



Public Health
England

Protecting and improving the nation's health

2018 to 2019 Season Norovirus Report

National norovirus laboratory and
outbreak data in England

March 2021

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Main points for 2018/2019 season

1. During the 2018/2019 season, (July 2018 to June 2019), there were 6,172 laboratory reports of norovirus in England, and 274 reported outbreaks of suspected and confirmed norovirus in Acute NHS Trust hospitals in England.
2. The number of norovirus laboratory reports during the 2018/2019 season was comparable with the 5-season average (2013/2014 to 2017/2018) of 6,195 laboratory reports, however reports of suspected and confirmed outbreaks in Acute NHS Trust hospitals were 53% lower than the 5-season average (576 outbreaks).
3. During the 2018/2019 season, 92% of the 274 reported outbreaks in Acute NHS Trust hospitals led to ward closures or restrictions to admissions and 83% were laboratory confirmed as norovirus.
4. Throughout the year, reports of norovirus activity are published, providing summaries of laboratory reporting, virology and reports of outbreaks in hospitals. These reports are published weekly during the winter months and monthly during the summer months; all 2018/2019 season reports are available [here](#).

Introduction

While norovirus is more prevalent in the winter months norovirus infections do also occur in the summer, therefore each reporting season runs from July to the following June (week 27 to week 26) in order to capture the winter peak of activity in one reporting period. There can be substantial variation in norovirus activity from one reporting season to the next and because no single surveillance system fully captures national changes in norovirus activity, we present data from 3 systems in this report which collectively describe recent trends.

Laboratory data (SGSS)

During the 2018/2019 season (1 July 2018 to 30 June 2019) there were 6,172 laboratory reports of norovirus in England. This is comparable to the average of the previous 5 seasons (2013/2014 to 2017/2018) of 6,195 laboratory reports.

Table 1. Laboratory reports of norovirus in England by reporting season (2013/2014 to 2018/2019)*

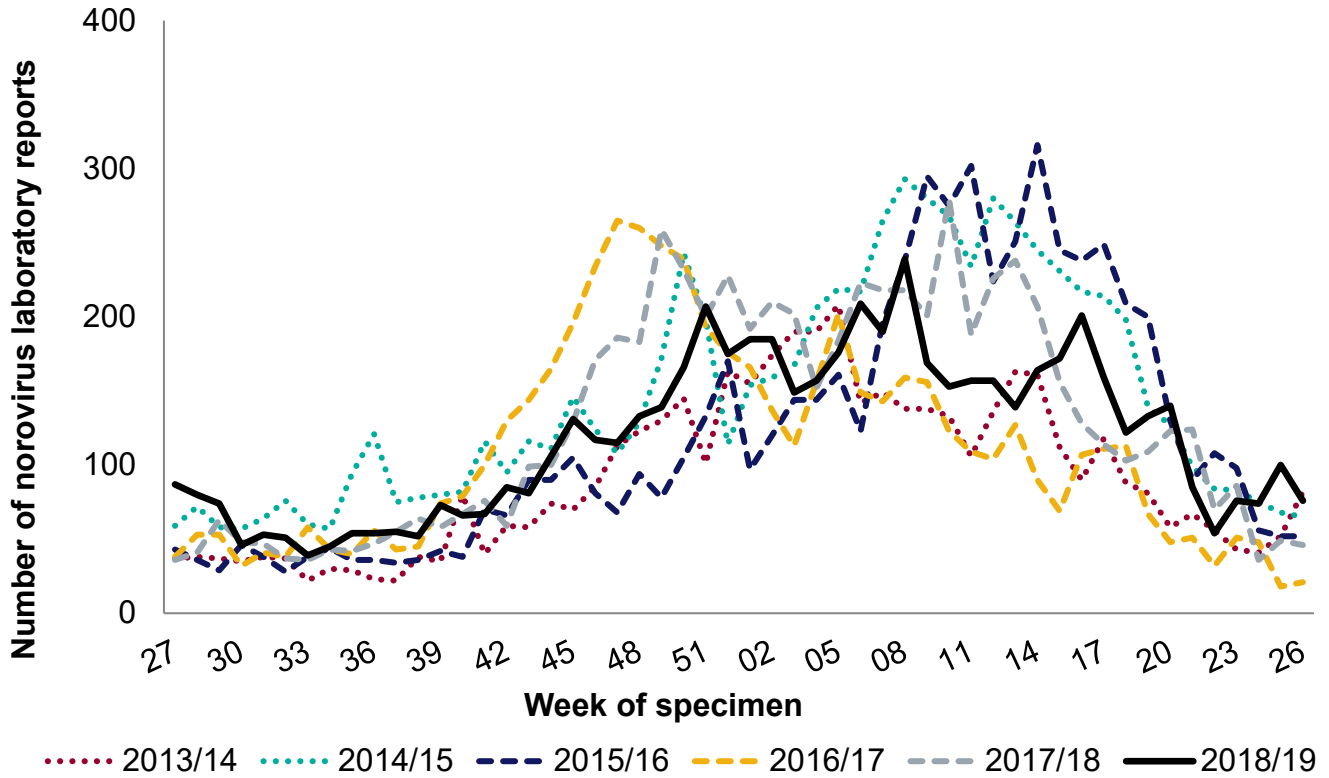
Season	Number of laboratory reports	Laboratory reports per 100,000 population
2013/2014	4,733	8.8
2014/2015	7,556	13.9
2015/2016	6,287	11.4
2016/2017	5,713	10.3
2017/2018	6,688	12.0
2018/2019	6,172	11.0

* Number of norovirus laboratory reports in 2017/2018 and 2018/2019 seasons may differ to that presented in previous reports as they are updated from a live reporting system

While the cumulative number of norovirus laboratory reports each season have been fairly consistent since the 2015/2016 season, the peak of activity has occurred at different time points during each season. The only season in which the peak of activity occurred in late December was 2016/2017, and while activity in all other seasons appeared to peak in December there was a second, higher peak of activity which occurred later in the season between February and April.

Norovirus activity during the 2018/2019 season was comparable to activity during the previous 5 seasons, peaking in mid-February (week 8, 2019).

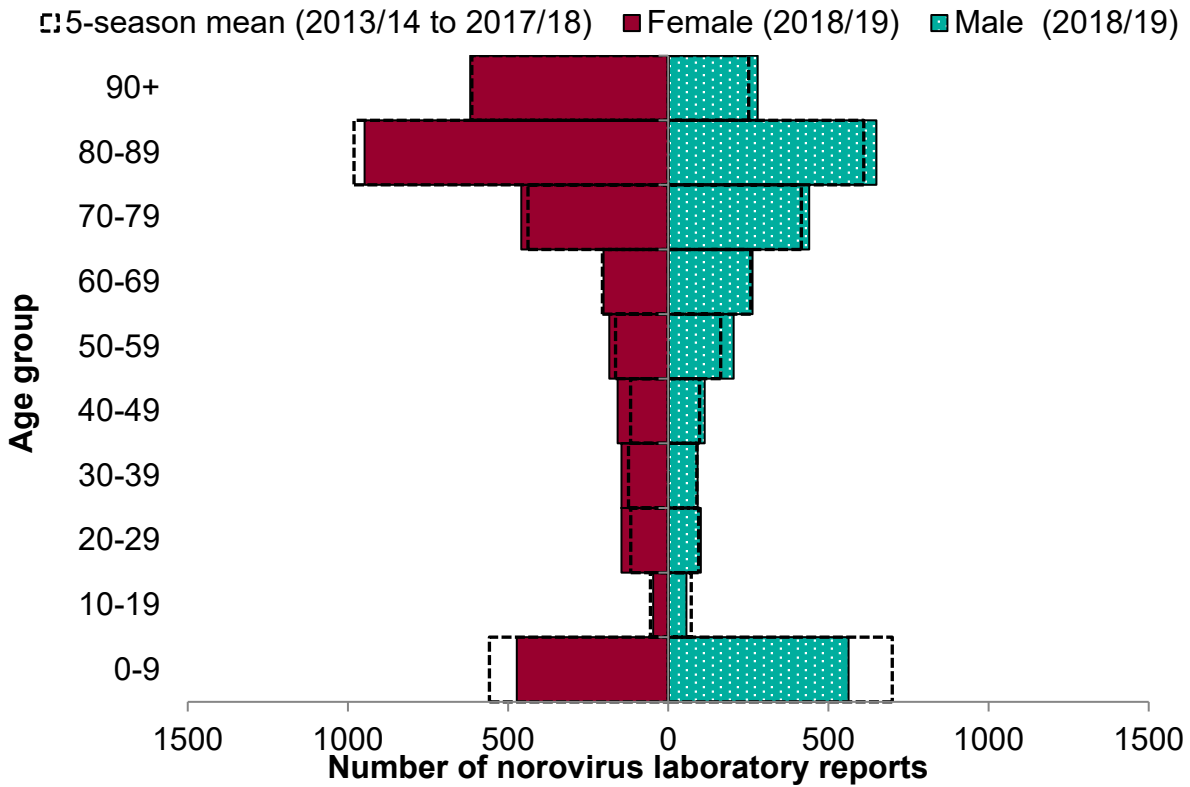
Figure 1. Comparison of laboratory reports of norovirus in England by reporting season (2013/2014 to 2018/2019)*



* There were 53 reporting weeks in the 2015/2016 season, therefore week 53, 2015 laboratory reports have been added to the data for week 52, 2015 in order to not distort the graph

The highest reported burden of norovirus infection in England is among adults aged 80 and over (Figure 2). These age groups are more vulnerable to complications such as dehydration and may live in shared accommodation, such as residential care homes or nursing homes, where norovirus outbreaks can have a very disruptive impact and therefore they are more likely to be tested for norovirus. It is also likely that the burden of norovirus in other age groups is underestimated. During the 2018/2019 season the age-sex distribution of norovirus laboratory reports was comparable to the 5-season average in all age groups apart from children aged 0 to 9, which was slightly lower than the 5-season average (3%, Figure 2).

Figure 2. Comparison of age/sex distribution of norovirus laboratory reports in England during 2018/2019 season to 5-season average (2013/2014 to 2017/2018)*



* 372 reports with unknown age and/or gender were excluded from this figure.

During the 2018/2019 season Yorkshire and Humberside was the PHE region with the highest number of norovirus laboratory reports and the North East of England had the lowest (Table 2), with 1,311 and 222 laboratory reports respectively. Local testing criteria and methodologies for norovirus are known to vary across England therefore variations may reflect differences in ascertainment by region.

Table 2. Regional distribution of laboratory reports of norovirus in England (2018/2019)

PHE Region	Number of laboratory reports
East Midlands	408
East of England	898
London	640
North East	222
North West	639
South East	528
South West	954
West Midlands	572
Yorkshire and Humberside	1,311

Hospital outbreaks (HNORS)

In England suspected and confirmed norovirus outbreaks in Acute NHS Trusts are voluntarily reported to the Hospital Norovirus Outbreak Reporting System (HNORS). Between 17 May and 7 October 2019, the HNORS website was temporarily offline; reliance on manual data collation during this period may have negatively impacted outbreak ascertainment, therefore trends should be interpreted with caution.

During the 2018/2019 norovirus season (1 July 2018 to 30 June 2019) 274 suspected and confirmed norovirus outbreaks were reported in England via HNORS. This is a 53% decrease in reported outbreaks compared to the average of the previous 5 seasons (2013/2014 to 2017/2018, 576 outbreaks) (Table 3, Figure 3). While ascertainment may have been reduced when the HNORS website was offline for the last 6 weeks of the 2018/2019 season, the reduction in reporting cannot be wholly attributable to this.

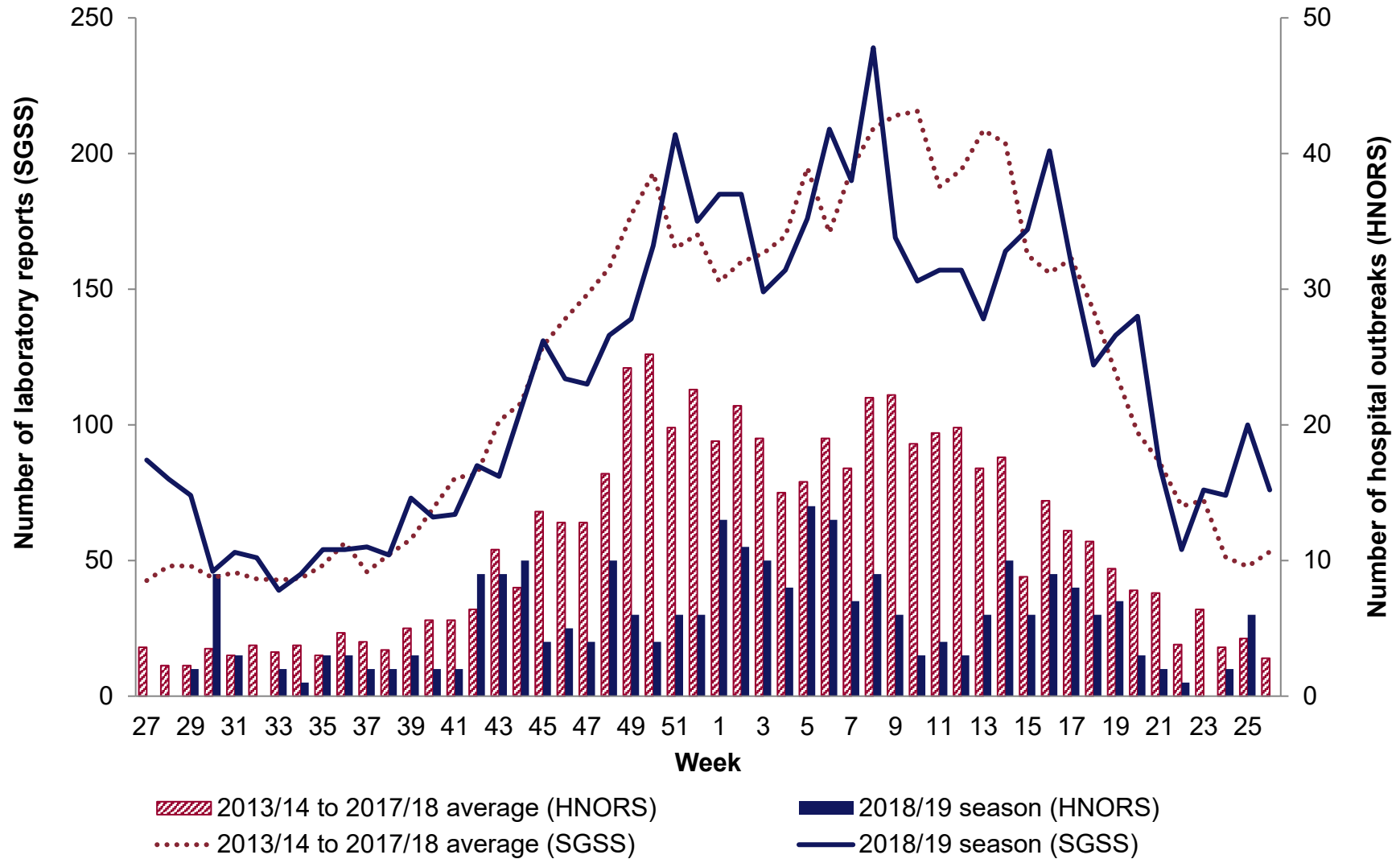
Overall during the 2018/2019 season 92% (253) of the reported outbreaks led to ward/bay closures or restriction to admissions which is consistent with the 5-season average of 95%. Eighty-three per cent (227) of reported outbreaks were laboratory confirmed as norovirus, this is 8% higher than the 5-season average of 75%.

Table 3. Seasonal reports of suspected and confirmed norovirus outbreaks in Acute NHS Trust hospitals in England (2013/2014 to 2018/2019)

Season	Number of outbreak reports	Number of laboratory confirmed outbreaks	Any bay or ward closures
2013/2014	625	419	586
2014/2015	858	630	806
2015/2016	491	381	466
2016/2017	437	337	410
2017/2018	472	370	455
2018/2019	274	227	253

Despite the lower number of suspected and confirmed norovirus outbreaks reported via HNORS during the 2018/2019 season compared to the 5-season average the high percentage of closures or restrictions to admissions was consistent with previous seasons and demonstrates the sustained disruption norovirus causes in the NHS. Given the seasonality of norovirus, the increased pressure of closures or restrictions also occurs at a time when demands for NHS services are at their peak. Although reporting to HNORS is voluntary and is therefore considered to be an underestimate, the data collected continue to improve the understanding of the impacts of norovirus outbreaks in hospital settings.

Figure 3. Weekly number of Acute NHS Trust hospital outbreaks and norovirus laboratory reports, 2018/2019 season compared to 5-season average (2013/2014 to 2017/2018)*



* There were 53 reporting weeks in the 2015/2016 season, therefore week 53, 2015 laboratory and outbreak reports have been added to the data for week 52, 2019 to not distort the graph.

Foodborne outbreaks of norovirus (eFOSS)

Foodborne outbreaks of norovirus are reported to the electronic Foodborne Outbreak Surveillance System (eFOSS). Overall 19 suspected and confirmed foodborne outbreaks of norovirus were reported to eFOSS during the 2018/2019 season. Of these 3 were suspected and 16 were laboratory confirmed as norovirus, one of which was laboratory confirmed as norovirus and adenovirus. This total of 19 was higher than the 5-season average of 10 suspected and confirmed foodborne norovirus outbreaks. The vehicle was 'unknown' for 37% of reported outbreaks (7) and where a vehicle was identified oysters were the most commonly reported vehicle with 4 outbreaks associated with raw oyster consumption (Table 4).

Table 4. Reports of suspected and confirmed foodborne norovirus outbreaks in England (2018/2019)

Agent	Total affected	Laboratory confirmed	Hospital admissions	Setting	Vehicle
Norovirus (GII)	15	1	0	Restaurant	Lamb, salad
Norovirus (GII)	3	1	0	Restaurant	Oysters
Norovirus	30	9	1	Events venue, buffet	Egg mayonnaise sandwiches
Norovirus	22	4	0	Restaurant	Unknown
Norovirus	13	8	0	Take-away	Mexican burrito style wraps and accompaniments
Norovirus (GII)	17	4	0	Pub	Unknown
Norovirus	19	6	0	Restaurant	Egg fried rice and stir-fried dishes
Norovirus	20	6	0	Restaurant	Mixed foods

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Agent	Total affected	Laboratory confirmed	Hospital admissions	Setting	Vehicle
Norovirus (GII)	14	1	0	Hotel	Unknown
Norovirus (GII)	15	3	0	Pub	Unknown
Norovirus (GII)	56	1	0	Secondary school	Unknown
Norovirus	31	1	1	College	Mixed foods
Norovirus (GII)	37	1	0	College (charity event)	Oysters
Norovirus	42	Unknown	0	Football club	Cheeseburger and chips
Norovirus	42	3	1	Golf club	Unknown
Norovirus, adenovirus	50	7	0	Hotel	Unknown
Suspected norovirus	14	0	0	Hotel	Oysters
Suspected norovirus	4	0	0	Restaurant	Beef, spinach cannelloni
Suspected norovirus	5	0	0	Restaurant	Oysters and mixed fish grill

Data sources and caveats

SGSS and HNORS data presented in this report are correct as of 17 June 2020, eFOSS data are correct as of 5 November 2020.

Frontline laboratory reports of positive norovirus samples are provided by Labbase2 (2006 to October 2014) and Second Generation Surveillance System (SGSS) (November 2014 onwards). This is a live laboratory reporting system. Therefore, numbers may fluctuate. Data provided in this report are new extractions from this system and provide updated figures to previously published reports. In 2014, PHE upgraded the laboratory reporting system. So direct comparisons between data reported from the previous system (LabBase2) and the new system (SGSS) may require cautious interpretation.

Data extracted are faecal and lower gastrointestinal tract specimens only for England as reported to Public Health England, and reporting region is based on case's area of residence.

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.

Between May and October 2019 HNORS was temporarily offline. The reliance on manual data collation may have resulted in a reduction in reporting during this period.

Mid-Year Population Estimates used to calculate an estimate of the population of England during the 2018/2019 season (mean of 2018 and 2019 estimates). Office for National Statistics licensed under the Open Government License.

In seasons with 53 reporting weeks (for example, week 53, 2015 in season 2015/2016) the number of laboratory reports or outbreaks are added to the total for week 52.

Acknowledgements

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This report was produced by the Gastrointestinal Pathogens Unit, PHE, any queries or comments can be directed to NoroOBK@phe.gov.uk.

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