PHE National norovirus and rotavirus Report

Summary of surveillance of norovirus and rotavirus

10 August 2017 – data to week 30

This report is published monthly on the PHE website. For further information on the surveillance system mentioned in this report, please visit the Hospital Norovirus Reporting System website.

Summary

The next report will be published on 7 September 2017.

Norovirus

- Reports of suspected and confirmed outbreaks of norovirus in hospitals continue to be reported at lower levels than in previous years.
- The number of laboratory reports of norovirus in this season* (since week 27 2017) is 177. This is 10 per cent lower than the average number for the same period in the five seasons from season 2012/13 to season 2016/17 (197), and 6 per cent lower than the same weeks last season. Norovirus activity varies from season-to-season, therefore it is more appropriate to use the five season average for comparison.
- The most commonly detected norovirus strains in circulation this season belong to the Sydney2012 cluster of GII.4 noroviruses. This group of GII.4 norovirus strains have been circulating worldwide since 2012.

Rotavirus

- The number of laboratory reports of rotavirus in this season* (since week 27 2017) is 112. This is 51 per cent lower than the ten season average for the same period in the seasons 2003/04 to 2012/13 (229)** and 58 per cent lower than the four season average for the same period in the post-vaccine seasons 2013/14 to 2016/17.
- In the first season following the introduction of the rotavirus vaccine in July 2013, a 77 per cent decline in laboratory-confirmed rotavirus infections in infants was observed (Atchison et al, 2016). The total number of laboratory-confirmed rotavirus infections each season has since remained low compared to the pre-vaccine period.
- There may be some fluctuation in activity due to low numbers of infections in the early part of the season when compared to the same period prior to use of the vaccine. Furthermore, most laboratory tests in use do not distinguish vaccine from wild-type rotavirus. In the post-vaccine period, further characterisation of laboratory-confirmed rotavirus infections should be considered. Broader testing of cases among eligible infants for other enteric pathogens should also be considered to avoid over-attributing rotavirus as a cause of infectious intestinal disease in young children.

*In order to capture the winter peak of activity in one season, for reporting purposes, the norovirus and rotavirus season runs from week 27 in year 1 to week 26 in year 2, i.e. week 27 2009 to week 26 2010, July to June. Data for 2009 and 2015 exclude week 53.

**Comparison is made with this ten season period as it is prior to the vaccine introduction.

Hospital Norovirus Outbreak Reporting System (HNORS) - England

In the four weeks between 03/07/2017 and 30/07/2017 (weeks 27 2017 to 30 2017) the hospital norovirus outbreak reporting scheme (HNORS) recorded 6 outbreaks of suspected or confirmed norovirus in England, all of which led to ward/bay closures or restrictions to admissions and 2 of which (33 per cent) were laboratory confirmed as a norovirus outbreak.

Last season (week 27 2016 to week 26 2017) 440 outbreaks were reported, 412 (94 per cent) of which reported ward/bay closures or restrictions to admissions and 321 (73 per cent) were reported as laboratory confirmed norovirus outbreaks.

Table 1: The number of suspected and confirmed norovirus outbreaks in hospitals

Public Health England Centre	Outbreaks 03/07/2017 to 30/07/2017			Outbreaks reported in the last season 2016/2017 (week 27 2016 - week 26 2017)		
	Outbreaks	Ward/bay closure[ŦŦ]	Lab confirmed	Outbreaks	Ward/bay closure[ŦŦ]	Lab confirmed
East of England				1	1	1
East Midlands				25	24	24
London				3	3	1
North East	2	2	1	50	46	26
North West				49	46	36
South East	1	1		41	40	26
South West	2	2		101	98	87
West Midlands	1	1	1	80	74	55
Yorkshire and the Humber				90	80	65
Total	6	6	2	440	412	321

[ŦŦ] Note: not all outbreaks result in whole ward closure, some closures are restricted to bays only

Norovirus Laboratory Reporting – England and Wales

The number of laboratory reports of norovirus in England and Wales, as reported to Public Health England, in this season* (week 27 2017 to week 26 2018) is 177. This is 10 per cent lower than the average number for the same period in the five seasons from season 2012/13 to season 2016/17 (197), and 6 per cent lower than the same weeks last season (188). Norovirus activity was low during the 2015/16 season and no two seasons are the same therefore it is more appropriate to use the five season average for comparison. Data from laboratory reporting are subject to a reporting delay and the number reported in recent weeks is likely to increase as further laboratory reports are received. Norovirus is predominantly a winter pathogen; however, norovirus infections do occur in the summer months.

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

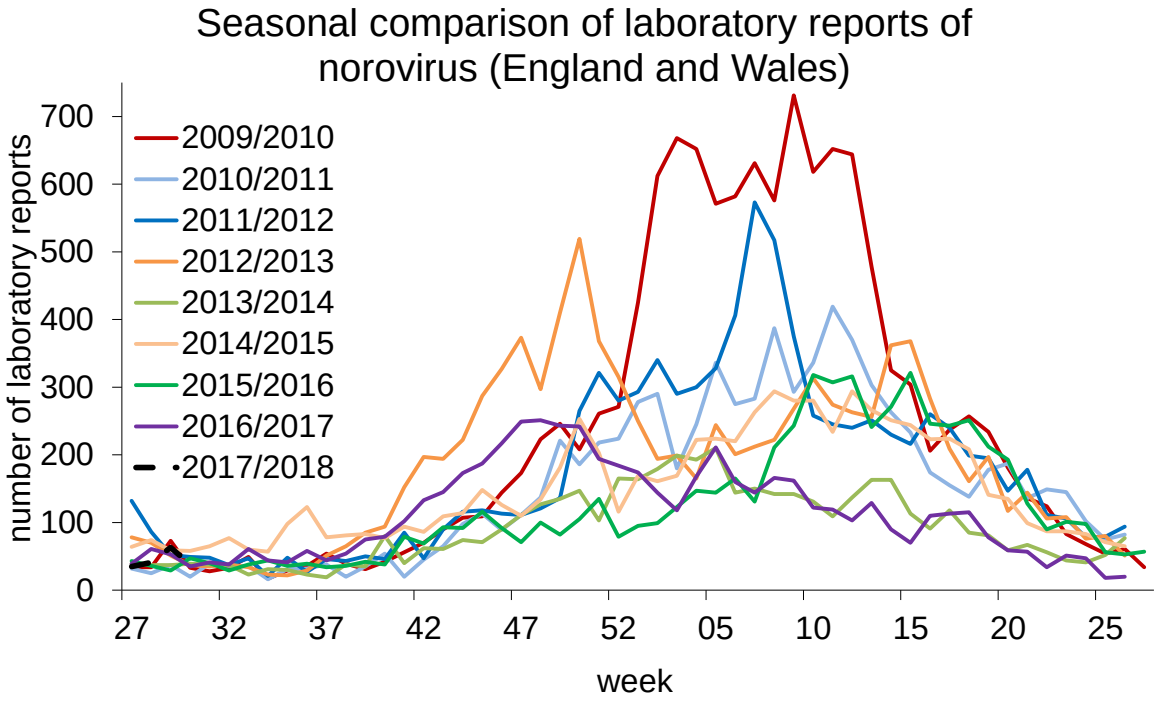


Figure 2: Laboratory and hospital outbreak reports by month of occurrence

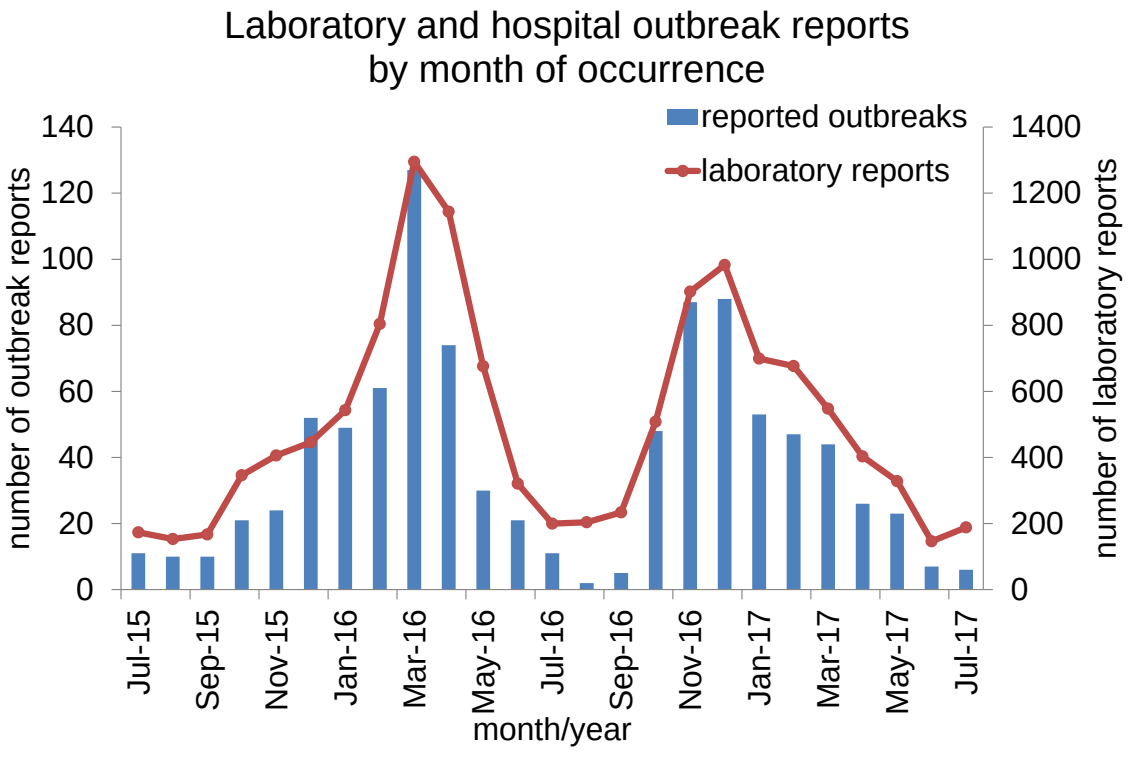


Figure 3: Cumulative number of laboratory reports of norovirus by season 2007/8-2016/17

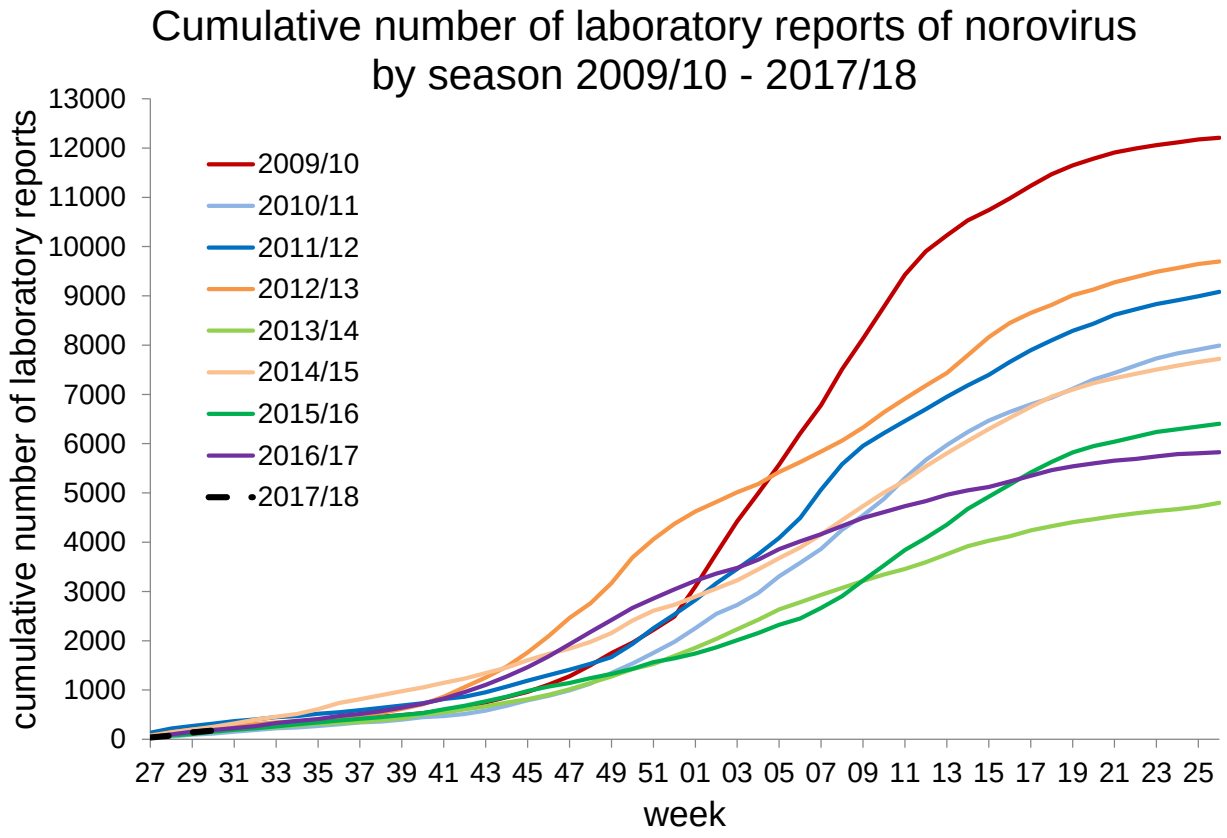
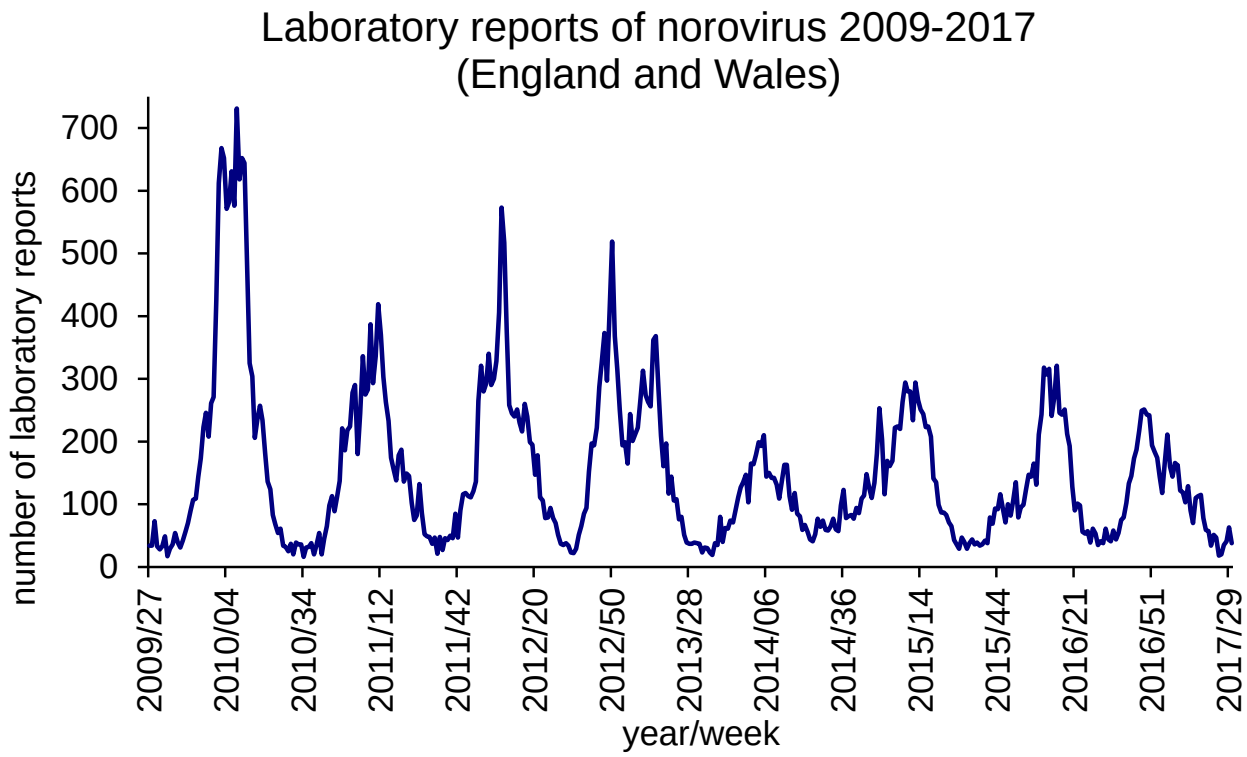


Figure 4: Laboratory reports of norovirus 2009-2017 (England and Wales)



*In order to capture the winter peak of norovirus activity in one season, for reporting purposes, the norovirus season runs from week 27 in year 1 to week 26 in year 2, i.e. week 27 2009 to week 26 2010, July to June. Data for 2009 and 2015 exclude week 53.

Laboratory Surveillance Update – Virus Reference Department (VRD) – England and Wales

WEEKLY NOROVIRUS LABORATORY SURVEILLANCE UPDATE

Date of update: **03/07/2017**
Week of update: **18-2017**

Total number of outbreaks referred to VRD (27-2016 to date): **405**
Total number of outbreaks confirmed as norovirus positive: **290**

Total number of outbreaks from healthcare settings, referred to VRD (27-2016 to date): **251**
Total number of outbreaks from healthcare settings, confirmed as norovirus positive: **153**

Figure 5: Season-to-season comparison of norovirus-confirmed outbreaks (all settings) referred to VRD

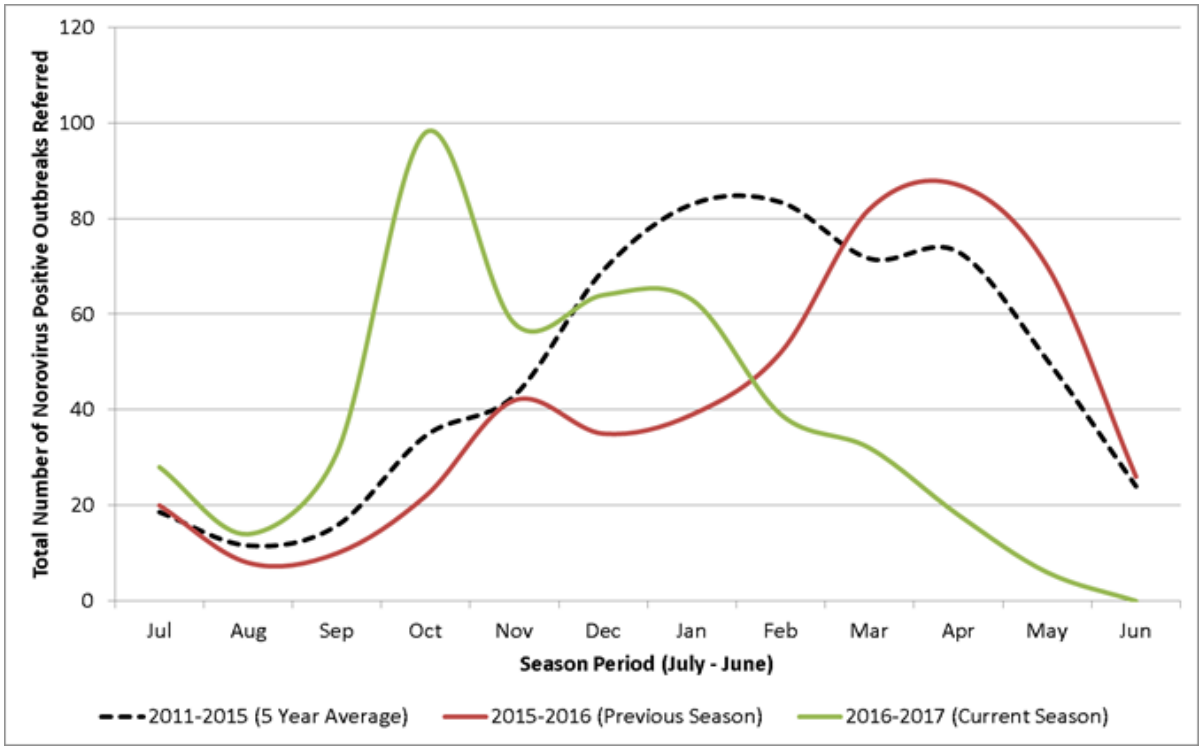
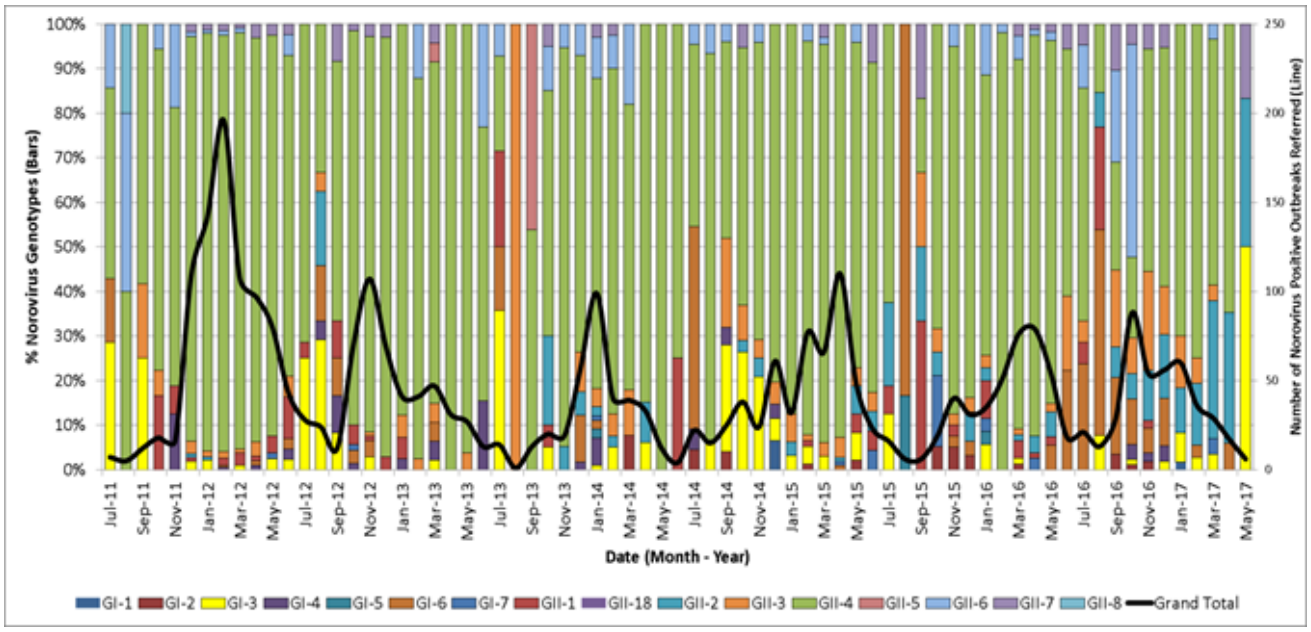
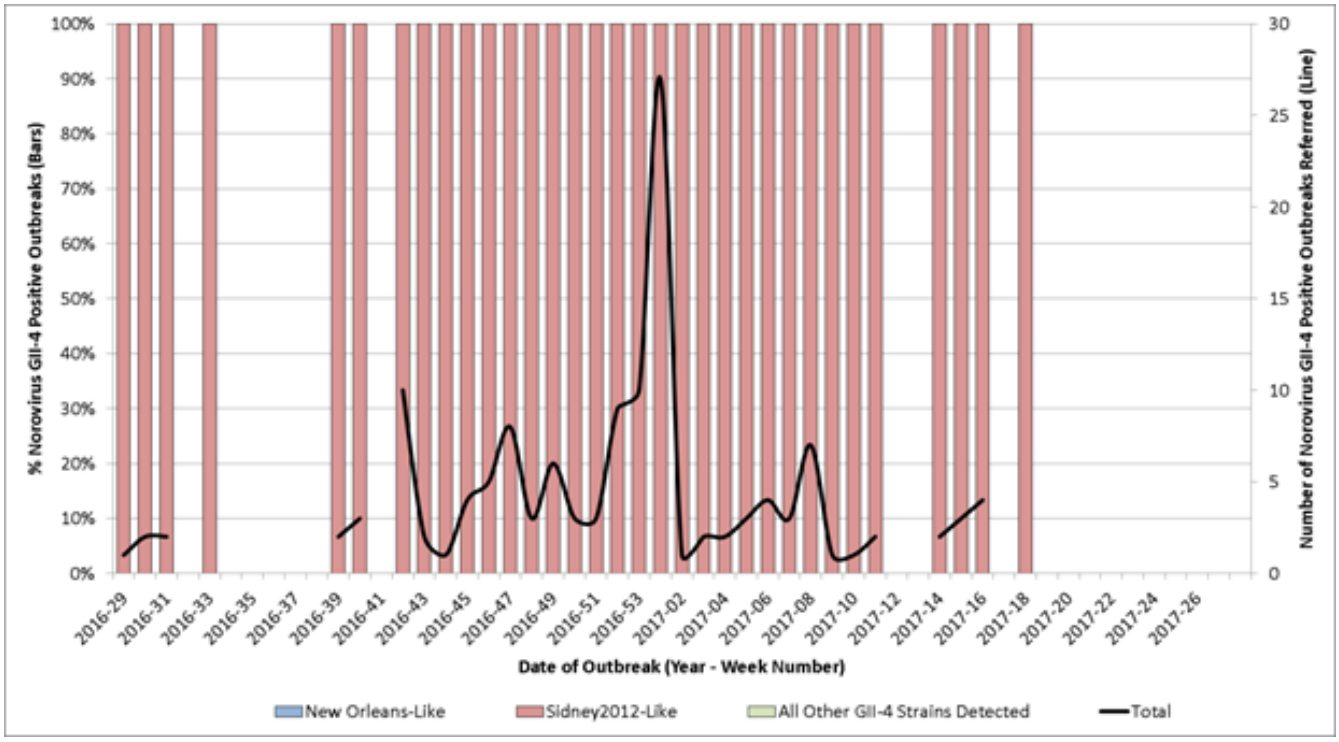


Figure 6: Norovirus-confirmed outbreaks (all settings, by month) referred to VRD



- 76.4 per cent of norovirus-confirmed outbreaks were associated with GII-4 strains since July 2011.
- 13 different norovirus genotypes have been detected in the current season (27-2016 to date).
- The majority of norovirus-confirmed outbreaks in the current season (27-2016 to date) were associated with GII-4 (189/409, 46.2 per cent).

Figure 7: GII-4 norovirus strains detected (by week) among norovirus confirmed outbreaks (all settings) (06-2016 to date)



- The most commonly detected GII-4 strain between periods 28-2016 to 28-2017 is Sydney2012 and is associated with 97.9 per cent of GII-4 norovirus-confirmed outbreaks.
- The most commonly detected GII-4 strain in the previous season (2015-2016) was Sydney2012.

Activity in prisons and other places of detention - England

No outbreaks of diarrhoea and vomiting were reported in prisons between weeks 27and 30 2017.

NB. Not all suspected cases are tested for norovirus. Where there is an outbreak, a sample of individuals will be tested.

For guidance on the management of outbreaks in prisons see:

https://www.gov.uk/government/publications/multi-agency-contingency-plan-for-disease-outbreaks-in-prisons

Rotavirus Laboratory Reporting – England and Wales

The number of laboratory reports of rotavirus in England and Wales as reported to Public Health England, in this season* (week 27 2017 to week 26 2018) is 112. This is 51 per cent lower than the ten season average for the same period in the seasons 2003/04 to 2012/13 (229)**, and 58 per cent lower than the four season average for the same period in the post vaccine seasons 2013/14 to 2016/17 (269).

In the first season following the introduction of the rotavirus vaccine in July 2013, a 77 per cent decline in laboratory-confirmed rotavirus infections in infants was observed (Atchison et al, 2016). The total number of laboratory-confirmed rotavirus infections each season has since remained low compared to the pre-vaccine period.

Most laboratory tests in use do not distinguish vaccine from wild-type rotavirus. In the post-vaccine period, further characterisation of laboratory-confirmed rotavirus infections and considering broader testing of cases among eligible infants for other enteric pathogens are increasingly important to avoid over-attributing rotavirus as a cause of infectious intestinal disease in young children.

Rotavirus particularly contributes to reported diarrhoea and vomiting illness in children aged under five and is often associated with outbreaks of diarrhoea and vomiting in nurseries and schools.

Data from laboratory reporting are subject to a reporting delay and the number reported in recent weeks is likely to increase as further laboratory reports are received.

Figure 8: Seasonal comparison of laboratory reports of rotavirus (England and Wales)

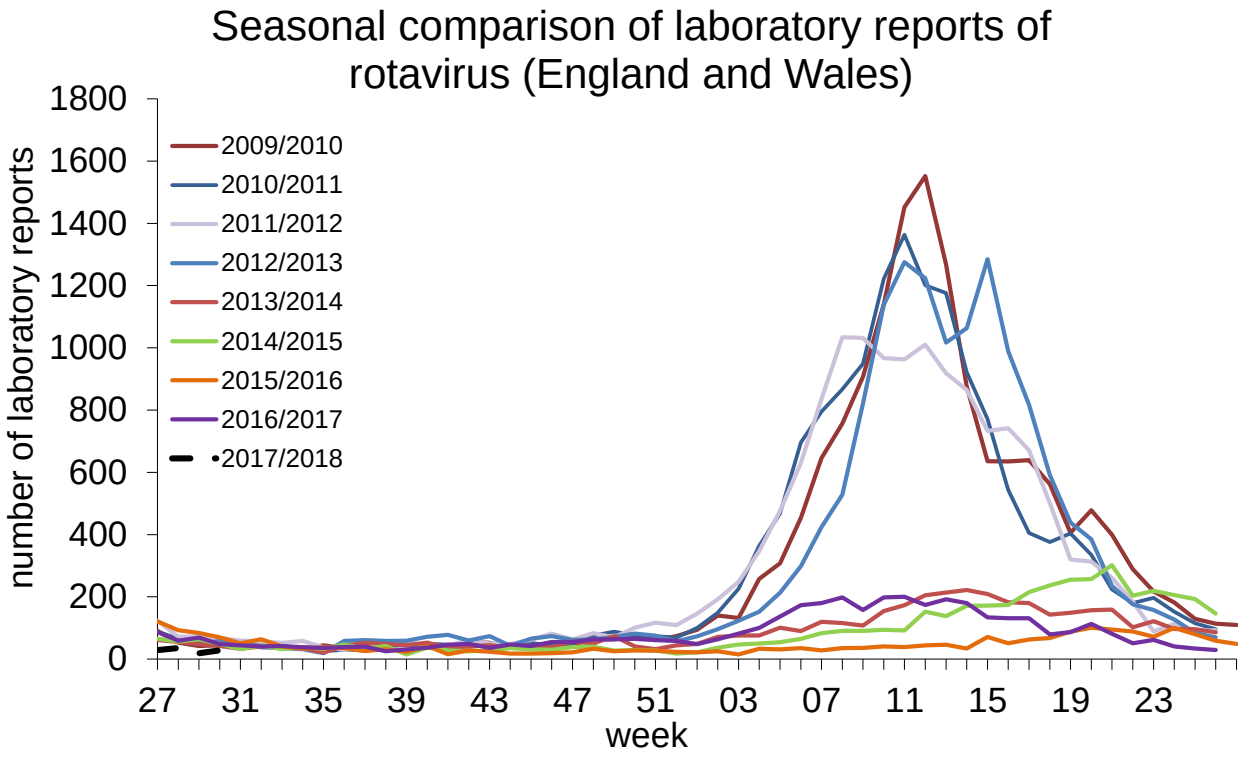


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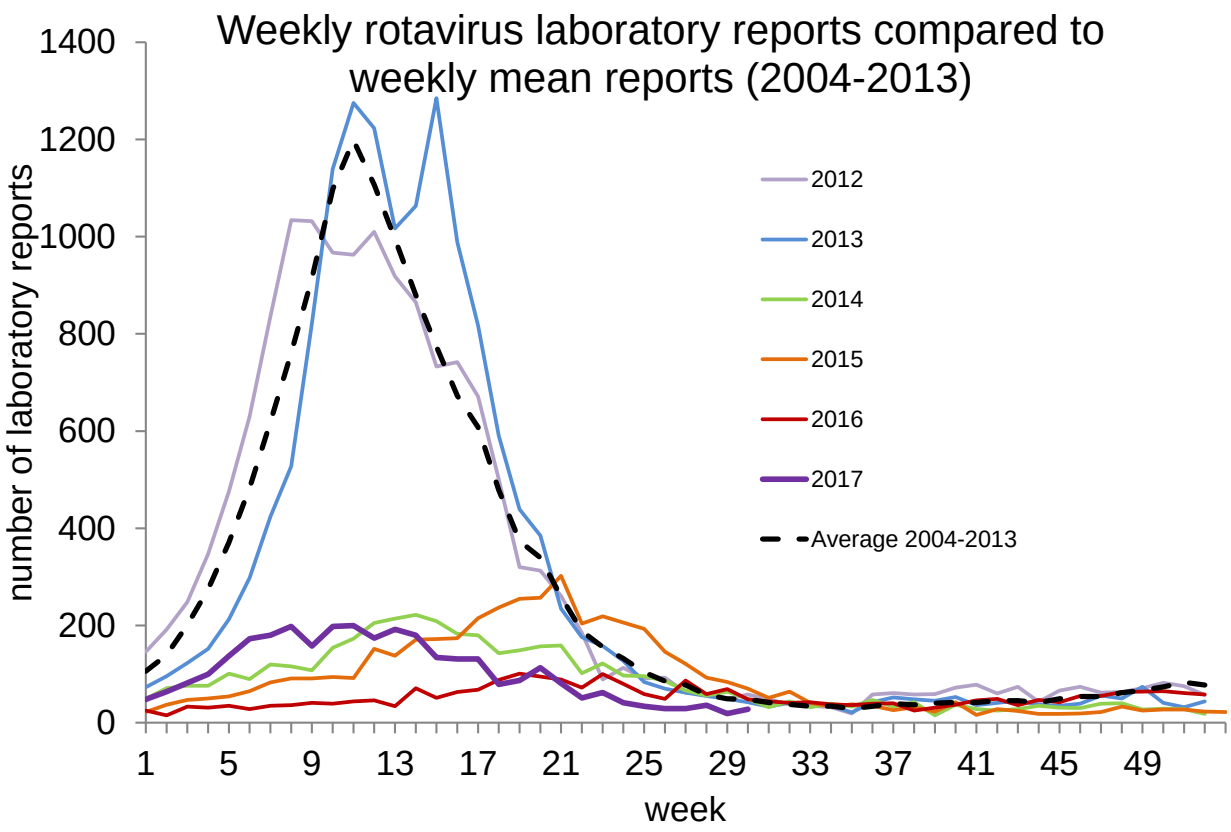
Figure 9: Weekly rotavirus laboratory reports compared to weekly mean reports(2004-2013)



Acknowledgements

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Any queries can be directed to noroOBK@phe.gov.uk