UK Health Security Agency

Common animal-associated infections (England and Wales): fourth quarter 2021

Health Protection Report
Volume 16, Issue 2
8 February 2022

Background

This quarterly report is produced by the Emerging Infections and Zoonoses team in the Clinical and Emerging Infections Directorate, UK Health Security Agency (UKHSA).

The report summarises confirmed cases of zoonoses reported in England and Wales between October and December 2021 (fourth quarter) and includes additional information on the quarterly trends for hepatitis E, leptospirosis, and Lyme disease.

The data presented in this report supersedes data in previous reports due to late notifications and de-duplication.

Common animal-associated infections (England and Wales): quarter 1 2019 to quarter 4 2021

Table 1. Animal-associated infections in England and Wales: quarterly laboratory reports by specimen date, Q1 2019 to Q4 2021

Disease (Organism)	Number of reports														
	2019					2020					2021[1]				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Anthrax (*Bacillus anthracis*)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brucellosis (*Brucella spp.*)[3]	7	4	5	8	24	1	1	6	1	9	1	3	3	1	8
Hepatitis E	345	330	291	240	1,206	278	190	271	198	937	293	265	225[4]	242	1,025
Leptospirosis (*Leptospira spp.*)	12	5	36	38	91	15	7	22	7	51	8	5	16	26	55
Lyme disease (*Borrelia burgdorferi*)															
All cases	191	318	781	349	1,639	173	188	625	276	1,262	119	225	573	239	1,156
Acute infections	90	187	466	160	903	53	132	468	155	808	59	146	477	180	862
Pasteurellosis (*Pasteurella spp.*)	173	171	214	214	772	175	153	214	190	732	196	258	243	188	885
Q-fever (*Coxiella burnetii*)															
All cases	3	6	2	4	15	7	5	3	2	17	3	2	5	1	11
Acute infections	2	5	1	1	9	6	3	3	1	13	2	2	5	1	10
Toxoplasmosis (*Toxoplasma gondii*)[2]	67	50	48	57	222	n/a	n/a	n/a	n/a	n/a	n/a	n/a	45	n/a	45

[1] Provisional data.
[2] Based on date specimen received.
[3] Serology results, in addition to culture results, were introduced in Q1 2019.
[4] Numbers for Q3 2021 for hepatits E have been updated due to a reporting issue which has now been resolved.
n/a = not available due to issues in the reference laboratory related to COVID-19.

Hepatitis E

The national hepatitis E virus (HEV) surveillance reports reference laboratory data (Public Health Laboratory Birmingham and Blood Borne Virus Unit Colindale) together with additional cases reported by local laboratories through the Second Generation Surveillance System (SGSS). The combined data sets provide a more accurate reflection of the number of acute HEV infected cases reported in England and Wales.

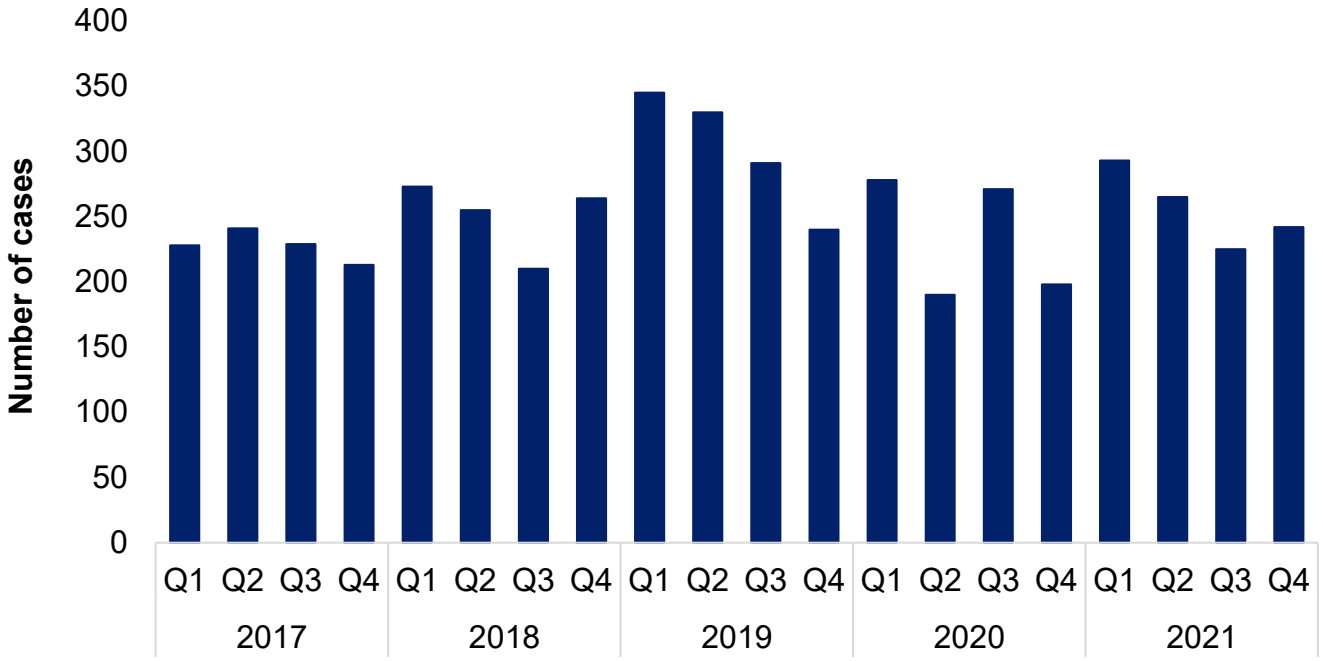
There were 242 laboratory reported cases of HEV infection in the fourth quarter of 2021 compared to 198 cases in the same quarter of 2020. Of those, 151 (62%) were male (aged 22 to 93 years, median=61) and 87 (36%) were female (aged 20 to 95, median=63; Table 2). There were 4 cases with unknown sex and age. The persisting observation of the predominance of older men remains unexplained.

Table 2. Laboratory confirmed cases of hepatitis E by age group and sex, Q4 2021

Age group	Male	Female	Unknown	Total
Under 15	0	0	0	0
15 to 24	2	3	0	5
25 to 44	29	18	0	47
45 to 64	58	26	0	84
Over 64	62	40	0	102
Unknown	0	0	4	4
Total	**151**	**87**	**4**	**242**

Figure 1 shows the number of HEV infections by quarter between 2017 and 2021. The data shows a peak in cases in 2019 (n=1,206). There were a total of 1,025 cases in 2021, an increase from the previous year (2020: n=937).

Figure 1. Laboratory confirmed cases of hepatitis E by quarter, Q1 2017 to Q4 2021

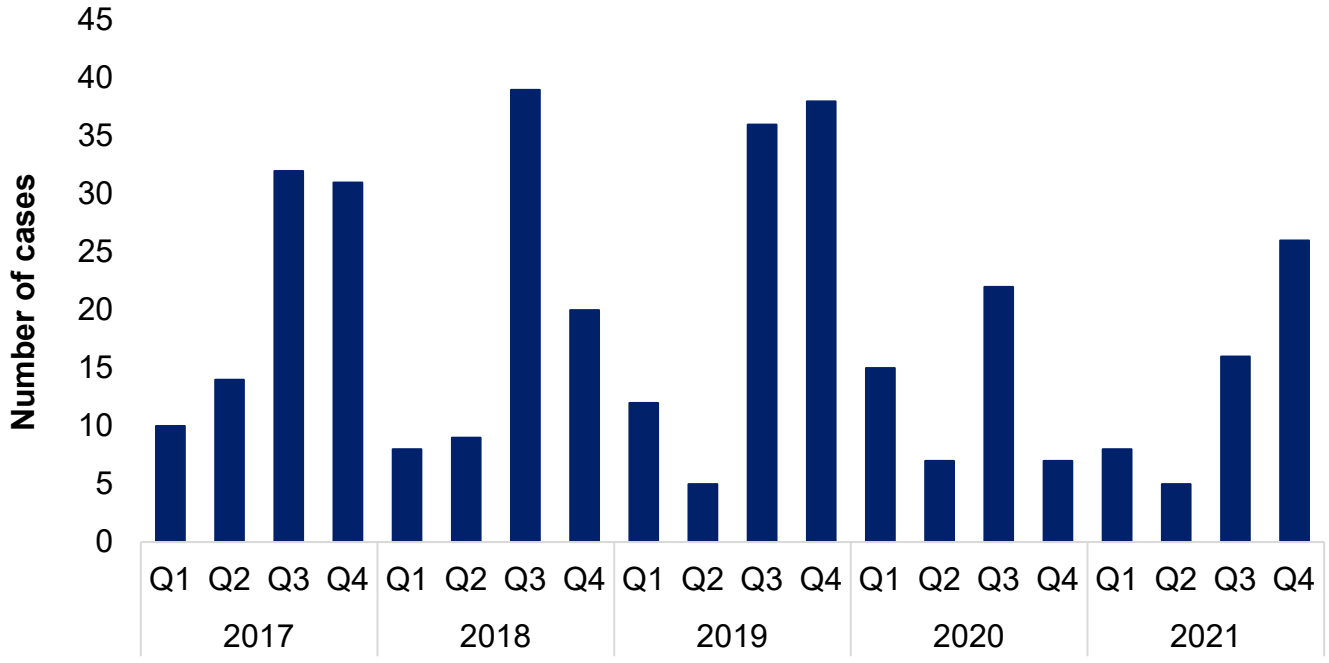


Leptospirosis

Data for leptospirosis was obtained from the Rare and Imported Pathogens Laboratory (RIPL, UKHSA Porton). As of 1 August 2020, a laboratory confirmed case of leptospirosis is defined by a positive 16S rRNA PCR result only. An IgM enzyme-linked immunoabsorbent assay (EIA) continues to be performed on all samples of suspected leptospirosis cases. A case with a positive leptospirosis IgM result will usually be treated clinically on the basis of this result, even in the absence of a positive PCR result. A case with a positive IgM but without a confirmatory PCR result is therefore reported as a probable case for surveillance purposes.

There were 26 confirmed cases of leptospirosis reported in the fourth quarter of 2021, compared to only 7 cases reported in the same quarter of 2020. Overall, however, the total number of confirmed cases in 2021 (n=55) was similar to 2020 (n=51). There were 28 probable cases reported in the fourth quarter of 2021, compared to 22 in the same quarter of 2020. Overall, there were 83 probable cases reported in 2021. Figure 2 shows the number of confirmed cases reported by quarter over the past 5 years (2017 to 2021).

Figure 2. Laboratory confirmed cases of leptospirosis by quarter, Q1 2017 to Q4 2021



In the fourth quarter of 2021, most confirmed cases (23; 88%) were male (aged 17 to 76 years) and 3 cases were female (aged 24 to 78 years). Cases were reported in all regions of England, with the exception of the East Midlands and the North East. Most cases were reported in the South West (8) followed by the South East (6). No cases were reported in Wales.

One case reported recent travel abroad to southern Europe. Of the 26 confirmed cases that were reported in the fourth quarter of 2021, 15 reported potential exposures:

- six had an exposure linked to a water source: of these, 3 cases reported exposure to river water, one case reported exposure to pond water, one case reported exposure to canal water and one case reported an exposure to water without additional details being provided (this case also reported exposure to rodents, included below)

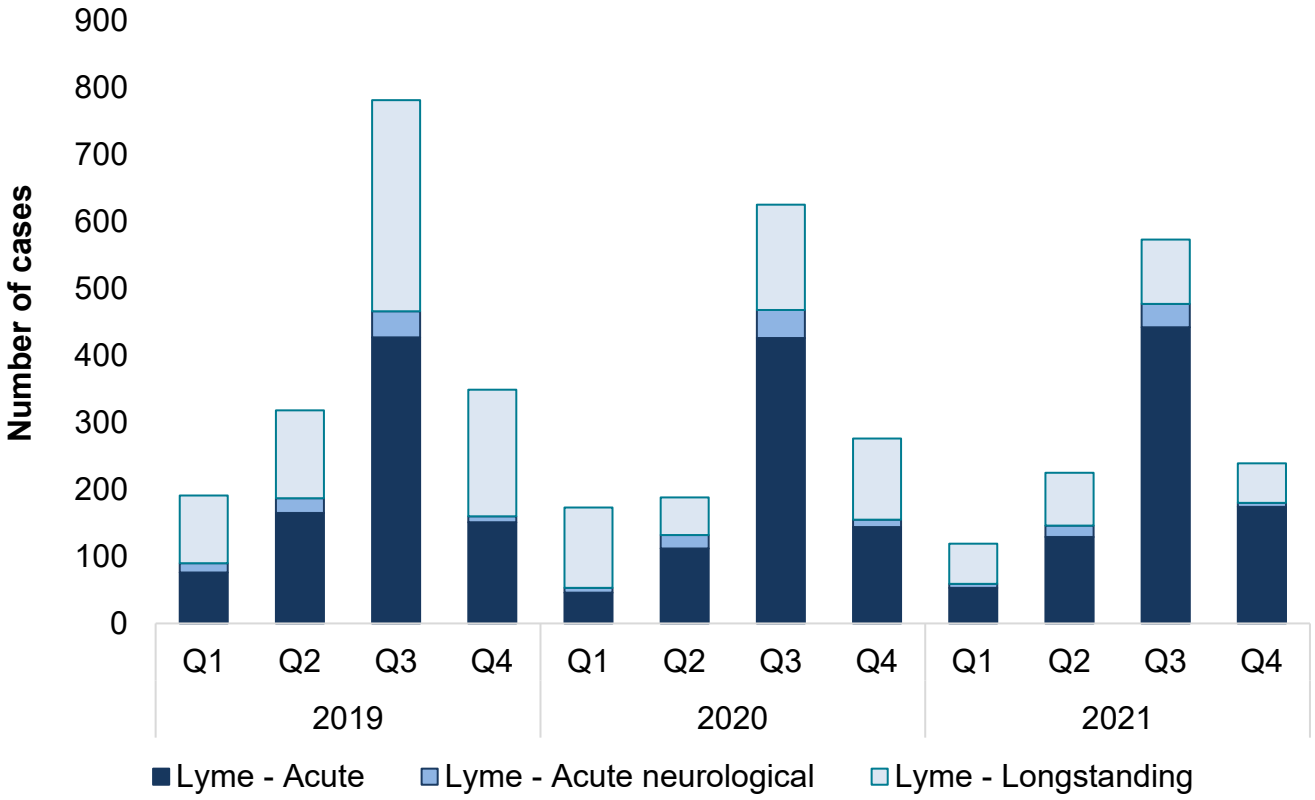
- ten had an exposure linked to animals: of these, 8 cases reported an exposure to rodents and one case reported exposure to farm animals

Lyme disease

Data for Lyme disease was obtained from the Rare and Imported Pathogens Laboratory (RIPL, UKHSA Porton). The total number of confirmed Lyme disease cases reported in the fourth quarter of 2021 (n=239) was lower than in the same period in 2020 (n=276). The total number of acute cases was slightly higher than the same period in 2020 (Q4 2020: 155; Q4 2021: 180). Overall, the total number of cases reported in 2021 (n=1,156) was lower than in 2020 (n=1,262), however, the number of acute cases was proportionally higher (2020: 808; 2021: 862).

Figure 3 shows how the number of cases peak during the summer months (third quarter), which corresponds to the peak times of exposures to ticks in the UK in the spring and summer months.

Figure 3. Laboratory confirmed cases of Lyme disease by quarter, Q1 2019 to Q4 2021



Of the total cases, 180 (75%) were acute (including 6 with neurological Lyme disease) and 59 (25%) were longstanding. Of the acute cases, 90 were male (aged 7 to 77, median 45.5) and 90 were female (aged 3 to 88, median 47). Table 3 shows the age group and sex distribution.

Table 3. Laboratory confirmed acute cases of Lyme disease by age group and sex, Q4 2021

Age group	Male	Female	Total
0 to14	6	1	7
15 to 24	4	7	11
25 to 34	14	17	31
35 to 44	17	18	35
45 to 54	21	19	40
55 to 64	17	20	37
65 to 74	10	3	13
Over 75	1	5	6
Total	**90**	**90**	**180**

The regions that reported the most acute cases in the fourth quarter of 2021 were London (n=45), the South East (n=36), and the South West (n=36) (Table 4). Overall, the South East reported the highest number of acute Lyme disease cases in 2021 (n=227) as well as in the previous year (2020: 257). Seven of the acute cases in the fourth quarter of 2021 reported foreign travel; 3 to western Europe, one to northern Europe, one to eastern Europe, and one to eastern Africa. No travel details were available for one case.

Table 4. Laboratory confirmed acute cases of Lyme disease by region, Q1 2020 to Q4 2021

PHE Centre	2020					2021				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
East Midlands	2	1	3	0	6	2	2	5	1	10
East of England	3	5	23	9	40	7	11	24	14	56
London	17	33	90	38	178	21	27	83	45	176
North East	1	4	4	4	13	3	6	15	5	29
North West	5	7	33	24	69	4	24	52	19	99
South East	12	48	152	45	257	11	30	150	36	227
South West	6	29	143	23	201	6	31	115	36	188
West Midlands	4	1	3	2	10	3	3	7	6	19
Yorkshire and Humber	1	2	10	7	20	1	8	20	11	40
Wales	2	2	7	3	14	1	4	6	7	18
Total	**53**	**132**	**468**	**155**	**808**	**59**	**146**	**477**	**180**	**862**

Note: specimens sent for Lyme disease referral testing should be accompanied by a completed referral form.

Other zoonotic organisms (provisional data)

There were 21 reports of *Capnocytophaga* spp**.** in the fourth quarter of 2021. Of these, 10 were speciated to *C. canimorsus*. Of those speciated, 9 cases were male and 1 was female. Cases were reported in the North East, the South East, the South West, the West Midlands, and Yorkshire and the Humber. No cases were reported in Wales. There were a total of 96 reports of *Capnocytophaga* spp**.** in 2021, of which 56 (58%) were speciated to *C. canimorsus* and one to *C. canis*. *Capnocytophaga* spp. are frequently carried in the mouths of companion animals (cats and dogs) or humans and may be associated with an animal bite or opportunistic infections in those with impaired immune systems. Unfortunately, limited information is available in these cases to determine the likely route of exposure.

There was one report of *Mycobacterium marinum* in the fourth quarter of 2021. Exposure information was not available for this case. There were a total of 8 reports in 2021.

There were 11 reports of *Erysipelothrix rhusiopathiae* in the fourth quarter of 2021. Of these, 7 cases were female and 4 cases were male. Most cases (n=9) were reported in England, and 2 cases were reported in Wales. There were a total of 17 reports in 2021. *E. rhusiopathiae* is the cause of swine erysipelas and can cause erysipeloid in humans. Infection is often linked to exposure to infected animals or animal products. No additional information on potential exposures was available for these cases.

Two toxigenic *Corynebacterium ulcerans* infections were reported in the fourth quarter of 2021. Both cases were female and aged over 80 years. Both cases had reported contact with companion animals. The companion animals linked to each incident were swabbed and toxigenic *C. ulcerans* was identified in one of the animals. There were a total of 8 reports of toxigenic *C. ulcerans* in 2021. Contact with companion animals remains the most frequently reported exposure for individuals with confirmed toxigenic *C. ulcerans* infections, however, the animals may not show evidence of infection and it is not always possible to confirm the carriage of *C. ulcerans*.

There was 1 report of *Taeniasis* in the fourth quarter of 2021, which was speciated to *T. saginata*. There were a total of 19 reports of *Taeniasis* in 2021, of which 7 were speciated to *T. saginata*.

There were no reports of rat-bite fever (*Streptobacillus moniliformis*) in the fourth quarter of 2021.There were a total of 4 reports in 2021.

There were no further reports of *Toxocariasis*, as such, there was only one report in 2021, which was not further speciated.

About the UK Health Security Agency

The UK Health Security Agency is an executive agency, sponsored by the Department of Health and Social Care.

Version 0.1

Prepared by: Emerging Infections and Zoonoses Team
For queries relating to this document, please contact Zoonoses@phe.gov.uk

Published: February 2022
Publishing reference: GOV-11262