Public Health England

Protecting and improving the nation's health

National Norovirus and Rotavirus Bulletin

Routine norovirus and rotavirus surveillance in England, 2020 to 2021 season

Week 24 report: data to week 21 (30 May 2021)

Contents

Main messages

1. PHE launched this National Norovirus and Rotavirus Bulletin in December 2020 to provide an overview of activity in England during the 2020/2021 season. This publication temporarily replaces the suspended Official Statistics national norovirus and rotavirus report. This monthly bulletin covers the 4 week period between 3 and 30 May 2021 (reporting weeks 18 to 21).

2. In England, decreased activity across all surveillance indicators has continued through the first quarter of 2021, particularly for norovirus. The reasons for these reductions are considered to be multifactorial. The coronavirus (COVID-19) pandemic has led to many changes which have likely had a negative impact on surveillance indicators, but which have likely also resulted in reduced norovirus and rotavirus transmission. It is possible that unusual or out of season increases in norovirus activity could be seen following the staged easing of COVID-19 control measures[1].

3. Reported norovirus activity is increasing and although the overall number of reported enteric virus (EV) outbreaks remains lower than the 5-season average, since week 14, 2021, the total number of EV outbreaks reported has been steadily increasing, with the biggest reported increases in care home and educational settings. Therefore, the National Norovirus Surveillance Team will continue to closely monitor all available surveillance data to ensure any unusual norovirus activity, including novel strain emergences or replacement events are detected as early as possible.

4. PHE's Enteric Virus Unit (EVU) provides a norovirus characterisation service to support national surveillance and monitor the diversity of circulating strains so the emergence of novel variants, which could lead to a strain replacement event, are detected as early as possible. To enable effective molecular surveillance during this period it is crucial that samples are obtained from suspected norovirus cases or outbreaks for laboratory confirmation and then norovirus-positive samples are referred on to EVU for characterisation.

[1] Douglas A, Sandmann FG, Allen DJ, Celma CC, Beard S, Larkin L. Impact of COVID-19 on national surveillance of norovirus in England and potential risk of increased disease activity in 2021. Journal of Hospital Infections. 2021 Mar 11:S0195-6701(21)00101-8. doi: 10.1016/j.jhin.2021.03.006.

Data summary

Data reported here provide a summary of norovirus and rotavirus activity (including EV outbreaks) in England up to reporting week 21 of the 2020/2021 season.

Since week 12 of the 2019/2020 season, and throughout the 2020/2021 season, reported norovirus activity has been substantially lower than the 5-season average for the same period (2014/2015 to 2018/2019, Figure 1).

After a decrease during week 12, 2020 rotavirus laboratory reports were lower than the 5-season average of the same period and have remained lower during the 2020/2021 season (Figure 2).

The number of reported EV outbreaks dropped in week 12 of the 2019/2020 season and remains lower than the 5-season average calculated from 2014/2015 to 2018/2019 (cumulative total to week 21 in 2020/2021 season is 88% lower, Figure 3). During the 4 week period between weeks 18 and 21, 2021 the majority of reported EV outbreaks have occurred in care home and educational settings (46% and 42% respectively, Figure 4). While the overall number of reported EV outbreaks remains lower than the 5-season average across all settings the total number of EV outbreaks reported in the 4 week period between weeks 14 to 17, 2021 increased by 40% from 59 to 84 between weeks 18 and 21, 2021.

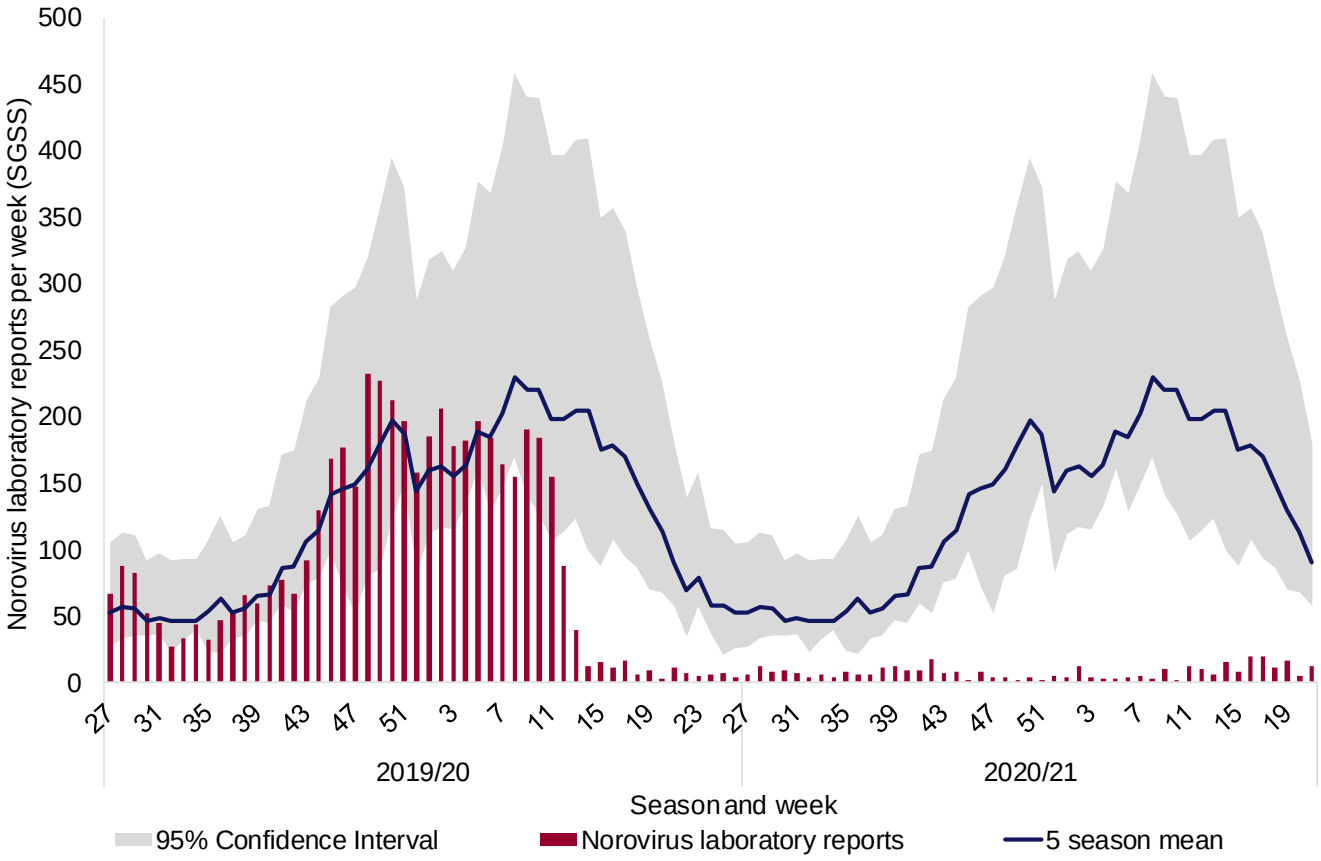
Since a decline in week 12, 2020, reports of suspected and confirmed norovirus outbreaks in hospitals have been substantially lower than the 5-season average (cumulative total to week 21 in 2020/2021 season is 96% lower, Figure 5).

Due to the low number of samples submitted for characterisation we are unable to comment on the diversity of norovirus strains currently circulating.

Laboratory data

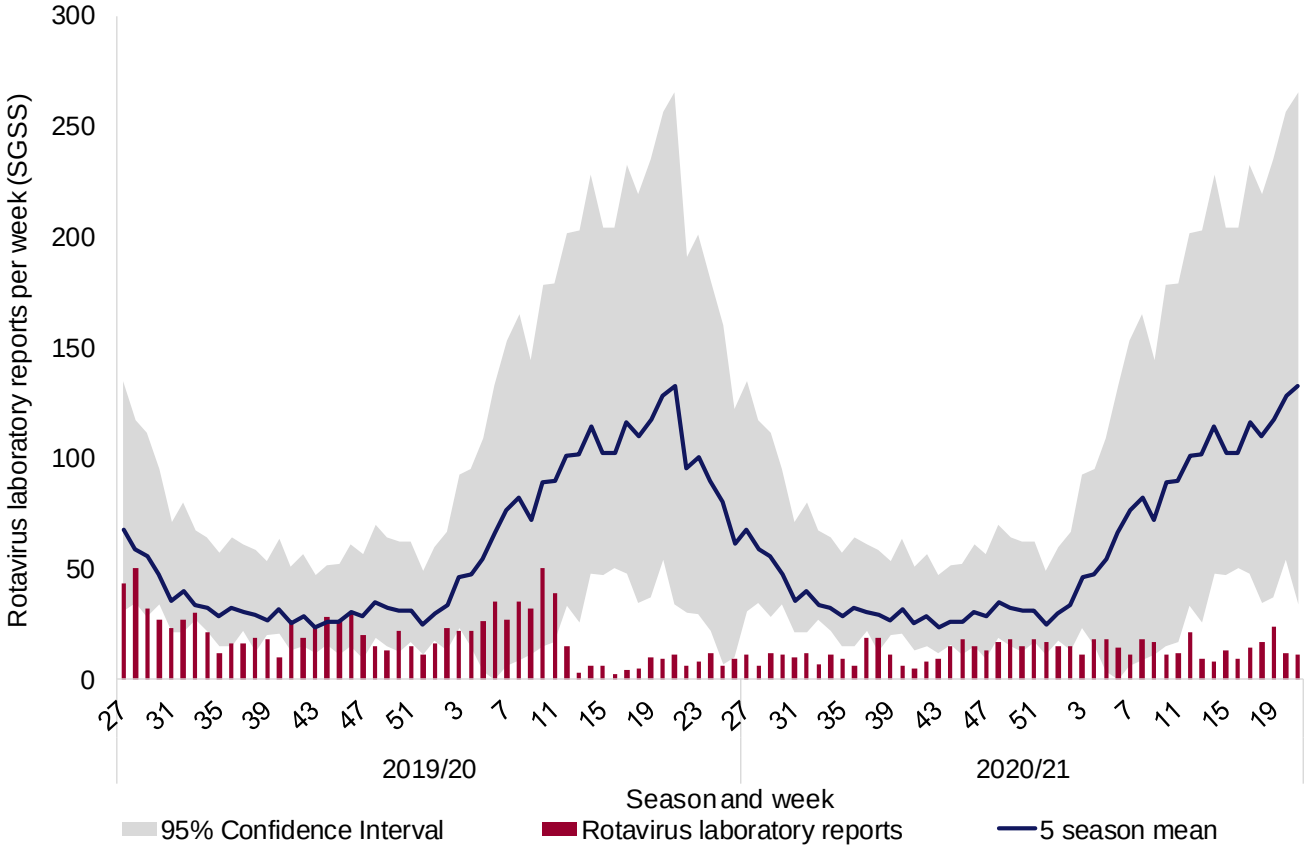
Please see data sources and caveats section for more information and for guidance on interpretation of trends and the impact of COVID-19.

Figure 1. Norovirus laboratory reports in England by week during 2019/2020 and 2020/2021 seasons, compared to 5-season averages*



* In order to capture the winter peak of activity in reporting period the norovirus season runs from week 27 in year 1 to week 26 in year 2, that is, week 27 2019 to week 26 2020, July to June. Week number is calculated from specimen date. Data are based on laboratory geography and are faecal and lower GI tract specimen types only. The 2019/2020 and 2020/2021 seasons are compared to the 5-season average calculated from the 5-season period of 2014/2015 to 2018/2019. The 2019/2020 period is not included in this calculation due to the adverse impact of the emergence of COVID-19 on surveillance part way through the 2019/2020 season. In years with a week 53 (2015 and 2020) data are combined with week 52 data to avoid distortion of the figure.

Figure 2. Rotavirus laboratory reports in England by week during 2019/2020 and 2020/2021 seasons, compared to 5-season average (2014/2015 to 2018/2019 and 2015/2016 to 2019/2020)*

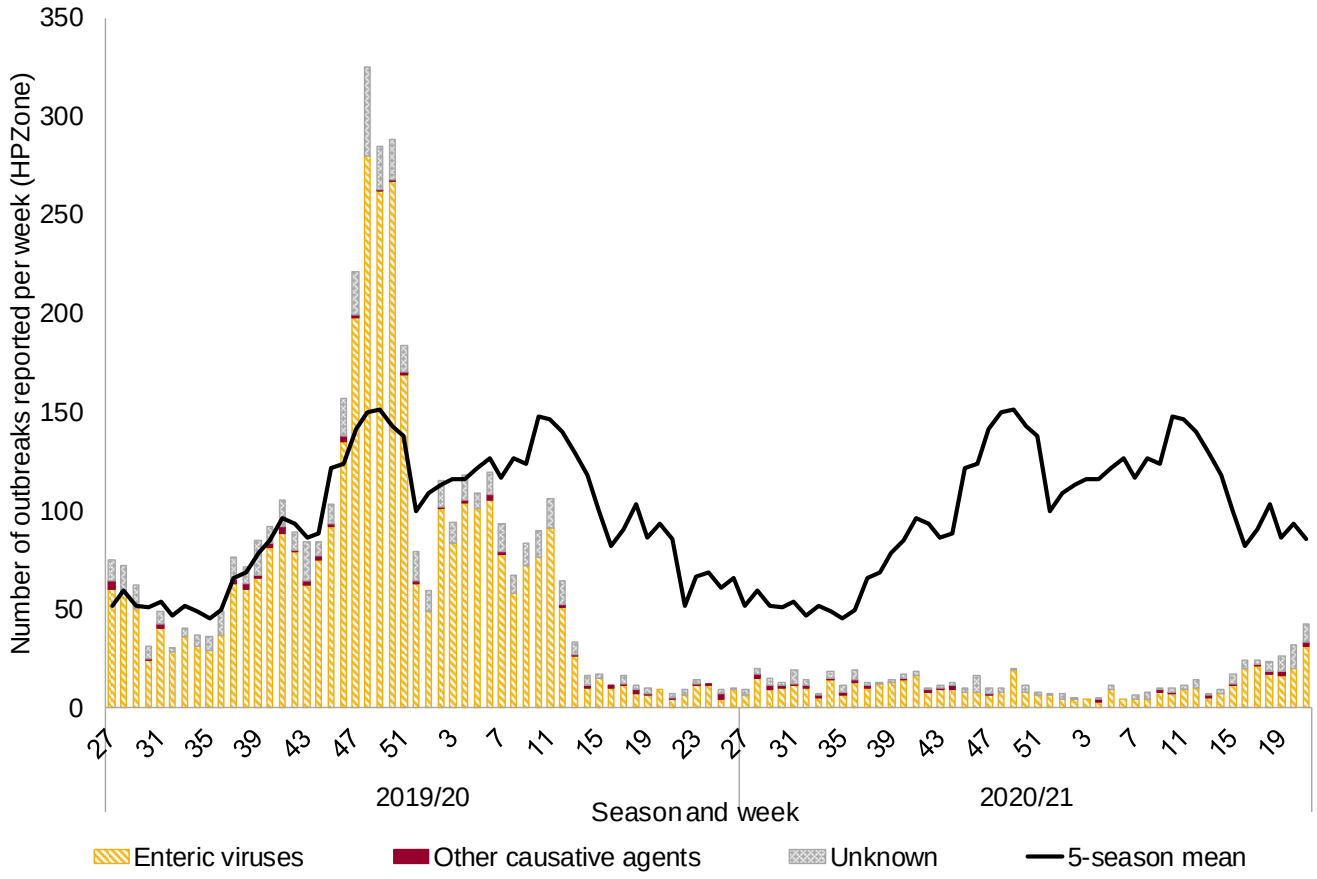


* In order to capture the winter peak of activity in reporting period the rotavirus season runs from week 27 in year 1 to week 26 in year 2, that is, week 27 2019 to week 26 2020, July to June. Week number is calculated from specimen date for SGSS data. Data are based on laboratory geography. The 2019/2020 and 2020/2021 seasons are compared to the 5-season average calculated from the 5-season period of 2014/2015 to 2018/2019. The 2019/2020 period is not included in this calculation due to the adverse impact of the emergence of COVID-19 on surveillance part way through the 2019/2020 season. In years with a week 53 (2015 and 2020) data are combined with week 52 data to avoid distortion of the figure. 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.

Outbreak data

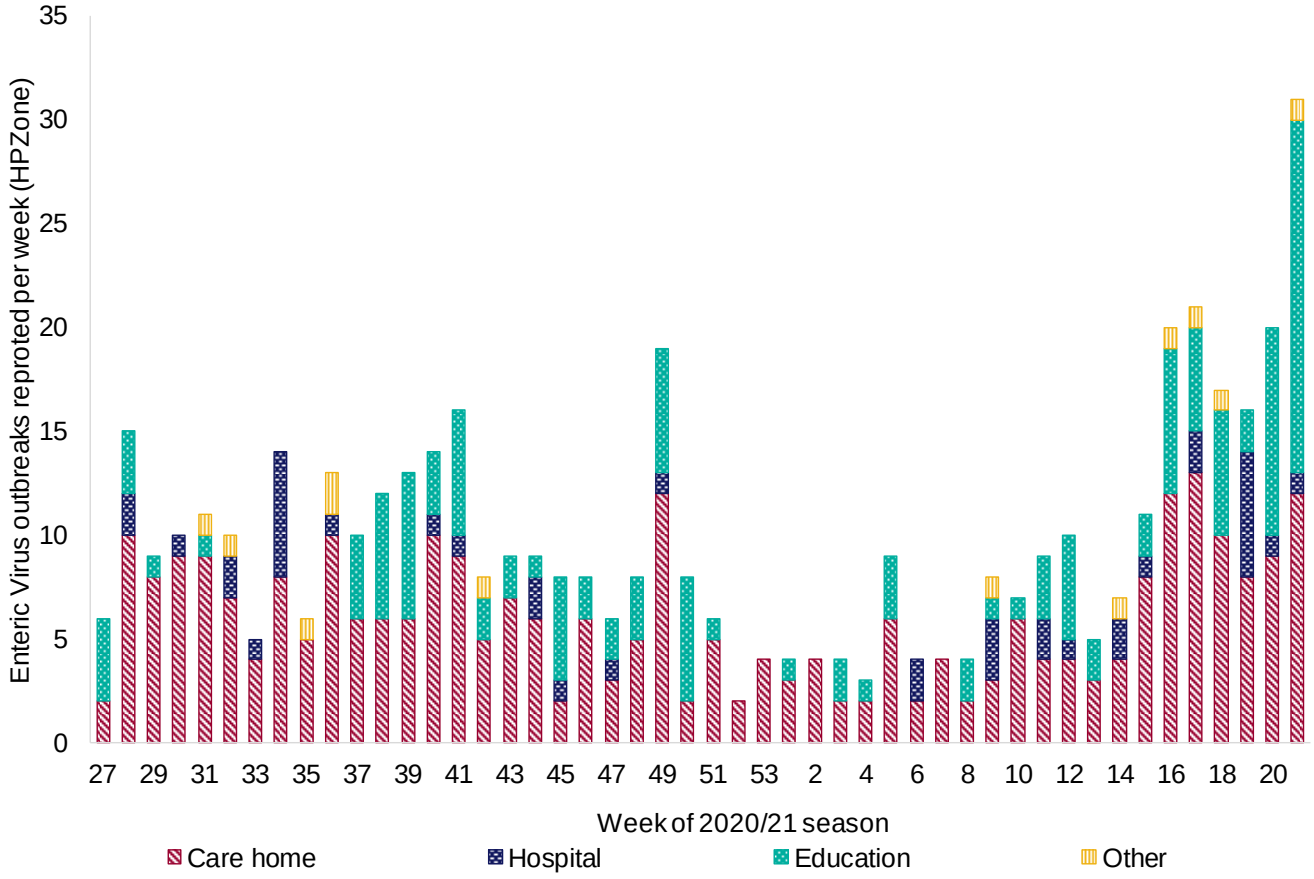
Please see data sources and caveats section for more information and for guidance on interpretation of trends and the impact of COVID-19.

Figure 3. Gastroenteritis outbreak reports by causative agent and week of declaration in England, 2019/2020 and 2020/2021 seasons compared to the 5-season average of total reported outbreaks*



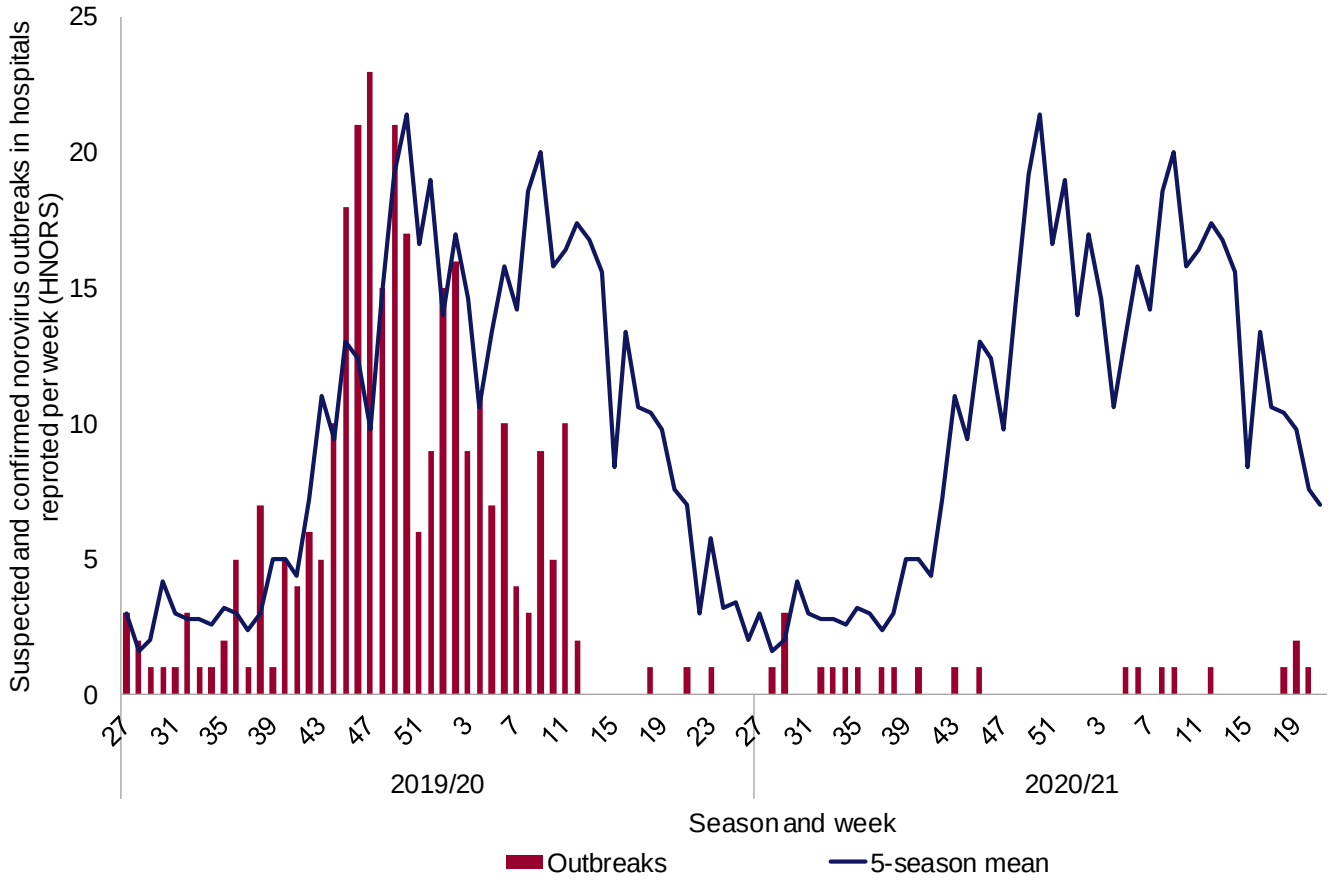
* Week number is calculated from date of outbreak declaration on PHE's case management system HPZone. The 2019/2020 and 2020/2021 seasons are compared to the 5-season average calculated from the 5-season period of 2014/2015 to 2018/2019. The 2019/2020 period is not included in this calculation due to the adverse impact of the emergence of COVID-19 on surveillance part way through the 2019/2020 season. In years with a week 53 (2015 and 2020) data are combined with week 52 data to avoid distortion of the figure. Over the 5 seasons of 2015/2016 to 2019/2020 an average of 86.1% of gastroenteritis outbreaks reported to HPZone were attributed to EVs (norovirus, rotavirus, sapovirus and astrovirus), 1.6% to other causative agents and 12.3% were of unknown cause. Of the outbreaks attributed to EVs, 98.7% were reported as suspected and confirmed norovirus outbreaks.

Figure 4. Enteric virus outbreaks reported to HPZone in England by setting during the 2020/2021 season (to week 21, 2021)



*During the previous 5 seasons (2015/2016 to 2019/2020) 61% of all reported outbreaks attributed to EVs (norovirus, rotavirus, sapovirus and astrovirus), occurred in care home settings, 22% in educational settings, 12% in hospital settings and 5% in 'other' settings. Of the outbreaks attributed to EVs, 98.7% were reported as suspected and confirmed norovirus outbreaks. Only 14% of reported EV outbreaks were laboratory confirmed as norovirus during the previous 5 seasons.

Figure 5. Suspected and confirmed norovirus outbreaks reported to HNORS in England by week of occurrence during the 2019/2020 and 2020/2021 seasons compared to the 5-season average*



*Week number is calculated from date of first case onset for HNORS data. The 2019/2020 and 2020/2021 seasons are compared to the 5-season average calculated from the 5-season period of 2014/2015 to 2018/2019. The 2019/2020 period is not included in this calculation due to the adverse impact of the emergence of COVID-19 on surveillance part way through the 2019/2020 season. In years with a week 53 (2015 and 2020) data are combined with week 52 data to avoid distortion of the figure. During the previous 5 seasons (2015/2016 to 2019/2020) 76% of outbreaks reported to HNORS were laboratory confirmed as norovirus.

Data sources and caveats

Data sources

1. Second-Generation Surveillance System (SGSS) is the national laboratory reporting system, recording positive reports of norovirus and rotavirus.

2. Hospital Norovirus Outbreak Reporting System (HNORS) is a web-based scheme for reporting suspected and confirmed norovirus outbreaks in Acute NHS Trust hospitals, and captures information on the disruptive impact these outbreaks have in hospital settings.

3. HPZone is a web-based case and outbreak management system used by Health Protection Teams (HPTs) to record outbreaks they are notified of and investigate. In England, suspected and confirmed Enteric Virus (EV) outbreaks (norovirus, rotavirus, astrovirus and sapovirus) are reported as 'Gastroenteritis' outbreaks.

4. Norovirus characterisation data is produced by the Enteric Virus Unit and is used to monitor the diversity of circulating strains of norovirus in England.

Data caveats

Trends for the 2020/2021 season should be interpreted with caution. It is likely that the interventions implemented to control COVID-19 have led to a reduction in enteric virus transmission. However, when considering the surveillance data reported here, the magnitude of the reduction is unlikely to be wholly attributable to these control measures alone. It will include other factors such as, but not limited to, changes in ascertainment, access to health care services and capacity for testing.

Under-ascertainment is a recognised challenge in enteric virus surveillance with sampling, testing and reporting criteria known to vary by region. Additionally, samples for microbiological confirmation are collected in a small proportion of community outbreaks. Therefore, this report provides an overview of enteric virus activity across England and data should be interpreted with caution.

All surveillance data included in this report are extracted from live reporting systems, are subject to a reporting delay, and the number reported in the most recent weeks may rise further as more reports are received. Therefore, data pertaining to the most recent 2 weeks are not included.

HNORS reporting is voluntary and variations may reflect differences in ascertainment or reporting criteria by region.

National guidance recommends closure of the smallest possible unit in hospitals. Therefore, not all outbreaks reported to HNORS result in whole ward closure (some closures are restricted to bays only) and not all suspected cases are tested.

From May to October 2019 and during February 2020 the HNORS website was temporarily offline. The reliance on manual data collation during this period may have negatively impacted ascertainment so trends should be interpreted with caution.

Further information

Official Statistics ‘National norovirus and rotavirus reports’ can be found at Norovirus and rotavirus: summary of surveillance reports.

Further information about norovirus surveillance can be found at Norovirus: guidance, data and analysis.

Further information about rotavirus surveillance can be found at Rotavirus: guidance, data and analysis.

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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.

About Public Health England

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