



# PHE National norovirus and rotavirus Report

## Summary of surveillance of norovirus and rotavirus

26 October 2017 – Week 43 report (data to week 41)

This report is published weekly on the PHE [website](#). For further information on the surveillance system mentioned in this report, please visit the [Hospital Norovirus Outbreak Reporting System website](#).

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### Summary

**The next report will be published next week on 2 November 2017.**

#### Norovirus – laboratory reporting

- Since week 27, 2017 there have been 738 laboratory reports of norovirus in England and Wales. This is 8 per cent lower than the average number for the same period in the previous 5 seasons from season 2012/13 to season 2016/17 (799).

#### Norovirus – Hospital Norovirus Outbreak Reporting System (HNORS)

- Reports of suspected and confirmed outbreaks of norovirus in hospitals in England are currently at lower levels than in previous years (2009-2016).

#### Rotavirus – laboratory reporting

- Since week 27 2017, there have been 370 laboratory reports of rotavirus in England and Wales. This is 46 per cent lower than the average for 2013/14 to 2016/17(680) (the period after vaccine was introduced).
- Following the introduction of the rotavirus vaccine into the routine childhood immunisation schedule in July 2013, the total number of laboratory-confirmed rotavirus infections each season has remained low compared to the pre-vaccine period.

### Interpretation of trends

- 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.
- Norovirus activity varies from season-to-season; therefore it is most appropriate to use the 5 season average for comparison with the current season. Due to this variability between norovirus seasons, it is not possible to predict how the current season will progress.
- Norovirus is predominantly a winter pathogen; however, norovirus infections occur in the summer months.
- Data included in this report are provisional and are extracted from live reporting systems therefore numbers may fluctuate. Laboratory testing and reporting practices are known to vary. Data from laboratory reporting and HNORS are subject to a reporting delay and the number reported in the most recent weeks is likely to rise further as laboratory reports are received. Due to these reporting delays, data pertaining to the most recent two weeks are not included.

### Hospital Norovirus Outbreak Reporting System (HNORS)

- Hospital norovirus outbreak reporting scheme (HNORS) data are for England only. Reporting to HNORS is voluntary and variations may reflect differences in ascertainment by region.
- Not all outbreaks reported to HNORS result in whole ward closure, some closures are restricted to bays only.
- It is important to note that not all suspected cases are tested for norovirus. Where there is an outbreak, a sample of individuals will be tested.

### Laboratory reporting

- Laboratory data are for England and Wales, as reported to Public Health England by laboratories in England and Wales, and are specimens taken from faeces and the lower gastrointestinal tract only. Reporting may be subject to differences in regional ascertainment. Reporting region is based on patient's area of residence.
- 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 diarrhoea in young children.
- For rotavirus, comparison is made with the 10 season period 2003/04 to 2012/13 prior to the vaccine introduction and the 4 season period 2013/14 to 2016/17 post vaccine introduction.

In weeks 40 and 41 (02/10/2017 to 15/10/2017 inclusive) 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 5 of which (83 per cent) were laboratory confirmed as a norovirus outbreak.

This season (since week 27, 2017) there have been 30 outbreaks reported, 28 of which (93 per cent) resulted in ward/bay closures and 19 (63 per cent) were laboratory confirmed as norovirus.

**Table 1: Reports of suspected and confirmed norovirus outbreaks in hospitals (HNORS) and laboratory reports to PHE- week 40 to 41 2017 (02/10/2017 to 15/10/2017)**

| Public Health England Region | Outbreaks |                  |               | Laboratory reports* |
|------------------------------|-----------|------------------|---------------|---------------------|
|                              | Outbreaks | Ward/bay closure | Lab confirmed |                     |
| East of England              |           |                  |               | 9                   |
| East Midlands                |           |                  |               | 17                  |
| London                       |           |                  |               | 21                  |
| North East                   | 1         | 1                |               | 5                   |
| North West                   |           |                  |               | 7                   |
| South East                   | 1         | 1                | 1             | 1                   |
| South West                   | 2         | 2                | 2             | 12                  |
| West Midlands                | 2         | 2                | 2             | 5                   |
| Yorkshire and the Humber     |           |                  |               | 28                  |
| <b>Total</b>                 | <b>6</b>  | <b>6</b>         | <b>5</b>      | <b>105</b>          |

\* By patient's area of residence

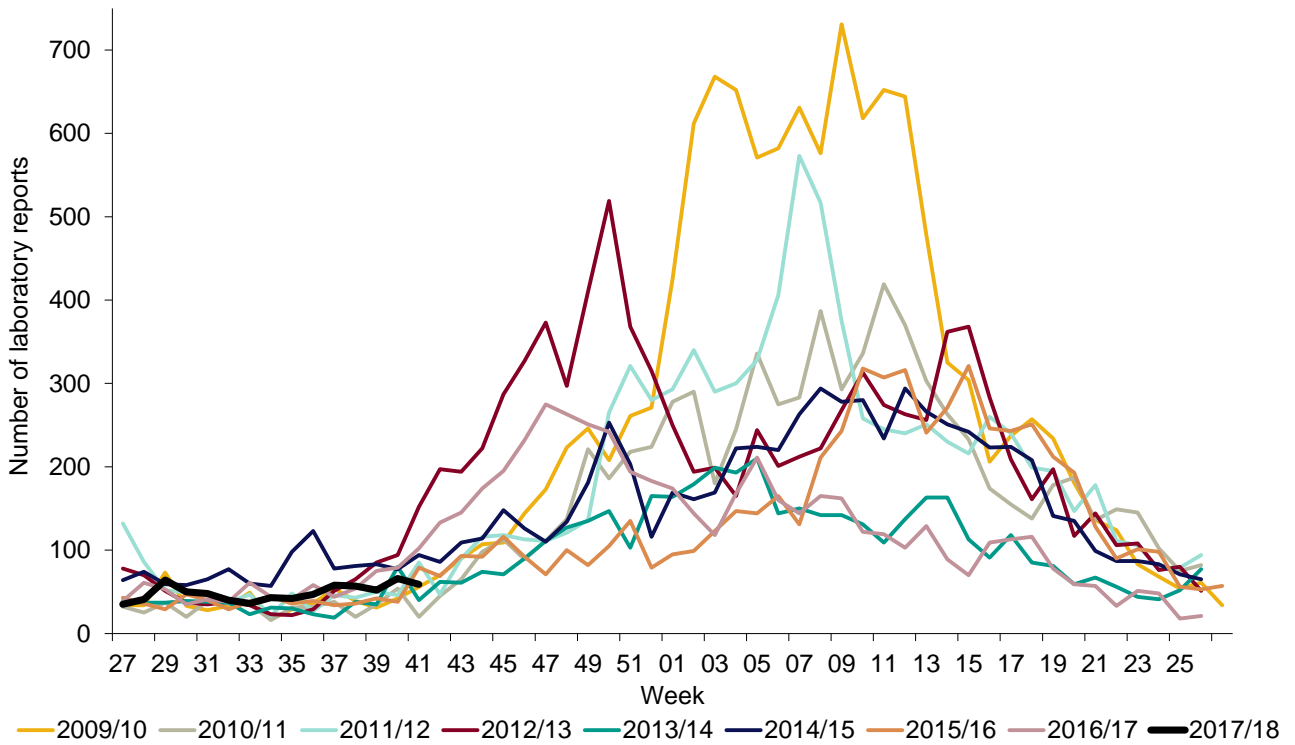
### Norovirus Laboratory Reporting – England and Wales

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 41, 2017) is 738.

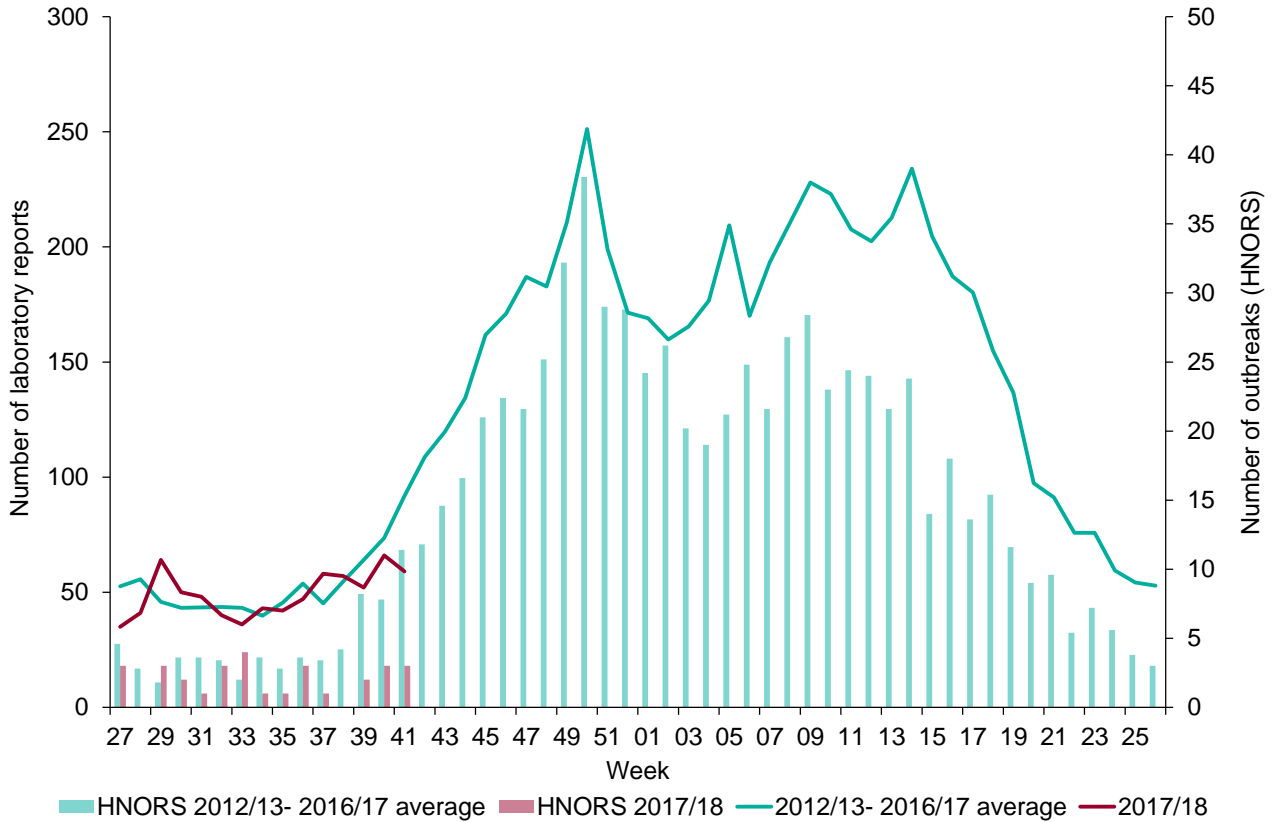
This is 8 per cent lower than the average number for the same period in the previous five seasons from season 2012/13 to season 2016/17 (799), and 11 per cent lower than the same weeks last season (825).

Norovirus activity varies from season to season and no two seasons are the same. The emergence of novel strains of norovirus may result in shifts in seasonality (Allen et al, 2014).

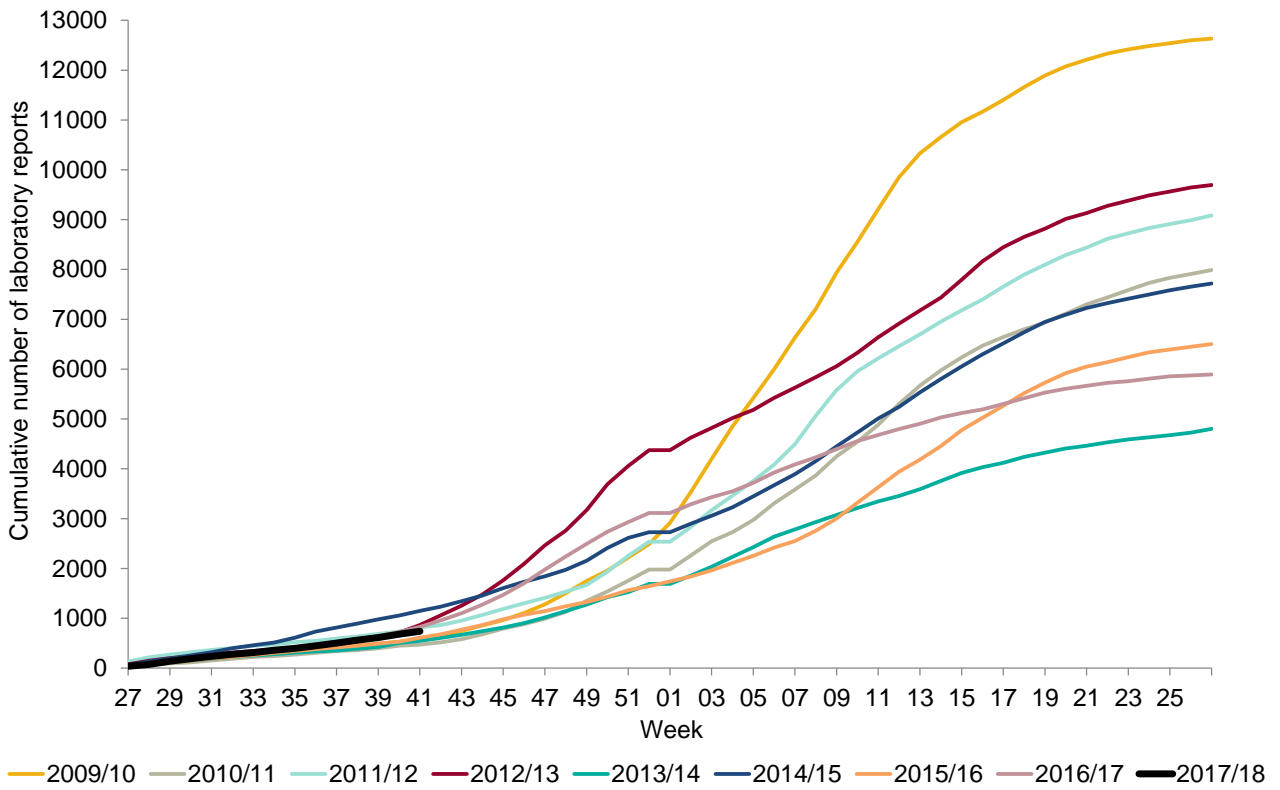
**Figure 1: Seasonal comparison of laboratory reports of norovirus (England and Wales)**



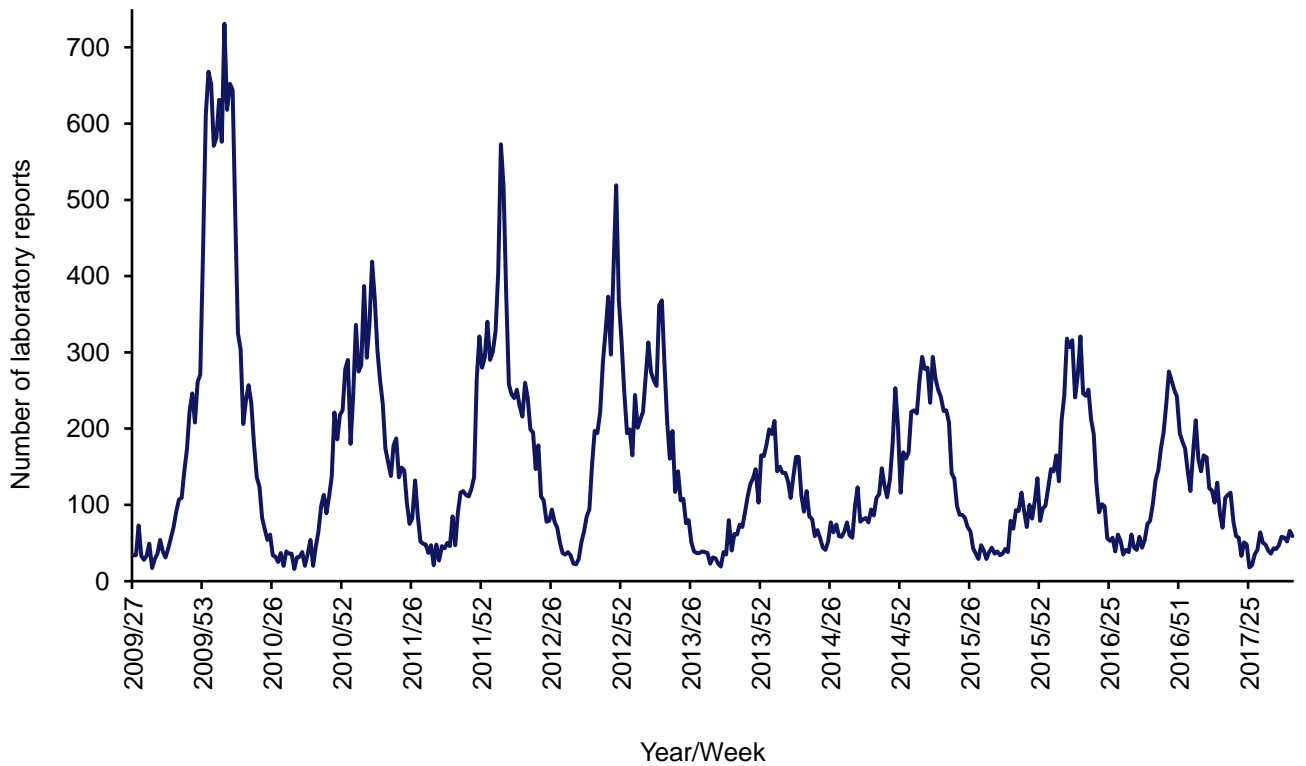
**Figure 2: Laboratory (England and Wales) and hospital outbreak reports (England) by week of occurrence**



**Figure 3: Cumulative number of laboratory reports of norovirus by season 2007/8-2016/17 (England and Wales)**



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



Data provided to week 38-2017. Samples referred for norovirus characterisation from week 38 onwards are still ongoing.

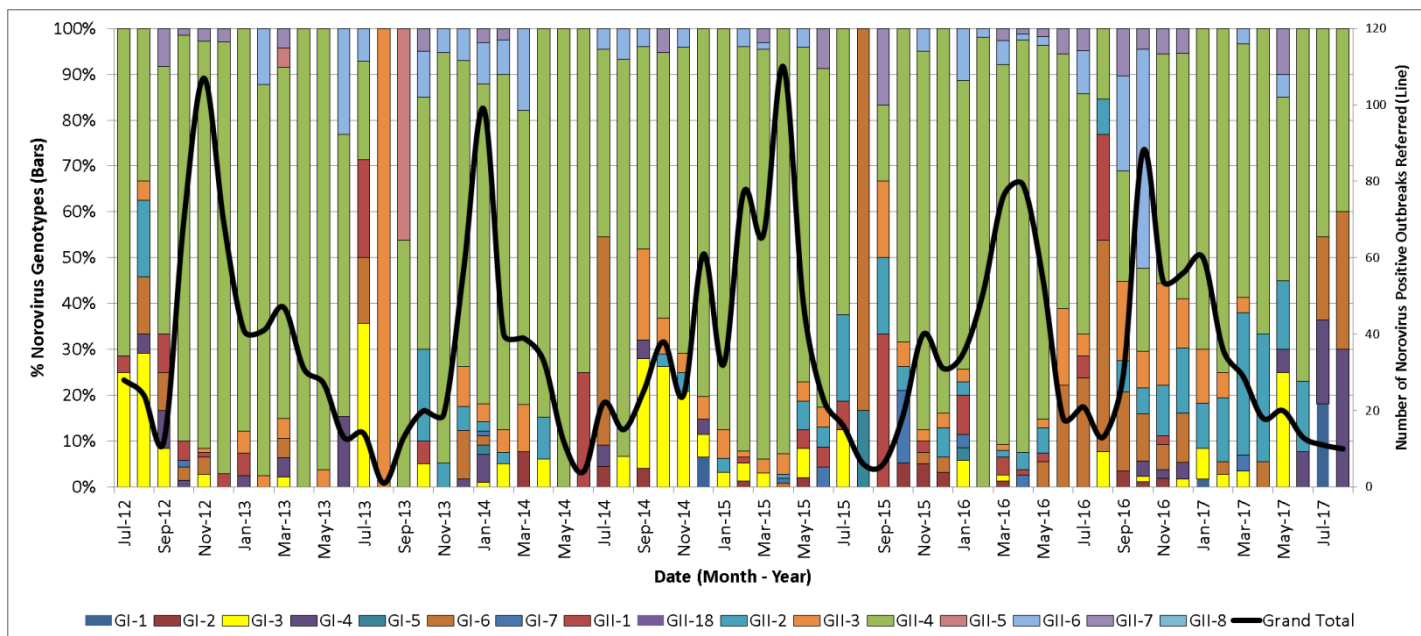
Total number of outbreaks referred to VRD last season (27-2016 to 26-2017): **416**  
 Total number of outbreaks confirmed as norovirus positive last season: **303**

Total number of outbreaks from healthcare settings, referred to VRD last season (27-2016 to 26-2017): **261**  
 Total number of outbreaks from healthcare settings, confirmed as norovirus positive last season: **163**

Total Number of outbreaks referred to VRD Current Season (27-2017 to 38-2017): **61**  
 Total number of outbreaks confirmed as norovirus positive: **55**

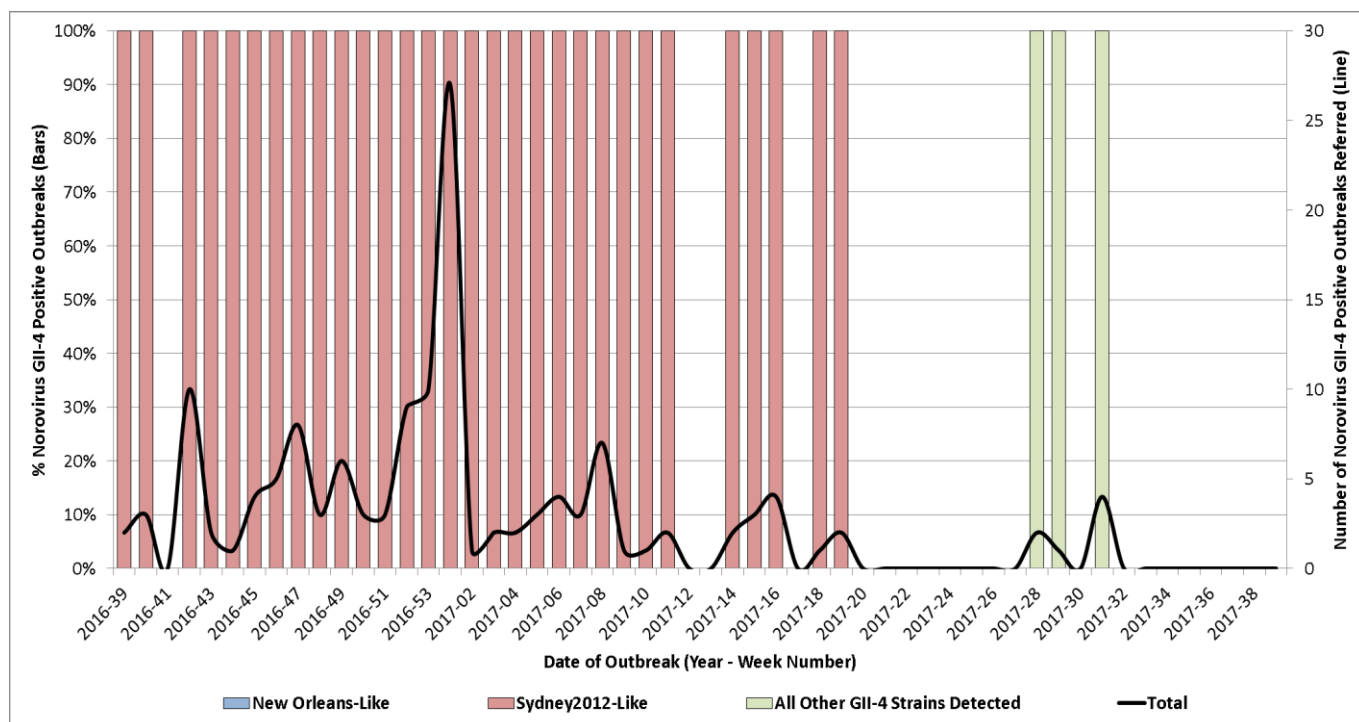
Total number of outbreaks from healthcare settings, referred to VRD Current season (27-2017 to 38-2017): **21**  
 Total number of outbreaks from healthcare settings, confirmed as norovirus positive: **16**

Figure 5: Norovirus-confirmed outbreaks (all settings, by month) referred to VRD:



- 72.54% of norovirus-confirmed outbreaks were associated with GII-4 strains since July 2012
- 5 different norovirus genotypes have been detected in the current season (27-2017 to 38-2017).
- The majority of norovirus-confirmed outbreaks in the current season (27-2017 to 38-2017) were associated with GII-4 (9/21, 42.86%).

**Figure 6: GII-4 norovirus strains detected (by week) among norovirus confirmed outbreaks (all settings) (39-2016 to 38-2017):**



- The most commonly detected GII-4 strain between periods 39-2016 to 38-2017 is Sydney2012 and is associated with 95.04 % of GII-4 norovirus-confirmed outbreaks.
- The most commonly detected GII-4 strain in the previous season (2016-2017) was Sydney2012.

**Activity in prisons and other places of detention - England** [\[Back to top\]](#)

One outbreak of diarrhoea and vomiting was reported in prisons between weeks 40 and 41 2017.

For guidance on the management of outbreaks in prisons see:

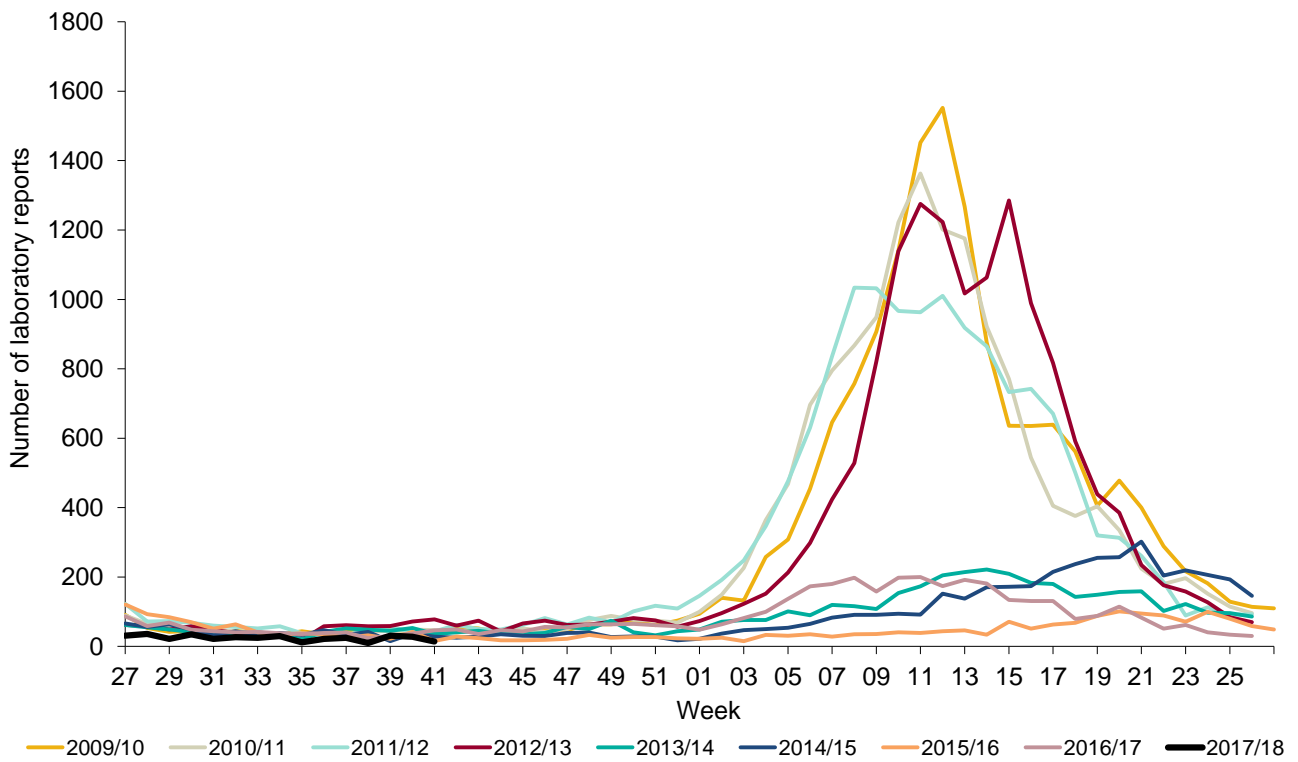
<https://www.gov.uk/government/publications/multi-agency-contingency-plan-for-disease-outbreaks-in-prisons>

**Rotavirus Laboratory Reporting – England and Wales** [\[Back to top\]](#)

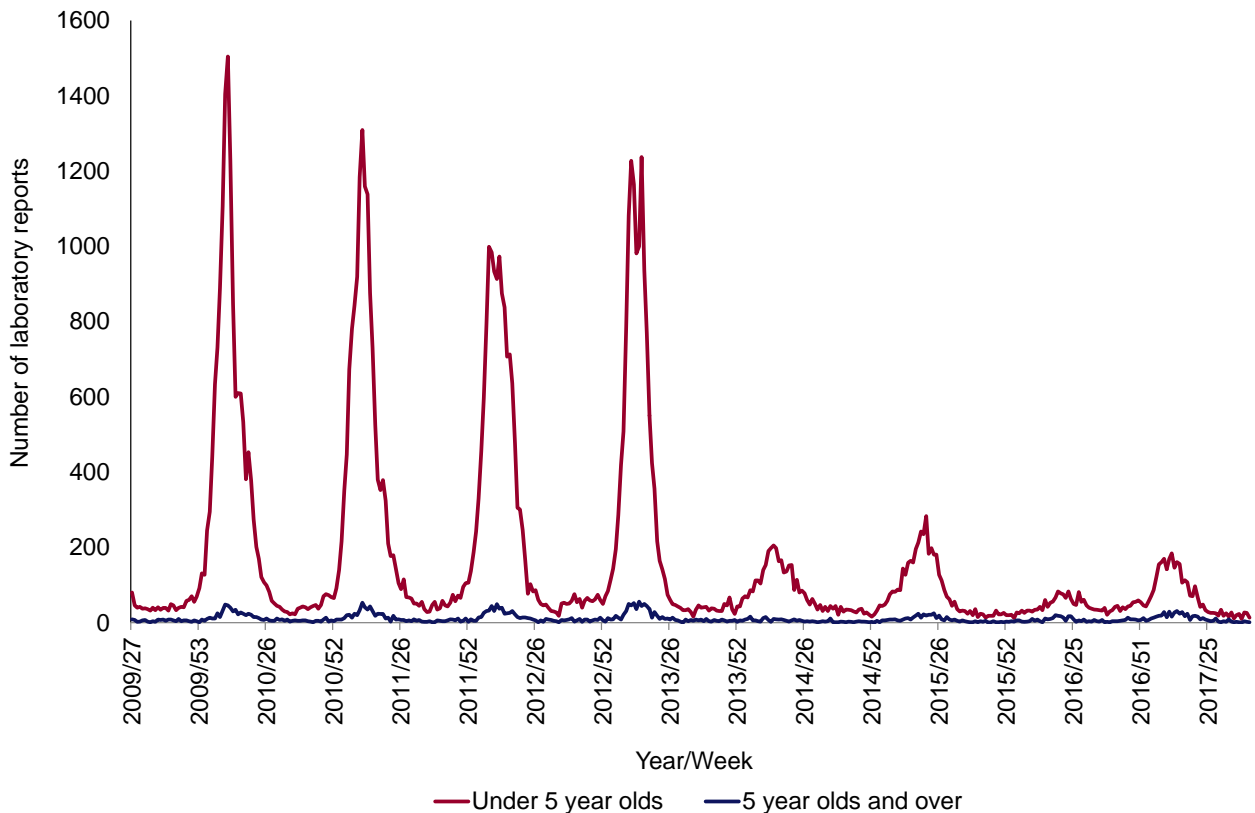
The number of laboratory reports of rotavirus in England and Wales as reported to Public Health England, in this season (week 27, 2017 to week 41, 2017) is 370. This is 41 per cent lower than the ten season average (pre-vaccine) for the same period in the seasons 2003/04 to 2012/13 (623), and 46 per cent lower than the four season average (post-vaccine) for the same period in the seasons 2013/14 to 2016/17 (680).

Rotavirus particularly contributes to reported diarrhoea and vomiting illness in children aged under five however 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.

**Figure 7: Seasonal comparison of laboratory reports of rotavirus by week (England and Wales)**



**Figure 8: Laboratory reports of rotavirus by week and age group (England and Wales)**





## Acknowledgements

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This report was prepared by the Gastrointestinal Infections Department, Centre for Infectious Disease Surveillance and Control, Public Health England. We are grateful to all who provided data for this report including infection control staff in hospitals who take the time to contribute data to HNORS, the Virus Reference Department, Public Health England and the Health and Justice Team, Public Health England.

Any queries or comments can be directed to [noroOBK@phe.gov.uk](mailto:noroOBK@phe.gov.uk)

## References

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Atchison, C. J., Stowe, J., Andrews, N., Collins, S., Allen, D. J., Nawaz, S., Brown, D., Ramsay, M. E. & Ladhani, S. N. 2016. Rapid Declines in Age Group–Specific Rotavirus Infection and Acute Gastroenteritis Among Vaccinated and Unvaccinated Individuals Within 1 Year of Rotavirus Vaccine Introduction in England and Wales. *The Journal of Infectious Diseases*, 213, 243-249.

Allen DJ, Adams NL, Aladin F, Harris JP, Brown DWG (2014) Emergence of the GII-4 Norovirus Sydney2012 Strain in England, Winter 2012–2013. *PLoS ONE*9(2): e88978. <https://doi.org/10.1371/journal.pone.0088978>