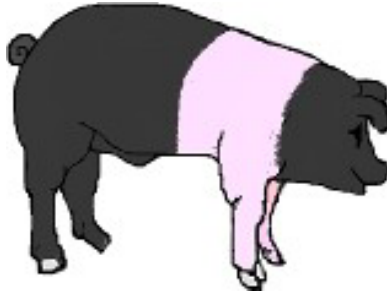




Animal &
Plant Health
Agency



Great Britain pig quarterly report: disease surveillance and emerging threats

Volume 32: Quarter 1 of 2025 (January to March)

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Introduction and overview

This quarterly report reviews disease trends and disease threats for the first quarter of 2025 (January to March). A full explanation of [how data are analysed](#) is provided in the annexe available on GOV.UK.

This report is compiled using data available at the time of writing. It contains analyses carried out on disease data 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.

Pig disease surveillance dashboard outputs

Diagnoses made most frequently in the first quarter of 2025 through the Great Britain (GB; England, Wales and Scotland) scanning surveillance network are listed in Table 1. Note that further diagnoses may be added for submissions made in quarter 1 of 2025 which are finalised after the generation of this report. Diagnoses can be interrogated further using the interactive pig [disease surveillance dashboard](#), which was launched in October 2017. Surveillance data for diagnostic submissions in quarter 1 of 2025 are illustrated in Figures 1a to 1c.

These diagnostic submissions are voluntary and subject to several sources of bias. Changes in the number of submissions and the balance of sample types can affect the number and profile of diagnoses achieved. Submission of carcasses enables more complete diagnostic investigation.

The profile of submissions for the first quarter of 2025 was similar to that of the same quarter in 2024, in that the most frequent main clinical sign was diarrhoea and gastro-intestinal and the most frequent syndrome was enteric. The throughput of total pig submissions to the GB scanning surveillance network in quarter 1 of 2025 was 7% lower than the average for quarter 1 in the previous four years (2021 to 2024), while the throughput of carcase submissions in quarter 1 of 2025 increased by 16% compared to the average for quarter 1 in the previous four years. In terms of numbers of diagnoses, there were 194 diagnostic records in quarter 1 of 2025 (recorded at the time of writing) compared to 350 diagnostic records in quarter 1 of 2024.

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 to discuss disease investigations with Veterinary Investigation Officers at APHA and SRUC.

Table 1: Fifteen most frequent diagnoses in quarter 1 of 2025 and for the same quarter in 2024 made by the GB scanning surveillance network.

15 most frequent diagnoses in quarter 1 of 2025 (total 196)	15 most frequent diagnoses in quarter 1 of 2024 (total 350)
1. Porcine reproductive and respiratory syndrome (PRRS) - systemic	1. Salmonellosis – <i>S. Typhimurium</i>
2. Intestinal volvulus or torsion	2. <i>Streptococcus suis</i> disease
3. Colibacillosis - enteric	3. Colibacillosis - enteric
4. <i>Brachyspira pilosicoli</i> colitis	4. Porcine reproductive and respiratory syndrome (PRRS) - systemic
5. <i>Streptococcus suis</i> disease	5. <i>Glaesserella parasuis</i> disease
6. PRRS – pneumonia	6. <i>Brachyspira pilosicoli</i> colitis
7. Gastric ulceration	7. <i>Lawsonia</i> sp. associated disease
8. <i>Clostridium perfringens</i> necrotic enteritis	8. Swine influenza
9. Salmonellosis -monophasic ST-like variants	9. Swine dysentery – <i>B. hyodysenteriae</i>
10. Salmonellosis – <i>S. Typhimurium</i>	10. Pneumonia – <i>Pasteurella multocida</i>
11. <i>Glaesserella parasuis</i>	11. Pneumonia other cause
12. Rotavirus	12. PRRS – pneumonia
13. Streptococcal infection (excluding <i>S. suis</i>)	13. Streptococcal disease (non- <i>S. suis</i>)
14. Pneumonia due to <i>Actinobacillus pleuropneumoniae</i>	14. Gastric ulceration
15. Pneumonia – <i>Pasteurella multocida</i>	15. Intestinal volvulus or torsion

Figures 1a to 1d summary surveillance data for 487 submission records in quarter 1 of 2025 (585 in quarter 1 of 2024)

Figure 1a: pig age category

Adult	89
Mixed	3
Neonatal	20
Postwean	253
Prewean	39
Unknown/other	79

Figure 1b: disease syndrome

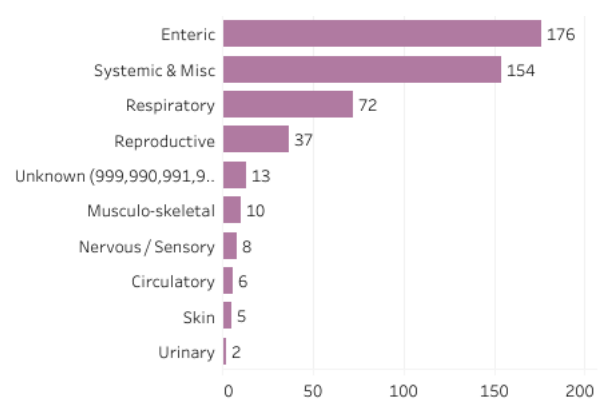


Figure 1c: main clinical sign reported

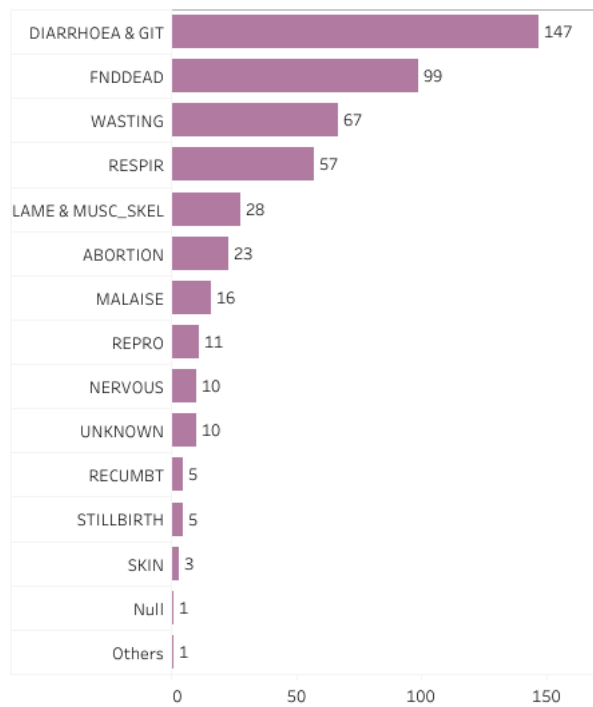
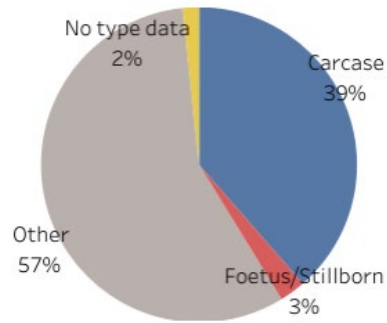


Figure 1c: balance of submissions



New and re-emerging diseases and threats

Porcine enteric coronavirus surveillance

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). No more suspect incidents of PED have been reported since the suspect case in May 2022 on a small pig premises in England, in which PED was ruled out and iron deficiency anaemia was diagnosed.

Enhanced surveillance for PED continues and 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 (PEDV) and transmissible gastroenteritis virus (TGEV) on a weekly basis. None have been positive for PEDV or TGEV in 1863 diagnostic submissions tested under Agriculture and Horticulture Development Board (AHDB) Pork funding from June 2013 to March 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 United Kingdom (UK) to date. This surveillance aims to detect any of these three porcine enteric coronaviruses, should they occur as a new and (re-)emerging cause of porcine diarrhoea in pigs and thus pose a potential threat to pig health and welfare. 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.

Unusual diagnoses or presentations

Trichuris suis worm infestation in a growing pig

A group of 11-week-old pigs on an outdoor unit developed diarrhoea and wasting with a poor response to florfenicol by injection. Two typically affected pigs were euthanised and submitted to the Bury St Edmunds Veterinary Investigation Centre. Pigs on the site had previously been diagnosed with lungworm and the batch had been wormed with in-feed benzimidazole over a two-week period which finished five days before the pigs were submitted.

Both pigs were small for their age, but did not appear wasted. They had semi-liquid contents throughout the intestines, soft faeces and the spiral colon was moderately thickened with material adhering to the mucosa. In the large intestine of one of the pigs, there were 5-8mm long white worms visible in the mucosa which were identified as *Trichuris suis* (whipworm). *T. suis* can cause colitis and weight loss when present in sufficient numbers.

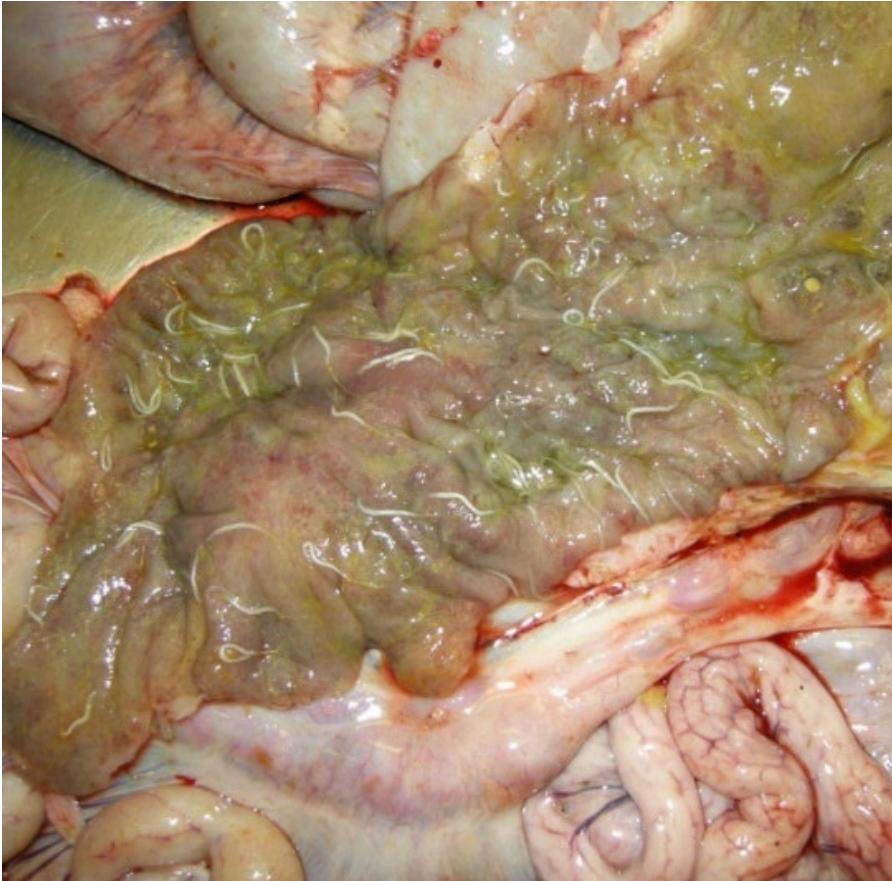
No *Brachyspira* species or *Salmonella* serotypes were isolated from the intestinal contents, but DNA of *B. pilosicoli*, the causative organism of porcine intestinal spirochaetosis, was detected in the pig in which *T. suis* worms were present. Histopathology revealed no evidence of circoviral disease (PCV2 or PCV3).

The pigs being investigated were from the oldest batch on the farm. Given the clinical signs shown, several interventions were implemented, following which younger batches performed well. Due to the detection of *T. suis* worms, some individual pigs with diarrhoea or poorer body condition in the affected batch were wormed again using injectable ivermectin as a precaution. In-feed benzimidazole treatment continued to be used in future batches of pigs, with no clinical issues arising. It was suspected that the presence of *T. suis* in one of the poorly grown pigs submitted may have been because the pig did not eat enough of the feed to receive an adequate dose of anthelmintic, rather than being due to anthelmintic resistance. Interestingly, in this pig, histopathology revealed a mild, multifocal, acute, lymphohistiocytic, neutrophilic and eosinophilic interstitial pneumonia which was considered likely to relate to nematode larval migration (possible lungworm).

There has been just one confirmation of anthelmintic resistance (AR) in gastrointestinal nematode parasites infecting pigs in GB, which was a case of ivermectin resistance in *Oesophagostomum dentatum* worms in sows (Macrelli and others, 2019). Concerns about possible AR in pigs are not often raised to APHA for investigation. The APHA is interested to hear from vets attending pigs where there are concerns around suspected lack of expected efficacy (SLEE) and can assist investigations with advice from the APHA's veterinary lead for parasitology, Rebecca Mearns. Depending on the details of the situation and anthelmintic used, the faecal egg count reduction test (FECRT) is often the first method used to investigate. However, clinical disease within the prepatent period, the

poor efficacy of anthelmintics against *T. suis* (necessitating in-feed treatment over several days) and intermittent shedding of eggs in faeces can make interpretation of FECRT difficult. There are no World Association for the Advancement of Veterinary Parasitology (WAAVP) guidelines published as yet for this worm species (Kaplan and others, 2023). There is general advice on [worms in pigs](#) on the National Animal Disease Information Service (NADIS) website and on [anthelmintic use in pigs](#) on the Responsible use of Medicines in Agriculture (RUMA) website.

Figure 2: *Trichuris suis* worms embedded in the large intestine (image from a previous case).

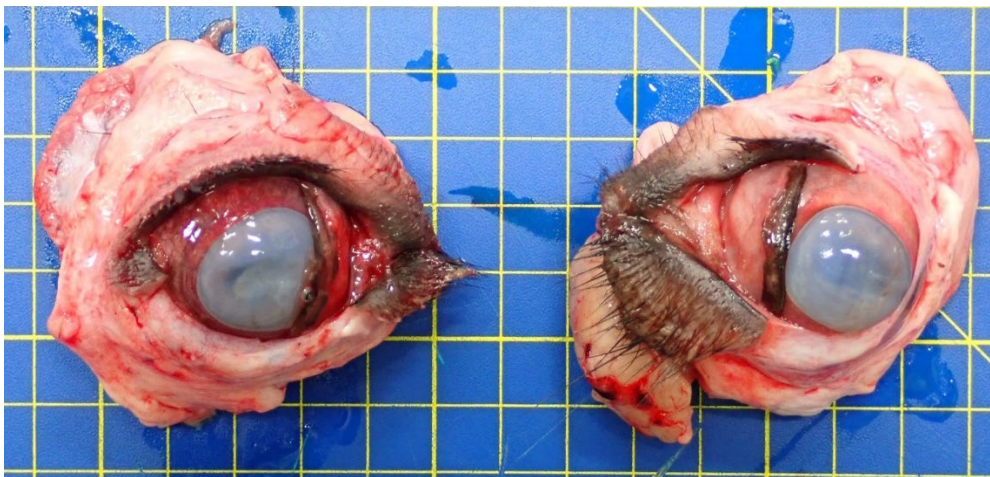


Corneal opacity and nervous signs due to malignant catarrhal fever

A single adult boar on a small, mixed species holding which included sheep became inappetent and lethargic. A veterinary visit found the pig was pyrexemic with conjunctivitis. Hindlimb ataxia began and progressed from mild to severe over a week, with no response to antimicrobial and anti-inflammatory treatment. A head tilt, nystagmus, absence of menace reflex and marked bilateral corneal opacity (Figure 3) also developed. The pig was euthanised and submitted to one of APHA's surveillance pathology partners, University of Liverpool's School of Veterinary Science.

At postmortem examination, the boar was found to be quite thin. The corneas were diffusely opaque, there was reddening of the conjunctivae and sclerae as well as markedly injected scleral blood vessels. The meningeal blood vessels were also prominent. No bacteria were isolated from the meninges or other internal sites. The unusual ocular lesions, together with nervous signs and poor response to treatment, raised suspicion of malignant catarrhal fever (MCF). PCR testing on the spleen for ovine herpes virus-2 (OvHV-2; the causative virus for MCF) gave a positive result, confirming the diagnosis. Histopathology on a range of tissues including the brain and eyes was also consistent with MCF. This revealed severe, subacute, widespread, fibrinoid necrotising arteritis as well as inflammatory lesions including: a moderate to severe, subacute non-suppurative uveitis; moderate subacute angiocentric non-suppurative meningoencephalomyelitis; and moderate multifocal necrotising lymphadenitis.

Figure 3: Bilateral corneal opacity due to malignant catarrhal fever



MCF has been diagnosed previously in pigs at APHA (Wessels and others, 2011) and elsewhere (Løken and others, 1998) but is much less common in pigs compared to bovidae and various species of deer with sheep contact. Aberrant hosts like this pig may suffer very severe disease when infected but do not shed virus, meaning that they are considered dead-end hosts. Weaned lambs and adult sheep shed OvHV-2 intermittently, usually without showing clinical signs themselves.

Bilateral corneal opacity is an unusual clinical presentation in pigs; where nervous signs also develop and there is the possibility of contact with sheep, MCF should be considered. Other differentials for bilateral corneal opacity in pigs include: severe anterior uveitis, which could be a complication of a bacterial meningitis; severe conjunctivitis; and “blue eye disease” due to a porcine rubulavirus. This last differential has previously only been described in Mexico and causes nervous signs and corneal opacity in growing pigs as well as reproductive failure in breeding pigs (Iowa State University, 2025).

Where pigs have close contact with other species, as may occur on mixed smallholdings, unusual diseases may occasionally be seen in pigs. Other possible examples include

disease due to ruminant pestiviruses (Dastjerdi and others, 2022) and unusual leptospiral infections (Hathaway and others, 1983).

Myopathy associated with ionophore toxicity in growing pigs

This item describes a case from 2024, which is included in this report to highlight the importance of considering the possibility of myopathy in cases which present with normal mentation but limb weakness, tremors and recumbency.

Two submissions of six-week-old pigs were sent for investigation from a 1600-pig indoor nursery unit following the sudden onset, three days earlier, of clinical signs in 20 pigs which presented with recumbency; apparent ataxia and proprioceptive deficits (Figure 4a and 4b); and death of four pigs. More pigs became affected over the next two days and some died. Affected pigs were randomly distributed across pens and the farmer noted that all the affected pigs were in the half of the pig batch which had received a new delivery of feed while, in contrast, pigs in the other half of the batch which had not received the new feed were totally unaffected. Immediate action was taken to provide the affected groups of pigs with an alternative feed pending the results of investigation. The water supply was also checked, with no issues identified.

Figure 4a and 4b: Pig with myopathy due to ionophore toxicity showing muscle weakness and an inability to stand or move normally. Images captured from video kindly provided by the submitting veterinarian.

4a



4b



Postmortem examination findings were unremarkable apart from a moderate amount of ventral oedema; all the stomachs of all the submitted pigs were full of feed. Histopathology and liver biochemistry were initiated immediately; liver selenium concentrations were within normal ranges and histopathology revealed marked, diffuse, acute, myocyte degeneration and necrosis. Pathology was limited to skeletal muscle. No changes were

found in the heart muscle of any of the pigs submitted and there were no obvious changes in the brains or spinal cords examined. This unusual pathology is most likely to have a toxic or metabolic/nutritional aetiology. Possible causes include ionophore, cotton seed (gossypol) and cassia seed toxicity or nutritional myopathy due to oxidative tissue damage which may be associated with vitamin E/Selenium deficiency. Subclinical electrocution also results in a myopathy, however the epidemiological situation on farm was not consistent with electrocution. The absence of spinal cord pathology and liver biochemistry ruled out selenium toxicity and analysis of the feed confirmed the presence of ionophore which had been accidentally included. There was fortunately no tiamulin in the feed, which would have potentiated the toxic effects of ionophore.

In addition to the pigs lost through deaths or euthanasia on welfare grounds, the remaining pigs which had received the ionophore-contaminated feed stabilised after being on the replacement diet for a week but grew poorly. APHA's toxicologist proposed a withdrawal period from the food chain of 28 days. As these pigs were several months away from slaughter, the food chain was not at risk.

Pigs with myopathy initially have normal mentation, with clinical signs reflective of muscle weakness and pain. In a different myopathy case, in pigs showing tremors, the tremoring stopped when the pigs were recumbent. This case highlights the need to consider the possibility of myopathy when nervous or musculoskeletal signs are seen and to collect skeletal muscle as well as nervous tissue for investigation in case this is needed during the diagnostic investigation. Recommended muscles to sample are the triceps, semimembranosus, semitendinosus, epiaxial spinal musculature and diaphragm. In this case, videos accompanying the submission and good communication between the private vet and APHA Veterinary Investigation Officer and toxicologist greatly aided the clinical investigation and prompt intervention.

Changes in disease patterns and risk factors

Porcine reproductive and respiratory syndrome virus update

GB update

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. [A recent publication](#) described a new scheme for classifying PRRSV-1 strains (Yim-Im and others, 2025) based on the open reading frame (ORF) 5 gene. This classification is now being incorporated into APHA ORF5 gene sequencing reports.

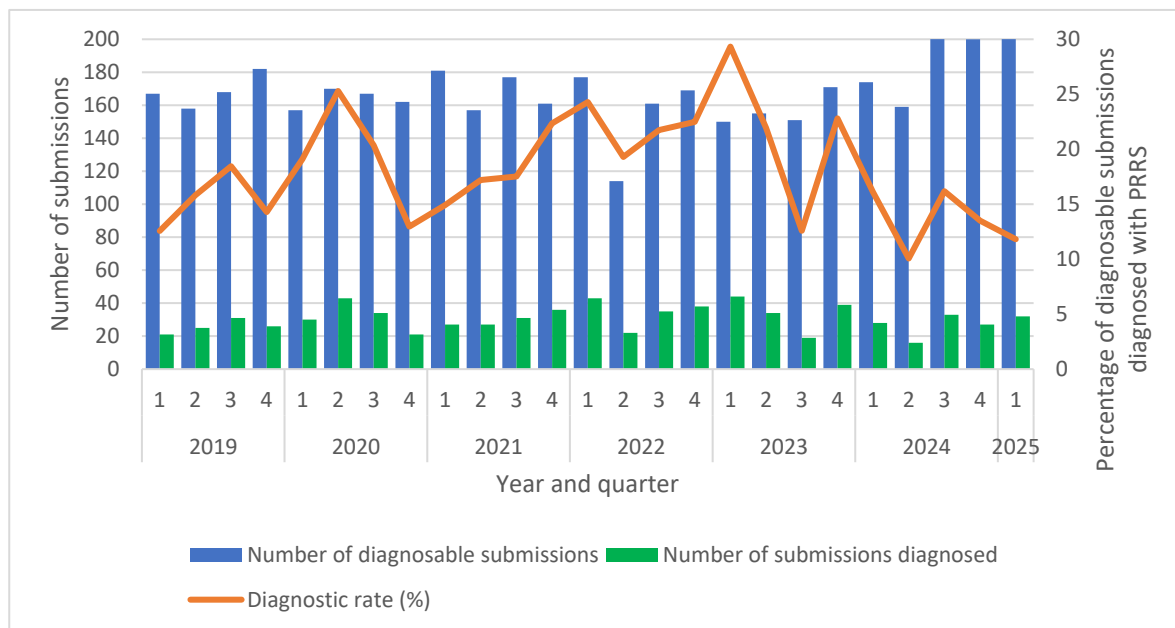
Although the diagnostic rate for PRRS in GB has shown a general downward trend since a peak in the first quarter of 2023, the data shown in Figure 5 indicate that PRRS remains a significant disease in GB pigs. The data underline the importance of PRRSV as an endemic pathogen and PRRS is the priority for disease control in the [pig component of the Animal Health and Welfare pathway](#), alongside a focus on biosecurity improvements to control endemic pig diseases and prevent the introduction of exotic disease threats.

Thirty-two diagnoses of PRRS have been recorded in VIDA to date in quarter 1 of 2025. Three of these relate to reproductive disease in breeding pigs and 29 to systemic or respiratory disease.

Just over 50% of the diagnoses of systemic or respiratory disease due to PRRSV in quarter 1 of 2025 were made in pigs of four to eight weeks of age (where the age of pigs was provided), which are likely to be recently weaned pigs. This likely reflects the opportunity for PRRSV spread following mixing of pigs at weaning, when pig's maternal immunity is waning and vaccinal immunity, where vaccines are used at or near weaning, is still establishing.

Sixty-six percent of PRRS diagnoses were made in carcass submissions, in which full diagnostic investigation can be undertaken. Concurrent diseases were found in 19 of the 21 diagnoses of systemic and respiratory PRRS made in carcass submissions in the first quarter of 2025. In contrast in non-carcass submissions, concurrent diagnoses were made in four of the eight submissions in which systemic or respiratory PRRS was diagnosed.

Figure 5: Diagnostic rate of PRRS by year and quarter as a proportion of diagnosable submissions to the GB scanning surveillance network¹.



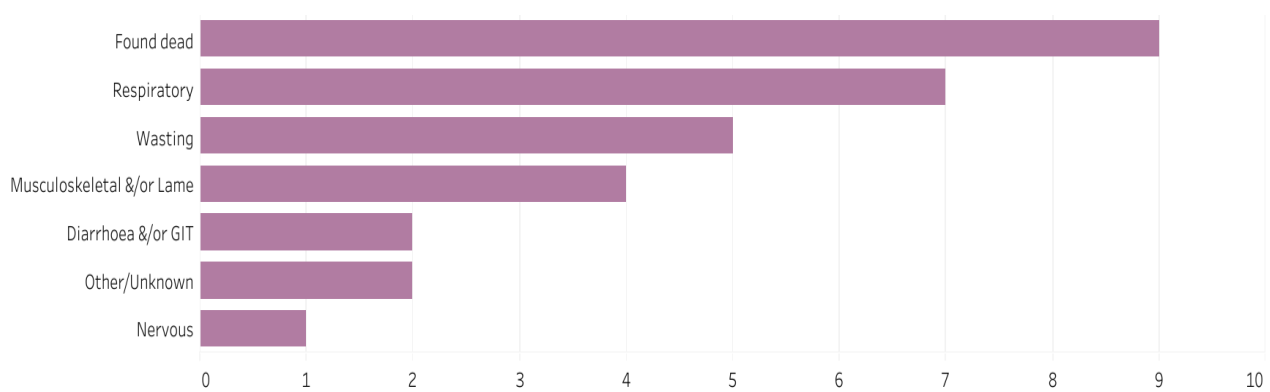
Overall, salmonellosis was diagnosed together with PRRS in six submissions and was the most common individual concurrent diagnosis made in quarter 1 2025. The other most frequent concurrent diagnoses were streptococcal disease and disease due to *Glaesserella parasuis*. This differed from 2024 when swine influenza was the most common concurrent diagnosis. The presence of these additional diseases reflects the immunosuppressive effect of PRRS. This adds to the adverse impact that PRRS has on pig health, welfare and antimicrobial use, the last of which is employed to treat the bacterial infections which result from, or are exacerbated by, PRRS.

The main clinical signs described in submissions in which PRRS was diagnosed in quarter 1 of 2025 are shown in Figure 6. Clinical signs may reflect the concurrent diagnoses made, rather than being directly due to PRRS.

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.

¹ Diagnosable submissions are those which allow the testing by which the diagnosis could be established.

Figure 6: Main clinical signs in submissions in which PRRS was diagnosed in quarter 1 2025.



The genetic diversity of the PRRSV strains that are sequenced continues to increase and at least 14 different lineages/clades were seen in quarter 1 of 2025. 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.

The proportion of sequenced PRRSV found to be vaccine-like ranged from 22 to 31% in the years 2019 to 2022. In 2023, only 13% of the PRRSV sequenced at APHA were found to be vaccine-like. This may have reflected, in part, issues with the supply of certain live vaccines. Vaccine-like viruses represented 18% of those sequenced in 2024 and represent 22% of those sequenced so far in 2025.

Reproductive disease associated with a vaccine-like PRRSV-1 strain in France

A recent publication by Lebret and others (2025) describes an outbreak of reproductive disease in a farrow-to-wean farm in France associated with a PRRSV-1 strain derived from a modified live virus (MLV) vaccine. The farm was considered to be stable for PRRS with mass vaccination of the sows with a MLV vaccine, while piglets were not vaccinated. Sows showed pyrexia, lethargy and early farrowings; most piglets in affected litters were delivered stillborn and liveborn piglets were splay-legged.

PRRSV-1 was detected in sows and suckling piglets and sequencing showed that the strain differed from the MLV vaccine strain used on the farm and was closely related to a different PRRSV-1 MLV strain which had never been used on the farm. The authors note that there was evidence of small sequence differences between the farm strain and the

vaccine strain to which the farm strain was closely related to, showing that there had been some evolution of the strain. No recombination events were detected with other MLV vaccine strains authorised in France.

PRRS testing of samples from the nearest farm to the case farm detected a PRRSV-1 strain with very close genetic similarity to the strain on the case farm. The relevant MLV vaccine had been used on this nearby farm, although not since 2021 (two years before the current outbreak). Although the degree of similarity suggested that the nearby farm was the source of infection to the case farm, the authors indicated that it was not possible to definitively confirm this.

Control measures included vaccination with the MLV vaccine used previously on the farm and improved internal biosecurity. One year after the outbreak the farm was reclassified as PRRS stable with vaccination.

Reversion to virulence of PRRS MLV vaccine strains has been described, although mainly for PRRSV-2 vaccines. In the late 1990s, use of a PRRSV-2 MLV vaccine for a national PRRS control scheme led to the spread of this MLV vaccine strain to non-vaccinated herds (Bøtner and others, 1997). This MLV-derived PRRSV-2 has been detected in several countries in Europe (Stadejek and others, 2013).

Partial reversion to virulence of a PRRSV-1 MLV strain has been suggested under experimental conditions by Eclercy and others (2019). The publication by Lebret and others (2025) may represent the first case report of a field outbreak of reproductive disease associated with a PRRSV-1 MLV which appears to have reverted to virulence. The case highlights the importance of genetic surveillance for PRRSV in GB as well as the need to use PRRSV MLVs according to the datasheet (as was performed in this case) to minimise the risk of recombination events. It is recommended that the use of two or more MLV vaccines based on different strains is avoided in a herd. The European Medicines Agency Committee for Medicinal Products for Veterinary Use has published advice for users of live PRRS vaccines in the last item [here](#).

Increase in the number of diagnoses of leptospirosis

In 2024, there were more diagnoses of leptospirosis made through the GB scanning surveillance in submissions from unique pig holdings than in any of the previous nine years, although numbers are small and unlikely to be statistically significant. In 2024, there were ten submissions diagnosed with leptospirosis from six unique pig holdings. As can be seen from Figure 7, five out of six diagnoses on unique pig holdings in 2024 were diagnoses of fetopathy due to *Leptospira* in breeding herds. Two of these herds indicated that they were already vaccinating against leptospirosis. A significant rodent problem was specifically mentioned in two herds.

Nine out of the ten submissions diagnosed with leptospirosis in 2024 were submitted between August and November. One diagnosis was made in May in postnatal pigs which

presented with jaundice. This tendency for leptospirosis to be diagnosed over autumn and winter months is typical of the seasonal pattern for diagnoses of leptospirosis made through the scanning surveillance network over the last ten years (Figure 8).

Figure 7: Diagnoses of leptospirosis made on unique holdings by year of submission to quarter 1 2025.

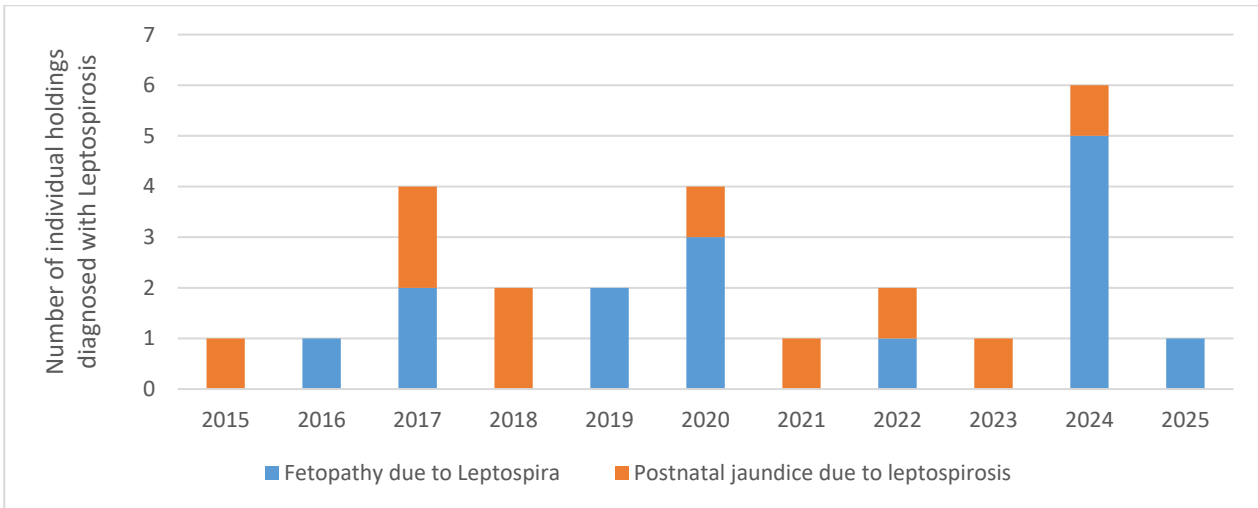
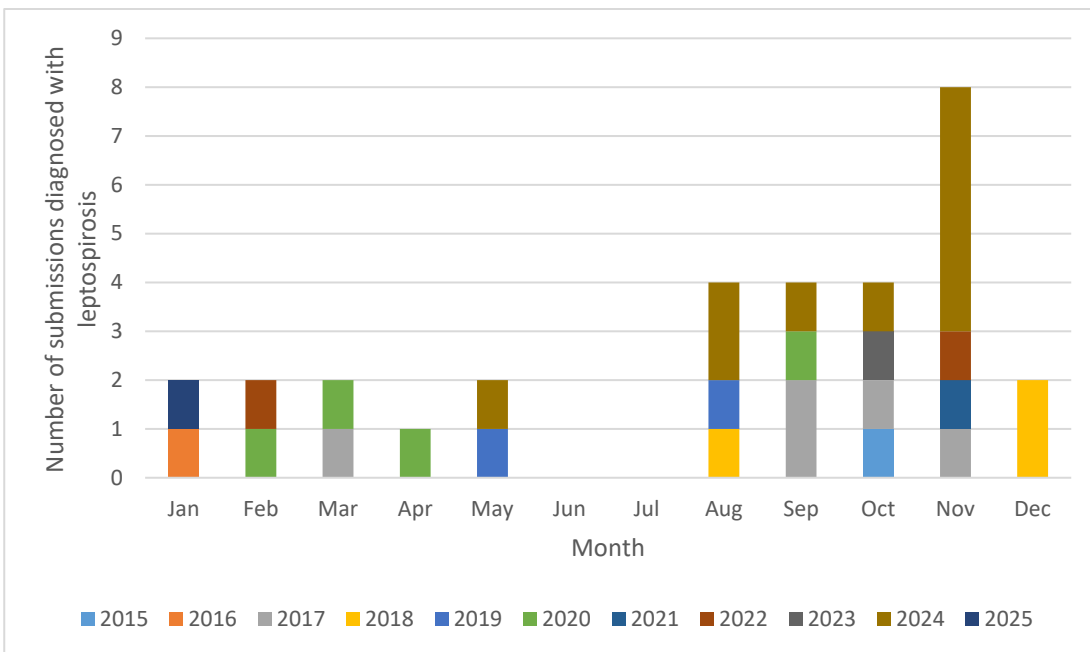


Figure 8: Diagnoses of leptospirosis from 2015 to quarter 1 of 2025, by the month of submission.



Where *Leptospira* DNA is detected by PCR in the kidneys from fetuses or postnatal pigs, APHA offers free of charge *Leptospira* serology screening on up to 10 sows delivering affected litters, or 10 recovered pigs in the same cohort. This is aimed at identifying the serovar involved in the disease, given that the pathogenic *Leptospira* PCR is generic and does not identify the infecting serovar. This is only worthwhile in pigs which are not vaccinated against leptospirosis. Where this was taken up in past cases, antibody titres have been detected to rodent-associated leptospire (*L. Icterhaemorrhagiae* and

Copenhageni), *L. Bratislava* and, [in three holdings in the Southwest of England](#), to *L. Pomona* (considered to be wildlife-adapted *Pomona*) (APHA, 2017). In past serological studies, *L. Bratislava* has been found to be the main serovar circulating in the UK pig population with leptospire maintained in rodents (*L. Icterhaemorrhagiae* and *Copenhageni* combined) being the next most common (Williamson and others, 2004).

In each of the 2024 cases, information was provided to the submitting vet on the zoonotic potential of *Leptospira* serovars, including the need to practice good personal hygiene (such as wearing gloves to handle afterbirth, abortion material or stillborn piglets) and the importance of effective rodent control. Many human cases of leptospirosis diagnosed in England report exposure to potentially contaminated water or direct contact with rodents as the probable source of infection. Further information is found here:

<https://www.gov.uk/guidance/leptospirosis>

It is important to note that the numbers of diagnoses of leptospirosis are low and, therefore, trends should be interpreted with care. An increase in the number of diagnoses may, in part, reflect increased submissions by vets wishing to investigate the cause of reproductive disease in pigs fully; the number of submissions with abortion or stillbirth as a main presenting sign in 2024 was also at a ten year high. Some of the diagnoses were made as a result of an initiative at one veterinary practice to better understand the cause of increased rates of mummified piglets on their clients' farms. This veterinary practice collected samples from stillborn and mummified piglets themselves and submitted them to APHA. APHA plans to provide more detailed sampling guidance to vets later in 2025 to help them investigate porcine stillbirths or abortions where whole litters of foetuses/stillborn piglets and placentae cannot be submitted to an APHA VIC or surveillance pathology partner. This will enable them to collect and submit a targeted set of samples from abortion and/or stillbirths, to allow full diagnostic investigation into the main infectious causes of porcine abortion/stillbirth. The number of diagnoses of leptospirosis, as well as other causes of fetopathy in pigs, will be kept under review in future quarters.

Porcine circovirus 3-associated disease surveillance update

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). Hearts have now been examined routinely by histopathology for four successive years (Table 2).

PCV3 is a relatively recently discovered pig virus and is genetically distinct from PCV2, with no significant cross protective immunity considered to exist between them. 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. Publications indicate that PCV3 is widespread in pigs globally and evidence suggests that this virus, although recently discovered, has been in the pig population for a number of years. No zoonotic concern is reported. Experimental PCV3 infection of weaned pigs (Jiang and others, 2019) induced disease which resembled PDNS in some respects.

Saporiti and others (2021) proposed case definitions for PCV3-associated disease. Table 2 summarises the cases submitted to APHA where findings fulfilled the criteria allowing diagnoses to be confirmed. PCV2 involvement was not found in these submissions. Given that there are few systematic evaluations of the virus in diseased and healthy pigs and few experimental infection studies, there is still uncertainty around the significance of PCV3 to porcine disease.

Two main disease manifestations have been recognised in submissions to APHA; PCV3-associated foetopathy and PCV3-associated systemic disease in postnatal pigs. Examples of each have been diagnosed in 2024.

In 2024, for the first time, two postnatal pigs were found to have PCV3-associated systemic disease in the same submission. Previously, postnatal PCV3 disease has only been confirmed in one pig in a submission, with other pigs in the submission not affected. In the 2024 submission with PCV3-associated disease in two pigs, the history was of sudden deaths of eight-week-old pigs in good body condition. Two pigs had non-suppurative perivasculitis in the heart and one of these also had a non-suppurative myocarditis, which prompted testing for porcine circoviruses. Disease due to *Glaesserella parasuis* and porcine reproductive and respiratory syndrome (PRRS) was diagnosed in all three pigs submitted. Thus, although this submission is the first in which two pigs have been diagnosed with systemic PCV3-associated disease, the main clinical problem diagnosed was not PCV3. There is a detailed description of postnatal PCV3 systemic cases in 2021 in the report for quarter 1 of 2022 (APHA, 2022).

In the PCV3-associated foetopathy cases diagnosed up to 2024, multiple foetuses were affected within litters. This was also the case for three of the four 2024 foetopathy cases. In the fourth case, just one of eight stillborn piglets examined had strong PCV3 nucleic acid labelling within the heart associated with a minimal non-suppurative myocarditis. No other diagnosis was made in the litter, and the PCV3 PCR on the heart was positive with a low Ct value (Ct 15.6) indicating a high viral load in the tissue.

In the PCV3-associated foetopathy cases diagnosed by APHA to date, stillborn and mummified piglets have been the most consistent presentations, sometimes with abnormal or weak neonates described and, in two incidents, arthrogryposis was a feature in some piglets (APHA, 2018). Several 2023 PCV3-associated foetopathy cases were described in a monthly surveillance report in the Veterinary Record (APHA, 2024).

The findings from this enhanced surveillance indicate that there is a low and fairly consistent level of PCV3 diagnoses in APHA submissions to date. This will provide a useful baseline to monitor for changes in PCV3 diagnoses.

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

Table 2: Summary of PCV3-associated disease cases diagnosed through surveillance of APHA diagnostic submissions.

CT = congenital tremor

Year	Reproductive PCV3 cases	Systemic PCV3 (myocarditis) cases	Age range of myocarditis cases	Other cases
Pre-2021	3	3	10 days to 13 weeks	-
2021	3	7	3 to 14 weeks	1 (ISH+ve lymph node, negative heart)
2022	0	2	4 to 6 weeks	1 (ISH+ve lymph node, negative heart)
2023	2	3	4 days to 8 weeks	1 (CT-like clinical signs, ISH +ve brain and spinal cord)
2024	4	5	6 to 14 weeks	-

Swine dysentery diagnoses continue in 2025

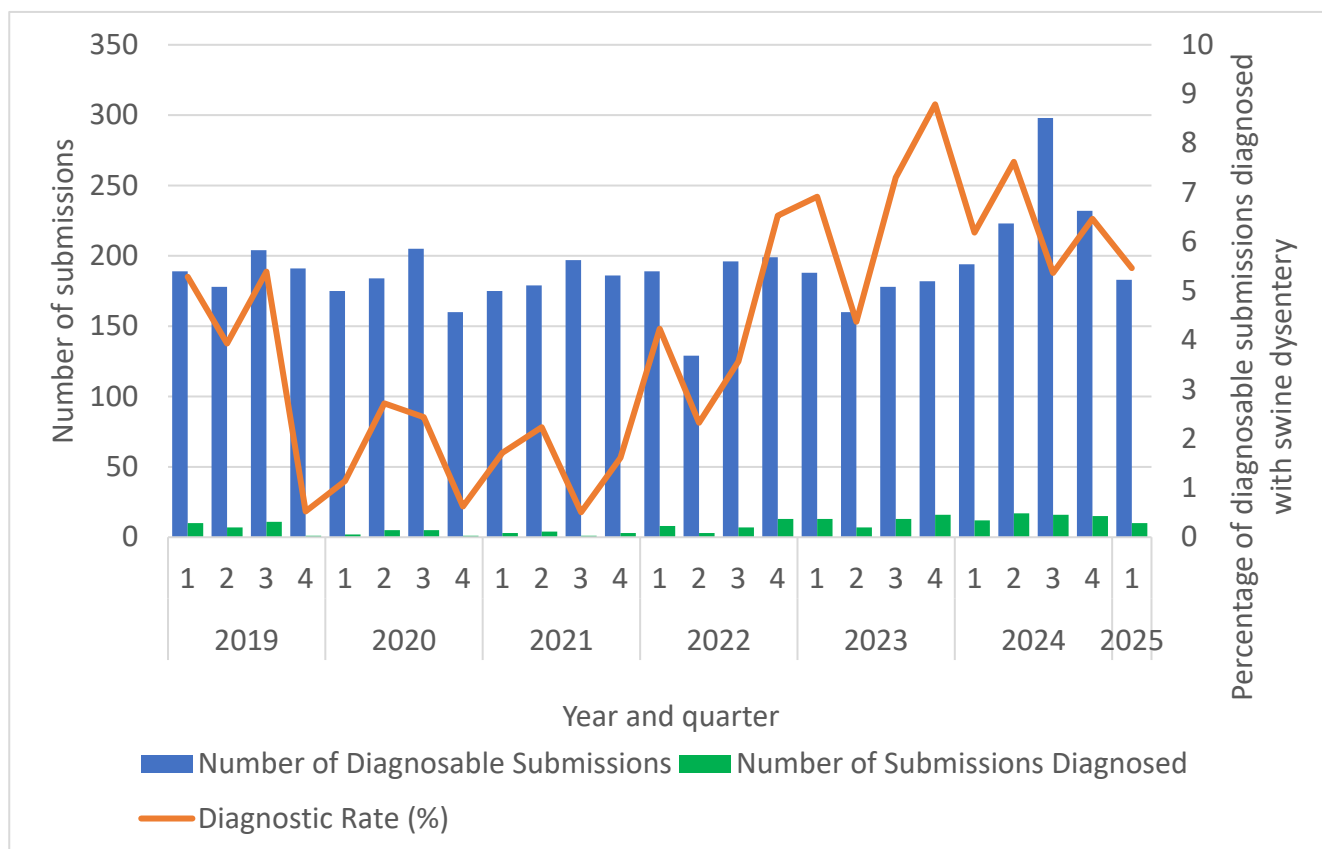
The number of diagnoses of swine dysentery made through the GB scanning surveillance network (at APHA and SRUC laboratories) has increased each year from 2021, although the diagnostic rate (the number of diagnoses as a proportion of diagnosable submissions)

has reduced since quarter 4 of 2023 (Figure 9). In recent years, veterinarians have noticed that some confirmed cases of swine dysentery have been in pigs showing mild to moderate diarrhoea rather than the muco-haemorrhagic diarrhoea that is usually associated with swine dysentery.

Ten diagnoses have been recorded to date in VIDA during quarter 1 of 2025. Submissions were from nine premises in four counties in GB (Fife, Norfolk, North Yorkshire and South Yorkshire). This compares to quarter 4 of 2024 when 12 diagnoses were made on 10 premises in eight counties in GB. These diagnoses can be seen on the interactive [GB pig disease surveillance 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).

Figure 9: Diagnostic rate of swine dysentery by year and quarter as a percentage of diagnosable submissions to the GB scanning surveillance network².



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) under funding from APHA’s pig disease scanning surveillance project. 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](#).

Table 3 shows the STs identified by WGS completed so far for isolates from submissions to APHA or SRUC in 2025. Five different STs have been identified amongst seven isolates sequenced so far in 2025. Each year several novel allelic profiles are identified; these are submitted to the pubMLST database and allocated a new ST. One novel ST has been identified so far in 2025 (ST 348). No 2025 isolates have shown clinical resistance to tiamulin so far.

² Diagnosable submissions are those which allow the testing by which the diagnosis could be established.

Table 3: STs of *Brachyspira hyodysenteriae* isolates identified so far in submissions received in 2025. Note that further STs from quarter 1 2025 may be identified as more isolates are sequenced from this time period.

ST identified	Number of isolates	Counties of origin in 2024	ST identified in UK isolates prior to 2025
88	2	Norfolk	Yes
242	1	North Yorkshire	Yes
270	2	South Yorkshire	Yes
341	1	Norfolk	Yes (newly identified in 2024)
348	1	Norfolk	No

An increase in cases of necrotic enteritis due to *Clostridium perfringens*

Both the number of diagnoses and the diagnostic rate for necrotic enteritis due to *Clostridium perfringens* increased in quarter 4 of 2024 and quarter 1 of 2025 (Figure 10). The disease is characterised by diarrhoea, which may be bloody, and/or sudden death of sucking piglets, usually in the first week of life. All diagnoses made at APHA in these most recent quarters were at the Bury St Edmunds VIC, in piglets from outdoor breeding herds. Disease has affected several piglets per litter and multiple litters. Litters from parity one sows have been disproportionately affected, although some affected herds have been single parity and have only had parity one sows. Post-mortem presentations have included a fibrinonecrotic appearance to the jejunal mucosa, emphysematous and/or haemorrhagic lesions (Figure 11). The necrohaemorrhagic manifestation was only described in one case.

Figure 10: Diagnoses of necrotic enteritis in pigs due to *Clostridium perfringens* since 2022 made by the GB scanning surveillance network.

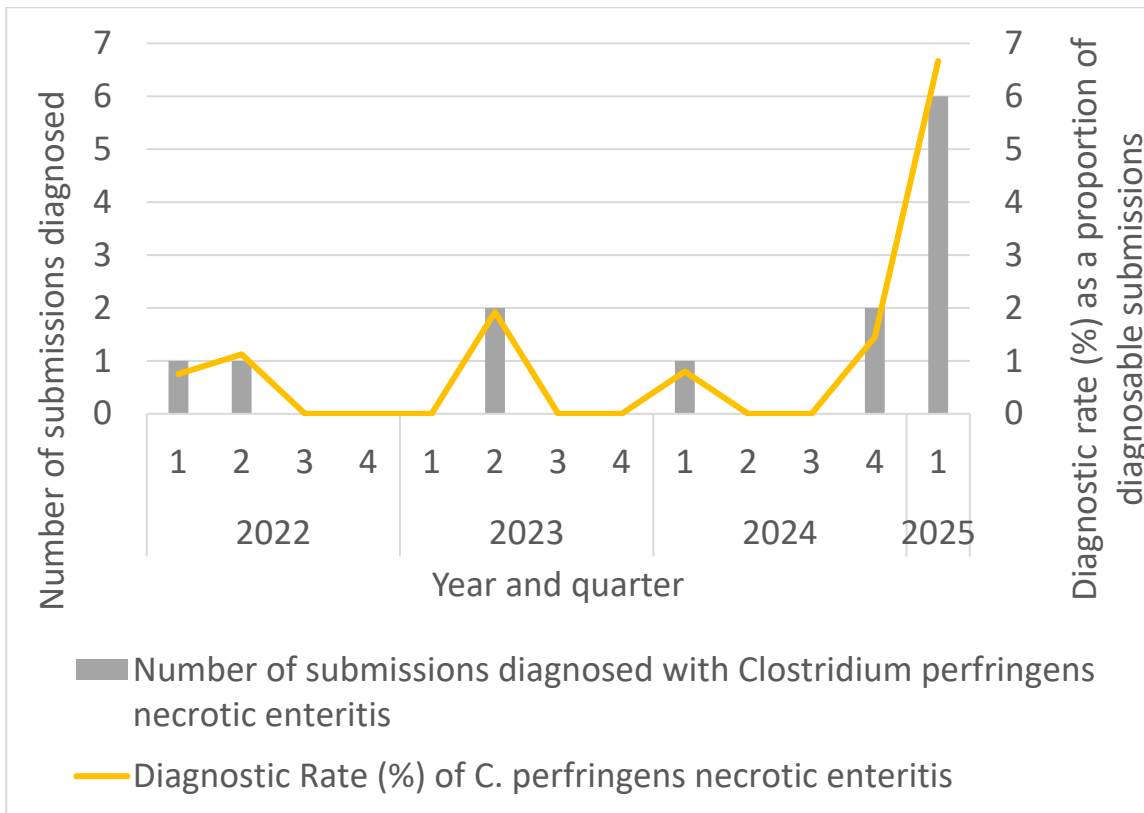


Figure 11: Diphtheresis affecting a region of the small intestine in a piglet with necrotic enteritis due to *C. perfringens* type C.



It is important to note that the numbers of diagnoses are low and, therefore, trends should be interpreted with care. Although a clostridial vaccination schedule including for *C. perfringens* type C was in place in all the affected herds, a change of vaccination preceded several cases following vaccine supply issues. Evidence of failure of passive transfer was confirmed in one case; it was not possible to obtain sera for testing from affected piglets in the others.

Whilst histopathology can provide strong evidence to support a diagnosis of necrotic enteritis due to *C. perfringens*, lesions are not pathognomonic and detection of the relevant clostridial toxins is essential to confirm a diagnosis. Where on-farm postmortem examinations are undertaken, small intestinal contents can be submitted for testing in the *C. perfringens* toxin ELISA, ideally collected from loops of grossly affected small intestine.

C. perfringens type C produces alpha and beta toxin; testing for both is recommended as the latter is labile, meaning that sometimes only alpha toxin is detected. *C. perfringens* type A produces alpha toxin only and may also act as an enteropathogen in neonatal pigs. Detection of alpha toxin confirms the presence of *C. perfringens* and supports (but cannot confirm) a diagnosis of necrotic enteritis due to *C. perfringens* type C (in the presence of typical clinical and pathological findings) where no beta toxin is detected. Songer and Uzal (2005) provide a more detailed explanation of diagnosis of enteric disease due to *C. perfringens* in pigs.

Given this labile nature of beta toxin as well as that enteric tissue autolyses quickly after death, collection of samples (enteric tissue for histopathology and small intestinal contents for toxin testing) from very freshly dead pigs is beneficial. To maximise the diagnostic value of submissions of, or from, neonatal piglets with diarrhoea, several, very freshly dead or euthanased piglets should be examined and sampled. They should be typically-affected, untreated piglets, early in the course of disease.

Horizon scanning

High prevalence of influenza D virus in pigs in Northern Ireland

[In a recent publication](#), Lagan and Lemon (2025) describe detection of influenza D virus (IDV) in several pig breeding herds in Northern Ireland (NI). Whilst IDV was first detected in a pig in the United States (Hause and others, 2013), it is thought that cattle are the main livestock reservoir (Gaudino and others, 2021) and studies in Europe have detected IDV at a low prevalence in pigs (Gaudino and others, 2022). In NI, prior to the current study, Dane and others (2019) detected IDV in 8.7% of 104 cattle with respiratory signs that were submitted for post-mortem examination to the Agri-Food and Biosciences Institute. Although antibodies to IDV have been demonstrated in people, IDV has not been found to cause human clinical infection (Trombetta and others, 2019; Vega-Rodriguez and Ly, 2023; White and others, 2016).

In the study by Lagan and Lemon (2025), nasal swabs were collected from 17 pig breeding units. Forty-one percent (7/17) of units tested positive for IDV. Within the positive herds, the proportion of samples which tested positive was between 10 and 93%. Four were also positive for swine influenza A virus and three were positive for a field strain of PRRSV. Just three of the IDV-positive farms described clinical signs in the pigs which were signs of death and slow growth; PRRSV was also detected on all three of these farms and swine influenza A virus was detected on two. Five of the IDV-positive farms kept cattle; the two that didn't had farm staff who worked on cattle farms and had cattle grazing in pastures adjacent to the pig units. Thus, there was either direct or indirect contact between the pigs and cattle on all of the IDV-positive pig farms. Lagan and Lemon (2025) note that the high prevalence of IDV in pigs in their study may be partly explained by the organization of the agricultural sector in NI, where multispecies farms containing both cattle and pigs are common.

Several distinct IDV genotypes were identified in the pig samples, some of which clustered with bovine strains. The authors suggest that this may support repeated introduction into pig herds from cattle but also note that the high rate of sample positivity in some herds points to some pig-to-pig transmission. Mutations were found at the receptor binding site of some of the pig IDV strains. Further research is necessary to assess whether these mutations may be involved in the adaptation of the virus to pigs.

Since February 2023 in GB, diagnostic samples from pigs with respiratory disease and/or respiratory pathology which are tested for swine influenza A virus are also tested for IDV. [This is undertaken at no charge to the submitting vet](#). To date, this surveillance has detected IDV in seven submissions between April 2023 and March 2025, which represents approximately 1% of samples tested. In comparison, around 10% of samples tested positive for swine influenza A virus. There has been one IDV detection in 2025 in March which was from the respiratory tissues of one pig from a submission of three submitted for post-mortem examination. The nine-week-old pigs were submitted to investigate swollen joints, illthrift and increased mortality on a nursery unit. They had varying degrees of arthritis, polyserositis and pneumonia. *Streptococcus suis* was isolated from systemic sites

from all three pigs and they all tested positive for PRRS by PCR. Histopathology was consistent with PRRS and also suggested possible earlier infection with an influenza virus. Two pigs were also diagnosed with salmonellosis and pneumonia due to *Pasteurella multocida* was confirmed in one. The detection of IDV in one of these three pigs is of uncertain clinical significance, given the other significant diagnoses established. There was no known link with cattle.

Sow mortality due to *Streptococcus equi* subspecies *zooepidemicus* in Germany

Geiping and others (2023) [describe the first outbreak in pigs due to *Streptococcus equi* subspecies *zooepidemicus* in Germany](#). High morbidity and mortality was described in a sow herd in North-West Germany. Ten sows died in four weeks and sows displayed pyrexia; lethargy and inappetance; oedema of the ears, conjunctiva and nasal bridge; mucosal discharge; dyspnoea; and abortion. No signs were noted among suckling or weaned growing pigs.

At post-mortem examination, sows had: severe fibrinous and purulent polyserositis; splenic congestion; and lesions suggestive of septicaemia. Coccoid bacteria were noted in internal organs by histopathology. *S. equi* subsp. *zooepidemicus* was isolated in profuse growths from systemic sites (including lung, spleen, kidney, thorax, pericardium). No concurrent pathogens were identified. The isolates were found to be a new sequence type (ST) of *S. equi* subsp. *zooepidemicus*, namely ST 524, which is not related to the ST which has caused outbreaks in pigs in China, Ohio and Tennessee (which were ST194). All sows were treated with cefquinome and faults in the ventilation system were rectified. Following this, no further cases occurred. The ST 524 detected in these sows is a single locus variant of ST 65 which is represented by five isolates from the upper respiratory tract of horses. Three healthy horses were kept about 100m from the sow unit; they were not investigated further.

S. zooepidemicus is a commensal of many animals, including pigs and humans. It is also an opportunistic pathogen and is associated with disease in horses and dogs in particular. After emerging as a major pathogen in Chinese pig herds in the 1970's, disease outbreaks due to a closely related strain occurred in North America in 2019.

Disease outbreaks described in pigs in other countries have been severe with sudden onset and progression of malaise, inappetence, recumbency, pyrexia and rapid death of multiple sows or finishers. Sows may also abort. The severity of clinical disease and some of the pathology (e.g. splenomegaly, congested and haemorrhagic lymph nodes and tonsils, oedematous gall bladder) could result in outbreaks being reported as suspect notifiable disease (particularly the swine fevers). A Swine Health Information Center fact sheet can be found [here](#) and a webinar is available [here](#).

This German incident is thought to be only the second documented outbreak of disease due to *S. zooepidemicus* in pigs in Europe. The previous case was in the Netherlands, in which the sequence type was not identified (Houben and others, 2021). Oedema of the

nasal bridge was a feature in both outbreaks. Geiping and others (2023) hypothesise this to be a result of septic shock, after multi-organ failure due to capillary leaks.

To date the Pig Expert Group, APHA and SRUC have not been alerted to pig disease outbreaks due to *S. equi* subsp. *zooepidemicus* through submissions or from investigations outside the GB scanning surveillance network. There are isolations of *S. equi* subsp. *zooepidemicus* archived at APHA from a variety of animals.

African swine fever

Comprehensive global information on African swine fever is available from several sources. [African swine fever \(ASF\) update assessments](#) are published by APHA's International Disease Monitoring (IDM) team on GOV.UK.

The most recent update for Europe was published in [June 2025](#), although further developments have occurred since this update (Defra and APHA, 2025b). This update describes that, in June 2025, Germany reported a case of ASF in a dead wild boar in Kirchhundem, western Germany, the first report in the state of North Rhine-Westphalia. A [press release](#) on this outbreak was released by the Friedrich-Loeffler Institut, which describes that the closest related viruses originate from southern Italy, rather than the previously identified West German variants (Friedrich-Loeffler Institut, 2025). IDM's June 2025 update also describes that, in May 2025, an ASF-positive wild boar carcass was reported in Calabria, southern Italy. This is the first ASF case in southern Italy since September 2024, and the first in Calabria since 7th August 2024. Sweden and Sardinia (Italy) have both been officially recognised as free from ASF following successful control. A summary of a [European Food Safety Authority analysis of ASF in the European Union \(EU\) during 2024](#) also features in the IDM's update assessment. An update was published for Asia in [February 2025](#) (Defra and APHA, 2025a).

Monthly IDM summaries are also included in the [disease surveillance items in the Veterinary Record](#). European Commission information is accessed [here](#) 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.

The Agriculture and Horticulture Development Board (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.

EU member states are restricted from exporting pork products from regions impacted by ASF without mitigating measures, such as heat treatment (Defra and APHA, 2024). A significant recent development was the introduction of new safeguarding measures on September 27th 2024 to restrict personal imports of pork and pork products from the EU

single market area to GB, unless produced and labelled to EU commercial standards. No personal imports of unpackaged pork and pork products are permitted and the personal allowance of commercially produced and labelled goods was limited to 2kg (Defra, 2024). Further restrictions have been enforced more recently to prevent the introduction of foot-and-mouth disease following recent outbreaks in Europe; [from 12th April](#), travellers were no longer allowed to bring cattle, sheep, goat, and pig meat, or dairy products, from EU countries into GB for personal use. This amendment removed the previous 2kg weight limit allowance so all goods from susceptible species, regardless of weight, are now restricted.

Given the risk that porcine products of animal origin may pose, it is crucial that pig keepers demonstrate strict adherence to legislation around pig feeding. Veterinarians are well placed to ensure that keepers maintain biosecurity measures and are aware of the legislation around pig feeding, including that it is illegal to feed catering waste of any description or domestic food waste to farm animals in the UK. This includes waste from a vegan domestic kitchen and also covers pigs kept as pets.

[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 the herd.

Veterinarians and pig keepers must show vigilance and be familiar with the clinical signs of the swine fevers. ASF is a notifiable disease, meaning that suspicions must be 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](#).

Foot and Mouth Disease in Europe

APHA's IDM team published a [preliminary outbreak assessment](#) in January 2025 after Germany reported Foot and Mouth Disease (FMD) in one herd of buffalo in Märkisch-Oderland. The risk level for incursion of FMD to the UK was increased to medium. The commercial import of cattle, pigs, sheep, deer, buffaloes and their products such as untreated meat, untreated dairy, certain composite products and animal by products of pigs and ruminants from Germany [was banned](#) on 13th January 2025. Travellers were also banned from bringing unpackaged meat or dairy products from pigs and ruminants into GB from the European Union, European Free Trade Association states, the Faroe Islands and Greenland. The import ban on cattle, pigs, sheep, deer, buffaloes and their products such as meat, and dairy from Germany was amended on 24th March to recognise regionalisation for FMD in Germany at the containment zone level, which covered a 6km radius around the outbreak. Consequently, the export of affected commodities could resume from areas outside this zone, provided all other import requirements were satisfied. Personal imports of packaged and unpackaged meat, meat products, milk and dairy products of pigs and ruminants remained in place. On 14th April 2025, WOA

officially recognised Germany as Foot and Mouth Disease (FMD) free. As a result and after an internal assessment, GB's restrictions on imports of affected commodities from the containment zone in Germany were lifted on 14 May 2025.

On 7 March 2025, [the UK government announced a further ban on commercial imports of susceptible species of live animals and their untreated products from Hungary and Slovakia](#), following a confirmed case of FMD in the northwest of Hungary, near the border with Slovakia on 6 March 2025. Three outbreaks of FMD were confirmed in Slovakia on 21 March. On 28 March, due to the proximity of a new Hungarian case to the Austrian border, the decision was made to suspend the commercial import from Austria of cattle, pigs, sheep, goats, wild ruminants and porcines (including deer and wild boar), and their untreated products such as fresh meat and dairy.

Outbreaks in Hungary and Slovakia have been due to the same serotype (serotype O), but of a strain with a different lineage than the outbreak in Germany. Details can be found in preliminary outbreak assessments published [here](#). Assessments of the risk of an animal in GB becoming infected with foot and mouth disease virus are published [here](#). Visit the .GOV.UK website for information on the [latest situation](#).

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