UK Health Security Agency

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

Health Protection Report
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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 July and September 2021 (third 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): Q1 2019 to Q3 2021

Table 1. Animal-associated infections in England and Wales: quarterly laboratory reports by specimen date, Q1 2019 to Q3 2021

Disease (organism)	Number of reports													
	2019					2020					2021[1]			
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Total
Anthrax (*Bacillus anthracis*)	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	7
Hepatitis E	345	330	291	240	1,206	278	190	271	198	937	293	265	203	761
Leptospirosis (*Leptospira spp.*)	12	5	36	38	91	15	7	22	7	51	8	5	16	29
Lyme disease (*Borrelia burgdorferi*)														
All cases	191	318	781	349	1,639	173	188	625	276	1,262	119	225	573	917
Acute infections	90	187	466	160	903	53	132	468	155	808	59	146	477	682
Pasteurellosis (*Pasteurella spp.*)	173	171	214	214	772	175	153	214	190	732	196	258	243	697
Q-fever (*Coxiella burnetii*)														
All cases	3	6	2	4	15	7	5	3	2	17	3	2	5	10
Acute infections	2	5	1	1	9	6	3	3	1	13	2	2	5	9
Toxoplasmosis (*Toxoplasma gondii*)[2]	67	50	48	57	222	n/a	n/a	n/a	n/a	n/a	n/a	n/a	45	45

[1] Provisional data.
[2] Based on date specimen received.
[3] Serology results, in addition to culture results, introduced in Q1 2019, are available online.
n/a = not available.
Note: Hydatid and Psittacosis data not available due to inconsistencies in surveillance data provided to UKHSA and a laboratory reporting issue, respectively. These are being addressed.

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 datasets provide a more accurate reflection of the number of acute HEV infected cases reported in England and Wales.

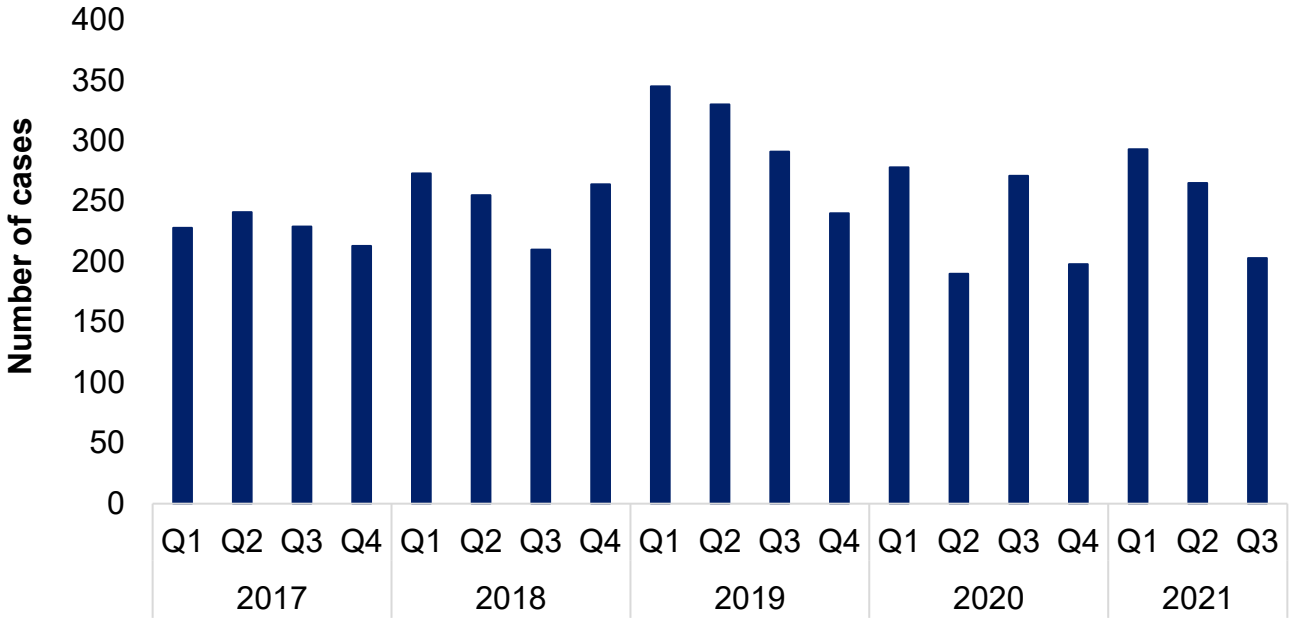
There were 203 laboratory reported cases of HEV infection in the third quarter of 2021 compared to 271 cases in the same quarter of 2020. Of those, 122 (60%) were male (aged 20 to 89 years, median=59) and 81 (40%) were female (aged 18 to 93, median=62; Table 2). The persisting observation of the predominance of older men remains unexplained.

Table 2. Laboratory confirmed cases of hepatitis E by age group and sex, Q3 2021

Age group	Male	Female	Total
Under 15	0	0	0
15 to 24	4	3	7
25 to 44	25	12	37
45 to 64	44	30	74
Over 64	49	36	85
Total	**122**	**81**	**203**

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) followed by a decrease in 2020 (n=937).

Figure 1. Laboratory confirmed cases of hepatitis E by quarter, Q1 2017 to Q3 2021

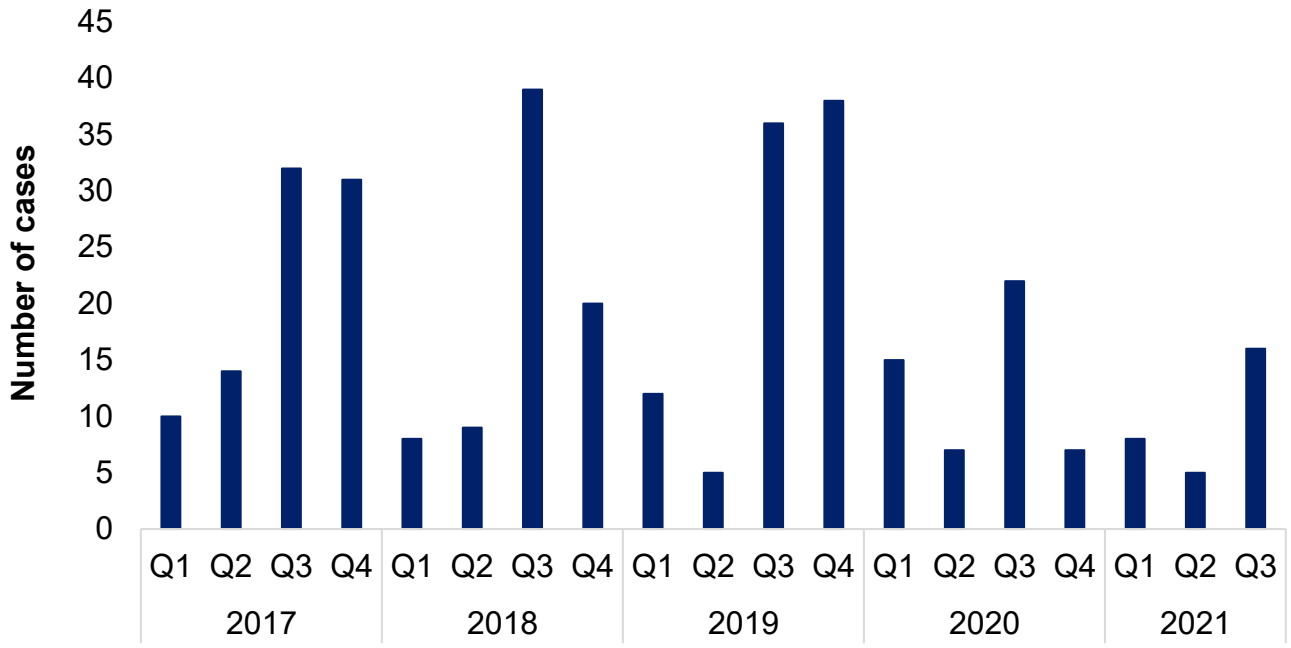


Leptospirosis

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 16 confirmed cases of leptospirosis reported in the third quarter of 2021, compared to 22 cases reported in the third quarter of 2020. Figure 2 shows the number of confirmed cases reported by quarter over the past 5 years (2017 to 2021). There were 17 probable cases reported in the third quarter of 2021.

Figure 2. Laboratory confirmed cases of leptospirosis by quarter, Q1 2017 to Q3 2021



In the third quarter of 2021, most confirmed cases (13 out of 16; 81%) were male (aged 14 to 64 years) and 3 cases were female (aged 14 to 51 years). Cases were reported in the East of England (1), the North West (2), the South East (4), the South West (8) and Yorkshire and the Humber (1). No cases were reported in Wales.

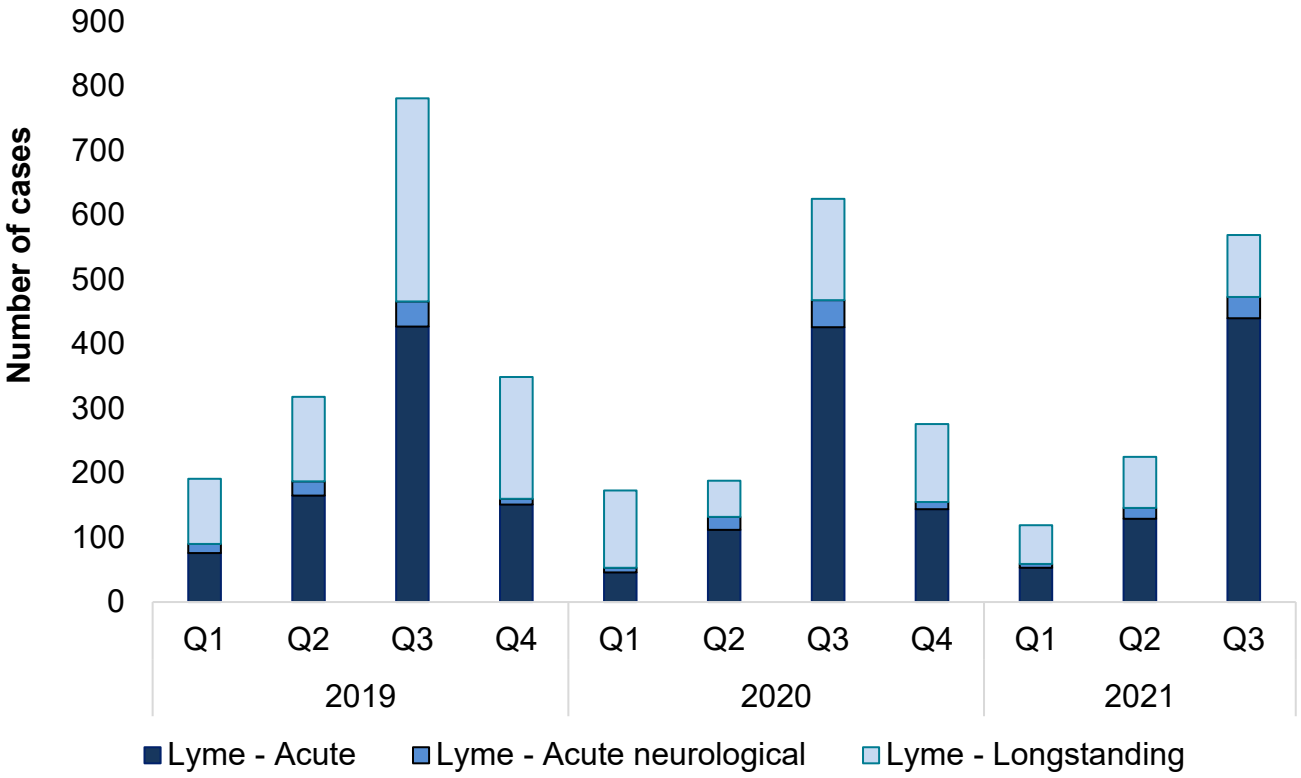
No cases reported recent travel abroad. Of the 16 confirmed cases that were reported in the third quarter of 2021, 12 reported potential exposures:

- 10 had a water exposure: 3 cases had swam in rivers, one case swam in a lake, 3 cases had an occupational water exposure (one as a marina worker and 2 as sewage or waste disposal workers), and 3 further cases had been exposed to water (2 of which to fresh water); however, the nature of these exposures was not specified
- 4 had an animal exposure: 2 cases had an occupational exposure to animals, and 2 cases had contact with rats (both of which had also reported water contact)

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 third quarter of 2021 (n=573) was lower than in the same period in 2020 (n=625). The total number of acute cases remained similar to the same time period in 2020 (Q3 2020: 468; Q3 2021: 477). As shown in Figure 3, the number of cases peaked 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 Q3 2021



Of the total cases, 477 (83%) were acute (including 34 with neurological Lyme disease) and 96 (17%) were longstanding. Of the acute cases, 241 were male (aged 3 to 90, median 48.5) and 236 were female (aged 2 to 87, median 50). Table 3 shows the age group and sex distribution.

Table 3. Laboratory confirmed acute cases of Lyme disease by age group and sex, Q3 2021

Age group	Male	Female	Total
0 to14	28	20	48
15 to 24	12	12	24
25 to 34	33	31	64
35 to 44	27	35	62
45 to 54	55	45	100
55 to 64	44	43	87
65 to 74	32	34	66
Over 75	10	16	26
Total	**241**	**236**	**477**

The regions that reported the most acute cases in the third quarter of 2021 were the South East (n=150), the South West (n=115) and London (n=83) (Table 4). Three of the acute cases reported foreign travel; one to western Europe, one to northern Europe and one to North America.

Table 4. Laboratory confirmed acute cases of Lyme disease by region, Q1 2020 to Q3 2021

PHE centre	2020					2021			
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Total
East Midlands	2	1	3	0	6	2	2	5	9
East of England	3	5	23	9	40	7	11	24	42
London	17	33	90	38	178	21	27	83	131
North East	1	4	4	4	13	3	6	15	24
North West	5	7	33	24	69	4	24	52	80
South East	12	48	152	45	257	11	30	150	191
South West	6	29	143	23	201	6	31	115	152
West Midlands	4	1	3	2	10	3	3	7	13
Yorkshire and Humber	1	2	10	7	20	1	8	20	29
Wales	2	2	7	3	14	1	4	6	11
Total	**53**	**132**	**468**	**155**	**808**	**59**	**146**	**477**	**682**

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

Toxoplasmosis

Data for toxoplasmosis was obtained from the Toxoplasma Reference Unit (TRU, Swansea). The total number of confirmed toxoplasmosis cases in the third quarter of 2021 (n=45) was similar to the number of cases reported 2 years previously (n=48). Of the total confirmed cases, 16 were male (aged 0 to 77, median 42.5) and 28 were female (aged 17 to 82, median 32). One case had no known sex or age. Table 5 shows the age group and sex distribution. It is likely that reported numbers are an underestimate, biasing towards severe infections.

Toxoplasmosis surveillance data between the first quarter of 2020 and the second quarter of 2021 is currently unavailable due to the impact of pressures on the laboratory as a result of the COVID-19 pandemic and will be published retrospectively as soon as possible.

Table 5. Laboratory confirmed cases of toxoplasmosis by age group and sex, Q3 2021

Age group	Male	Female	Unknown	Total
Under 15	2	0	0	2
15 to 24	0	4	0	4
25 to 44	9	15	0	24
45 to 64	1	4	0	5
Over 64	4	3	0	7
Unknown	0	2	1	3
Total	**16**	**28**	**1**	**45**

Other zoonotic organisms (provisional data)

There were 28 reports of *Capnocytophaga* spp**.** in the third quarter of 2021. Of these, 16 were speciated to *C. canimorsus*. Of those speciated, 8 cases were female and another 8 were male. Overall, cases were spread across regions in England, with the exception of the East of England and the West Midlands. One case was reported in Wales. *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 were 3 reports of *Mycobacterium marinum* in the third quarter of 2021. Exposure information was not available for these cases.

There were 4 reports of *Erysipelothrix rhusiopathiae* in the third quarter of 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 third quarter of 2021. Of these, one was male and one female, and both were aged over 60 years. Both cases had reported contact with companion animals in the home; both animals were swabbed and and a negative result was reported. 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 were 8 reports of *Taeniasis* in the third quarter of 2021, of which 3 were speciated to *T. saginata*.

There was one report of *Streptococcus canis* in the third quarter of 2021. Exposure information was not available for this case.

About the UK Health Security Agency

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

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