (associated with Gram-negative rods), as well as vasculitis in the myocardium. The case definition for an outbreak of *Kpp* is 'Pigs found dead with lesions consistent with septicaemia and pure/predominant growths of *Kpp* isolated from internal sites in multiple pigs'. As *Kpp* was isolated from just the meninges of each pig, not multiple internal sites,

the current case did not meet the case definition. The piglets were also younger than is [typical of outbreaks of \*Kpp\*](#) and all pigs in the litter do not tend to die (Bidewell and others, 2018). That said, *Kpp* can cause opportunistic infections, including septicaemia, in pigs of any age, as may have been the case here. Whole genome sequencing of the *Kpp* isolates from this case will be undertaken within a batch of *Kpp* archived during 2025, including isolates from confirmed *Kpp* outbreaks. This will indicate whether they are the virulent sequence type 25 *Kpp* strain associated with outbreaks in preweaned piglets in England.

The cause of death of the sow could not be established as the carcass was not available for examination. A follow-up submission from the same farm examined two sows that died after moving into farrowing rooms. One had intestinal volvulus and a perforated gastric ulcer and the other showed extensive fibrous adhesions with no significant growth on bacteriology. Hot weather and poor ventilation were considered contributory factors.

**Figure 2: Enlarged spleen with acute, fibrinosuppurative splenitis in a piglet in which swine fevers were ruled out.**



## Hepatic lipidosis diagnoses in pregnant gilts

Hepatic lipidosis in pigs is rarely documented and [may be under-reported](#) (Alsop and others, 1994). Until August 2025, the APHA had no recorded diagnoses of hepatic lipidosis in pigs. During the month of August, two cases were confirmed in unlinked submissions made to the Thirsk and Starcross VICs.

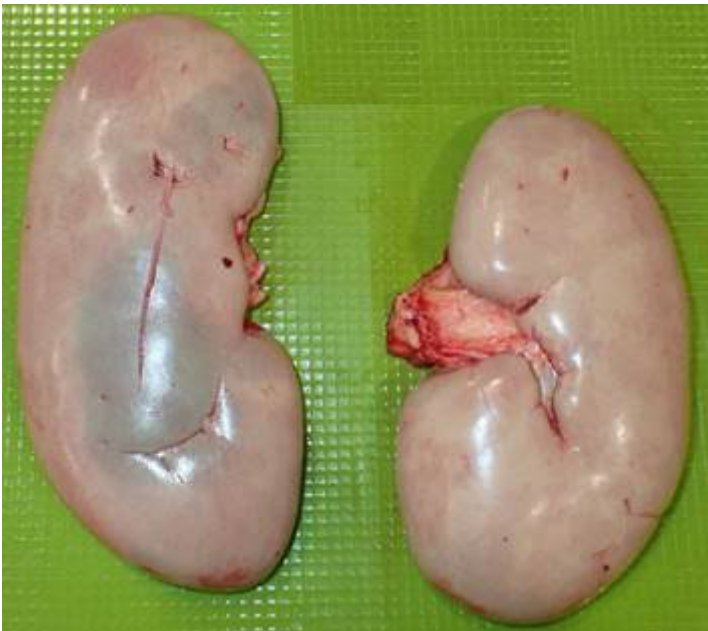
The cases originated from indoor breeding herds. In the first, gilts exhibited widespread anorexia following a suspected feed issue. Removal of a specific feed component (potato waste) restored food consumption in most pigs, apart from 12 affected gilts. In the second case, gilts introduced to the unit at four to seven weeks gestation in excessive body condition and poor conformation showed recumbency; bacterial polyarthritis was diagnosed in one of two pigs submitted. Post-mortem examinations showed that two gilts from the first case and one from the second (not the gilt with bacterial polyarthritis) had ulceration of the pars oesophagea, minimal gastrointestinal contents and marked pallor of liver and kidneys (Figure 3). All were in late gestation with large litters (17–20 piglets) and

had diminished body condition. Histopathology confirmed marked lipid accumulation in hepatocytes (Figure 4) and renal tubular epithelium.

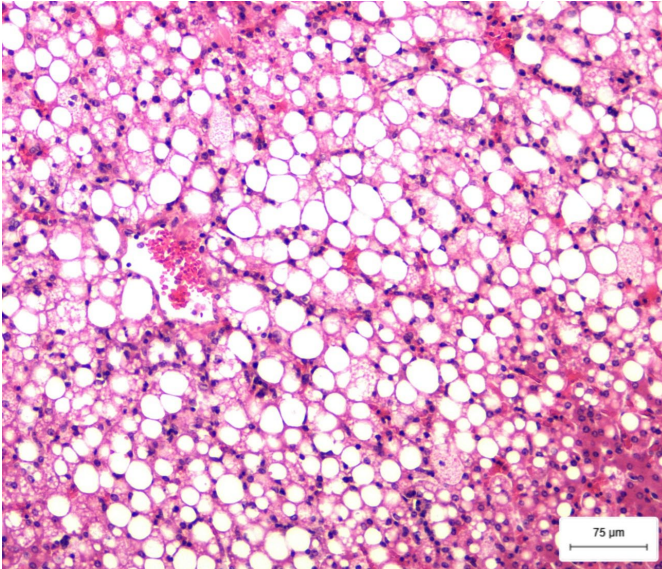
Hepatic lipidosis is a non-specific change which indicates impaired hepatic processing of lipids. This may be the result of toxic, metabolic or hypoxic insults impacting on hepatocellular function or high levels of free fatty acids in the blood (i.e. hyperlipaemia) overwhelming the processing capacity of hepatocytes. In these cases, the striking accumulation of lipid in hepatocytes and renal tubular epithelium in the absence of any other evidence of cellular degeneration or necrosis made hyperlipaemia due to significant mobilisation of body fat stores the most likely pathogenesis. Gross pallor of the liver or kidneys can occur for several reasons including anaemia, fibrosis, diffuse neoplasia, lipidosis and inflammation. Histopathology is, therefore, required to confirm the nature of the pathology.

While hepatic lipidosis is relatively commonly encountered in some farm animal species such as ruminants, it is an unusual finding in pigs and is not a typical outcome of rapid loss of body condition. Alsop and others (1994) describe one case study, also in a sow in late gestation with gastric ulceration. It is plausible that the interruption to feed intake in late gestation and resultant energy deficit due to the demands of both pregnancy and continued growth in the gilts may have led to rapid mobilisation of fat stores, hyperlipaemia and hepatic lipidosis. We are interested to hear others' thoughts and experiences, particularly if similar pathology has been encountered.

**Figure 3: Marked renal pallor due to lipid accumulation in tubular epithelium.**



**Figure 4: Marked vacuolation of hepatocyte cytoplasm due to lipid accumulation in a gilt in late gestation.**



### **Porcine circovirus 3 associated disease in two growing pigs**

Seven pigs aged 10 to 12 weeks were found dead over several weeks on a small breed-to-finish indoor unit. The affected batches had been treated with antibiotics but deaths had continued. Four dead pigs were submitted to the Starcross VIC for post-mortem examination. All were in good body condition with full stomachs. Froth was present in the airways and the meninges and conjunctivae were congested. There was excess pale fluid in the pleural and pericardial cavities. Petechiae were observed on the epicardium of the right ventricle in one pig and fibrin strands were present in the abdominal cavity of another.

Cultures from systemic sites did not yield any growths and *Escherichia coli* isolated from the terminal small intestine lacked virulence factors by PCR. Histopathology revealed non-suppurative myocarditis in two of three hearts examined. Immunohistochemistry on the hearts of these two pigs was negative for porcine circovirus type 2 (PCV2), while in situ hybridization was positive for PCV3 in both. Histopathology of the brains from these two pigs identified a mild, multifocal, non-suppurative vasculitis within the meninges. These lesions were mild but unusual and not typical of a primary meningitis or encephalitis of any type, appearing more consistent with a systemic viral infection such as circovirus.

This case represents the second confirmed case of PCV3-associated systemic disease where more than one pig has been affected within a single submission. The first occurred in 2024 in eight-week-old pigs, where PCV3-associated myocarditis was detected alongside Glässer's disease and PRRS in two pigs and PCV3 was not considered the primary cause of the clinical disease on farm. In the current case, no other diagnoses were made in the submitted pigs, although prior antibiotic use may have affected culture results. Cases of PCV3-associated systemic disease detected through APHA surveillance differ

from PCV3-associated foetopathy cases, where typically multiple piglets in a litter are affected.

PCV3 is a prevalent virus in the pig populations globally. Data from the 2023–2024 serum archive indicate that 26.2% of pigs tested positive for PCV3 by PCR, based on over 800 sera from approximately 600 premises in England and Wales.

## Vaccine-like PRRSV-1 virus persisted after vaccine use discontinued

In 2025, a porcine reproductive and respiratory syndrome-1 virus (PRRSV-1) was detected that exhibited 99.5% genetic similarity to a vaccine strain in the ORF5 region, while the nsp2 sequence showed 98.6% similarity to the same vaccine strain. The detection matched the live vaccine strain used on the farm until the vaccine became unavailable 11 months prior. The farm was an indoor farrow to finish farm which had been vaccinating sows and piglets as well as growing pigs every 12 weeks.

Alternative vaccines were employed between the previous vaccine becoming unavailable and this virus was detected; the detected virus showed no evidence of recombination with these other strains, based on nsp2 and ORF5 sequence data. The private veterinary surgeon intends to conduct further testing and sequencing of detected PRRSV-1 to check for recombination events. In this case, [guidelines for the use of live PRRS vaccines](#) were followed as different vaccine strains were not used on the same farm at the same time.

It is recognised that live PRRSV vaccines persist for several weeks in vaccinated pigs and can transmit to unvaccinated pigs (Eclercy and others, 2019; Lebret and others, 2025). In this case, there was long term persistence of a PRRSV-1 strain similar to the vaccine strain used 11 months earlier in the herd. This underlines the potential for recombination events between different vaccine and field strains of PRRSV in pig farms which are continuously occupied with pigs.

## Further detections of *Brachyspira suanatina* in growing pigs

*Brachyspira suanatina* is known to [cause diarrhoea in pigs](#) (Rohde and others, 2018). There have been three detections of this pathogen in pigs in England through the GB scanning surveillance network. [The first was in February 2022 in a pig from Southeast England that was kept outdoors near a lake frequented by waterfowl](#). The second detection was in June 2025 from finishing pigs with diarrhoea in Staffordshire, with isolates submitted to APHA from SRUC. The presence of wild birds was not described as abnormal; wild bird access to the shed was possible. *Brachyspira pilosicoli* was also detected in samples submitted, so whether *B. suanatina* was the cause of the clinical problem could not be established. The third detection was in July 2025 in four-week-old pigs with diarrhoea from Oxfordshire. *B. suanatina* was not considered the cause of the clinical problem and rotavirus and coccidiosis were diagnosed in related submissions. The

attending veterinary surgeon had noted a high presence of wild birds on the breeding farm. [\*B. suanatina\* has also been detected previously in a rhea in Southwest England in 2010](#) (McFadzean and others, 2021).

Antimicrobial susceptibility testing by minimum inhibitory testing (MIC) and whole genome sequencing (WGS) was completed on isolate(s) from each detection at no charge to the submitting vet practices, under APHA's pig disease scanning surveillance and 'Monitoring of Antimicrobial Resistance in Bacteria from Animals and their Environment' projects. Currently, there is no specific MLST scheme for *B. suanatina*, so isolates are assigned sequence types (STs) using the generic *Brachyspira* species MLST database. Three STs have been identified in the *B. suanatina* isolates in England: the previous pig isolate from 2022 was ST16, those from the July 2025 pig case and 2010 rhea were both ST13, although they were not closely genetically related, and the June 2025 pig isolate was ST28. Genome SNP analysis has confirmed that the three GB pig isolates detected to date have each been genetically distant and not linked.

Both of the 2025 pig isolates appear fully sensitive to the antimicrobials tested based on MIC, although this interpretation is based on breakpoints derived for *B. hyodysenteriae* as none are available for *B. suanatina*. WGS also showed that the isolates lacked any known antimicrobial resistance genes or SNPs.

Given the rarity of *B. suanatina* detections in GB pigs, potential risk pathways for introduction into UK pig herds include the importation of clinically mild or asymptomatic infected pigs or transmission via migratory birds. Consequently, direct or indirect contact between birds and pigs, particularly in outdoor systems, is considered a risk factor, although the prevalence of *B. suanatina* in birds remains unknown.

This finding highlights the importance of carrying out cultures for *Brachyspira* species in tandem with PCR testing in order to identify emerging *Brachyspira* species and obtain isolates for WGS and antimicrobial sensitivity testing. Recently, SRUC have introduced a new *Brachyspira* RT-PCR test which specifically detects four pathogenic species of *Brachyspira* (*B. hyodysenteriae*, *B. pilosicoli*, *B. hampsonii* and *B. suanatina*). The test is expected to enhance the ability of the GB scanning surveillance network to detect emerging *Brachyspira* species.

## Changes in disease patterns and risk factors

### *Klebsiella pneumoniae* subsp. *pneumoniae* septicaemia outbreaks in 2025

Four outbreaks of *Klebsiella pneumoniae* subspecies *pneumoniae* (*Kpp*) septicaemia were confirmed in pig herds in East Anglia and West Yorkshire during August 2025. The main features of each of these are summarised in Table 1 below. These were the only *Kpp*

outbreaks detected by APHA in the first nine months of 2025. Three of the four outbreaks were typical in that they occurred in pre-weaned piglets in outdoor herds. In the fourth outbreak, deaths due to *Kpp* first occurred in pigs one day after they had been weaned, followed ten days later by pre-weaning deaths due to *Kpp* in piglets aged 14 to 16 days in the source breeding herd. They all fulfilled the case definition for a *Kpp* septicaemia outbreak which is ‘Pigs found dead with lesions consistent with septicaemia and pure/predominant growths of *Klebsiella pneumoniae* subspecies *pneumoniae* isolated from internal sites in multiple pigs’. A detailed history and other findings from each unit did not raise suspicion of notifiable diseases.

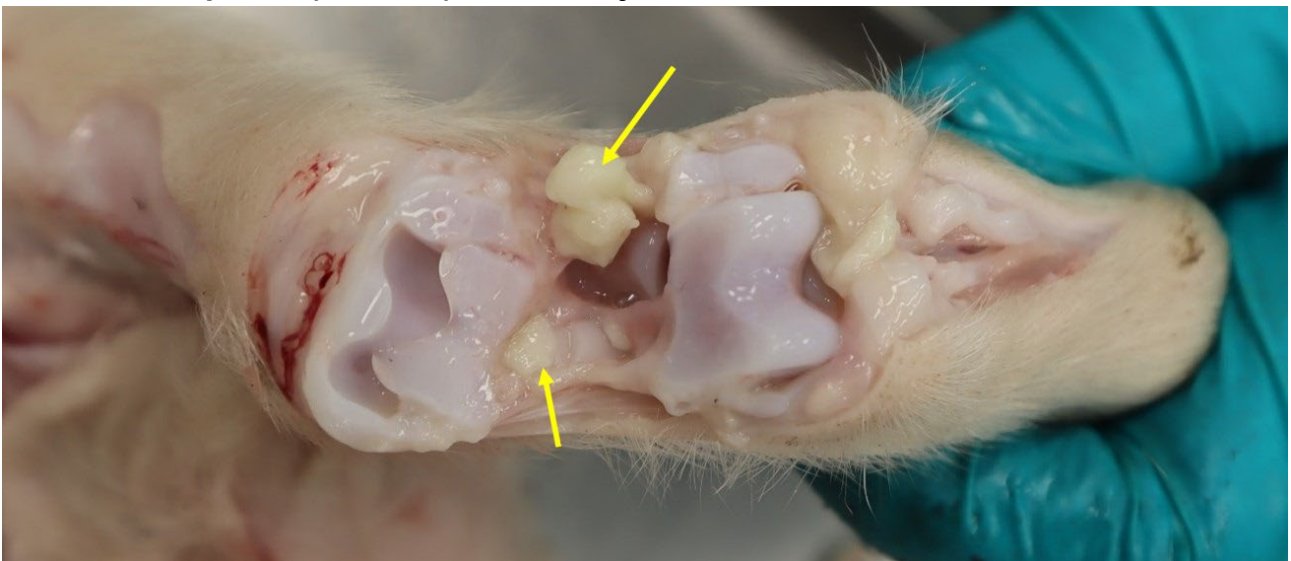
**Table 1: Summary features of August 2025 outbreaks of *Klebsiella pneumoniae* subsp. *pneumoniae* septicaemia in pigs**

<b>Feature</b>	<b>Outbreak 1</b>	<b>Outbreak 2</b>	<b>Outbreak 3</b>	<b>Outbreak 4</b>
<b>Herd type</b>	Weaner-producer breeding herd	Weaner-producer breeding herd	Weaner-producer breeding herd	Weaner-producer breeding herd
<b>Herd structure</b>	Single parity	Multiparity	Multiparity	Multiparity
<b>Indoor/outdoor</b>	Outdoor	Outdoor	Outdoor	Outdoor with pigs weaned offsite to rearing unit with straw-based yards
<b>Sow parity of affected litters</b>	Gilts	Any parity	Not recorded	Gilts and other unknown parities
<b>Piglet age</b>	7 to 14 days	18 days	28 days	29 days and 14 to 16 days
<b>Clinical signs in submitted pigs</b>	Shaking and found dead	High-pitched vocalisation and found dead	Found dead	Found dead
<b>Mortality at time of submission</b>	12%	5%	2%	1%
<b>Piglet body condition</b>	Fair to good	Good	Good	Poor to good
<b>Main pathology (not all lesions present in all submitted pigs)</b>	Severe fibrinopurulent polyarthritis, ventral skin reddening, diarrhoea, dehydration.	Dehydrated, skin reddening, abdominal fibrin, dark lungs with serous thoracic effusions.	Purple skin ventral abdomen, lungs reddened with interlobular oedema, petechial haemorrhages over kidney cortices.	Purple skin discolouration, abdominal fibrin, petechial haemorrhages on pleural surfaces and over kidney cortices, dark and enlarged spleens, reddened and enlarged lymph nodes, excess turbid fluid in single joints.

<b>Kpp isolation sites (pure/ predominant growths)</b>	Joints and multiple visceral sites.	Multiple visceral sites.	Multiple visceral sites.	Joints (one each from two pigs) and multiple visceral sites.
<b>Kpp antimicrobial resistance</b>	None acquired, innate resistance to penicillins	None acquired, innate resistance to penicillins	None acquired, innate resistance to penicillins	None acquired, innate resistance to penicillins
<b>Other laboratory findings</b>	None significant	None significant	One of three pigs positive PRRSV-1 PCR – not vaccine like	One of five pigs positive PRRSV-1 PCR – unsuitable for sequencing

One (outbreak 1) was unusual in that one piglet with *Kpp* septicaemia had polyarthritis (rather than no arthritis or arthritis restricted to one joint). The shaking described, as a clinical sign alongside deaths in this outbreak, was thought likely to be reflective of the joint pathology in this pig. Histopathology demonstrated a neutrophilic meningoencephalitis in one of these piglets which, considering the other pathological findings, is likely a consequence of the systemic bacterial infection this animal was experiencing.

**Figure 5: Fibrinosuppurative arthritis associated with *Kpp* septicaemia in a piglet – note fibrin deposits (arrowed) within the joint.**



The summer occurrence of *Kpp* septicaemia outbreaks is typical of previous years, with most incidents recorded by APHA being [between May and October](#) since the emergence of this disease in 2011 (Williamson and others, 2019).

It is important that suspected diagnoses of bacterial septicaemia are confirmed by laboratory investigation to identify the specific cause and provide isolates for antimicrobial sensitivity testing and archiving for, on occasion, autogenous vaccine production.

# Horizon scanning

## PCV3 detected in pigs with skeletal abnormalities in Switzerland

Rosato and others (2025) [have described a new presentation attributed to PCV3](#), beyond its previously recognized association with systemic and reproductive disorders, which is the first documentation of PCV3 detection in lesioned bone.

Their investigation was prompted by an increase in spinal deformities, characterized by “humpy backs,” on a Swiss pig breeding farm. Affected animals, primarily suckling and weaner pigs, also exhibited thickened ribs, facial oedema, unusually large ears positioned far back, and a distinctive “dolphin head” appearance. [Three pigs aged between four and six weeks were euthanized and submitted for diagnostic examination](#). Post-mortem examination revealed multiple rib fractures accompanied by prominent callus formation. Histopathology showed peri-arterial lymphohistiocytic and plasmacytic infiltrates. In situ hybridization (ISH) detected abundant PCV3 RNA within rib tissue, specifically in the periosteal arterial walls, osteocytes, and osteoblasts, as well as in mesenteric and renal arteries. Quantitative PCR confirmed high viral loads of PCV3 in the kidney, heart and mesenteric lymph nodes.

Beyond these investigations, the publication by Rosato and others (2025) describes findings in 36 pigs up to 30 weeks of age investigated with “humpy-back” posture, swollen ribs, head oedema, neurological signs and abortions. Twenty-six of these pigs originated from the farm initially investigated and the remaining 10 were from seven different farms which noted similar skeletal signs. Diagnostic investigations identified PCV3 DNA in 69% of pigs and 64% of histological lesions from multiple farms. Lesions included peri-arteritis, rib fractures with callus formation and central nervous system inflammation. High viral loads were detected in bone and central nervous system tissues and ISH confirmed viral RNA within arteries and skeletal muscle.

This publication is the first description of PCV3-associated disease in Switzerland and the first documented detection of the virus in bone lesions globally. Based on these findings, PCV3 should be considered as a differential in similar presentations and testing instigated where appropriate.

PCV3 surveillance is in place at APHA using histopathology on the heart of all pigs and foetopathy litters submitted to APHA for post-mortem examination as an initial screen to detect non-suppurative myocarditis and/or periarteritis. A recent systematic review found that myocarditis was only observed in 50% of cases of PCV3-associated disease in post-natal pigs and suggests that mesenteric plexus is a more reliable tissue for the detection of PCV3-induced periarteritis (Cobos and others, 2025). APHA is, therefore, reviewing tissue selection for PCV3 surveillance and remains alert to possible new presentations of PCV3-associated disease to GB, such as that described by these authors.

## Information sources on global notifiable disease

APHA's International Disease Monitoring (IDM) team monitor any major, notifiable or new and emerging animal disease outbreaks worldwide. [See IDM's outbreak assessments which detail such outbreaks](#). Monthly IDM summaries are also included in the [disease surveillance items in the Veterinary Record](#).

Visit the .GOV.UK website for information on the latest situation on [foot-and-mouth disease](#) and [African swine fever \(ASF\)](#). The [European Commission also publishes information on ASF](#) and maps are available showing the current [EU ASF restriction zones](#). The Food and Agriculture Organisation (FAO) Emergency Prevention System for Animal Health (EMPRES-AH) produces regular ASF disease [situation updates for ASF in Asia and the Pacific](#). The [Swine Health Information Centre \(SHIC\) global reports](#) includes a detailed round-up of ASF in their global disease monitoring report each month.

AHDB issued a [reminder to pig producers](#) in England of the threat of ASF to the national pig herd. AHDB offers resources for ASF contingency planning, including webinars, workshops, podcasts and advice on contingency planning. Information on what food items or products of animal origin may be brought into the UK is found via [.GOV.UK](#) and [Food Standards Agency](#).

An [on-line guide with images](#) of the clinical signs and pathology of ASF is available to veterinarians and pig keepers. This notes that, at the start of an outbreak, deaths may initially just involve one or two pigs. Significantly increased mortality may only develop later once the virus has spread further in a group.

Veterinarians and pig keepers must show vigilance and be familiar with the clinical signs of all notifiable diseases, so that suspicions are reported immediately. In England, this is by calling the Defra Rural Services Helpline on 03000 200 301. In Wales, contact 0300 303 8268 and in Scotland, contact your local APHA [Field Services Office](#). For information on notifiable diseases in animals, including disease controls, visit .GOV.UK.

## Ongoing scanning surveillance initiatives

### Whole genome sequencing of *Streptococcus suis*

Over the last year, APHA has been working in collaboration with the University of Cambridge to incorporate whole genome sequencing (WGS) of *Streptococcus suis* into national surveillance and routine testing as a means of identifying serotype.

This project was precipitated by global shortages in the antisera necessary for the previous serotyping test, with a clear need for an alternative method. WGS was pursued as it also offers the potential for additional insights into other aspects of *S. suis* isolates by examining other parts of the genome. With WGS, the serotype is determined using

[bioinformatic methods](#) based on those described by Athey and others (2016). It should be noted that WGS cannot necessarily predict the phenotypic expression of an isolate (e.g. such as in cases of capsule loss in *S. suis*).

Unavailable stocks of antisera for the conventional serotyping mean that conventional serotyping of *S. suis* was discontinued at APHA in November 2025 and replaced by serotyping of *S. suis* with WGS. This test will be reported out as unvalidated and unaccredited in the short term, while the final steps of validation are completed. APHA's [disease surveillance tests](#) pricelist will be altered in due course and VICs or the [Pig Expert Group](#) can be contacted for further information.

Following validation of WGS as a serotyping method for *S. suis*, APHA will begin validation of pipelines to understand sequence types, virulence-associated genes and other genetic attributes of *S. suis* which will further improve pig disease surveillance in GB for this important pathogen and enable better evidence to inform decision-making around *S. suis* for veterinarians working in the field, such as around autogenous vaccine manufacture. This will, in turn, benefit antibiotic stewardship.

## ***Brachyspira hyodysenteriae* – swine dysentery**

*Brachyspira hyodysenteriae* is the cause of swine dysentery. Whole genome sequencing (WGS) and minimum inhibitory concentration (MIC) testing by broth microdilution is undertaken on a representative *B. hyodysenteriae* isolate from a submission from each premises (where successfully isolated and provided to APHA). This is completed at no charge to the submitting veterinarian, under APHA's pig disease scanning surveillance and 'Monitoring of Antimicrobial Resistance in Bacteria from Animals and their Environment' projects. WGS enables multilocus sequence typing (MLST). MLST is a tool for characterisation of isolates of a bacterial species by analysing sequence data of seven conserved genes in each *B. hyodysenteriae* isolate. This results in a combination of alleles known as a sequence type (ST) for each isolate. The multilocus sequence types of *B. hyodysenteriae* isolates from pigs in GB, as well as the genes or SNPs associated with reduced antimicrobial susceptibility that they possess, are represented on the [B. hyodysenteriae MLST dashboard](#).

AHDB's webpages on [biosecurity](#) and [swine dysentery](#), including the [#MuckFreeTruck](#) campaign, contain comprehensive information on appropriate biosecurity before, during and after a visit to a pig holding. Farms which are signed up to the pig industry's [Significant Diseases Charter](#) (which is now a requirement for Red Tractor assured farms) must report a diagnosis of swine dysentery to the Charter. Alerts are then issued to participants of the Charter to raise awareness about swine dysentery outbreaks. The Pig Expert Group recently collaborated with key representatives from the pig sector to publish an article describing [prevention, diagnosis and management of swine dysentery for the general farm animal vet](#) (Scott and others, 2025).

## Porcine enteric coronavirus surveillance

APHA carries out enhanced surveillance for porcine epidemic diarrhoea (PED) virus, transmissible gastroenteritis virus (TGEV) and porcine deltacoronavirus (PDCoV). Diagnostic submissions from cases of diarrhoea and/or enteropathy in pigs (non-suspect PED) submitted to APHA have been routinely tested by PCR for PED virus and transmissible gastroenteritis virus (TGEV) on a weekly basis. None have been positive for PEDV or TGEV in 1892 diagnostic submissions tested under AHDB Pork funding from June 2013 to September 2025. This enhanced surveillance has included testing for porcine deltacoronavirus (PDCoV) since February 2023 under the same funding and no PDCoV has been detected in the UK to date. The last diagnosis of PED and of TGE recorded in the GB national diagnostic database ([Veterinary Investigation Diagnosis Analysis](#) [VIDA]) was in 2002 and 1999, respectively. Porcine epidemic diarrhoea (PED) due to any PED virus strain remains notifiable in England and Scotland and [suspicion of disease](#), or confirmation of infection, [must be reported](#) (Defra, 2015; Scottish Government, 2016).

## Porcine circovirus 3-associated disease

Porcine circovirus 3 (PCV3) is a relatively recently discovered pig virus. Since 2016, PCV3 has been described in pigs in an increasing number of countries globally, including the US, China, Poland, Italy and Spain (Palinski and others, 2017). It was first detected in archived samples from UK pigs in 2017 (Collins and others, 2017).

PCV3 detection has been reported in samples from both healthy pigs and from pigs with a variety of disease presentations; Saporiti and others (2021) proposed case definitions for PCV3-associated disease. No zoonotic concern is reported. Experimental PCV3 infection of weaned pigs (Jiang and others, 2019) induced disease which resembled PDNS in some respects.

Enhanced surveillance at APHA for disease associated with porcine circovirus 3 (PCV3) began in 2021, using histopathology on pig hearts as an initial screen to detect non-suppurative myocarditis and/or periarteritis in foetuses, pigs or plucks received by APHA VICs for postmortem examination. Where such lesions are detected, further investigation is progressed for detection of involvement of PCV2 by immuno-histochemistry (IHC) or PCV3 by *in situ* hybridisation (ISH).

Two main disease manifestations have been recognised in submissions to APHA; PCV3-associated foetopathy and PCV3-associated systemic disease in postnatal pigs. This enhanced surveillance since 2021 has to date detected a relatively low number of PCV3 diagnoses in APHA submissions each year. Whilst PCV3 foetopathy outbreaks have been diagnosed, systemic disease diagnoses in postnatal pigs have been sporadic and have only once involved more than one pig in the batch of pigs submitted.

A narrated [APHA presentation provides key features of PCV3 as well as APHA surveillance findings up to June 2021](#). Useful literature reviews on PCV3 include Klaumann and others (2018) and Kroeger and others (2022).

## Porcine reproductive and respiratory syndrome

Porcine reproductive and respiratory syndrome (PRRS) remains one of the most significant endemic viral infections in UK pigs. The APHA's [interactive PRRS dashboard](#) provides surveillance and diagnostic data from the GB scanning surveillance network for submissions diagnosed with PRRS from 2012 and has been updated to include data for 2024. All diagnoses made through the GB surveillance network were due to PRRSV-1, with no PRRSV-2 detected in British pigs to date. The Pig Expert Group recently published an [information note](#) on preventing the introduction of exotic PRRSV strains into GB in imported live pigs or semen.

As part of PRRSV surveillance at APHA, ORF5 gene sequencing is undertaken under pig disease surveillance funding on the sample with the lowest Ct value (likely highest viral load) in each PCR-positive submission to APHA. This monitors diversity in the PRRSV detected and assesses for introduction or development of novel or genetically diverse PRRSV-1 strains into GB. Sequencing completed so far in 2025 has not detected any suspected new introductions. Viruses in which the ORF5 gene sequence has 98.5% or greater similarity to one of the live PRRSV vaccines are termed "vaccine-like". As the ORF5 sequence analysis is based on just 4% of the genome, vaccine-like viruses are analysed further by sequencing part of the nonstructural protein 2 (nsp2) to help identify any potential recombinants. No further recombinants have been found since a recombinant PRRSV-1 vaccine (or vaccine-like) and field virus was described in pigs in England (Frossard and others, 2013). All of the other vaccine-like PRRSV examined to date have had nsp2 and ORF5 sequences that are consistent with the expected result and do not raise concern that they represent potential recombinants.

## Swine influenza

Pigs with respiratory disease in the UK can be tested for swine influenza virus at no charge to the submitting veterinarian through the [Government-funded swine influenza surveillance project at APHA](#).

Samples are initially tested for the presence of influenza A Matrix (M) gene RNA. Following a positive detection, molecular assays are applied to determine the hemagglutinin (HA) and neuraminidase (NA) subtype of swine influenza A virus. This is useful for veterinarians considering vaccination of pigs and may help investigation of epidemiological links. The subtypes detected in the last year were all H1 viruses, belonging to three main genetic clades: H1N1 that emerged in the 2009 pandemic (Clade 1A.3.3.2), H1N2 viruses of the 1B.1.1.X clade that is unique to GB and was linked to the human case in Nov 2023 and H1 viruses of the 1C.2.2 or 'Eurasian avian-like' clade that

were prevalent in Europe before 2009 and have re-emerged in recent years. No H3N2 virus has been detected in GB pigs since 1997.

## Seneca Valley Virus

In 2022, [APHA confirmed vesicular disease due to Seneca Valley virus on five commercial breeding pig premises in one geographical area of England between June and September](#). No cases of vesicular disease in pigs due to Seneca Valley virus were identified in GB in 2023 and 2024, and none to date in 2025 (December 2025).

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## References

Alsop, J. E., et al. (1994). Porcine ketosis: a case report and literature summary. DOI: <https://www.cabidigitallibrary.org/doi/full/10.5555/19942206663>.  
<https://www.aasv.org/shap/issues/v2n2/v2n2p5.pdf>.

Athey, T. B., et al. (2016). Determining *Streptococcus suis* serotype from short-read whole-genome sequencing data. *BMC microbiology* **16**(1): 162.

Bidewell, C. A., et al. (2018). Emergence of *Klebsiella pneumoniae* subspecies *pneumoniae* as a cause of septicemia in pigs in England. *PLOS ONE* **13**(2): e0191958.

Cobos, À., et al. (2025). Review of porcine circovirus 3-associated lesions in swine: Challenges and advances in diagnostics. *Vet Pathol*: 3009858251347522 DOI: 10.1177/03009858251347522.

Collins, P., et al. (2017). Porcine circovirus type 3 in the UK. *The Veterinary Record* **181**(22): 599 DOI: 10.1136/vr.j5505.

Defra (2015). Porcine epidemic diarrhoea: how to spot and report the disease. <http://www.gov.uk/guidance/porcine-epidemic-diarrhoea-how-to-spot-and-report-the-disease>.

Eclercy, J., et al. (2019). A field recombinant strain derived from two type 1 porcine reproductive and respiratory syndrome virus (PRRSV-1) modified live vaccines shows increased viremia and transmission in SPF pigs. *Viruses* **11**(3): 296.

Frossard, J.-P., et al. (2013). Porcine reproductive and respiratory syndrome virus: genetic diversity of recent British isolates. *Veterinary microbiology* **162**(2-4): 507-518.

Jiang, H., et al. (2019). Induction of porcine dermatitis and nephropathy syndrome in piglets by infection with porcine circovirus type 3. *Journal of Virology* **93**(4): 10.1128/jvi.02045-02018.

Klaumann, F., et al. (2018). Current knowledge on porcine circovirus 3 (PCV-3): a novel virus with a yet unknown impact on the swine industry. *Frontiers in Veterinary Science* **5**: 315 DOI: <https://doi.org/10.3389/fvets.2018.00315>.

Kroeger, M., et al. (2022). Five years of porcine circovirus 3: What have we learned about the clinical disease, immune pathogenesis, and diagnosis. *Virus Research* **314**: 198764.

Lebret, A., et al. (2025). PRRSV-1 outbreak in a farrowing farm caused by a vaccine derived strain: a case report. *Porcine Health Management* **11**(1): 9.

McFadzean, H., et al. (2021). Retrospective analysis of necrotizing typhlitis cases associated with *Brachyspira* spp. in British rheas. *Avian Pathology* **50**(3): 246-256 DOI: <https://www.tandfonline.com/doi/full/10.1080/03079457.2021.1907305>.

Palinski, R., et al. (2017). A novel porcine circovirus distantly related to known circoviruses is associated with porcine dermatitis and nephropathy syndrome and reproductive failure. *Journal of Virology* **91**(1): 10.1128/jvi.01879-01816 DOI: <https://doi.org/10.1128/jvi.01879-16>.

Rohde, J., et al. (2018). Occurrence of dysentery-like diarrhoea associated with *Brachyspira suanatina* infection on a German fattening pig farm. *Veterinary Record* **182**(7): 195-195 DOI: <https://bvajournals.onlinelibrary.wiley.com/doi/abs/10.1136/vr.104705>.

Rosato, G., et al. (2025). Concurrent histological lesions and molecular detection of porcine circovirus 3 in pigs with skeletal abnormalities and humpy-back posture. *Veterinary pathology*: 03009858251386914.

Saporiti, V., et al. (2021). Porcine circovirus 3 (PCV-3) as a causal agent of disease in swine and a proposal of PCV-3 associated disease case definition. *Transboundary and emerging diseases* **68**(6): 2936-2948.

Scott, C., et al. (2025). Prevention, diagnosis and management of swine dysentery for the general farm animal vet. *In Practice* **47**(5): 250-258.

Scottish Government (2016). The Specified Diseases (Notification) Amendment (Scotland) Order 2016. <http://www.legislation.gov.uk/ssi/2016/41/contents/made>.

Williamson, S., et al. (2019). Update on *Klebsiella pneumoniae* septicaemia outbreaks in preweaned pigs. *Veterinary Record* **184**(22): 580-583 DOI: <https://doi.org/10.1136/vr.l3164>.



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