Public Health England

Health Protection Report
weekly report

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Cyclospora outbreak related to travel to Mexico: an update

The cyclospora outbreak previously reported in the HPR on 5 August [1] is ongoing. As of 12 August 2016, 265 confirmed and probable cases of the infection have been reported in the United Kingdom since 1 June 2016. Travel to Mexico has been reported by 193 (73%) cases (87 in England, 94 in Scotland and 12 in the rest of the UK). Travel history is still pending for the remaining cases.

Cases have stayed at 24 different hotels and resorts in Mexico, but predominantly on the Riviera Maya coast of Mexico between Cancun and Tulum. Females represent 54% of all cases and the range of ages affected is 12-76 years (although most cases are adults). UK public health authorities have shared information with the Mexican authorities and the travel industry to support ongoing investigations in Mexico.

Further cases may be detected during the summer holiday period; it is recommended that cyclospora is considered as a possible cause of gastrointestinal infection in patients returning from Mexico. Cases should be reported to the local health protection team and a revised surveillance questionnaire is available to collect information on travel history and potential exposures.

Positive samples should be referred to the appropriate reference laboratory for confirmation: National Parasitology Reference Laboratory, Hospital for Tropical Diseases in London (England), the Scottish Parasite Diagnostic and Reference Laboratory in Glasgow (Scotland) or the Cryptosporidium Reference Unit in Swansea (Wales).

Health advice for travellers to Mexico, including advice on food and water hygiene, can be found on the NaTHNaC website.

Further information on cyclospora can be found on PHE's Cyclospora: Clinical and Travel Guidance webpage. A Cyclospora Advice for Travellers infographic is also now available.

Reference

1. Cyclospora outbreak related to travel to Mexico, *HPR* 10(25).

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Infection report

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Zoonoses

Common animal associated infections quarterly report (England and Wales): second quarter 2016

This quarterly report, produced by the Emerging Infections and Zoonoses Section at Public Health England Centre for Infectious Disease Surveillance and Control, and the Health Protection Division of Public Health Wales, summarises confirmed cases of zoonoses reported in England and Wales between April and June 2016 (second quarter; weeks 14-26).

Animal associated infections in England and Wales: laboratory reports to SGSS† (unless otherwise specified) by specimen date, Q2 (weeks 14-26/16)

Disease (Organism)	Reports for weeks 01-13		Reports for weeks 14-26		Total for weeks 01-26	
	2016*	2015	2016*	2015	2016*	2015
Anthrax (*Bacillus anthracis*)	–	–	–	–	–	–
Brucellosis *(Brucella spp.)*	2	1	5	5	7	6
Hepatitis E	245	235	275	237	520	472
Hydatid (*Echinococcus granulosus*)	10	5	6	2	16	7
Leptospirosis *(Leptospira spp*.)	3	8	16	6	19	14
Lyme borreliosis (*Borrelia burgdorferi*) *All cases* *Acute infections*	 111 61	 98 37	 159 117	 146 75	 270 178	 244 112
Pasteurellosis *(Pasteurella spp.)*	110	139	166	147	276	286
Psittacosis (*Chlamydophila psittaci)*	4	4	6	11	10	15
Q-fever *(Coxiella burnetii)*	6	5	11	3	17	8
Toxoplasmosis # *(Toxoplasma gondii)*	63	88	96	86	159	174

† Second Generation Surveillance System has now replaced LabBase

* Provisional data

Based on date specimen received. N/A=Not Available

Anthrax

There were no cases reported in the second quarter of 2016.

Brucellosis (data from the Brucella Reference Laboratories)

There were five cases of *Brucella* infection reported in the second quarter of 2016, the same number as in the second quarter of 2015. All were identified by the Reference Laboratory as *Brucella melitensis*; one initially typed as *Brucella suis* has been reported out as an atypical *B. melitensis*.

The cases occurred in two females and three males ranging in age from 21 to 68 years. All are reported to have acquired their infections overseas; one female who was admitted to hospital with fever and rigors on return to the UK had travelled to join family in Iraq. She reported consumption of unpasteurised milk whilst in Kubala where there is a current outbreak of brucellosis.

Hepatitis E (data from Public Health Laboratory Birmingham, and Blood Borne Virus Unit Colindale)

Please note that we have recently undertaken a five-year look-back and data-cleaning exercise to ensure that all reference laboratory confirmed cases, including any late-reported cases, are included in the final dataset. The data presented in this report may therefore not match previous HPR reports.

There were 275 cases of hepatitis E in the second quarter of 2016 compared to 237 in the same quarter of 2015. One hundred and eighty-three cases (66%) were male (aged 18-88 years, median 59) and 83 (30%) were female (aged 24-90 years, median 57). The genders of the remaining nine cases were not reported.

Laboratory confirmed cases of Hepatitis E infection (weeks 14-26, 2016)

Age Group	Male	Female	Unknown	Total
0-14	–	–	–	–
15-24	8	1	1	10
25-44	35	21	5	61
45-64	72	37	3	112
>64	68	23	–	91
Unknown	–	1	–	1
Total	**183**	**83**	**9**	**275**

The persisting observation of the predominance of older men remains unexplained. Cases were reported from all regions. The majority of cases (n=202 (73%)) had no apparent travel history.

There is a consistent increasing trend in the number of reference laboratory reported hepatitis E cases with a year-on-year increase since 2010 [1].

Hydatid disease (data from the Parasitology Reference Laboratory)

There were six cases of hydatid disease reported in the second quarter of 2016, compared with two cases in the second quarter of 2015. Three of the cases were female and 3 were male, with ages ranging from 25 to 81 years. All the infections are reported to have been acquired overseas with one case previously resident in Slovakia. Four cases were reported with hydatid liver cysts. One case had been first diagnosed 22 years previously.

Leptospirosis (data from the Leptospira Reference Unit)

There were 16 cases of confirmed leptospirosis reported in the second quarter of 2016, compared with six in the same quarter of 2015. Fifteen of the cases were male (aged 9-71 years, median=34), and one adult female was reported. The region reporting the highest number of cases was the South East (n=7).

Two cases reported exposure to rats (including one with a rat bite), and five reported exposure to water. Ten cases had travelled abroad, to Thailand (n=3), Columbia (n=2), Belgium (n=1), Ecuador (n=1), France (n=1), Jamaica (n=1), and Thailand/Cambodia/Vietnam (n=1).

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

A total of 159 cases of laboratory confirmed Lyme disease was reported during the second quarter of 2016, compared with 146 during the second quarter of 2015. Of these cases, 117 were acute (including 17 with neuroborreliosis) and 42 were longstanding.

Of the acute cases, 59 were male (aged 2-77 years, median 43.5) and 56 were female (aged 4-78 years, median 45) (the remaining four cases had no gender specified).

Fourteen (12.1%) of the acute cases reported foreign travel: 12 to Europe, one to the Middle East, and one case had an unspecified travel history. Forty four cases reported an insect bite, of whom 37 (84.1%) specified a tick bite. Fifteen cases reported erythema migrans as a presenting symptom. One case was a possible reinfection.

Laboratory confirmed cases of Lyme disease (weeks 14-26, 2016): age group by sex; region

Age Group	Male	Female	Unknown	Total
0-14	11	8	1	20
15-24	4	3	1	8
25-34	5	12	–	17
35-44	9	4	–	13
45-54	8	8	–	16
55-64	7	11	2	20
65-74	9	7	–	16
75+	5	2	–	7
Total	**58**	**55**	**4**	**117**

Region	Cases
East Midlands	6
East of England	10
London	26
North East	1
North West	9
South East	35
South West	13
Wales	7
West Midlands	8
Yorkshire & Humber	2
Total	**117**

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

Pasteurellosis

There were 166 confirmed cases of pasteurellosis reported in the second quarter of 2016. This compares with 147 reported in the same quarter of 2015. The following species were reported: *Pasteurella multocida* (118 cases), *P. canis* (10 cases), *P. pneumotropica* (3 cases), *Pasteurella* other named (6 cases) and *Pasteurella* sp. (29 cases).

One hundred and one (60.8%) of the cases were female (aged 3-94 years, median 65) and 65 were male (aged 18-93 years, median 55). The South West of England reported the most cases (n=35). Six of the cases were associated with dog bites, 16 with cat bites and two with cat scratches.

A 51 year old woman from London and an 80 year old woman from the South West were reported to have died.

Laboratory confirmed cases of pasteurellosis (weeks 14-26, 2016)

Age group	Male	Female
0-14	0	2
15-29	3	3
30-39	8	7
40-49	16	14
50-59	10	15
60-69	11	22
70-79	11	24
80+	6	14
Total	**65**	**101**

Psittacosis

Six cases of psittacosis were diagnosed in the second quarter of 2016, compared with 11 in the second quarter of 2015. Three cases were female (ages 47, 62 and 63 years), and three were male (ages 13, 56 and 57 years). Four cases were reported by the South West of England, and two by the West Midlands.

Note: Serological tests for respiratory chlamydophila infections cannot consistently distinguish psittacosis. The cases reported above have been identified by reporting laboratories as infection with *Chlamydia psittaci*.

Q fever (data from the Rare and Imported Pathogens Laboratory, Porton, and Bristol Reference Laboratory)

There were 11 cases of Q fever recorded in the second quarter of 2016, compared with three cases reported in the second quarter of 2015. Seven were male (aged 41-80 years, median 51) and four were female (aged 63-84 years, median 77). Five were reported by the South West of England, two by the South East, and one each by the East Midlands, London, the North East and the North West.

One death was reported in a 76 year old male.

Toxoplasma (Data from the Toxoplasma Reference Unit)

There were 96 cases of toxoplasmosis reported in the second quarter of 2016, compared with 86 cases in the second quarter of 2015. Eleven cases reported ocular symptoms. Sixteen cases occurred in pregnant women.

In addition, there were six unconfirmed congenital cases reported, all linked to pregnant cases in this quarter. There was one unconfirmed pregnant case linked to a congenital case reported in this quarter. (The unconfirmed case numbers are not included in figures presented in this report).

Laboratory confirmed cases of toxoplasma infection (weeks 14-26, 2016): age group by sex; age group by clinical category

Age Group	Male	Female	Unknown	Total
<0	1	–	–	1
0	2	1	1	4
1-9	–	–	–	0
10-14	1	–	–	1
15-24	8	5	–	13
25-44	21	34	1	56
45-64	8	4	–	12
>64	5	4	–	9
Total	**46**	**48**	**2**	96

Age Group	Cong-enital	Pregnant	HIV	Transplant donor	Transplant recipient	Other (immuno-competent)	Other (immune-suppressed)	Total
<0	1	–	–	–	–	–	–	1
0	2	–	–	–	–	2	–	4
1-9	–	–	–	–	–	–	–	0
10-14	–	–	–	–	–	1	–	1
15-24	–	3	1	–	–	9	–	13
25-44	–	12	2	–	1	40	1	56
45-64	–	–	2	–	2	7	1	12
>64	–	–	1	–	–	7	–	8
Total	**3**	**15**	**6**	**0**	**3**	**66**	**2**	**95***

*One case was both pregnant and a transplant recipient and is not included in the totals shown in this table.

Other zoonotic organisms

Other zoonotic infections of interest diagnosed in the second quarter of 2016 were as follows:

- Five cases of *Capnocytophaga* were reported. All of the cases were bacteraemic. Four of the cases were female (median age 68.5 years) and one was male (age 65 years). Two of the cases were reported each by the South East of England and North West of England, and one case was reported by London.
- One case of toxigenic *Corynebacterium ulcerans* was reported in a 67 year old female from the South East of England. The same organism was identified in a pet dog.
- Two cases of *Erysipelothrix rhusiopathiae* were reported in males (aged 52 and 78 years) from London and the South East of England. Both were bacteraemic.
- Two cases of *Mycobacterium marinum* in one female from the East of England (aged 11 years) and one male from the East Midlands (aged 66 years). Both were diagnosed by culture of tissue samples.

Reference

1. https://www.gov.uk/government/publications/hepatitis-e-symptoms-transmission-prevention-treatment/hepatitis-e-symptoms-transmission-treatment-and-prevention.

Infection report

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CJD/Emerging infections

Common Creutzfeldt-Jakob disease (CJD) biannual update (August 2016)

This six-monthly report provides an update on the enhanced surveillance of potential iatrogenic (healthcare-acquired) exposures to Creutzfeldt-Jakob Disease (CJD). The data is correct as of 30 June 2016. For numbers of CJD case reports, readers should consult data provided by the National CJD Research and Surveillance Unit (NCJDRSU, http://www.cjd.ed.ac.uk/data.html).

Monitoring of patients 'at increased risk' of CJD

Individuals who have been identified as ‘at increased risk’ of CJD as a consequence of their medical care are informed of their exposure and asked to follow public health precautions to avoid potentially transmitting the infection to others. They are also followed up to help determine the risks of CJD transmission to patients through different routes and to ascertain whether any people who may have been exposed to increased CJD risks go on to develop CJD.

Public Health follow up activities include clinical monitoring, General Practitioner (GP) updates, and post mortem investigations to determine whether asymptomatic individuals in these groups have been infected with the CJD agent. Some individuals also provide blood or tissue specimens for research purposes. A number of different organisations are involved in these activities: Public Health England (PHE), Health Protection Scotland (HPS), UCL Institute of Child Health/Great Ormond Street Hospital (ICH), NHS Blood and Transplant (NHSBT), National CJD Research and Surveillance Unit (NCJDRSU), National Prion Clinic (NPC), and the UK Haemophilia Centre Doctors' Organisation (UKHCDO).

The PHE CJD Section coordinates the collation of data on individuals identified as ‘at increased risk’ of CJD, and who have been informed of this. These individuals are followed up through public health monitoring and research activities by different organisations.

The PHE CJD Section currently holds data on the following groups of patients who have been identified as ‘at increased risk’ of CJD:

- recipients of blood components from donors who subsequently developed vCJD
- blood donors to individuals who later developed vCJD
- other recipients of blood components from these blood donors
- recipients of certain plasma products between 1990 and 2001 (non-bleeding disorder patients)
- certain surgical contacts of patients diagnosed with CJD
- highly transfused recipients.

Data on the following risk groups are not held by PHE, but are held by other organisations:

- bleeding disorder patients who received plasma products between 1990 and 2001 (UKHCDO)
- recipients of human derived growth hormone before 1985 (ICH)
- patients who could have received a dura mater graft before August 1992 (data not currently collected)
- individuals treated with gonadotrophin sourced from humans before 1973 (data not currently collected)
- family risk of genetic prion disease (NPC).

The data from the UKHCDO are likely to be a slight underestimate of the true number of patients with bleeding disorders who received UK-sourced clotting factors (1990 to 2001), as there was incomplete reporting of identified patients by haemophilia centres to the UKHCDO database. Notified patients are given the option of removing their details from the UKHCDO database, and are then removed from the ‘at increased risk' totals.

The data on patients who received human-derived human growth hormone held by the ICH is also a slight underestimate of the total as a small number of these patients are not included in the ICH follow-up.

Summary of all 'at increased risk' groups on which data are collected. (Data correct as of 30 June 2015)

'At increased risk' Group	Identified as 'at increased risk'	Number notified		Cases	Asymptomatic infections [a]
		All	Alive		
Recipients of blood from donors who later developed vCJD	67	27	14	3	1
Blood donors to individuals who later developed vCJD	112	108	103	0	0
Other recipients of blood components from these donors	34	32	16	0	0
Plasma product recipients (non-bleeding disorders) who received UK sourced plasma products 1990-2001	2	2	2	0	0
Certain surgical contacts of patients diagnosed with CJD	231	188	158	0	0
Highly transfused recipients	3	3	3	0	0
Total for 'at increased risk' groups where PHE holds data	**449**	**360**	**296**	**3**	**1**
Patients with bleeding disorders who received UK sourced plasma products 1990-2001[b]	4,025	3,554[c]	3,089[c]	0	1
Recipients of human derived growth hormone[b]	1,883	1,883	1,500	78	0
Total for all 'at increased risk' groups	**6,357**	**5,797**	**4,885**	**81**	**2**

a. An asymptomatic infection is when an individual does not exhibit any of the signs and symptoms of CJD in life but abnormal prion protein indicative of CJD infection has been found in tissue obtained at post mortem.

b. These are minimum figures. Central reporting for bleeding disorder patients is incomplete, and a small number of patients have opted out of the central UKHCDO database. A small number of 'at increased risk' growth hormone recipients are not included in the Institute of Child Health study. Not all of the 'at increased risk' growth hormone recipients have been notified. There is no central record of who has been informed.

c. These are the minimum number of people notified based on those patients who were seen for care after the notification exercise. It is likely that many more of the 'at increased risk' patients received their notification letter but as they were not subsequently recorded as being seen for care this cannot be confirmed.

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CJD/Emerging infections

Summary results of the third national survey of abnormal prion prevalence in archived appendix specimens

In July 2012, the Transmissible Spongiform Encephalopathies (TSE) Risk Assessment Sub-Group of the Advisory Committee on Dangerous Pathogens (the successor national advisory committee to the Spongiform Encephalopathy Advisory Committee (SEAC)), considered the results of the second unlinked anonymous national survey of the prevalence of abnormal prion protein in human appendix samples (Appendix-II [1]), and concluded that a further similar survey should be conducted on tissues from population groups considered unexposed to BSE [2]. This third national survey (Appendix-III) of appendix specimens removed at operations prior to the BSE epizootic and appendix specimens from those born in 1996 or later, by which time measures had been put in place to protect the food chain, has now been concluded. This report provides a summary of the results of the Appendix-III survey prior to publication in due course of the complete data.

The Appendix-III survey examined by immunohistochemistry (IHC) appendices removed at operation and collected from 44 hospitals throughout England. Abnormal prion accumulation was detected within the follicular dendritic cells of seven appendices out of 29,516 suitable samples examined. Indirect comparison of available data showed that none of the positive appendices could have come from the 178 known vCJD cases in the UK.

Two of the seven positive samples were from the 14,692 appendices removed at operations conducted in 1962 through 1979: both these positive samples were from the 5,865 appendices removed in 1977 through 1979. The other five positive samples were found in the 14,824 appendices from subjects born in 1996 or later and removed at operation in 2000 through 2014: all five were in the sub-group of 10,074 born in 1996 through 2000. Therefore, none of the seven positive appendices were in specimens removed before 1977 or in patients born in 2001 or later.

The planned statistical analysis found no difference between the prevalence observed in the Appendix-II survey of 493 per million (95% Confidence Interval (CI): 282 to 801 per million) and the Appendix-III prevalence in appendices removed between 1962 through 1979 of 136 per million (95%CI: 16 to 492 per million; exact p=0.08), nor with the Appendix-III prevalence in

appendices from those born in 1996 through 2000 of 337 per million (95%CI: 110 to 787 per million; exact p=0.64). Test accuracy calculations using the Appendix-III data suggest the IHC technique specificity is in the range of 99.975% to over 99.99%. Although specificity of this magnitude (99.99%) implies few false positives, if the true prevalence is very low, then the positive predictive value of the IHC technique will diminish. At the one in 7,000 prevalence observed in the Appendix-III survey of specimens removed in 1979 or earlier, the positive predictive value (PPV) will be 56%, for a specificity of 99.99% and a sensitivity of 90%, compared to a PPV of 82% at the one in 2,000 prevalence observed in the Appendix-II survey.

The Appendix-II and -III surveys were conducted by a collaboration of PHE, the Department of Neurodegenerative Diseases at the UCL Institute of Neurology, the Animal and Plant Health Agency, the National Creutzfeldt-Jakob Disease Research and Surveillance Unit, the Histopathology Department of Derriford Hospital in Plymouth, and the MRC Prion Unit.

In summary, the Appendix-III survey data have not produced a clear answer to the question of whether abnormal prions detected by IHC in the British population is limited to those exposed to the BSE epizootic, and various interpretations are possible. The survey results have been considered by the ACDP TSE Sub-Group and a position paper detailing the conclusions of the committee has been published online, simultaneously with this summary report [3].

References

1. Gill ON, Spencer Y, Richard-Loendt, A, Kelly C, Dabaghian R, Boyes L, *et al* (2013). Prevalent abnormal prion protein in human appendixes after bovine spongiform encephalopathy epizootic: large scale survey. *BMJ* **347**: f5675, http://www.bmj.com/content/347/bmj.f5675.

2. Advisory Committee on Dangerous Pathogens TSE Risk Assessment Subgroup (July 2012). Position Statement on occurrence of vCJD and prevalence of infection in the UK population. Available from: ACDP TSE subgroup minutes, agendas and papers, https://app.box.com/s/hhhhg857fjpu2bnxhv6e.

3. Advisory Committee on Dangerous Pathogens TSE Risk Assessment Subgroup (August 2016). “Appendix-III” position statement. Available from: ACDP TSE subgroup minutes, agendas and papers, https://app.box.com/s/hhhhg857fjpu2bnxhv6e.

Infection reports / Enteric

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General outbreaks of foodborne illness in humans, England and Wales: to week 30/2016

Preliminary information has been received about the following outbreaks.

PHE Centre/ Health Protect'n Team	Organism	Location of food prepared or served	Month of outbreak	Number ill	Cases positive	Suspect vehicle	Evidence
South West London	Norovirus	Event caterer	July	55	Not known	Oysters	D
Thames Valley	Campylobacter	Pub	July	15	1	Chicken liver parfait	D

D = **Descriptive epidemiological evidence**: suspicion of a food vehicle in an outbreak based on the identification of common food exposures, from the systematic evaluation of cases and their characteristics and food histories over the likely incubation period by standardised means (such as standard questionnaires) from all, or an appropriate subset of, cases.

Common gastrointestinal infections, England and Wales, laboratory reports: weeks 26-30/2016

Laboratory reports	Number of reports received					Cumulative totals		
	26/16	27/16	28/16	29/16	30/16	26-30/16	1-30/16	1-30/15
Campylobacter	1554	1427	1381	1457	1555	7374	30050	29830
Escherichia coli O157 *	101	56	39	34	17	247	478	337
Salmonella †	179	121	145	115	9	569	3353	3524
Shigella sonnei	11	9	7	8	7	42	391	501
Rotavirus	46	86	57	66	44	299	1669	3821
Norovirus	49	38	54	48	26	215	4512	4781
Cryptosporidium	73	61	84	87	84	389	2040	1447
Giardia	64	57	64	75	80	340	2021	2017

*Vero cytotoxin–producing isolates: data from PHE's Gastrointestinal Bacteria Reference Unit (GBRU).
† Data from GBRU.

Less common gastrointestinal infections, England and Wales, laboratory reports: *weeks 18-30/2016*

Laboratory reports	Total reports 18-30/2016	Cumulative total 1-30/2016	Cumulative total 1-30/2015
Astrovirus	81	206	192
Sapovirus	81	156	128
Shigella boydii	21	37	37
Shigella dysenteriae	7	15	16
Shigella flexneri	121	261	373
Plesiomonas	29	46	30
Vibrio spp.	22	45	32
Yersinia spp	11	25	17
Entamoeba histolytica	12	26	41
Blastocystis hominis	48	99	64
Dientamoeba fragilis	9	32	4

Less common gastrointestinal infections, England and Wales, laboratory reports: *weeks 5-17/2016*

Laboratory reports	Total reports 5-17/2016	Cumulative total 1-17/2016	Cumulative total 1-17/2015
Astrovirus	89	125	179
Sapovirus	53	73	92
Shigella boydii	9	17	23
Shigella dysenteriae	5	8	10
Shigella flexneri	114	130	234
Plesiomonas	13	16	18
Vibrio spp.	20	22	18
Yersinia spp	10	15	10
Entamoeba histolytica	12	13	27
Blastocystis hominis	43	39	46
Dientamoeba fragilis	21	18	2

Note: Following the introduction of a new laboratory reporting system (SGSS) in December 2014, direct comparisons with data generated by the previous system (LabBase2) may not be valid.

Salmonella infections (faecal specimens) England and Wales, reports to Public Health England (salmonella data set): March-April 2016

Details of 435 serotypes of salmonella infections recorded in March are given in the table below. In April 2016, 293 salmonella infections were recorded.

Organism	March 2016
S. Enteritidis	84
S. Typhimurium	87
S. Virchow	5
Others	259
Total salmonella (provisional data)	**435**

Note: Following the introduction of a new laboratory reporting system (SGSS) in December 2014, direct comparisons with data generated by the previous system (LabBase2) may not be valid.

Suspected and laboratory-confirmed reported norovirus outbreaks in hospitals, with regional breakdown: outbreaks occurring in weeks 26-30/2016

The hospital norovirus outbreak reporting scheme (HNORS) recorded nine outbreaks occurring between weeks 26 and 30, 2016, eight of which led to ward/bay closures or restriction to admissions. Three (33%) outbreaks were recorded as laboratory confirmed due to norovirus (see table). For the calendar year 2015 – between week 1 (week-beginning 4 January 2016) and week 30 (week beginning 25 July) – 371 outbreaks were reported. Ninety-seven per cent (359) of reported outbreaks resulted in ward/bay closures or restrictions to admissions and 78% (291) were laboratory confirmed as due to norovirus (see table).

Seasonal comparison of laboratory reports of norovirus (England and Wales)

In the current season to date† (from week 27, 2015, to week 30, 2016), there were 4512 laboratory reports of norovirus, which is 16% lower than the average number of laboratory reports for the same period in the seasons between 2011 and 2015 (5347). The number of laboratory reports in the most recent weeks will increase as further reports are received.

† The norovirus season runs from July to June (week 27 in year one to week 26 in year two) in order to capture the winter peak in one season.

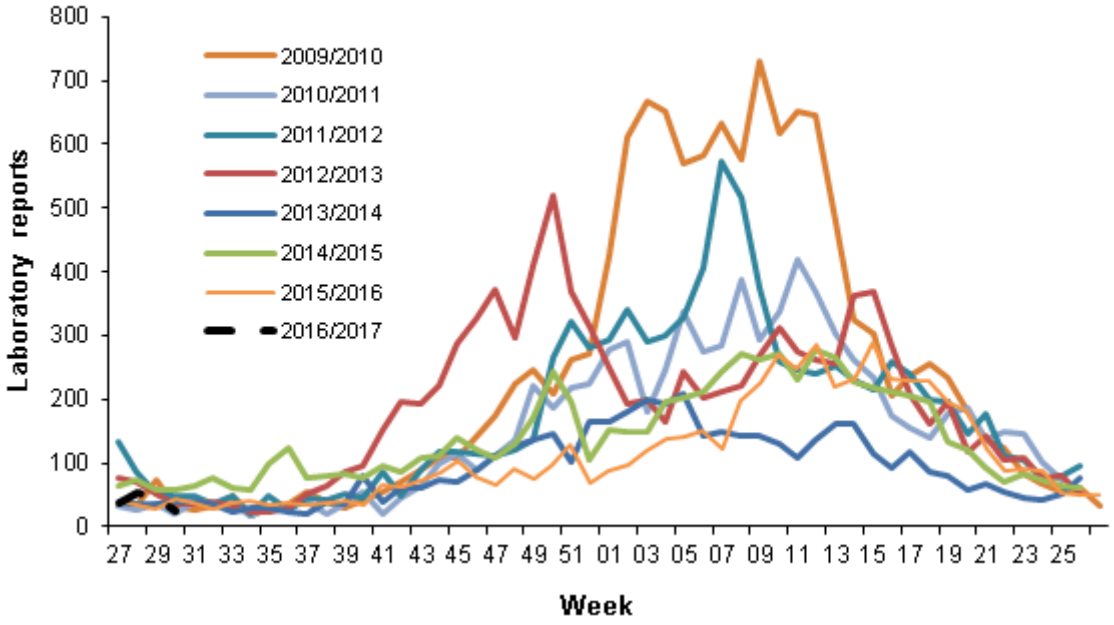
Note: A new laboratory reporting system was commissioned on 1 December 2014; as a result, direct comparisons between the earlier report (based on LabBase2) and the new system (SGSS) may not be valid.

Suspected and laboratory-confirmed reported norovirus outbreaks in hospitals, with regional breakdown: outbreaks occurring in weeks 26-30/2016

Region/ PHE Centre	Outbreaks between weeks 26-30/2016			Total outbreaks 1-30/2016		
	Outbreaks	Ward/bay closure*	Lab-confirmed	Outbreaks	Ward/bay closure*	Lab-confirmed
Avon, Gloucestershire and Wiltshire	–2	2	1	63	63	49
Bedfordshire, Hertfordshire and Northamptonshire	–	–	–	–	–	–
Cheshire and Merseyside	–	–	–	11	11	11
Cumbria and Lancashire	–	–	–	17	17	11
Devon, Cornwall and Somerset	–	–	–	25	25	19
Greater Manchester	1	1	–	14	14	8
Hampshire, Isle of Wight and Dorset	–	–	–	26	26	22
Lincolnshire, Leicestershire, Nottinghamshire and Derbyshire	–	–	–	21	20	20
London	–	–	–	1	1	–
Norfolk, Suffolk, Cambridgeshire and Essex	–	–	–	–	–	–
North East	1	1	–	62	58	50
Sussex, Surrey and Kent	1	1	–	6	5	5
Thames Valley	–	–	–	12	12	9
West Midlands	4	3	2	38	36	24
Yorkshire and the Humber	–	–	–	75	71	63
Total	9	8	3	371	359	291

* Note: not all outbreaks result in whole wards closures, some closures are restricted to bays only.

Current season's laboratory reports (to week 30, 2016) compared to previous seasons' weekly average (England and Wales)



Calendar year 2016 (to week 30) norovirus laboratory reports compared to previous years' weekly mean (2010-2015)