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Common animal-associated infections (England and Wales): fourth quarter 2019

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Common animal-associated infections (England and Wales): fourth quarter 2019

This quarterly report summarises confirmed cases of zoonoses reported in England and Wales between October and December 2019 (fourth quarter; weeks 40 to 52) and includes additional information on the quarterly trends for hepatitis E, leptospirosis, Lyme disease and toxoplasmosis. The rolling year total of case numbers for zoonoses covered in this report are shown in Table 1. The report is produced by the Emerging Infections and Zoonoses team at the National Infection Service, Public Health England.

Table 1. Animal associated infections in England and Wales: rolling four-quarter laboratory reports by specimen date, Q1 2019 – Q4 2019 (weeks 01/2019 to 52/2019) compared to the previous year

Disease (Organism)	Number of Reports								Total for weeks 01-52	
	weeks 01-13		weeks 14-26		weeks 27-39		Weeks 40-52		2019 *	2018
	2019	2018	2019	2018	2019	2018	2019	2018		
Anthrax (<i>Bacillus anthracis</i>)	0	0	0	0	0	0	0	0	0	0
Brucellosis (<i>Brucella spp.</i>)	7 ϕ	0	4	0	5	4	7	8	23 ϕ	12
Hepatitis E	345	273	330	255	291	210	236	264	1202	1002
Leptospirosis (<i>Leptospira spp.</i>)	12	8	5	5	36	39	38	20	91	72
Lyme disease (<i>Borrelia burgdorferi</i>)										
All cases	191	135	318	298	781	821	349	387	1639	1641
Acute infections	90	66	187	190	466	632	160	246	903	1134
Pasteurellosis (<i>Pasteurella spp.</i>)	173	178	172	157	214	207	214	160	773	702
Q-fever (<i>Coxiella burnetii</i>)										
All cases	4	5	6	9	2	5	4	5	16	24
Acute infections	2	4	5	7	1	5	1	3	9	19
Toxoplasmosis [†] (<i>Toxoplasma gondii</i>)	75	79	50	105	48	83	57	85	230	352

* Provisional data.

[†] Based on date specimen received.

ϕ Serology results, in addition to culture results, introduced in Q1 2019, accessible here:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/809141/hpr2019_zoosQ1.pdf

Note: Hydatid data not available due to inconsistencies in surveillance data provided to PHE; these are currently being addressed. Psittacosis data is not available due to a laboratory reporting issue which is being addressed.

Hepatitis E (Data from SGSS, Public Health Laboratory Birmingham and BBV Unit Colindale)

The national hepatitis E virus (HEV) surveillance reports reference laboratory data 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.

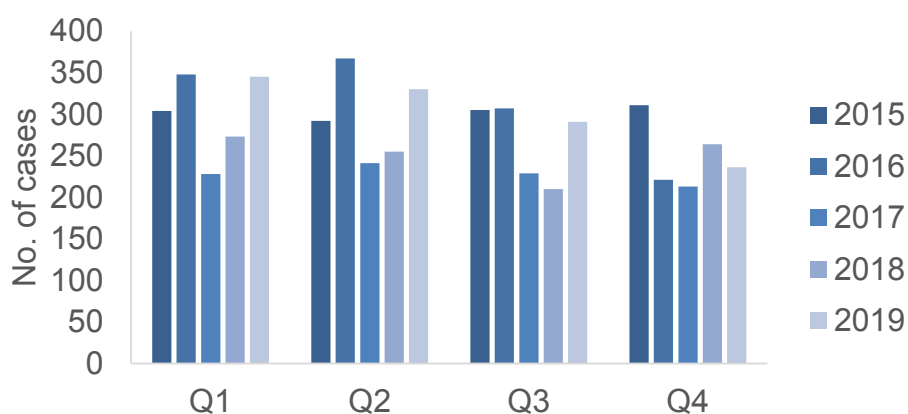
There were 236 cases of hepatitis E in the fourth quarter of 2019 compared to 2018 (n=264). Of those, 139 (59%) were male (aged 1-87 years, median=54) and 95 (41%) were female (aged 11 to 90 years, median=53; Table 2). Gender was not recorded for 2 cases. The persisting observation of the predominance of older men remains unexplained.

Table 2. Reference and local laboratory confirmed cases of hepatitis E infection (Q4, weeks 40 to 52, 2019)

Age Group	Male	Female	Not recorded	Total
<15	1	1	0	2
15-24	5	5	0	10
25-44	34	23	2	59
45-64	56	31	0	87
>64	43	35	0	78
Total	139	95	2	236

Figure 1 shows the number of HEV infections by quarter between 2015 and 2019. The data suggests an increasing trend in 2019 (1,191 cases) compared to 2018 (1,002 cases). The incidence (based on ONS estimates of the population in England and Wales) has increased from 1.7 per 100,000 population to 2.0 per 100,000. The peak incidence was recorded in 2016 (1,243 cases, incidence of 2.1/100,000).

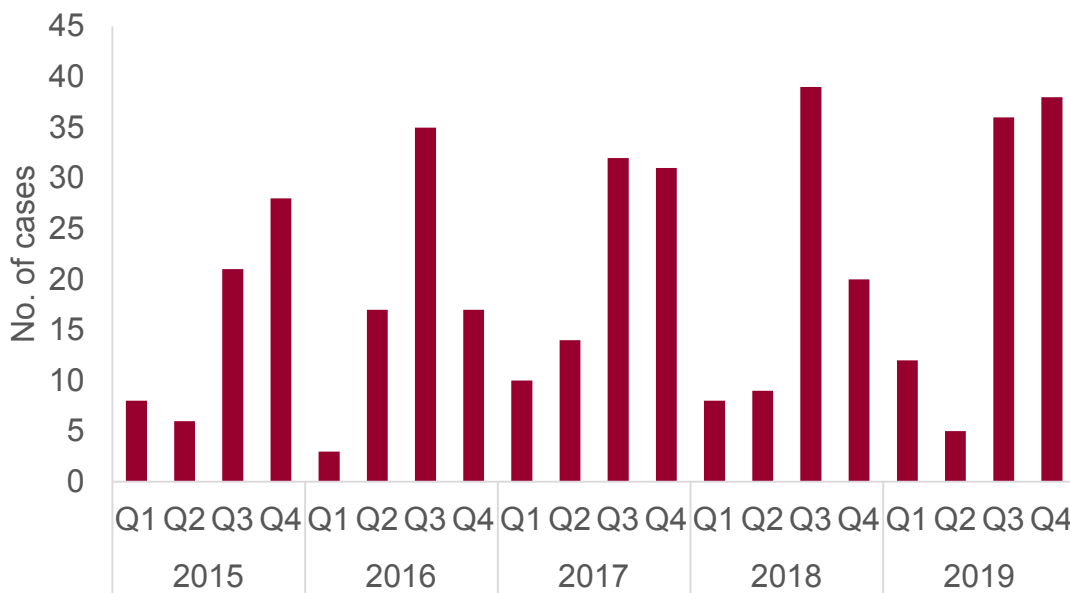
Figure 1. Laboratory confirmed cases of Hepatitis E, by quarter (2015 to 2019)



Leptospirosis (Data from the National Leptospirosis Service)

There were 38 confirmed cases of leptospirosis reported in the fourth quarter of 2019, bringing the total for 2019 to 91 cases, compared to the 72 cases reported in 2018. Figure 2 shows the number of cases reported by quarter for the last 5 years (2015 to 2019).

Figure 2. Laboratory confirmed cases of Leptospirosis, by quarter (2015 to 2019)



In the fourth quarter of 2019, the majority (n=34; 89%) of cases were male (aged 19 to 81 years) and 4 (11%) cases were female (aged 31 to 73 years). Cases were distributed across the 9 English regions and Wales.

Annually, the number of cases reporting recent travel abroad has ranged from 38% to 59% between 2015 and 2019, with the peak occurring in the third quarter of each year. In the fourth quarter of 2019, 13 (34%) of the cases reported recent travel abroad, with 10 (77%) of these 13 cases reporting travel to Asia, 1 to the Caribbean, 1 to Central America and 1 did not specify a destination. Of the travel related cases, 2 cases reported freshwater contact via kayaking, and 1 case via swimming.

Of the 25 cases that did not report travel abroad, 6 cases had water exposure, of which 4 were kayakers and 1 of these also had an animal exposure to rats. There were 7 other cases who had animal exposures, of which 3 were occupational: 1 case had contact with cows on a farm, 1 case worked with rats, and 1 case was exposed to rats that were spotted at a fruit and vegetable wholesaler. Three other cases were also exposed to rats, including 1 case that had a rat infestation at home,

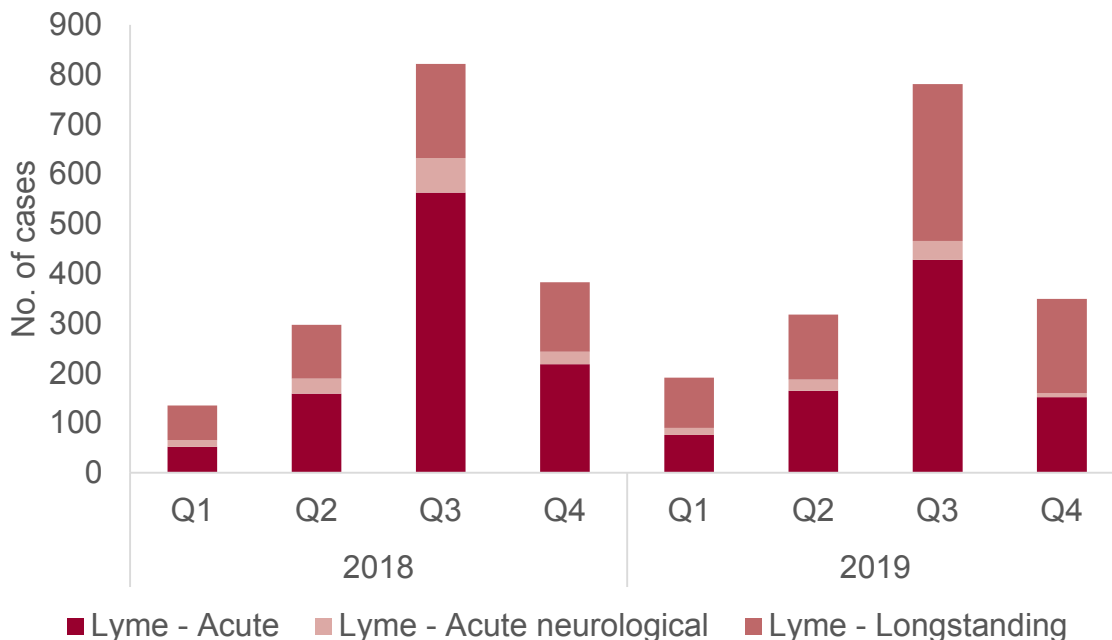
and 2 cases that did not specify the type of rat contact. One case did not describe the type of animal exposure.

The remaining 12 cases (32%) in the fourth quarter reported no exposures; 6 cases were located across the South East (of which 3 were in coastal towns), and the other cases were in London (n=1), South West (n=1), Wales (n=1), West Midlands (n=1), North East (n=1) and North West (n=1).

Lyme disease (Data from the Rare and Imported Pathogens Laboratory, Porton)

The total number confirmed Lyme disease cases were similar in 2018 (1,641 cases) and 2019 (1,639 cases), however, the proportion of acute cases was lower in 2019 (55%) compared to 2018 (69%). As shown in Figure 3, the number of cases peaked during the summer months (third quarter), which corresponds to exposures during 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 (2018 to 2019)



A total of 349 cases of laboratory confirmed Lyme disease were reported during the fourth quarter of 2019, which is lower than the 387 reported for the fourth quarter of 2018. Of these cases, 160 were acute (including 8 with neurological Lyme disease) and 189 were longstanding. In the fourth quarter of 2019, 81 (51%) of the acute cases were male (aged 1 to 81 years, median age 53) and 79 (49%) were female (aged 8 to 78 years, median age 43). Table 3 shows the age group and gender distribution.

Table 3. Laboratory confirmed acute cases of Lyme disease, by age and sex (Q4 weeks 40 to 52, 2019)

Age Group	Male	Female	Total
0-14	9	6	15
15-24	1	8	9
25-34	10	13	23
35-44	7	14	21
45-54	20	16	36
55-64	12	11	23
65-74	17	7	24
75+	5	3	8
Unknown	0	1	1
Total	81	79	160

Table 4 shows the distribution by region for all four quarters of 2019, including updates to quarter 1 to 3 figures from cases uploaded to the laboratory reporting system after the quarterly data extracts.

The regions with the most reported cases in the fourth quarter were the South East (n=48), South West (n=41) and London (n=22), which had the most reported cases in the other three quarters as well. Five of the acute cases (3%) reported foreign travel; 4 of these cases reported travel to Europe and 1 case reported travel to North America.

Table 4. Laboratory confirmed acute cases of Lyme disease, by region (Q1 to Q4 weeks 1 to 52, 2019)

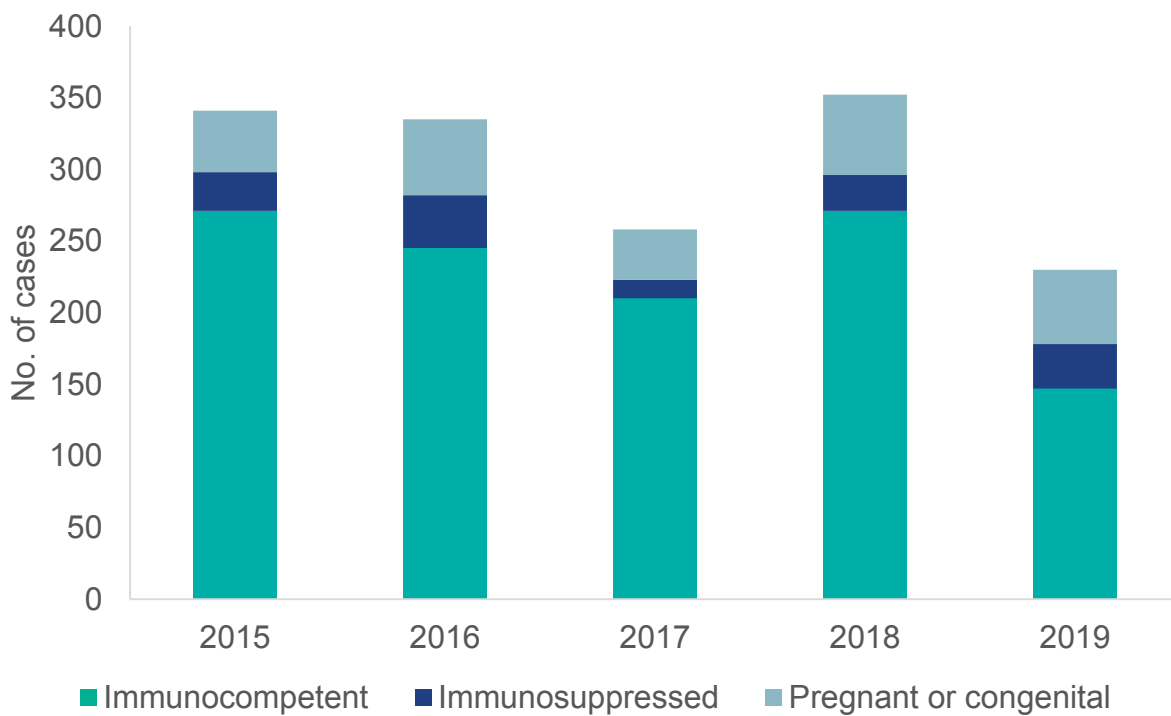
PHE Centre	Q1	Q2	Q3	Q4	Total
East Midlands	3	2	10	3	18
East of England	10	7	25	13	55
London	20	41	105	22	188
North East	2	5	7	1	15
North West	13	20	36	16	85
South East	17	50	142	48	257
South West	16	39	106	41	202
Wales	2	5	13	5	25
West Midlands	4	6	6	4	20
Yorkshire and Humber	3	12	16	7	38
Total	90	187	466	160	903

Note. Specimens sent for Lyme disease referral testing should be accompanied by a completed referral form: <https://www.gov.uk/lyme-borreliosis-service>

Toxoplasmosis

The total number confirmed toxoplasmosis cases in 2019 (230 cases) was the lowest number reported in the last 5 years by the Toxoplasma Reference Unit (TRU). The reason for the reduced number of cases in the past year remains unknown, however, the proportion of immunocompetent cases has reduced compared to pregnant, congenital and other immunosuppressed cases (Figure 4). Looking at the general demographic data of cases reported in 2019, there have been no changes in the proportion of cases by age or region; however, the proportion of male cases reduced to 35% in 2019 compared to an average of 41% for the preceding 4 years. Further investigation is required to explore possible explanations for the reduction of toxoplasmosis cases.

Figure 4. Laboratory confirmed cases of toxoplasmosis by clinical category, 2015 to 2019



Other zoonotic organisms reported in Q4 2019 (provisional data)

Thirty-three cases of ***Capnocytophaga spp.*** were reported in the fourth quarter of 2019, bringing the annual total to 116 in 2019. Of the 33 cases, 22 were speciated to *C. canimorsus*.

Five cases of ***Erysipelothrix rhusiopathiae*** were reported, accounting for 38% of the annual total of 13 cases in 2019.

Five toxigenic ***Corynebacterium ulcerans*** cases were reported in Quarter 4 of 2019. All the cases had contact with companion dogs, which were suspected to be the source of infection. In one situation linked to 3 cases, a dog from the household was found to be positive for toxigenic *C. ulcerans* on laboratory testing. This brings the total number of toxigenic *C. ulcerans* infections in 2019 to 10 cases.

One **hantavirus** positive case was reported in Quarter 4 of 2019, bringing the annual total to 2 cases.

One case of rat bite fever (***Streptobacillus moniliformis***) was reported in the fourth quarter, bringing the annual total to 2 cases.

One case of **monkeypox** was diagnosed and reported from the South West of England in an individual who had travelled from Nigeria. Further information and guidance on monkeypox is available at <https://www.gov.uk/guidance/monkeypox>.

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Health Protection Report is a national public health bulletin for England and Wales, published by Public Health England. It is PHE's principal channel for the dissemination of laboratory data relating to pathogens and infections/ communicable diseases of public health significance and of reports on outbreaks, incidents and ongoing investigations.

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