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News

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Group A streptococcal infections: seventh update on seasonal activity, 2013/14

Scarlet fever surveillance continues to show elevated levels of notified cases in all parts of England, although declines have been noted since April there have been some marked fluctuations [1]. Routine laboratory reports and isolate referrals of invasive group A streptococcal (iGAS) disease remain within usual seasonal levels.

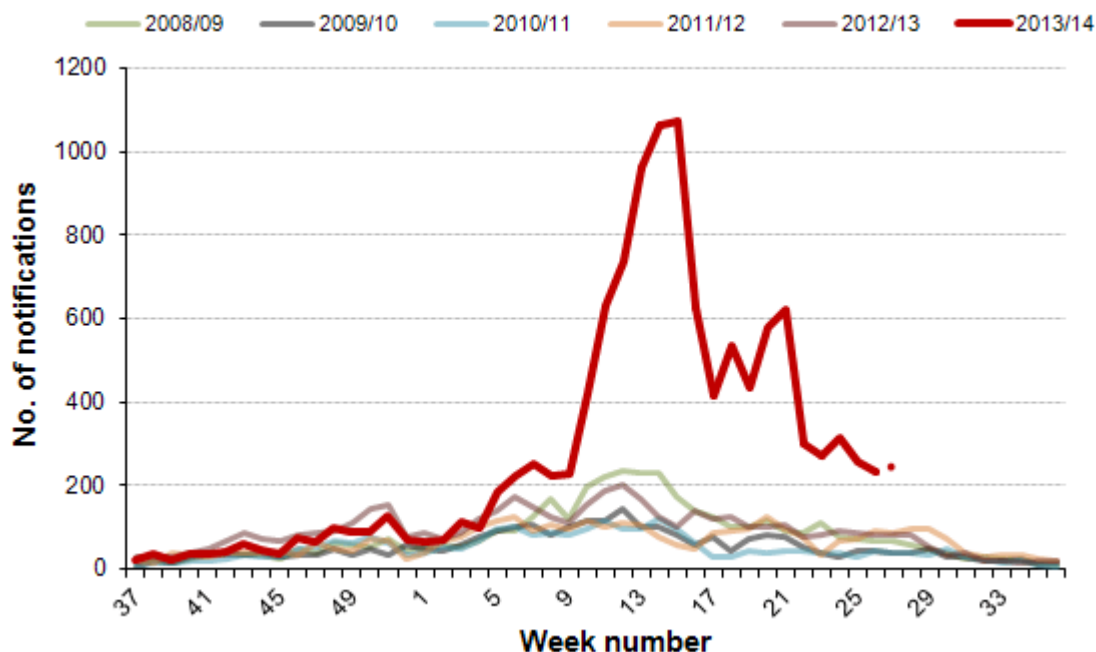
Preliminary results from the microbiological analysis of scarlet fever isolates submitted from across the country indicate that a range of group A streptococcus (GAS) sequence types are causing disease.

Scarlet fever

A total of 12121 notifications of scarlet fever have been made so far this season (week 37 2013 to week 27 2014) in England. Scarlet fever notifications peaked in weeks 14 and 15 of 2014 with just over 1000 notifications made each week (figure 1). Numbers of notifications have fluctuated since then, with the most recent three weeks remaining below 300 notifications (247 received to date in week 27). GP In-hours sentinel surveillance reports are showing a similar declining trend [2]. Notifications remain predominantly in children aged less than 10 years (87%; median four years (range <1y to 90y), with an equal split between males and females (50% male).

Scarlet fever notifications remain elevated in all areas in England compared with the same period last year (week 24 to 27), with some areas up to 7 times higher. The areas with the highest elevation are the West Midlands (109 compared with 16), Cumbria and Lancashire (73 with 11) and Cheshire and Merseyside (83 with 18).

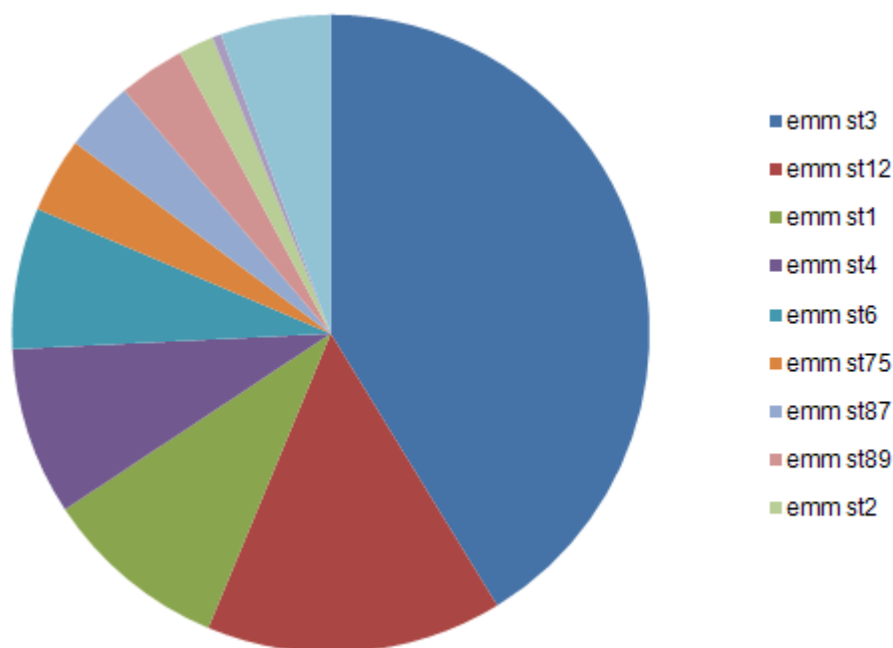
Figure 1. Weekly scarlet fever notifications in England, 2008/09 onwards*



* Dashed line indicates that numbers may increase as further notifications expected.

A total of 446 *S. pyogenes* isolates from clinical specimens, taken from patients with scarlet fever between 6 January 2014 and 18 June 2014, have been characterised by the Respiratory and Vaccine Preventable Bacteria Reference Unit (RVPBRU) at PHE Colindale. Sequence typing using the *emm* gene indicates that 19 different sequence types (st) are present in this sample of patients with scarlet fever, with the predominant types being *emm* st3 and *emm* st12 (figure 2). Whole Genome Sequencing is currently being undertaken. Antimicrobial sensitivity testing is being undertaken on a representative subset of 10% (44) isolates. The current distribution of *emm* types is broadly compatible with that seen in 2004 and 2009 when *emm* st3 also dominated.

Figure 2. Distribution of emm sequence types among scarlet fever isolates received in 2014 characterised by RVPBRU



* Other strains: emm28 (12); emm44 (4); emm18 (2); emm9 (2) and emm5, emm58, emm77, emm81, emm82 (one each).

Invasive Group A Streptococcus

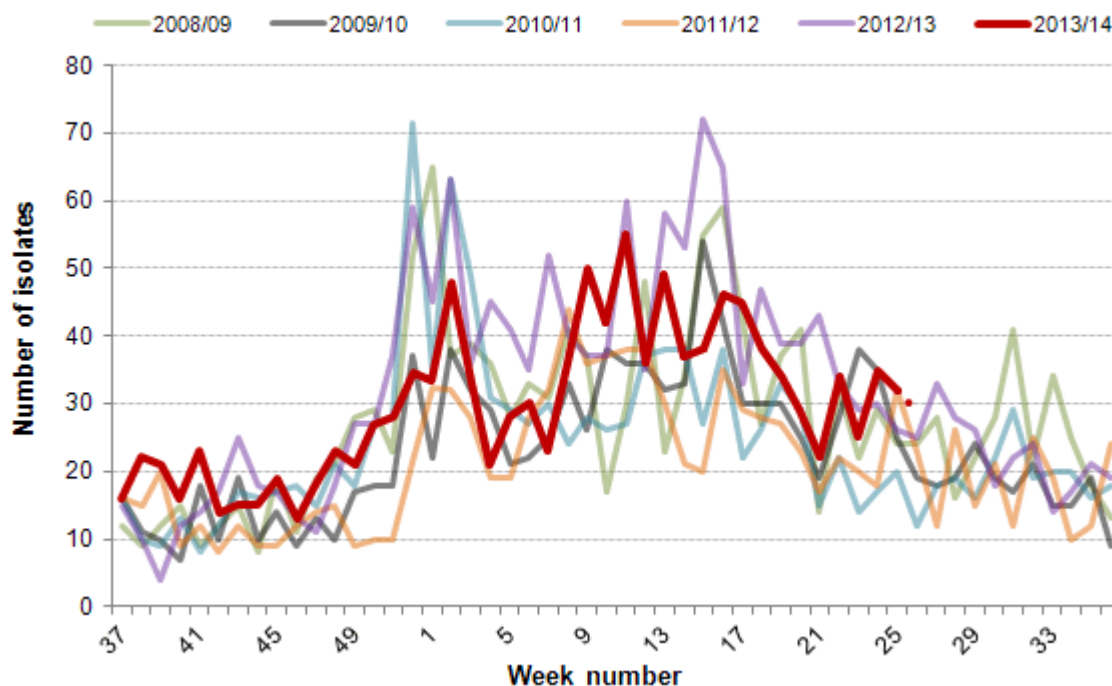
The number of iGAS isolates referred from laboratories in England, Wales and Northern Ireland to the RVPBRU at PHE Colindale continues to remain within normal levels this season. A total of 1254 isolates were referred for specimens taken between week 37 of 2013 to week 26 of 2014 (figure 3), slightly above the average for the same period over the last five years of 1136 isolate referrals (range of 930 to 1442). Referrals so far for June being 20% higher than the average for the previous five years (125 compared to an average of 104 isolates; range 98 to 129).

Laboratories in four of the English regions have referred numbers of isolates above average (previous five years) for January to June this season, the East Midlands (74), West Midlands (76), London (116) and the South East (164). Isolates may still be received for specimens taken in June and as such, these numbers could increase.

Analysis of iGAS *emm* strain diversity remains similar to what is normally seen with *emm* st1 and *emm* st3 the most common types identified between January and May 2014, with *emm* st3 dominant in May 2014.

No changes have been identified in iGAS isolate antimicrobial susceptibility patterns from routine laboratory reporting this season (weeks 37-26), with 6% non-susceptible to erythromycin, 9% tetracycline and 3% clindamycin, similar to previous years [3]. There have been no reports of penicillin resistance in iGAS isolates in England to date.

Figure 3. Weekly count of sterile site GAS isolates referred to the national reference laboratory, England, 2008/09 onwards*



* Dashed line indicates that numbers may increase as further notifications expected.

Levels of scarlet fever are declining but remain elevated compared to recent years. Resurgence in disease incidence was seen following the Easter school holidays, with more recent weeks seeing sequential declines. It is a concern that there is a slight elevation of invasive disease in June 2014 compared with recent years and continued vigilance is recommended.

Close monitoring and rapid and decisive response to potential outbreaks remains essential given the continued elevation in scarlet fever incidence. It remains important for clinicians, microbiologists and HPTs should continue to be mindful of potential increases in invasive disease and maintain a high index of suspicion in relevant patients as early recognition and prompt initiation of specific and supportive therapy for patients with iGAS infection can be life-saving. Invasive disease isolates and those from suspected clusters or outbreaks should be submitted to the Respiratory and Vaccine Preventable Bacteria Reference Unit at Public Health England, 61 Colindale Avenue, London NW9 5HT.

Relevant guidelines/FAQs are available on the PHE health protection website, as follows:

- Guidelines on infection control in schools and other childcare settings, including recommended exclusion periods for scarlet fever and new guidelines on management of scarlet fever outbreaks: <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SchoolsGuidanceOnInfectionControl/>
- FAQs on scarlet fever at: <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/ScarletFever/>
- Guidelines for the management of close community contacts of invasive GAS cases and prevention and control of GAS transmission in acute healthcare and maternity settings at: <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/StreptococcalInfections/Guidelines.>

Reference

1. Public Health England. Group A streptococcal infections: sixth update on seasonal activity, 2013/14. HPR 8(23): Infection (News) Report.
2. PHE. GP In Hours Syndromic Surveillance System Weekly Bulletin 2014 week 26. Published 1 July 2014
3. PHE. Voluntary surveillance of pyogenic and non-pyogenic streptococcal bacteraemia in England, Wales and Northern Ireland: 2012.

Imported dengue and chikungunya in England, Wales and Northern Ireland, 2013

In 2013, 541 cases of dengue fever were reported in England, Wales and Northern Ireland – a 58% increase compared to 2012 (343 cases), according to the annual epidemiological report for the infection published by Public Health England [1]. Cases of chikungunya, the subject of a separate annual report, also increased slightly, although the numbers were much smaller, with 24 reported in 2013 compared to 15 in 2012 [2].

Dengue and chikungunya do not occur in the UK – they are travel-associated viral infections that are transmitted by the day-biting *Aedes* mosquitoes in tropical and sub-tropical regions of the world. India and Thailand continue to be the most frequent countries of travel reported for dengue cases, although in 2013, there was also an increase in cases associated with travel to Barbados. Chikungunya is not currently as widespread as dengue, although in the last few years transmission has increased in India and South East Asia [3], where most of the travel-associated cases in England, Wales and Northern Ireland have been acquired [1]. More recently, in December 2013, indigenously acquired chikungunya was first reported in the

Caribbean in the French overseas territory of St Martin. By July 2014, at least 22 other islands and territories in the region had also reported indigenous chikungunya and four cases associated with travel to the Caribbean have been reported in the UK to date [4].

Symptoms of dengue and chikungunya are similar and include fever, headache, muscle ache, rash, nausea and vomiting. For chikungunya, joint pains may be a more prominent feature. Most patients make a full recovery, but in some cases joint pain and arthritis may persist for several months, or even years.

There is no vaccine to prevent dengue or chikungunya. Travellers to affected areas can reduce their risk of infection by practising **insect bite avoidance measures**. *Aedes* mosquitoes are most active during daylight hours. Particular vigilance with bite avoidance should be taken around dawn and dusk.

Health professionals should be aware of the possibility of chikungunya and dengue fever in febrile travellers who have recently visited Africa, Asia, South and Central America, Pacific islands and the Caribbean. If a case is suspected, appropriate samples should be sent for testing (including a full travel and clinical history with relevant dates) to the **Public Health England, Rare and Imported Pathogens Laboratory**.

The **Imported Fever Service** is available to local infectious disease physicians or microbiologists should specialist advice be needed on 0844 7788990.

References

1. Public Health England. *Chikungunya: epidemiology in England, Wales and Northern Ireland*. Available at: <https://www.gov.uk/government/publications/chikungunya-epidemiology-in-england-wales-and-northern-ireland>.
 2. Health Protection Agency legacy website. *Dengue fever – epidemiological data*. Available at: <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/DengueFever/EpidemiologicalData/>.
 3. World Health Organization. *Chikungunya factsheet*. Available at: <http://www.who.int/mediacentre/factsheets/fs327/en/>.
 4. National Travel Health Network and Centre. *Chikungunya virus: Caribbean and the Americas – update 7: 3 July 2014*. Available online at: http://www.nathnac.org/pro/clinical_updates/chikv_carib_030714.htm.
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Infection Reports

Enteric

- ▶ General outbreaks of foodborne illness in humans, England and Wales: weeks 23-26/2014
- ▶ Common gastrointestinal infections, England and Wales: laboratory reports: weeks 23-26/2014
- ▶ Less common gastrointestinal infections, England and Wales: laboratory reports: weeks 14-26/2014
- ▶ Hospital norovirus outbreaks (England and Wales, weeks 23-26/2014) and seasonal comparisons of recent years' norovirus laboratory reports
- ▶ Salmonella infections (faecal specimens), England and Wales: laboratory reports (PHE salmonella data set), May 2014

General outbreaks of foodborne illness in humans, England and Wales: weeks 23-26/2014

Preliminary information has been received about the following outbreaks.

Health Protection Unit	Organism	Location of food prepared or served	Month of outbreak	Number ill	Suspect vehicle	Evidence
Sussex, Surrey and Kent	VTEC, O157, PT54	Cruise ship	June	4	Not known	n/a
London	Hepatitis A	"Other" (workplace)	June	2	Not known	n/a
North East	<i>Clostridium perfringens</i>	Other (wedding venue)	June	40	Not known	n/a
Thames Valley	Not known (food poisoning)	Heartlands Hospital	June	165	Not known	n/a
West Wales	Salmonella	Hospital	June	3	Not known	n/a
Cheshire and Merseyside	<i>E coli</i> O157	Nursery school	June	8	Not known	n/a
North East and Central London	<i>Salmonella</i> spp, non-typhoidal or unspecified	Take-away	June	3	Not known	n/a
East Midlands	Enteroinvasive <i>E coli</i> O96	Take-away	June	50	Lettuce, cucumber	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 23-26/2014

Laboratory reports	Number of reports received				Total reports	Cumulative total	
	23/14	24/14	25/14	26/14	23-26/14	1-26/14	1-26/14
<i>Campylobacter</i>	1853	1865	1696	1716	7130	28772	25589
<i>E. coli</i> O157 *	18	28	17	15	78	253	234
<i>Salmonella</i> †	126	98	79	37	340	2361	2797
<i>Shigella sonnei</i>	20	19	15	13	67	509	409
Rotavirus	117	93	88	72	370	3328	13792
Norovirus	40	35	39	62	176	2895	5270
<i>Cryptosporidium</i>	62	58	61	49	230	1425	1541
<i>Giardia</i>	66	63	88	57	274	1706	1646

*Vero cytotoxin-producing isolates: data from CIDSC's Laboratory of Gastrointestinal Pathogens (LGP), PHE Colindale.

† Data from CIDSC-LGP.

Less common gastrointestinal infections, England and Wales, laboratory reports: weeks 14-26/2014

Laboratory reports	Total reports 14-26/2014	Cumulative total to 26/2014	Cumulative total to 26/2013
Astrovirus	67	152	207
Sapovirus	16	73	82
<i>Shigella boydii</i>	13	28	41
<i>Shigella dysenteriae</i>	13	17	19
<i>Shigella flexneri</i>	205	347	352
<i>Plesiomonas</i>	11	21	1
<i>Vibrio</i> spp.	11	23	21
<i>Yersinia</i> spp	8	28	18
<i>Entamoeba histolytica</i>	16	27	23
<i>Blastocystis hominis</i>	55	96	87
<i>Dientamoeba fragilis</i>	16	23	22

Suspected and laboratory-confirmed reported norovirus outbreaks in hospitals, with regional breakdown: outbreaks occurring in weeks 23-26/2014

The hospital norovirus outbreak reporting scheme (HNORS) recorded 13 outbreaks occurring between weeks 23 and 26, 2014, all of which led to ward/bay closures or restriction to admissions. Four outbreaks (31 per cent) were recorded as laboratory confirmed due to norovirus.

From week 01 (January 2014) to week 26 (week beginning 23 June 2014) 372 outbreaks have been reported. Ninety-three per cent (345) of reported outbreaks resulted in ward/bay closures or restrictions to admissions and 65 per cent (241) were laboratory confirmed as due to norovirus.

Suspected and laboratory-confirmed reported norovirus outbreaks in hospitals, with regional breakdown: outbreaks occurring in weeks 23-26/2014

Region/PHE Centre	Outbreaks between weeks 23-26/2014			Total outbreaks 1-26/2014		
	Outbreaks	Ward/bay closure	Lab-confirmed	Outbreaks	Ward closure	Lab-confirmed
Avon, Gloucestershire and Wiltshire	2	2	–	45	45	27
Bedfordshire, Hertfordshire and Northamptonshire	–	–	–	–	–	–
Cheshire and Merseyside	–	–	–	1	1	1
Cumbria and Lancashire	–	–	–	12	12	7
Devon, Cornwall and Somerset	2	2	–	36	35	19
Greater Manchester	2	2	–	15	14	4
Hampshire, Isle of Wight and Dorset	–	–	–	22	22	13
Lincolnshire, Leicestershire, Nottinghamshire and Derbyshire	–	–	–	28	27	19
London	–	–	–	6	6	5
Norfolk, Suffolk, Cambridgeshire and Essex	–	–	–	–	–	–
North east	–	–	–	37	31	25
Sussex, Surrey and Kent	4	4	4	18	18	13
Thames Valley	1	1	–	12	12	4
West Midlands	–	–	–	50	49	26
Yorkshire and the Humber	2	2	–	90	73	78
Total	13	13	4	372	345	241

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

In the current season to date † (from week 27, 2013, to week 26, 2014), there were 4654 laboratory reports of norovirus. This is 47 per cent lower than the average number of laboratory reports for the same period in the seasons 2007/08 and 2011/2012 (8830)*. 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.

* Last season – 2012/2013 – the season began earlier than normal so comparisons between this current and last season would not be valid.

Figure 1. Seasonal comparison of laboratory reports of norovirus (England and Wales)

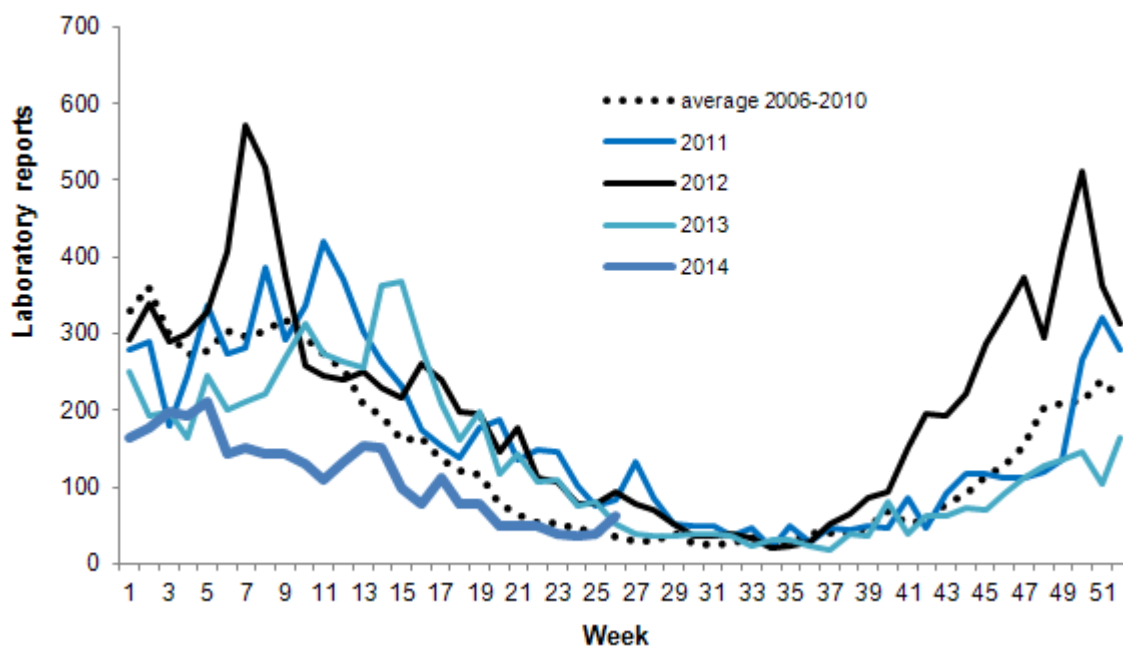
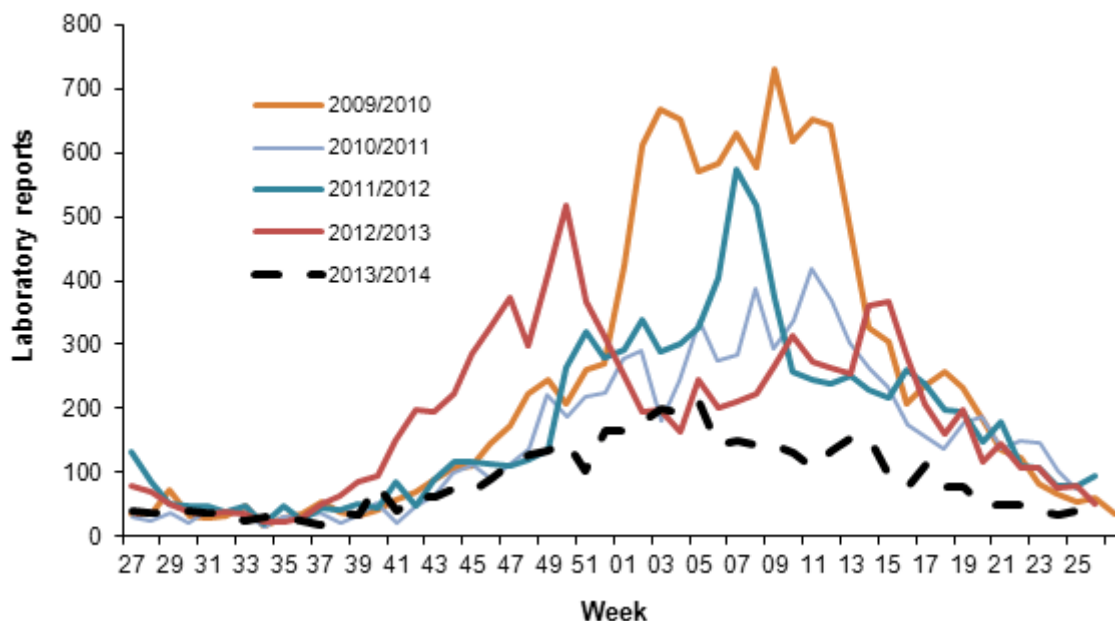


Figure 2. Current weekly norovirus laboratory reports compared to weekly average 2006/2010



Salmonella infections (faecal specimens) England and Wales: laboratory reports (PHE salmonella data set): May 2014

Details of 466 serotypes of salmonella infections recorded in May are given in the table below. In June 2014, 343 salmonella infections were recorded.

Organism	Cases: May 2014
S. Enteritidis PT4	9
S. Enteritidis (other PTs)	118
S. Typhimurium	87
S. Virchow	9
Others (typed)	243
Total salmonella (provisional data)	466
