Animal & Plant Health Agency

Zoonoses and Veterinary Public Health

Quarterly report Q1 – January to March 2024

Project FZ2100

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APHA is an Executive Agency of the Department for Environment, Food and Rural Affairs and also works on behalf of the Scottish Government, Welsh Government and Food Standards Agency to safeguard animal and plant health for the benefit of people, the environment and the economy.

Contents

Monitoring the occurrence of certain animal diseases can highlight the potential for zoonotic transmission and provide an indication of human, environmental and foodborne health risks. These FZ2100 project reports summarise the surveillance activities of the Animal and Plant Health Agency (APHA), APHA partner postmortem providers and Scotland's Rural College (SRUC) Veterinary Services in Scotland, for zoonoses and infections shared between humans and animals in Great Britain, using data (which primarily relates to farmed animal species) gathered by the network of Veterinary Investigation Centres. Quantitative diagnostic data for Great Britain is provided by the Veterinary Investigation Diagnosis Analysis (VIDA) surveillance system. Summaries of veterinary public health investigations into incidents and outbreaks of zoonotic disease and associated activities are also included. This report covers the relevant VIDA data for Quarter 1 (Q1) (January to March) 2024.

The Zoonoses and Veterinary Public Health project (FZ2100) is funded by Defra, the Scottish Government and the Welsh Government through the APHA's Bacterial Diseases and Food Safety portfolio. The FZ2100 project also uses returns from scanning surveillance projects.

This report provides information about non-statutory zoonoses, as well as *Coxiella burnetii* (Q fever), avian chlamydiosis (in psittacines), and brucellosis in dogs, which were made reportable in Great Britain in 2021. The detection of *C. burnetii* and brucellosis in dogs were made reportable through amendments to the Zoonoses Order (2021). The Psittacosis (Ornithosis) Order is the legislation that covers avian chlamydiosis. Non-statutory zoonoses are defined as any zoonoses for which no specific animal-health derived legislation exists, and so excludes *Salmonella* and those diseases which are compulsorily notifiable in specified animal species, for example, tuberculosis (TB), which is notifiable in all mammals. Information concerning notifiable and other reportable zoonoses is recorded elsewhere, some under specific projects such as FZ2000 (*Salmonella*).

1. General scanning surveillance

1.1 Zoonoses VIDA data for Great Britain: January to March 2024

Table 1 (collated 3 May 2024) summarises clinical diagnoses of zoonoses and infections shared between animals and humans from specimens submitted to APHA, APHA partner postmortem providers and SRUC Veterinary Investigation Centres for the 3-month period between January and March 2024. The table also compares the latest findings with the data for Q1 for the preceding 2 years, 2023 and 2022. It includes rare zoonotic infections and those for which zoonotic potential is confined predominantly to immunocompromised individuals. Diagnoses use strict criteria and are recorded, once per incident, using the VIDA system. The list is subject to selection, submission, and testing bias. It is not definitive and excludes notifiable and most reportable diseases, notably salmonellosis, which is recorded elsewhere.

The table is intended only as a general guide for veterinary and public health professionals to the diagnosed occurrence of animal-associated infections in predominantly farmed animal species in Great Britain.

Table 1. General scanning surveillance: Zoonoses VIDA data for Great Britain, January to March 2024 – all species

Table notes:

- '-' in a cell indicates that a diagnosis is not available for that species
- birds: data for birds includes domestic and wild birds
- wildlife: data for wildlife includes mammals only

VIDA codes	Diagnosis	2022	2023	2024	Cattle	Sheep	Goats	Pigs	Birds	Misc.	Wildlife
311	Babesiasis	0	0	0	0	-	-	-	-	-	-
258, 659	*Brachyspira pilosicoli* (intestinal spirochaetosis)	12	13	11	-	-	-	11	0	-	-
013	*Campylobacter* fetopathy	105	151	67	5	62	0	-	-	0	0
282	Chlamydiosis (*C. psittaci*)	1	0	0	-	-	-	-	0	-	-
014	*Chlamydia abortus* fetopathy	116	116	126	0	125	1	-	-	0	0
732	*Corynebacterium pseudotuberculosis (CLA)*	8	3	4	-	4	0	-	-	-	-
318	Cryptosporidiosis	92	79	66	64	2	0	0	0	0	0
362	Cysticercosis	0	0	0	-	0	-	-	-	-	-
193	Dermatophilus infection	0	0	0	0	0	0	-	-	0	0
022, 133, 615	Erysipelas	8	8	2	-	0	0	1	1	0	-
371, 372, 373	Fasciolosis	62	49	53	15	33	4	-	-	1	0
363	Hydatidosis	0	0	0	-	0	-	-	-	-	-
015, 136, 139	Leptospirosis (all categories)	2	1	0	0	0	0	0	-	0	0

VIDA codes	Diagnosis	2022	2023	2024	Cattle	Sheep	Goats	Pigs	Birds	Misc.	Wildlife
016, 140, 150, 189, 711	Listeriosis (all categories)	76	56	54	6	44	4	0	0	0	0
217	Louping ill	1	1	2	0	2	-	-	0	0	-
225	Orf (parapox virus)	3	4	5	-	5	0	-	-	0	-
152,153, 157, 158	*Pasteurella multocida* pneumonia (pasteurellosis)	66	73	78	54	13	0	11	0	0	0
223	Pseudocowpox (parapox virus)	0	0	0	0	-	-	-	-	-	-
027, 262	Q Fever (*Coxiella burnetii)*	3	3	0	0	0	0	-	-	0	0
374	Red Mite *(Dermanyssus gallinae)*	1	0	0	-	-	-	-	0	-	-
195	Ringworm	1	0	1	1	0	0	0	0	0	0
379, 392	*Sarcoptes scabei infection*	2	0	1	0	-	0	0	-	1	-
024, 171, 172, 644	Streptococcal infection (excluding bovine mastitis)	24	34	39	0	1	0	34	0	0	4
745	Swine influenza	14	15	12	-	-	-	12	-	-	-
026, 315	Toxoplasmosis, including fetopathy	107	108	73	-	71	2	-	-	0	0
142	Tuberculosis, excluding bovine *M. bovis*	8	12	5	-	0	0	0	2	3	0
034, 154	Yersiniasis (including fetopathy*)*	6	10	2	-	2	0	0	0	0	0

Common minor diseases of zoonotic importance, such as orf and ringworm, are grossly underestimated by the VIDA recording and reporting system, as it is unusual for practising veterinary surgeons to submit material for diagnosis.

See more specific information on scanning surveillance diagnoses and trends for endemic diseases on the APHA Vet Gateway website.

1.2 Highlights from APHA and SRUC disease surveillance centres

This section provides information on a few noteworthy findings of zoonotic interest from material submitted to the APHA (England and Wales), APHA partner postmortem providers and SRUC Veterinary Services (Scotland) during January to March 2024.

Further information is provided in the quarterly reports by the APHA species groups and the monthly surveillance reports in the Vet Record derived from scanning surveillance, which can be found on the APHA VET Gateway website.

The species expert group quarterly reports provide comprehensive details on scanning surveillance activities, covering avian, cattle, small ruminant, pigs, miscellaneous and exotic farmed species, and wildlife.

Detection of ticks on carcases during Q1 2024

APHA and our partner postmortem providers detected ticks on livestock throughout the winter months. The unseasonably warmer weather may have contributed to increased tick activity earlier in the year than expected. Advice was provided to Veterinary Investigation Officers that tick-borne diseases should be considered as differential diagnoses during the investigation of submitted cases, and in discussions with private veterinary surgeons and farmers. An update will be provided in the next Zoonoses and Veterinary Public Health quarterly report.

Coxiella burnetii polymerase chain reaction (PCR) positive test results in 3 placentae from heifers

This investigation of stillbirths in Jersey heifers was reported by SRUC and was published in the surveillance section of the April Vet Record. Placentitis was suspected and *Coxiella burnetii* was detected by PCR. No other diagnosis of infectious causes of stillbirth were made through routine investigation.

2. Specific scanning and targeted surveillance and other studies

2.1 Campylobacter

Human campylobacteriosis is usually caused by the thermophilic *Campylobacter* species *C. jejuni* and *C. coli*, which can be found in a wide range of livestock, poultry and wildlife species. Poultry and poultry meat products are the main sources for human infection, and campylobacteriosis is the most commonly reported bacterial cause of food poisoning. The United Kingdom Food Security Report 2021 indicated that there were 54,979 laboratory-confirmed infections in 2020, 68,006 in 2019, and 67,984 in 2018. Note, there may have been an impact of the COVID-19 pandemic on the 2020 figures.

This Zoonoses and Veterinary Public Health report does not cover foodborne illness related to *Campylobacter* infection. However, non-thermophilic *Campylobacter* strains (such as *C. fetus*) can also (rarely) cause severe systemic illness in people.

Please note that only *Campylobacter* fetopathy numbers are detailed in Table 1 above.

England and Wales

In Q1 2024 there were a total of 70 *Campylobacter* isolates identified by the APHA Starcross laboratory, which were mainly from ruminant abortions and comprised:

- Bovine – a total of 5 isolates: one *C. coli,* 2 *C. fetus venerealis intermedius*, one *C. fetus fetus*, and one *C. jejuni.*
- Ovine – a total of 65 isolates: 2 *C. coli*, 57 *C. fetus fetus*, 4 *C. jejuni*. and 2 *C. sputorum*

Scotland

SRUC Veterinary Services had a total of 44 *Campylobacter* isolates during Q1 2024, which were:

- Bovine – a total of 3 isolates: one *C. fetus venerealis intermedius*, one *C. jejuni*, and one non-typed *Campylobacter* sp.
- Ovine – a total of 8 isolates, all *C. fetus* not-typed.
- Canine – a total of 30 isolates: 10 *C. upsaliensis,* 14 *C. jejuni,* 2 *C. coli,* one *C. lari*, and 3 non-typed *Campylobacter* sp.
- Feline – a total of 3 isolates, all *C. upsaliensis.*

2.2 Leptospirosis

Targeted surveillance by APHA for leptospirosis is variously achieved by analysis of results from:

1. RT (real-time) PCR for pathogenic leptospires on appropriate diagnostic samples.

2. Microscopic agglutination test (MAT) antibody testing on sera submitted for disease diagnosis, monitoring and export (mainly dogs). Diagnostic MAT titres are considered seropositive at 1/100 or above (1/50 for *L.* Hardjo bovis in cattle).

3. Bulk milk tank antibody testing by enzyme-linked immunosorbent assay (ELISA) of samples submitted from dairy herds for monitoring purposes.

The last 2 methods are influenced by vaccination (dogs and cattle). MAT results are also very dependent on the range of serology (pools or single serovars) undertaken.

Between January and March 2024, a total of 68 kidney specimens (kidneys from 13 cattle, 46 pigs, 6 sheep, and 3 foxes) were examined by RT-PCR for pathogenic leptospires. There were no positive kidney test results. Two of the submitted samples (one pig sample and one sheep sample) were unsuitable for testing because these were too autolysed.

In Q1 2024, a total of 547 serum samples from a range of species were tested for *Leptospira* antibodies. Of these:

- 118 canine sera were tested for export purposes and 41 for diagnostic purposes
- 87 porcine samples were tested for *L.* Bratislava
- 241 bovine samples were tested for *L.* Hardjo bovis

Table 2. Single *Leptospira* serovars tested in dogs, pigs, and cattle expressed as percentage positive for the number of samples tested for each serovar

Table notes:

- more than one serovar may be detected in a serum sample
- abbreviations used in this table:
    - Canine E. = canine export (dogs tested for export purposes)
    - Canine D. = canine diagnostic (dogs tested for diagnostic purposes)
- the total tested columns are the numbers of samples tested for each serovar
- % positive is the percentage of each tested serovar which gave a positive result, for example 16.1% of 118 canine export samples tested were positive for *L.* Canicola antibodies

Species	Serovar	Total tested: Q1 2024	% positive	Total tested: Q1 2023	% positive
Canine E.	*L.* Canicola	118	16.1	140	11.4
Canine E.	*L.* Icterohaemorrhagiae	18	0	26	15.4
Canine D.	*L.* Australis	9	66.7	12	75
Canine D.	*L.* Autumnalis	9	22.2	11	0
Canine D.	*L.* Bratislava	35	22.9	38	7.9
Canine D.	*L.* Canicola	37	10.8	28	28.6
Canine D.	*L.* Copenhagenii	41	53.7	33	24.2
Canine D.	*L.* Grippotphosa	5	20	6	33.3
Canine D.	*L.* Icterohaemorrhagiae	41	4.9	32	6.3
Canine D.	*L.* Pomona	5	40	6	0
Canine D.	*L.* Sejroe	4	25	7	57.1
Porcine	*L.* Bratislava	87	10.3	138	24.6
Bovine	*L.* Hardjo bovis	241	12.9	426	2.6

In addition to single serovars, *Leptospira* pools (multiple serovars) are tested on a significant number of canine, porcine and bovine samples. Pooled serovars are not included in the above data.

Between January and March 2024 there were 8 bulk milk *L.* Hardjo antibody tests for monitoring purposes, which gave the following results: 4 (50.0%) were negative, one (12.5%) was low positive, 0 (0%) were mid positive, and 3 (37.5%) were high positive.

For comparison, between January and March 2023 there were 7 bulk *L.* Hardjo antibody milk tests (for monitoring purposes), which gave the following results: 2 (28.6%) were negative, 0 (0%) were low positive, one (14.3%) was mid positive and 4 (57.1%) were high positive.

The significance of these observations is heavily influenced by vaccination status and selection, although it is thought unlikely that fully vaccinated herds contributed many samples. Low submission numbers also make comparisons across the 2 years difficult.

2.3 Mycobacteria (excluding bovine cases of *M. bovis*)

Since *Mycobacterium bovis* became notifiable in all species in 2006, the number of samples examined by APHA has increased, particularly from pets and camelids. Samples from pigs are mainly submitted by Official Veterinarians at abattoirs.

The APHA testing protocol has changed, and since 30 March 2022 all new submissions from non-bovine animals have been tested by PCR, which detects the *M. tuberculosis* complex and *M. bovis*. If positive for the *M. tuberculosis* complex and *M. bovis*, the sample is sent for culture to harvest growth to establish the whole genome sequencing (WGS) clade of *M. bovis*.

If positive for the *M. tuberculosis* complex and negative for *M. bovis*, an unvalidated PCR for *M. microti* is carried out. If the PCR is positive for *M. microti*, there is no further testing. If the PCR for *M. microti* is negative, culture is carried out to establish the Mycobacterium present (possibilities include other members of the *M. tuberculosis* complex such as *M. tuberculosis* or *M. caprae*).

This testing protocol means that we do not receive results for as wide a range of non-statutory *Mycobacterium* sp. as compared to the historic testing protocols.

During Q1 2024 an interesting case of tuberculosis in a fallow deer was investigated by the APHA Shrewsbury Veterinary Investigation Centre. On postmortem examination, multiple abscesses were found adjacent to the trachea, in the mesentery, liver, attached to the kidneys and in the mediastinal and mesenteric lymph nodes. The abscesses contained white purulent material and were up to 5cm diameter. *Mycobacterium bovis* infection was confirmed by PCR.

2.4 Q fever

PCR is used to confirm the presence of *Coxiella burnetii*, typically following the identification of suspicious acid-fast bodies in Modified Ziehl-Neelsen (MZN)-stained smears of placentae (or foetal samples). Confirmation of Q fever as a cause of fetopathy requires histopathology and immunohistochemistry of placental tissue, in addition to a positive PCR result. In each case when *C. burnetii* is detected by PCR, public health colleagues are informed of the incident and the zoonotic potential of this organism is highlighted to the farmer and private veterinary surgeon, with the provision of an advisory sheet about Q fever.

Comparisons of Q fever data with previous years should be made with caution because from April 2021 Q fever has been a reportable disease. In 2023 there was a notable increase in bovine test requests for the APHA *Coxiella burnetii* PCR test. It is important to note that an increase in the detection of *C. burnetii* does not necessarily equate to an increased prevalence.

During the period January to March 2024 a total of 41 samples (from 35 submissions) were tested for the presence of *Coxiella burnetii* by PCR at the APHA Q fever National Reference Laboratory, Penrith Veterinary Investigation Centre. The samples comprised 22 placental samples, 9 foetal fluid samples, one umbilical sample, one spleen sample, 2 brain samples, 5 vaginal swabs and one unspecified swab. The *C. burnetii* PCR has been validated for placental and foetal fluid samples, although other samples are also tested on agreement with the customer.

These samples were from 25 cattle, 9 sheep, and one goat submissions. Five samples tested positive for *C. burnetii* which were all cattle samples (from 4 submissions). *C. burnetii* was not detected in any of the sheep samples nor in the goat sample. Further information about the positive submissions is provided in section 3.4.

In addition, the detection of *C. burnetii* in 16 bovine bulk milk samples by PCR at an overseas laboratory (9 from English dairy farms, 3 from Welsh dairy farms, 4 from Scottish dairy farms) were reported to APHA.

2.5 *Streptococcus suis*

Streptococcus suis isolates from diagnostic material submitted to APHA and SRUC Veterinary Investigation Centres are typed further for disease surveillance purposes. The submission numbers and serotypes from porcine diagnostic material submitted during the period January to March 2024 are shown below, with data for the previous 2 years (Q1 2023 and Q1 2022) for comparison.

Table 3. *Streptococcus suis* serotypes from porcine diagnostic material

Table notes:

- UT = untypeable
- 1/2 = is a recognised distinct serotype that reacts with both 1 and 2 antisera

	1	2	3	4	5	7	8	9	13	14	19	23	33	34	1/2	UT	Total
Q1 2022	5	10	2	-	-	2	-	1	-	3	-	-	-	-	-	5	**28**
Q1 2023	2	14	2	3	-	3	-	-	-	-	1	-	-	1	-	5	**31**
Q1 2024	2	7	1	-	2	6	2	1	1	1	-	1	-	-	1	5	**30**

Serotype 2 was the most common serotype in Q1 for all 3 years, 2022, 2023 and 2024. There was some variation with the second most common serotype, which was serotype 7 for Q1 2024. Both serotypes 4 and 7 were the second most common in Q1 for 2023, and the second most common serotype in 2022 was serotype 1.

2.6 Toxoplasmosis

The European Food Safety Authority (EFSA Journal 2007, 583, 1 to 64) highlighted the significance of toxoplasmosis as a foodborne zoonosis and the need to improve surveillance in this field. Serological examinations for *Toxoplasma gondii* using the latex agglutination test (LAT) are undertaken by the APHA on sera submitted to Veterinary Investigation Centres. The findings presented below provide a summary of the serological status of samples submitted for diagnosis, monitoring and screening purposes during the period January to March 2024, but do not constitute a structured survey. Positive samples, as defined here, have LAT titres of 1/64 or greater and indicate a history of exposure to this protozoan parasite. Toxoplasmosis as a cause of fetopathy in sheep and goats is diagnosed through antigen (PCR) testing of placental cotyledon.

During the period January to March 2024: 56 ovine samples and 2 caprine samples were submitted for Toxoplasma serology. There were 29 positive titres in the ovine samples and there was one positive caprine sample. Toxoplasma fetopathy figures for sheep and goats are provided in Table 1.

3. Investigations into zoonotic and potentially zoonotic incidents

Protocols for the investigation of zoonotic disease incidents in England and Wales are set out in the Guidelines for the Investigation of Zoonotic Disease (England and Wales).

There is similar guidance on the investigation and management of zoonotic disease in Scotland.

Advice for members of the public planning a trip to animal-associated visitor attractions, and other information, can be found on the UK Health Security Agency (UKHSA) zoonotic disease webpage.

The Industry Code of Practice for preventing or controlling ill health from animal contact at visitor attractions is available on the National Farm Attractions Network website.

3.1 Cryptosporidiosis

Investigations to assist in human outbreaks of cryptosporidiosis linked to direct contact with animals are undertaken at the request of Consultants in Communicable Disease Control (CsCDC) of the UKHSA and Public Health Wales (PHW) and in collaboration with the National Cryptosporidium Reference Unit, Swansea, and follow jointly agreed guidelines.

Consultants in Public Health Medicine (CsPHM) lead on these zoonoses investigations in Scotland.

Quarter 2 (Q2) is traditionally the busiest time for cryptosporidiosis investigations and is related to the frequency of open farm visits undertaken by families or school groups around the Easter holiday and bank holidays. Contact with young lambs either through bottle-feeding or handling is the major risk factor for the zoonotic spread of *Cryptosporidium parvum* in these settings. The availability of appropriate and suitably located hand-washing facilities including soap, rather than antimicrobial gel (which is not effective for this pathogen) is extremely important.

Although some human cryptosporidiosis incidents and outbreaks commenced in March, an update will be provided in the next Zoonoses and Veterinary Public Health quarterly report as investigations were ongoing during Q2 2024.

3.2 STEC

Shiga toxin-producing *Escherichia coli* (STEC, formerly known as VTEC) outbreak investigations are undertaken, according to agreed guidelines, at the request of CsCDC of UKHSA and PHW (CsPHM in Scotland) where an animal-associated source is suspected. These investigations often also involve collaboration with other organisations, including the environmental health departments of local authorities and the Health and Safety Executive (HSE). Determination of virulence factors, including shiga toxin genes and comparison of human and animal isolates by WGS analysis, are performed by the Gastrointestinal Bacteria Reference Unit (GBRU), UKHSA Colindale. If isolates from animals circumstantially implicated in outbreaks have an indistinguishable WGS profile to those from human cases, this is taken as confirmatory evidence of the epidemiological link. Other STECs or WGS types may be detected incidentally during the investigation of animal premises.

During Q1 2024 APHA assisted with the investigation of two Shiga toxin-producing *Escherichia coli* (STEC) human outbreaks.

A STEC O26 incident continued into Q2 and will be reported in the next quarterly update. STEC was implicated in an investigation of human disease associated with animal contact activities at a visitor attraction.

A STEC O145 outbreak was linked with consumption of a high-risk food stuff. APHA contributed to the multidisciplinary incident management team investigation, advising within the veterinary remit including an advisory visit and epidemiologically relevant sampling.

Cattle are a recognised reservoir of STEC and may contribute to environmental contamination. Other animals may be implicated to a lesser extent. STEC can be carried in the normal gut flora and may be intermittently shed in faeces. The epidemiology of STECs is complex and shedding by cattle is associated with multiple factors. There is no practically achievable control programme to eliminate STECs from the farm environment and culling of healthy animals is not advised. Cattle can shed STEC intermittently, so testing will not reliably identify carriers, and there is no commercial vaccine for cattle. It is advisable to consider that all livestock farms may have zoonotic organisms including STECs present and focus risk assessment and control measures to reduce the zoonotic risk associated with STECs.

Where the risk is by direct or indirect contact during animal attraction activities, control of the risk is based on the visitor interaction type and hygiene measures of the visitors, staff, and environment. Where there is a food producing premises, control may include but is not limited to optimal milking procedures and dairy hygiene, together with safe food production regarding milk handling and processing.

3.3 *Corynebacterium ulcerans*

Corynebacterium ulcerans was first isolated from cases of throat infection in humans in 1926, with zoonotic outbreaks initially associated with direct contact with farm animals or consumption of unpasteurised milk. The organism can produce diphtheria toxin, which can produce human disease with the same clinical signs as cutaneous or respiratory diphtheria caused by *C. diphtheriae*. More recently, *C. ulcerans* has been isolated from the oral cavity, skin lesions, nasal discharge, and other anatomical sites of domestic pets such as dogs and cats. APHA and SRUC Veterinary Services in Scotland assist public health colleagues in the investigation of human cases of *C. ulcerans* where there has been animal contact, by liaising with the private veterinary surgeon and providing animal related advice.

The guidance for the public health management of toxigenic *C. ulcerans* in companion animals in England is available online: Public health management of toxigenic C. ulcerans in companion animals.

These investigations are multidisciplinary and APHA works closely with public health colleagues to investigate, manage, and provide advice regarding the animals involved. Typically, APHA will also liaise closely with the private veterinary surgeon to facilitate the taking of and testing of surveillance swabs, antibiotic treatment, and post-treatment clearance swabs as appropriate. APHA also provides advice on health and safety procedures for private veterinary surgeons and pet owners, including information on cleaning of pet bedding and pet toys. Comprehensive information is available in the companion animal public health guidance.

During Q1 2024 APHA were involved with assisting the UKHSA Health Protection Teams (HPTs) with 16 toxigenic *Corynebacterium ulcerans* incidents, of which 15 were animal index cases and one was a human index case. This is the largest number of recorded *C. ulcerans* incidents observed in the first quarter of the year since recording of animal incidents commenced in 2017. There has been an increasing number of animal index cases detected in recent years, and the reasons for this are not fully understood.

The human index case did not require any follow-up from APHA, as there were no close animal contacts.

Of the 15 animal index cases, 10 were dogs and 5 were cats. Cutaneous lesions were the most common clinical presentation (5 of 15), followed by nasal or respiratory issues (4 of 15) and ear infection (3 of 15). APHA recommends surveillance swabbing of animals that are in the same household as, or have had close contact with, an animal index case to investigate if there has been any animal-to-animal transmission. Surveillance swabbing of other animals was undertaken for 9 of the animal index cases, with a total of 13 animals swabbed. Of these 13 animals' surveillance swabbed, toxigenic *C. ulcerans* was only detected in one animal.

Thirteen of the animal index cases identified in Q1 2024 have concluded. Negative post-antibiotic treatment clearance swabs have been obtained and APHA have completed their support of these cases.

Local HPTs coordinate the human interventions required for the public health response to animal index cases. Swabbing of people who had close contact with animal index cases did not result in detection of toxigenic *C. ulcerans.*

Three animal index cases identified in Q4 2023 resolved in Q1 2024. This included an animal index case (dog) that had a recurrent ear infection. Toxigenic *C. ulcerans* was detected in an ear swab in October 2023. This dog had previously tested positive for toxigenic *C. ulcerans* from an ear swab in May 2023.

3.4 Q fever *(Coxiella burnetii)*

In each case when *C. burnetii* is detected by PCR, public health colleagues are informed of the incident and the zoonotic potential of this organism is highlighted to the farmer and private veterinary surgeon, with the provision of a Q fever information sheet.

For all ruminant abortion investigations and reports of the detection of *C. burnetii*, APHA provides comprehensive advice to private veterinary surgeons, including information about optimising ruminant abortion investigations, laboratory testing, and zoonoses advice for private vets to pass on to their farmer clients.

Transmission of *C. burnetii* to humans is most frequently due to inhalation of contaminated aerosols or contaminated dusts. Aerosolized bacteria are spread in the environment by infected animals after normal births or abortion. Birth products contain the highest concentration of bacteria, but *C. burnetii* is also found in urine, faeces and milk of infected animals.

Compared to aerosol transmission, milk is considered low risk. However, the general advice is that it is not advisable to ingest unpasteurised milk. There are also other zoonotic organisms that can be acquired from the ingestion of unpasteurised milk.

During Q1 2024 there were 3 separate dairy farms where *Coxiella burnetii* was detected by PCR in a placental sample from an aborted cow. Two of these farms were farms which had performed an industry-linked *C. burnetii* bulk milk PCR test which had returned a positive result. The bovine abortion investigations by APHA were on 2 cows (one from each farm) which had aborted following the bulk milk testing – these investigations were to further assist the private veterinary surgeons of the 2 farms to determine whether *C. burnetii* was involved in these 2 abortions. Histopathological examination confirmed placentitis, however the role of *C. burnetii* in both cases of abortion could not be determined.

The third farm comprised the Scottish investigation which was included within the section 1.2 highlights.

3.5 Avian chlamydiosis (psittacosis)

Chlamydia psittaci, the causative agent of avian chlamydiosis (psittacosis), can cause serious human illness. The disease has been described in many species of birds, particularly in parrots, parakeets, budgerigars, and cockatiels. Other commonly affected birds include pigeons and doves. Ducks and turkeys may also be affected, but chickens less frequently. Birds can carry the organism without any signs of disease, or they can become mildly to severely ill.

C. psittaci can lead to inapparent subclinical infection or acute, subacute, or chronic disease, characterised by respiratory, digestive, or systemic infection. The clinical signs are generally nonspecific and vary greatly in severity, depending on the species and age of the bird and the *Chlamydia* strain involved. Humans are most likely to contract *C. psittaci* infection through inhalation of dust or aerosols contaminated by secretions from infected birds for example faeces, ocular and respiratory secretions. It is therefore important to follow current health and safety measures when in contact with birds.

Avian chlamydiosis (in psittacines) is reportable to APHA. Further information on psittacosis infection is available online at:

Psittacosis - UKHSA guidance

Psittacosis - HSE factsheet

In Q1 2024 there were no diagnoses of avian chlamydiosis recorded in the VIDA database, nor any reports of avian chlamydiosis in psittacine birds.

3.6 Tularaemia in a human of unknown origin

During 2023 APHA assisted the UKHSA with a joint investigation into the potential origin of a *Francisella tularensis* infection (Tularaemia) in a human patient. *F. tularensis* is a fastidious, Gram-negative coccobacillus and is a zoonotic organism that affects a large range of animals, and it can also be transmitted by several types of arthropod vectors. For humans, the most important animal reservoirs are lagomorphs and rodents, and the most important arthropod vectors are mosquitoes and ticks. The *F. tularensis* bacterium has not been detected from an animal reservoir in Great Britain, to date.

There are 2 clinically relevant subtypes of *F. tularensis* which are *F. tularensis* subsp. *tularensis* (Type A) and *F. tularensis* subsp. *holarctica* (Type B). Type A (which is highly virulent for humans) is mainly associated with lagomorphs in North America. Type A may occasionally be found in Europe. *F. tularensis* subsp. *holarctica* (Type B) occurs mainly in lagomorphs and rodents in Eurasia. It can also be found in aquatic rodents (for example beavers and muskrats), voles in North America, and possums in Australia.

A human case of *F. tularensis* subsp. *holarctica* was diagnosed in Great Britain in 2023 and investigation revealed travel history, but this was not typical of the expected incubation period for tularaemia. APHA supported an investigation of the household pets and provided information about wildlife monitoring. No definitive source of infection was identified.

4. *Brucella canis*

Since July 2020, there has been a large increase in the number of incidents of canine brucellosis due to infection with *Brucella canis.* APHA, in liaison with health protection agencies across Great Britain, has been involved in investigating these incidents. The UK Chief Veterinary Officer advised on this potential zoonotic disease in a letter published in the Vet Record in February 2021. Amendments to the Zoonoses Order in 2021 added dogs to the list of animals for which brucellosis is a reportable disease in Great Britain.

Further information is available in APHA's Canine Brucellosis: Summary information sheet and in our list of frequently asked Brucella canis testing questions.

General information for the public and dog owners is available on the GOV.UK website.

The Human Animal Infections and Risk Surveillance group (HAIRS) Brucella canis risk assessment outlines the current risk to the UK human population from canine brucellosis.

The British Small Animal Veterinary Association (BSAVA) has published a scientific document.

During Q1 of 2024, there were 79 epidemiologically separate incidents where there was strong evidence of infection with *Brucella canis*. All 79 were identified by serology and presented at least one other risk factor for *B. canis* infection and were reported to the relevant public health authorities. Investigations into these incidents has resulted in the testing of 82 dogs in total (inclusive of index), of which all 82 dogs were serologically positive.

5. Imported disease summaries for dogs and cats

In recent years, there has been an increase in the number of companion animals imported into the UK. In some cases, little is known about the medical history of these animals and therefore the risk of importing diseases, which are not endemic in the UK, is increasing. Additionally, with the change in climate there is also the risk of the change in distribution of vectors. APHA's Imported disease summaries for Dogs and Cats (August 2022) document provides a short summary of some of the diseases that could be imported into the UK with the importation of dogs and cats. This list is not exhaustive but provides a useful summary and signposts to further information for some conditions of concern.

Within the document there is information with additional links for a range of diseases, many parasitic. The following diseases are included: Babesiosis, *Dirofilaria repens*, *Echinococcus multilocularis*, *Ehrlichiosis*, Heartworm, Leishmaniasis, *Onchocerca lupi* parasitosis, Rabies, Sporotrichosis, Thelaziasis and Tongue worm (*Linguatula serrata*).