Public Health England

Health Protection Report
weekly report

This is a PDF consolidation of the news items and infection reports published in HPRs 10(1), 10(2) and 10(3), on 8, 15 and 22 January 2016, respectively

Volume 10 Numbers 1/2/3 Published on: 8, 15 and 22 January 2016

Current News

Infection Reports

Respiratory *

Enteric **

* Published in *HPR* **9**(1) on 8/1/2016.

** Published in *HPR* **9**(2) on 15/1/2016.

*** Published in *HPR* **9**(3) on 22/1/2016.

Zika virus in the Americas and increase in microcephaly: an update

The outbreak of Zika virus (ZIKV) in the Americas continues. From February 2014 to 17 January 2016, 18 countries and territories in the Americas have confirmed autochthonous circulation of ZIKV: Brazil, Barbados, Colombia, Ecuador, El Salvador, French Guiana, Guatemala, Guyana, Haiti, Honduras, Martinique, Mexico, Panama, Paraguay, Puerto Rico, Saint Martin, Suriname, and Venezuela [1]. The majority (14) of these countries reported their first autochthonous case since November 2015. It is likely that further cases will be reported in other countries in the Americas in coming weeks and months.

The potential association between ZIKV infection and neurological illness, specifically Guillain-Barré Syndrome (GBS), continues to be investigated. To date, three countries in the Americas (Brazil, El Salvador, and Venezuela) have reported cases of GBS in individuals with a history of symptoms consistent with ZIKV infection. Similar situations are being monitored in other countries of the Americas [1].

Brazil continues to report an unprecedented increase in cases of babies born with microcephaly. As at 16 January 2016, 3,893 cases of suspected microcephaly including 49 deaths had been reported across 21 states in Brazil [2] compared to an average of 163 cases reported from 2010 to 2014 [1]. To date, no other countries in the Americas with a currently active ZIKV outbreak have officially reported cases of microcephaly potentially associated with ZIKV.

There is growing evidence to support the hypothesis that this increase in cases of microcephaly is associated with the ongoing ZIKV outbreak [1] but investigations to establish whether there is a causal relationship continue. The virus has recently been demonstrated to cross the placental barrier and has been detected in blood and tissues of at least seven affected foetus/infants; the mothers of six of these cases presented with symptoms consistent with ZIKV during pregnancy [1].

As a precaution, the National Travel Health Network and Centre (NaTHNaC) has reviewed and updated its advice for travellers to the Americas. There is currently no vaccine available to prevent ZIKV and prevention relies on avoiding mosquito bites [3]. While standard mosquito

protection advice should be reiterated to all travellers to the Americas [3], pregnant women (in any trimester) are advised to consider avoiding travel to an area where an active ZIKV outbreak is reported [4]. Similar advice has been issued by other countries, including the United States and Canada.

Health professionals should consider ZIKV among the differential diagnoses of patients with fever returning from the Americas. If a case of ZIKV is suspected, appropriate samples for testing (together with a full travel and clinical history with relevant dates) should be sent as early as possible to the PHE Rare and Imported Pathogens Laboratory.

The Imported Fever Service (tel: 0844 7788990) is available to local infectious disease physicians or microbiologists should specialist advice be needed.

Health professionals should also be vigilant for any increase of neurological and autoimmune syndromes (in adults and children) – or congenital malformations in new born infants (where the cause is not otherwise evident) – in patients with a history of travel to areas where ZIKV transmission is known to occur.

Further information is available on the PHE Zika virus health protection guidance webpage.

References

1. Pan American Health Organization (17 January 2016). Epidemiological Update: Neurological syndrome, congenital malformations, and Zika virus infection.
2. Ministry of Health, Brazil (20 January 2016). Informe Epidemiológico nº 09/2016 – Semana Epidemiológica 02/2016 Monitoramento dos casos de microcefalia no Brasil (in Portuguese).
3. National Travel Health Network and Centre. Insect and tick bite avoidance factsheet.
4. National Travel Health Network and Centre. Zika virus: update and advice for pregnant women.

Cryptosporidiosis outbreak in England and Scotland (November 2015)

Cryptosporidiosis can vary quite substantially in annual occurrence and causation. Between 2005 and 2014 cases recorded annually ranged from 3099 to 6013 (mean 4147) with many outbreaks linked to drinking water, swimming pools, person-to-person spread, animal contact and food.

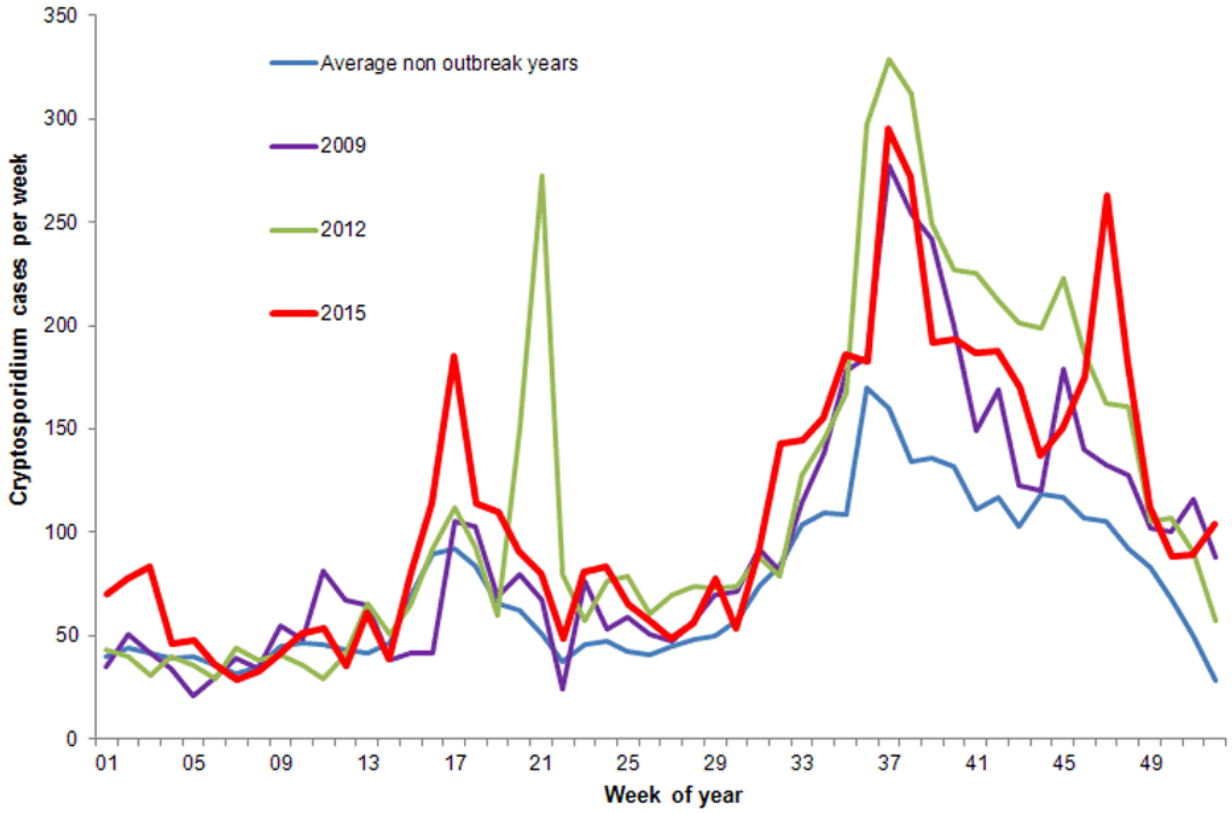
Cases in 2015 were much increased over most previous years (the exceptions being 2009 and 2012). In September 2015 there was an increase in cryptosporidiosis across England, Wales and Scotland that peaked in week 38 (see figure) and was investigated using specialist testing and descriptive epidemiology, and a hypothesis-generating trawling questionnaire. Typing at the Cryptosporidium Reference Unit (CRU) and Scottish Parasite Diagnostic and Reference Laboratory (SPDRL) showed the predominant species to be *Cryptosporidium hominis* GP60 subtype IbA10G2 and that infections were in both children and adults. No common activity or exposure was identified in patients who were interviewed. The increase was coincident with a rise in cases linked to travel to Spain, but there was no analytical evidence that this was the cause of the increase, following which cases remained higher than in previous years.

In November 2015 cryptosporidiosis cases again began to increase across England (see figure), Wales and Scotland; peaked in week 47; and cases were again investigated using descriptive epidemiology and specialist testing. The CRU and SPDRL identified that the outbreak was caused by *Cryptosporidium parvum* GP60 subtype IIdA24G1 and was predominantly in adults. A hypothesis-generating trawling questionnaire identified a number of potential risk factors and these are being used to conduct a national case-control study in England, Wales and Scotland that is trying to identify the source, vehicle and route of transmission in this outbreak.

Cryptosporidium is a particular problem because of the resistance of its oocysts to chlorine. Outbreaks linked to drinking water, which were regular in the 1990s, have declined since the turn of the century as a result of improvements in mains water treatment and are now uncommon in the UK. A large outbreak in May 2012 was traced to bagged salad [1], suggesting that nationally distributed foods may be a less well recognised source of infection. Swimming pool outbreaks remain an important and regular occurrence, particularly in the second half of the year. Travel-related disease can also be important, but can be rather difficult to investigate.

The *C. parvum* outbreak is over, but cases of *C. hominis* remain above what has been normally seen in previous years.

Cryptosporidium cases in England in 2015 compared to cases over the previous 10 years based on the specimen date



Reference

1. McKerr C, Adak GK, Nichols G, Gorton R, Chalmers RM, Kafatos G, *et al* (2015). An outbreak of *Cryptosporidium parvum* across England and Scotland associated with consumption of fresh pre-cut salad leaves, May 2012. PLOSOne **10**(5): e0125955.

C. difficile ribotyping network biennial report for 2013 to 2015

PHE has published a biennial report covering the activities of its *Clostridium difficile* Ribotyping Network (CDRN) that provides a molecular epidemiology service for the analysis of *C. difficile* infection (CDI) cases, including clusters and outbreaks associated with healthcare facilities, for England.

The report presents detailed data covering: the proportion of mandatory CDI reported cases ribotyped; reasons for sample submission; CDI recovery rates; changes in ribotype prevalences; results of enhanced fingerprinting; antibiotics associated with cases; and antibiotic susceptibility summary data.

The CDRN service now comprises eight participating regional laboratories and a reference laboratory in Leeds. Since its introduction in 2008, reports of *C. difficile* in England have fallen markedly, as has CDI-associated mortality, following peaks in 2007. Although it is not possible to determine which interventions have been particularly responsible for the decreased incidence, it is plausible that better access to the ribotyping and enhanced fingerprinting results have facilitated better local investigation and control of CDI cases, the report notes. Most notable has been the marked decline since 2008 in prevalence of the epidemic ribotype 027 strain, which is associated with poor outcomes.

Timely data provided by CDRN has enabled healthcare institutions to respond to changes in CDI presentation and/or incidence. Hospitals are encouraged to consider submitting samples from confirmed cases to CDRN, according to local clinical need, so as to optimise the control and prevention of CDI. The service aims to provide results within two weeks of sample receipt.

Reference

1. CDRN report webpage.
2. See: "Leeds CDRN study on use of genetic fingerprinting in CDI case-cluster and outbreak investigation," *HPR* **6**(1).
3. CDRN service webpages.

Seasonal flu increasing in the UK

Public Health England surveillance systems in England have indicated recent increases in influenza activity, which suggest that influenza is now circulating in the population. Influenza A(H1N1)pdm09 is currently the dominant circulating strain, with increases in positivity in sentinel swabbing in primary care and in influenza-related hospitalisations and admissions to intensive care. More details on these findings are provided in the latest weekly national influenza report published by PHE on 7 January 2016 [1].

Following these findings, the Chief Medical Officer has written to health professionals in England to advise that neuraminidase inhibitors may be prescribed in primary care according to NICE guidance [2].

References

1. The PHE Weekly National Influenza Report, 7 January 2016. See Weekly national flu reports.
2. Department of Health, 7 January, 2016. "Influenza season 2015/16 – use of antiviral medicines", letter from the Chief Medical Officer stating that the use of antiviral drugs for the prevention or treatment of influenza was recommended.

New point prevalence survey of HCAIs in preparation

PHE's HCAI and AMR department has begun preparing a new point prevalence survey (PPS) on healthcare-associated Infections and antimicrobial use in England, to be carried out this autumn.

The last PPS, in 2011 [1], identified the following key facts that have informed PHE priorities in this area:

- the prevalence of HCAIs was 6.4% in 2011, compared to 8.2% in 2006
- the most frequent HCAIs detected were respiratory tract, urinary tract and surgical site infections
- the prevalence of antimicrobial use (AMU) was 34.7% in 2011, the first time it was measured nationally, which is being used as a baseline against which future useage will be compared
- the prevalence of HCAIs, AMU and device use was highest in intensive care units, which reflects in part the complexity and vulnerability of patients in this setting.

The new PPS will provide an opportunity to review the burden of HCAI and AMU in acute hospitals and continue to identify priority areas for the future.

Over 100 hospitals participated in the 2011 survey and PHE is hoping to achieve similar high levels of engagement this year. Formal letters of engagement will be sent to Directors of Infection Prevention and Control of Acute Trusts in February 2016.

Reference

1. PHE (May 2012). English national point prevalence survey on healthcare-associated infections and antimicrobial use: 2011.

WHO focusses on control of EVD re-emergence risk in West Africa

On 29 December 2015, human-to-human transmission of Ebola virus disease (EVD) directly associated with the initial outbreak in West Africa which began two years previously was declared halted [1]. Since then, the three countries predominantly affected by the outbreak (Guinea, Liberia and Sierra Leone) have implemented enhanced surveillance to detect further cases that may arise from a missed chain of active transmission, a new spillover event from an animal reservoir, importation from an area of active transmission, or re-emergence of virus that has persisted in a survivor. To date, 10 small outbreaks or flare-ups of EVD not directly associated with the original outbreak have been identified, likely caused by the ability of Ebola virus to persist in survivors even after recovery [2]. The risk of such flare-ups of disease is expected to continue in West Africa over the coming months.

On 15 January 2016, a new case of EVD was reported in Tonkolili, northern Sierra Leone, following a positive result from a post mortem swab [3]. Investigations continue into the source of infection for this case; approximately 150 contacts have been identified, around 50 of which are deemed high risk due to the close nature of the contact with the initial case while she was unwell [3]. To date, one high risk contact has tested positive for EVD and is currently being treated at an Ebola Treatment Centre in Freetown [4]. The situation in West Africa will continue to be monitored closely.

The risk to the general population in the UK from EVD remains negligible [5].

References

1. WHO (25 December 2015). End of Ebola transmission in Guinea.

2. WHO (14 December 2015). Latest Ebola outbreak over in Liberia; West Africa is at zero, but new flare-ups are likely to occur.

3. WHO (20 January 2016). Ebola situation report.

4. Sierra Leone Ministry of Health (20 January 2016). Press statement on second case of Ebola in Sierra Leone.

5. PHE (20 November 2015). Ebola virus disease: risk assessment of outbreak in West Africa.

Legionnaires' disease in Europe, 2014

The latest annual report from ECDC's European Legionnaires Disease Surveillance Network (ELDSNet) has noted both the continuing increase in the overall notification rate for the infection across EU/EEA countries and also a marked increase in the number of travel-related clusters that are identified as a result of the international reporting co-ordinated by ELDSNet in Stockholm [1].

Six thousand nine hundred and forty one Legionnaires Disease cases were reported via ELDSNet by member states in the 2014 annual data collection, the highest number ever recorded, according to the annual report. This is in line with the increasing trend observed over the 2009–2014 period. A large community outbreak that occurred near Lisbon, Portugal, in 2014, contributed substantially to the high number of reported cases.

The overall notification rate for the infection across the EU/EEA in 2014 was 13.5 cases per million population, the highest ever observed. The UK had a notification rate of 5.8 cases per million population. France, Germany, Italy, Portugal, and Spain accounted for 74% of all cases. The main characteristics of cases reported were very similar to previous years: most cases were sporadic and community acquired, and the disease affected mostly older males.

In 2014, 953 travel-associated cases of Legionnaires Disease were reported, 21% more than in 2013. A total of 132 travel-associated clusters were identified, compared with 110 in 2013 and 99 in 2012. The report notes that more than half of these travel-related clusters would probably not have been detected without the international collaboration that underpins the ELDSNet surveillance scheme.

Reference

1. ECDC (12 January 2016). Legionnaires' disease in Europe, 2014.

Royal Society of Medicine conference on vaccine preventable diseases

The paediatrics and child health section of the Royal Society of Medicine, in collaboration with PHE's Immunisation Department and St George's University of London (SGUL), is hosting a one-day conference, on 15 March 2016, on vaccine-preventable diseases in children.

The programme provides a forum for leading scientists in the field to update paediatricians, microbiologists, immunologists, epidemiologists and other public health specialists (and trainees across these specialties) on the national childhood immunisation programme and the current epidemiology of the infectious diseases it aims to prevent. Other topics to be covered include:

- the role of PHE's National Infection Service, and its health protection teams, in supporting clinicians who manage children with suspected vaccine-preventable infections
- the clinical management of confirmed vaccine failures
- new childhood vaccines on the horizon

The programme includes a Q&A session during which questions related to vaccine-preventable childhood diseases will be answered by an expert panel.

Further information

Hot topics in vaccine preventable diseases: the A-Z guide to epidemiology, surveillance and management of vaccine-preventable infections, London, 15 March, 2016. Contact for further information: Dr Shamez Ladhani shamez.ladhani@phe.gov.uk.

PHE applied epidemiology scientific conference

PHE's Applied Epidemiology Scientific Conference 2016 will be held on Tuesday 22 and Wednesday 23 March 2016, in the Ramphal Building at the University of Warwick, focusing on the application of epidemiological and other scientific methods to protect and improve public health.

The purpose of this annual event is to support high quality and innovative science through the sharing of good practice including the work of the NIHR Health Protection Research Units. The conference comprises a mix of plenary sessions, posters and parallel sessions.

Further information

PHE Applied Epidemiology Scientific Conference 2016: application of scientific methods to improve and protect public health, 22-23 March, 2016.

Public Health England

Health Protection Report
weekly report

Infection reports

Volume 10 Numbers 1 and 2 Published on: 8 and 15 January 2016

Infection Reports

Respiratory

- **Laboratory reports of respiratory infections made to PHE from PHE and NHS laboratories in England and Wales: weeks 49 to 53, 2015**

Enteric

- **General outbreaks of foodborne illness in humans, England and Wales: weeks 49-53/2015**
- **Common gastrointestinal infections, England and Wales, laboratory reports: weeks 49-53/2015**
- **Salmonella infections (faecal specimens) England and Wales, reports to Public Health England (salmonella data set): November 2015**
- **Suspected and laboratory-confirmed reported norovirus outbreaks in hospitals, with regional breakdown: outbreaks occurring in weeks 49-53/2015**

Infection reports / Respiratory

Volume 10 Number 1 Published on: 8 January 2016

Laboratory reports of respiratory infections made to PHE from PHE and NHS laboratories in England and Wales: weeks 49 to 53, 2015

Data are recorded by week of report, but include only specimens taken in the last eight weeks (i.e. recent specimens)

Table 1. Reports of influenza infection made to CIDSC, by week of report

Week	Week 49	Week 50	Week 51	Week 52	Week 53	Total
Week ending	**6/12/15**	**13/12/15**	**20/12/15**	**27/12/15**	**3/1/16**	
Influenza A	**37**	**25**	**75**	**94**	**119**	**350**
Isolation	1	4	6	6	17	34
DIF *	6	–	8	12	19	45
PCR	27	19	56	59	79	240
Other †	3	2	5	17	4	31
Influenza B	**15**	**9**	**10**	**10**	**14**	**58**
Isolation	–	1	1	–	–	2
DIF *	3	–	3	2	–	8
PCR	12	8	6	6	14	46
Other †	–	–	–	2	–	2

* DIF = Direct Immunofluorescence. † Other = "Antibody detection - single high titre" or "Method not specified".

Table 2. Respiratory viral detections by any method (culture, direct immunofluorescence, PCR, four-fold rise in paired sera, single high serology titre, genomic, electron microscopy, other method, other method unknown), by week of report

Week	Week 49	Week 50	Week 51	Week 52	Week 53	Total
Week ending	**6/12/15**	**13/12/15**	**20/12/15**	**27/12/15**	**3/1/16**	
Adenovirus *	93	78	87	81	79	418
Coronavirus	6	20	21	20	30	97
Parainfluenza†	130	89	124	70	86	499
Rhinovirus	310	289	330	214	293	1436
RSV	1046	961	972	656	633	4268

* Respiratory samples only. † Includes parainfluenza types 1, 2, 3, 4 and untyped.

Table 3. Respiratory viral detections by age group: weeks 49-53/2015

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Un-known	Total
Adenovirus *	109	118	38	84	52	17	–	418
Coronavirus	21	13	11	15	18	19	–	97
Influenza A	49	86	34	191	140	65	–	565
Influenza B	2	9	11	23	6	9	–	60
Parainfluenza †	117	100	57	67	73	85	–	499
Respiratory syncytial virus	2865	603	122	188	236	250	4	4268
Rhinovirus	610	257	89	166	156	158	–	1436

***** Respiratory samples only.

† Includes parainfluenza types 1, 2, 3, 4 and untyped.

Table 4 Laboratory reports of infections associated with atypical pneumonia, by week of report

Week	Week 49	Week 50	Week 51	Week 52	Week 53	Total
Week ending	**6/12/15**	**13/12/15**	**20/12/15**	**27/12/15**	**3/1/16**	
Coxiella burnettii	–	–	–	–	–	0
Respiratory *Chlamydia* sp. *	3	–	1	1	–	5
Mycoplasma pneumoniae	26	25	15	14	12	92
Legionella sp.	7	8	10	10	1	36

***** Includes *Chlamydia psittaci*, *Chlamydia pneumoniae*, and *Chlamydia* sp detected from blood, serum, and respiratory specimens.

Table 5 Reports of Legionnaires Disease cases in England and Wales, by week of report

Week	Week 49	Week 50	Week 51	Week 52	Week 53	Total
Week ending	**6/12/15**	**13/12/15**	**20/12/15**	**27/12/15**	**3/1/16**	
Nosocomial	–	1	–	–	–	1
Community	6	3	1	3	–	13
Travel Abroad	1	2	8	6	1	18
Travel UK	–	2	1(1*)	1	–	4
Total	**7**	**8**	**10**	**10**	**1**	**36**
Male	6	7	7	5	–	25
Female	1	1	3	5	1	11

***** Non-pneumonic case

Thirty-five cases were reported with pneumonia and one case had non-pneumonic infection. Twenty-five males aged 26 - 84 years and 11 females aged 48 - 82 years. Thirteen cases had community-acquired infection and one case was reported to be associated with a hospital/healthcare facility. One death was reported in a male aged 42 years.

Thirty-four cases were reported with travel association: Belgium (1), Cyprus/Turkey (1), France (1), Italy (1), Jamaica (1), Kosovo/Macedonia (1), Malaysia (1), Mauritius (1), Oman (1), Pakistan (1), Pakistan/United Kingdom (1), Spain (1), Thailand (2), United Arab Emirates (3), United Kingdom (4) and the United States of America (1).

Table 6. Reports of Legionnaires Disease cases in England and Wales, by PHE Centre: weeks 49-53/2015

Region/Country	Nosocomial	Community	Travel Abroad	Travel UK	Total
North of England					
North East	–	1	–	–	1
Cheshire & Merseyside	–	–	–	–	0
Greater Manchester	–	2	–	1(1*)	3
Cumbria & Lancashire	–	–	1	–	1
Yorkshire & the Humber	–	1	–	–	1
South of England					
Devon, Cornwall & Somerset	–	–	–	–	0
Avon, Gloucestershire & Wiltshire	–	2	–	1	3
Wessex	–	–	–	–	0
Thames Valley	–	1	1	–	2
Sussex, Surrey & Kent	–	–	3	–	3
Midlands & East of England					
East Midlands	–	5	–	1	6
South Midlands & Hertfordshire	–	–	3	–	3
Anglia & Essex	–	–	1	–	1
West Midlands	–	1	2	–	3
London Integrated Region					
London	1	–	5	1	7
Public Health Wales					
Mid & West Wales	–	–	1	–	1
North Wales	–	–	–	–	0
South East Wales	–	–	1	–	1
Miscellaneous					
Other	–	–	–	–	0
Not known	–	–	–	–	0
Total	**1**	**13**	**18**	**4**	**36**

***** Non-pneumonic case

Infection reports / Enteric

Volume 10 Number 2 Published on: 15 January 2016

General outbreaks of foodborne illness in humans, England and Wales: weeks 49-53/2015

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
Thames Valley	VTEC O157	Food premises	December	2	2	Not known	N/k
South East	VTEC O157, PT24, VT2	Restaurant	December	4	4	Not known	N/k
North East	Clostridium perfringens	Nursery	December	13	10	Three bird roast	D
East Midlands	Salmonella Typhimurium	Restaurant	December	2	Not known	Not known	N/k

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 49-53/2015

Laboratory reports	Number of reports received					Total reports	Cumulative total	
	49/15	50/15	51/15	52/15	53/15	49-53/15	1-53/15	1-52/14
Campylobacter	838	779	763	594	552	3562	58800	59950
Escherichia coli O157 *	0	7	11	8	3	28	722	748
Salmonella †	87	97	62	23	2	241	8451	7119
Shigella sonnei	13	8	12	6	9	48	1154	1155
Rotavirus	26	26	27	19	20	118	5268	4447
Norovirus	77	93	129	67	87	453	7190	6024
Cryptosporidium	110	86	85	61	39	381	5488	3851
Giardia	96	55	85	47	39	322	4433	3959

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

Salmonella infections (faecal specimens) England and Wales, reports to Public Health England (salmonella data set): November 2015

Details of 73 serotypes of salmonella infections recorded in November 2015 are given in the table below. In December 2015, 298 salmonella infections were recorded.

Organism	Cases: November 2015
S. Enteritidis PT4	0
S. Enteritidis (other PTs)	164
S. Typhimurium	142
S. Virchow	13
Others (typed)	249
Total salmonella (provisional data)	**578**

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 49-53/15

The hospital norovirus outbreak reporting scheme (HNORS) recorded 40 outbreaks occurring between weeks 49 and 53, 2015, 33 of which led to ward/bay closures or restrictions to admissions. Twenty three outbreaks were recorded as laboratory confirmed due to norovirus (see table). For the calendar year 2015 – between week 1 (January) and week 53 (week beginning 28 December) – 653 outbreaks were reported. Ninety-four per cent (611) of reported outbreaks resulted in ward/bay closures or restrictions to admissions and 66% (428) 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 53, 2015), there were 453 laboratory reports of norovirus. This is 58% lower than the average number of laboratory reports for the same period in the seasons between 2009/10 and 2013/2014 (1085, see table). 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.

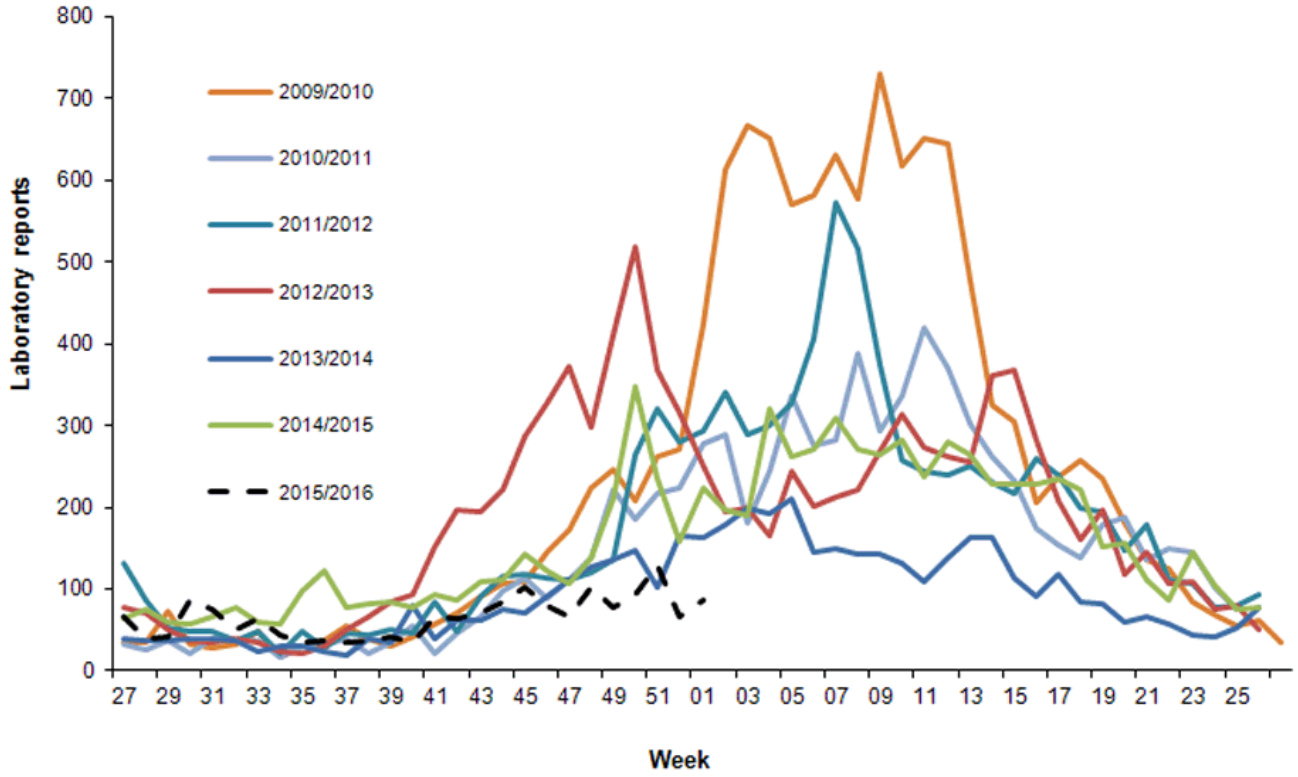
Note: A new laboratory reporting system was commissioned on 1 December 2014; as a result, direct comparisons between the earlier report (based on LabBase2) and the new system (SGSS) may not be valid.

Suspected and laboratory-confirmed reported norovirus outbreaks in hospitals, with regional breakdown: outbreaks occurring in weeks 49-53/2015

Region/ PHE Centre	Outbreaks between weeks 49-53/2015			Total outbreaks 1-53/2015		
	Outbreaks	Ward/bay closure*	Lab-confirmed	Outbreaks	Ward/bay closure*	Lab-confirmed
Avon, Gloucestershire and Wiltshire	4	3	1	79	77	58
Bedfordshire, Hertfordshire and Northamptonshire	2	2	1	9	9	7
Cheshire and Merseyside	–	–	–	8	6	8
Cumbria and Lancashire	1	1	1	40	39	21
Devon, Cornwall and Somerset	1	1	1	120	120	80
Greater Manchester	1	1	–	18	15	8
Hampshire, Isle of Wight and Dorset	1	1	1	26	25	21
Lincolnshire, Leicestershire, Nottinghamshire and Derbyshire	–	–	–	29	26	22
London	–	–	–	4	4	1
Norfolk, Suffolk, Cambridgeshire and Essex	–	–	–	–	–	0
North East	7	7	3	69	64	40
Sussex, Surrey and Kent	9	9	5	28	28	19
Thames Valley	–	–	–	9	7	1
West Midlands	3	3	2	116	113	61
Yorkshire and the Humber	11	5	8	98	78	81
Total	**40**	**33**	**23**	**653**	**611**	**428**

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

Current season's laboratory reports (to week 53, 2015) compared to previous seasons' weekly average (England and Wales)



Calendar year 2015 (to week 53) norovirus laboratory reports compared to previous years' weekly mean (2010-2014)