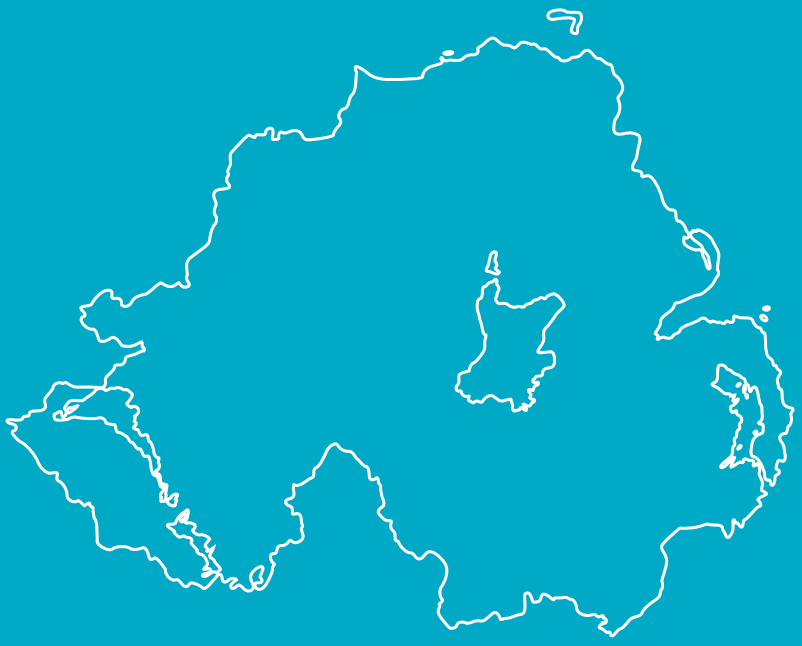
HSC Public Health Agency

Coronavirus (COVID-19)

Weekly Epidemiological Bulletin



Northern Ireland

Week 1 (03 January - 09 January 2022)

Summary - Up to week 1 (09 January 2022)

From 01 January 2021 to 09 January 2022 (week 1), there have been a total of 381,149 laboratory confirmed cases[1] of COVID-19. From March 2020 to week 52 2021 there have been 4,013 registered COVID-19 deaths[2] in Northern Ireland (NI).

COVID-19 case epidemiology

From 01 January 2021 to 09 January 2022 (week 1):

- 381,149 laboratory confirmed cases (4.7% from HSC laboratories)
- 52.2% of total cases are female
- In week 1, those aged 15-44 had the highest case rate (2455.9 per 100,000; 51.1% positivity)
- In week 1, Derry & Strabane had the highest case rate (2290.4 per 100,000 population; 48.4% positivity)

Confirmed COVID-19 care home outbreaks

- 1150 confirmed COVID-19 outbreaks reported in total; includes 51 reported in week 1
- Involving 407 care homes (85.5% of all NI care homes)
- The highest proportion of outbreaks (89.7%) were reported from the Western Trust area

Schools Surveillance

In the 28 days up to 09 January 2022:

- There were 7,901 confirmed cases notified to the Contact Tracing Service (CTS) where the case advised they

[1] Virological reports and the National Testing Programme.

[2] NISRA; 2020-21 - up to 31 December 2021.

attended or worked in a school

- 38.7% of cases were associated with post primary schools, 58.5% with primary schools and 2.8% with special schools
- 88.8% of primary, 99% of post primary and 95% of special schools have had at least one case

Mortality surveillance

- In week ending 31 December 2021, the proportion of COVID-19 deaths registered was 5.8%. From the 19 March 2020 to week ending 31 December 2021 the proportion was 12.8%
- Excess deaths were reported in 2020 in weeks 13-20, 22 & 45, and in 2021 in weeks 2, 36 and 48; mainly in those over 65 years old.

Testing surveillance virology

From 01 January 2021 to 09 January 2022 (week 1):

- Number of individuals tested in total: 2,113,733 (18% positivity)
- Number of individuals tested in:
  - HSC laboratories: 423,256 (20% of total tests)
  - National Testing Programme: 1,690,477 (80% of total tests)

What's New

- For Week 49 onwards there is currently no updated ICU/critical care data available.
- Due to the recent large increase in the number of positive COVID-19 cases associated with the Omicron variant and the pressures placed on the CT service, cases associated with higher risk settings (e.g. healthcare, food processing/packaging) and clusters and outbreaks with higher numbers have been prioritised. Therefore the number of clusters with smaller numbers of associated cases is likely to be an underestimate.
- Production of the COVID-19 Weekly Epidemiological Bulletin will be paused for the incoming Epidemiological weeks, due in part to recent changes regarding confirmatory PCR and LFT testing and their effect upon case figures, as well as related considerations surrounding the deduplication of results. This pause provides an opportunity to introduce changes effectively, to ensure outputs are useful and relevant for all stakeholders, including the public. Reporting will recommence in due course.
- CTC data (such as data relating to schools) will still be made publicly available.

Introduction

COVID-19 is an illness that can affect your lungs and airways. It's caused by a virus called SARS-CoV2 (a member of the coronavirus family).

The Public Health Agency (PHA) Health Protection team has developed this report with the primary focus of looking at the demographic characteristics (age, sex and geographical location) of people affected by the virus. It also looks at some of the wider impacts of the virus on the healthcare system, comparing recent trends in activity with historic norms. There is a large amount of data being regularly published regarding COVID-19 (for example, the Department of Health COVID-19 Daily Dashboard Updates and the NISRA Deaths Registered Dashboard). This report presents data from existing and newly developed PHA Health Protection surveillance systems that monitor COVID-19 activity in NI and complements the range of existing data currently available.

As this is an emerging pandemic the systems used will constantly evolve and the complexity of the analysis will increase. Any updates will be documented in a “what’s new” section.

Unless otherwise stated, data are presented using epidemiological weeks (a standardised method of counting weeks [Monday-Sunday] to allow for the comparison of data year after year). This is dependent on the data available and annual comparisons are not yet possible as the virus only emerged in 2020.

The data included in this report are the most up to date data available at the time of the report; however this is subject to change as the data are subject to ongoing quality assurance.

Contact tracing

Contact tracing is the process of identifying, assessing, and managing people who have been exposed to a disease to prevent onward transmission (WHO). Contact tracing can help break the chains of transmission of COVID-19 and is an essential public health tool for controlling the virus.

Contact tracing seeks to limit and prevent the spread of infections such as COVID-19. It works by identifying a confirmed case and asking them who they have been in contact with. Individual contacts are considered high risk if they have spent more than 15 minutes in close contact with a confirmed case without personal protection. This means that those who have casually passed by someone on the street will not be considered high risk. The person with a confirmed infection and their close contacts will be given advice regarding symptom management and the need to self-isolate to prevent wider spread of the virus. This advice is based on information available on the PHA website and includes social distancing, handwashing and cleaning in the home to help protect people who are at risk. We can also advise people on how to best look after those in their care.

The most up-to-date contact tracing management service update (issued 06 January 2022) can be found here*.

The StopCOVID NI contact tracing app is now available from the Google or Apple App store.

*These are experimental performance and activity data and provide a snapshot of contact tracer activity. Data reported relates to a live operational system which includes case and contact activity in progress or in a queue. It is based on manually recorded information and data extracted from current contact tracing systems and reporting methods and parameters may change over time.

Automatic reporting in future may create a discontinuity in figures. New IT systems and data outputs often take some time to bed in. Data should therefore be treated with caution while the system and understanding of the data develops. At this stage, there is a risk of data entry errors or delay, which may require that data are revised and updated in future. The process of finding and removing duplicate records may also need refining, which could result in revisions to the data.

Clusters

Definition:

A cluster is currently defined as two or more laboratory confirmed cases of COVID-19 among individuals associated with a key setting, who have illness onset dates within a 14 day period. Key settings in which clusters have occurred include: workplaces, retail, hospitality and leisure premises as well as educational settings[3].

Comment:

Number of all clusters (open and closed) that have been recorded by the contact tracing service up to 12pm Sunday 09 January 2022.

There have been 42 new clusters since Monday 03 January 2022[4,5]. In total, up to 09 January 2022, a total of 1281 clusters with greater than five people have been identified in the following council areas; Antrim and Newtownabbey (n=121), Ards and North Down (n=62), Armagh, Banbridge and Craigavon (n=142), Belfast (n=354), Causeway Coast and Glens (n=62), Derry and Strabane (n=98), Fermanagh and Omagh (n=76), Lisburn and Castlereagh (n=79), Mid and East Antrim (n=76), Mid Ulster (n=123) and Newry, Mourne and Down (n=88). In addition, there have been 4,950 clusters across Northern Ireland with fewer than five people.

Source: Contact Tracing Service / PHA Health Protection Service

[3] COVID-19 transmission is most common in household settings. The number of affected households is not reported.

[4] Some clusters may overlap (larger clusters may contain or overlap with several smaller clusters).

[5] From week to week the number of clusters may change due to ongoing updates to the source information following detailed risk assessments. For this reason, we would discourage making direct comparisons between the cumulative number of clusters reported each week, with the number reported in the current week the most accurate at the time of the report.

Case epidemiology

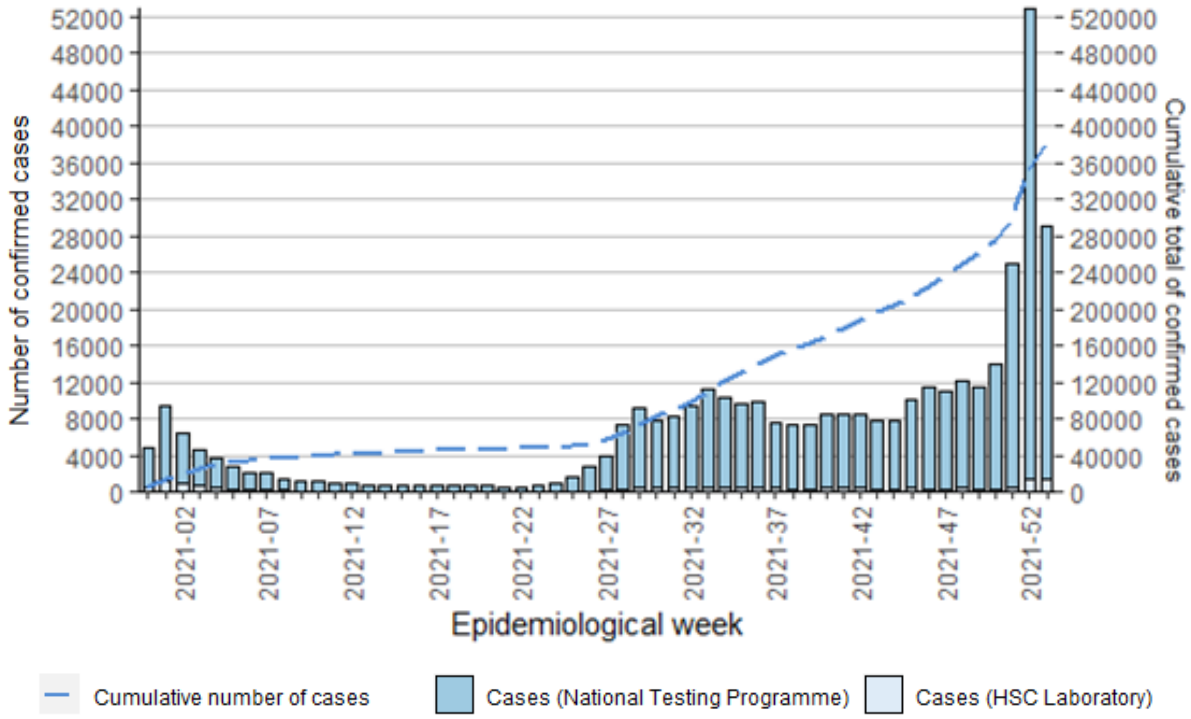


Figure 1. Laboratory confirmed COVID-19 cases by epidemiological week and source (HSC Laboratory testing and the National Testing Programme), 2021-22

Figure 1 represents the number of new weekly cases reported to the PHA (bars) and the cumulative number of cases (dashed line). Reporting is likely to be incomplete for the most recent week due to natural delays in samples reaching the labs, being tested and the information being reported.

At the beginning of 2021 there was a general downward trend in the number of weekly cases, however from week 21 there was a general increasing trend in cases, peaking in week 33. Although this was then followed by a decrease in weekly cases, there have been increases in recent weeks, reaching a large peak in week 52.There has been a decrease in the number of weekly cases in week 1 2022 compared to the previous week.

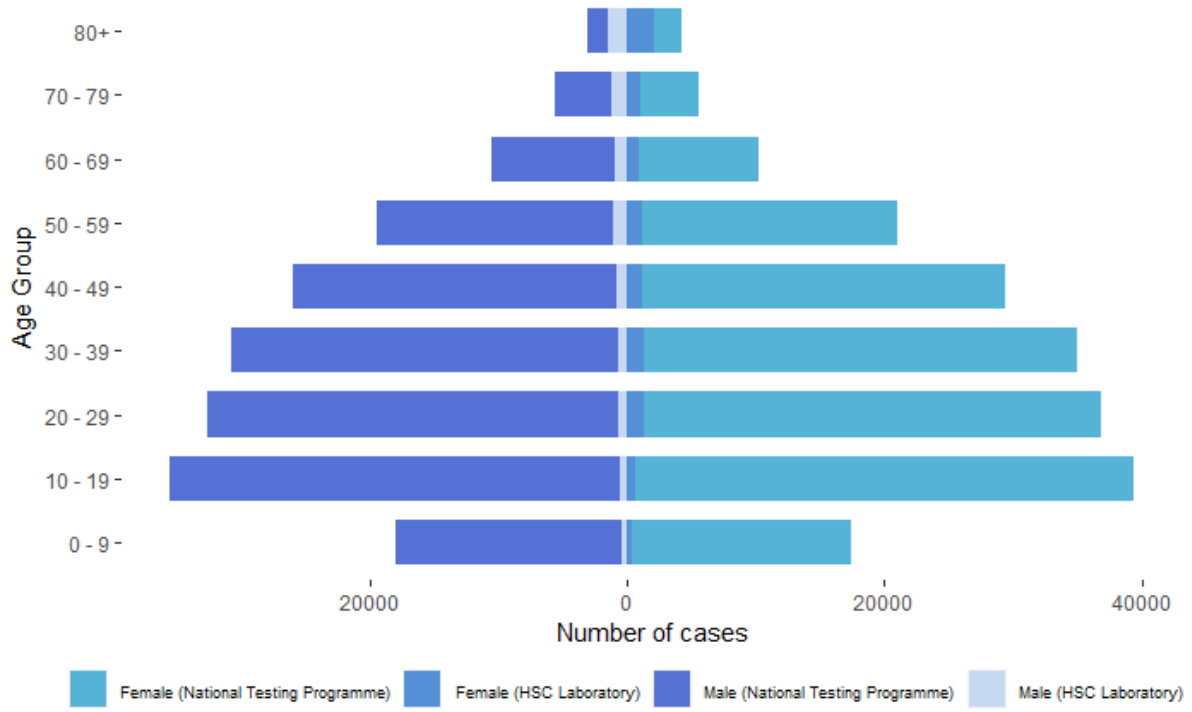


Figure 2. Laboratory confirmed cases, by age, sex and source (HSC Laboratory testing and the National Testing Programme), 2021-22

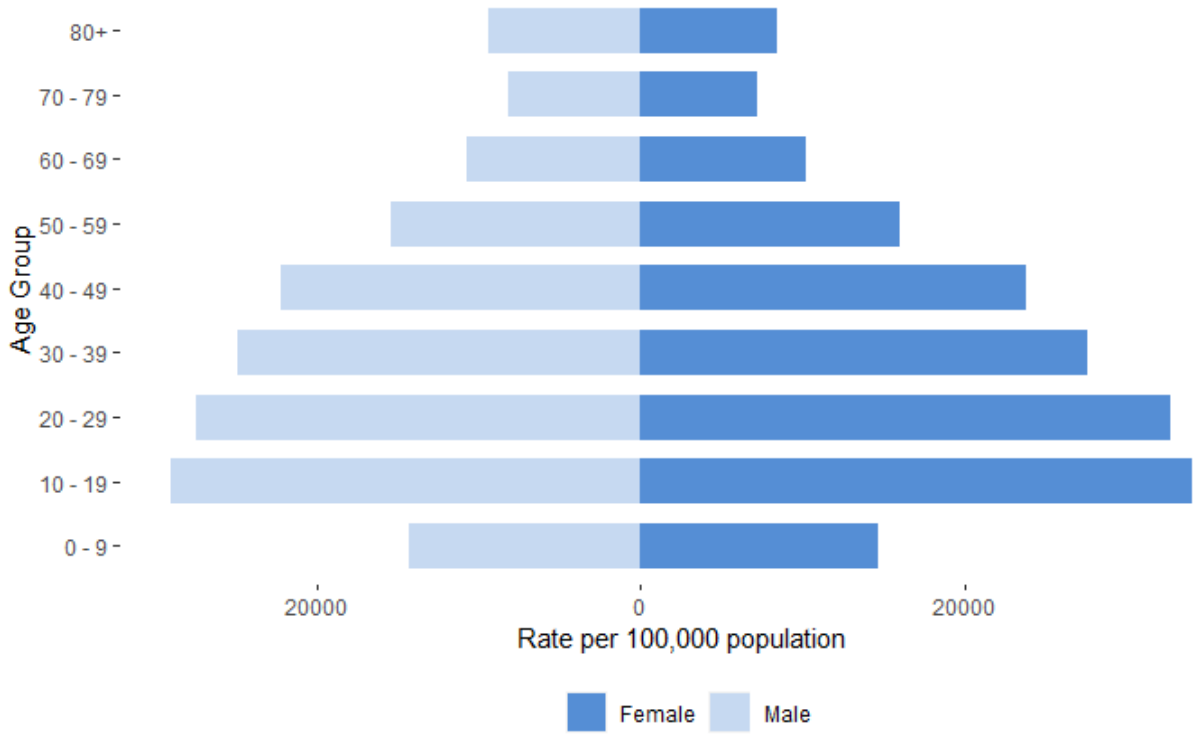


Figure 3. Laboratory confirmed cases per 100,000 population, by age and sex, for all testing data combined, 2021-22

Figure 4. Laboratory confirmed cases, by age, sex and source (HSC Laboratory testing and the National Testing Programme), for week 52 and week 1

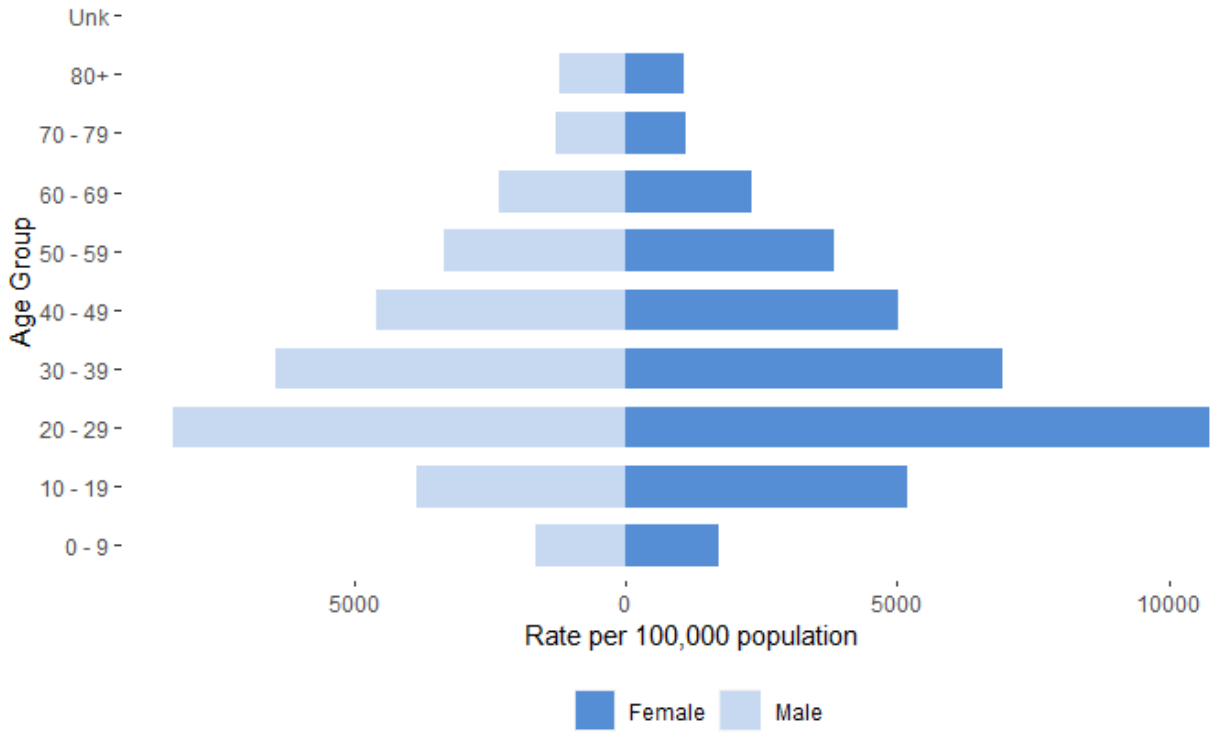


Figure 5. Laboratory confirmed cases per 100,000 population, by age and sex, for all testing data combined, for week 52 and week 1

Figures 2 and 3 represents the cumulative number of cases reported by HSC laboratories and the National Testing Programme, and overall case rates per 100,000 respectively, for 2021. The increasing use of the National Testing Programme as the main source of case data is particularly evident in the 2021 data; this programme enables detection of a greater spectrum of disease, in a greater number of settings additional to hospitals, including amongst younger age groups. From this data, we can see a higher number of cases overall in the 10-19 age group.

Figures 4 and 5 show similar findings to the cumulative numbers but restricted to the previous two epidemiological weeks. These show how the age groups of cases in the most recent weeks at times differ from the overall cumulative cases presented in figures 2 and 3; in particular, the consistently lower case numbers in older age groups, and rising figures in 20-29 age group in recent weeks.

Table 1. Total laboratory confirmed COVID-19 cases, by sex, for all testing data combined

	Sex		
Age Group	Male	Female	Total*
0 - 9	17,967	17,426	35,393
10 - 19	35,519	39,391	74,910
20 - 29	32,642	36,875	69,517
30 - 39	30,737	35,000	65,737
40 - 49	25,934	29,396	55,330
50 - 59	19,383	20,989	40,372
60 - 69	10,506	10,295	20,801
70 - 79	5,600	5,562	11,162
80+	3,069	4,212	7,281
Unknown	1	1	2
Total	181,358	199,147	380,505

**Unknown sex for 644; these are not included in the total figures*

Table 2. Laboratory confirmed COVID-19 cases, by Trust				
	Epidemiological Week			
Trust Area	51	52	01	Total
Belfast	256	584	411	5,947
Northern	69	181	152	3,161
South Eastern	110	163	144	2,344
Southern	62	201	154	2,870
Western	37	153	182	1,791
Other*	24,477	51,704	28,065	364,951
Unknown	5	3	10	85
Northern Ireland	25,016	52,989	29,118	381,149

**Other cases includes those from the National Testing Programme, NIAS, private nursing home residents, pathology services, GPs and hospices*

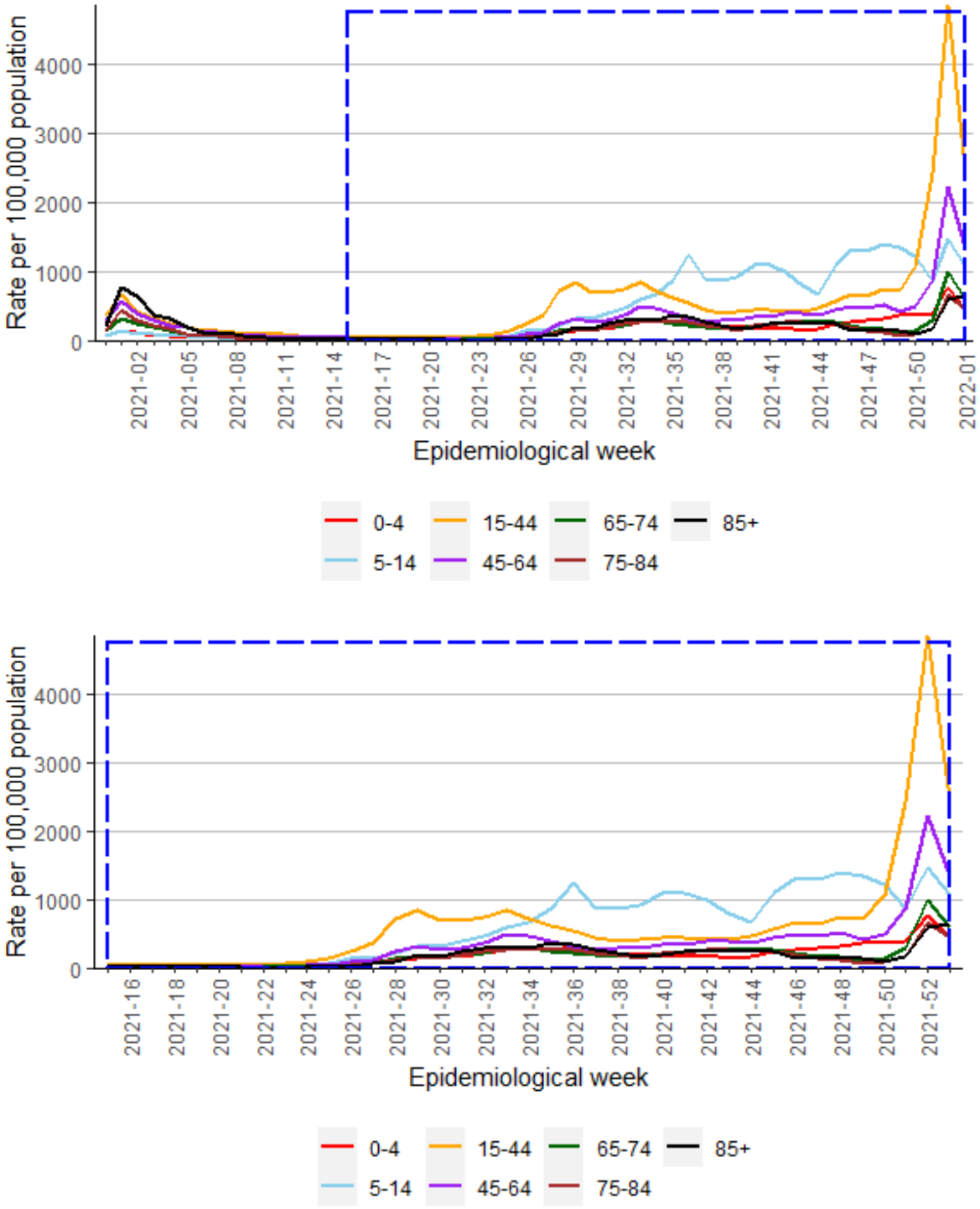


Figure 6. Weekly laboratory confirmed case rates per 100,000 population, by age group, for all testing data combined, 2021-22

The case rates increased in week 1 in the 85+ age group, and decreased in all other age groups compared to week 52. The highest case rates were seen in the 15-44 age group (2455.9 per 100,000). This is significantly lower than the previous peak of 4866.3 per 100,000 in the 15-44 age group in week 52 (27 Dec 2021 – 02 Jan 2022).

In week 1, positivity was highest in the 15-44 age group (51.1%). The lowest positivity was observed in the 85+ age group (13.2%).

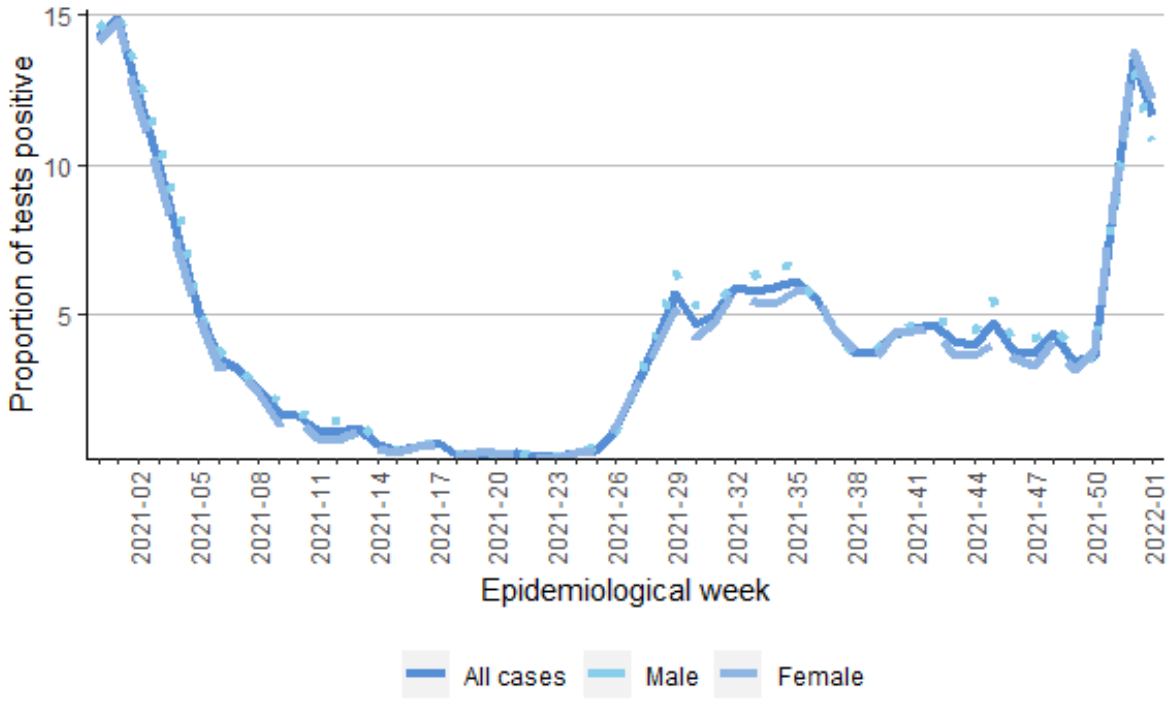


Figure 7. Positivity (%) of laboratory confirmed COVID-19 cases by epidemiological week, overall and by sex (HSC Laboratory testing), 2021-22

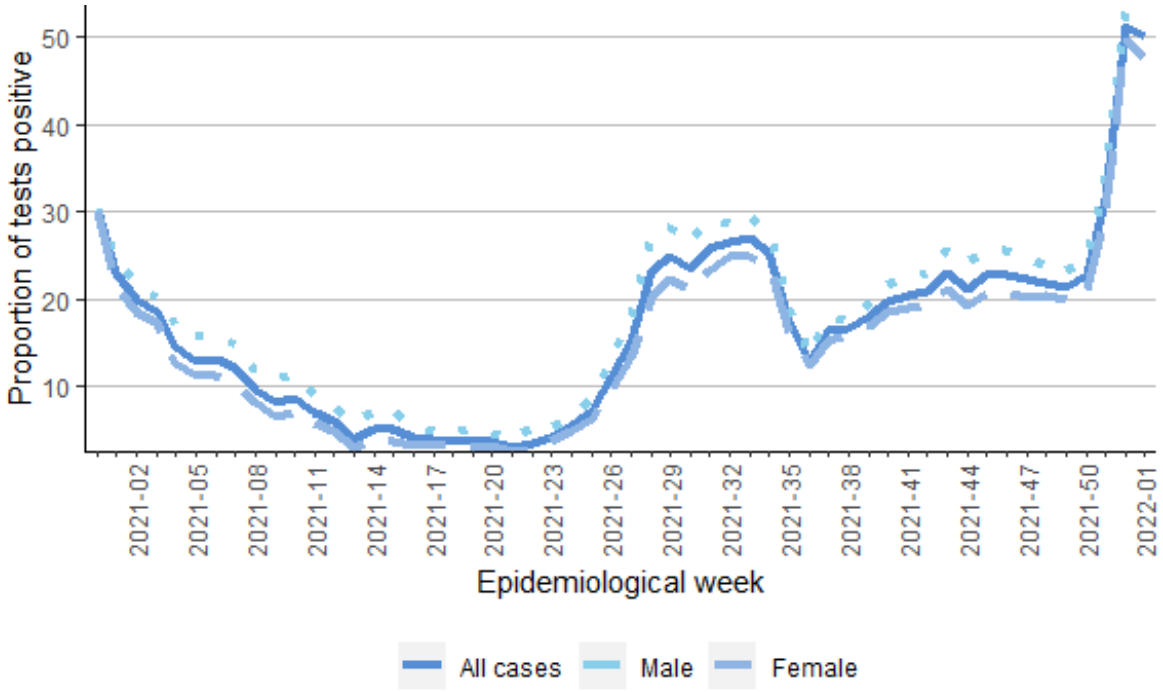


Figure 8. Positivity (%) of laboratory confirmed COVID-19 cases by epidemiological week, overall and by sex (National Testing programme), 2021-22

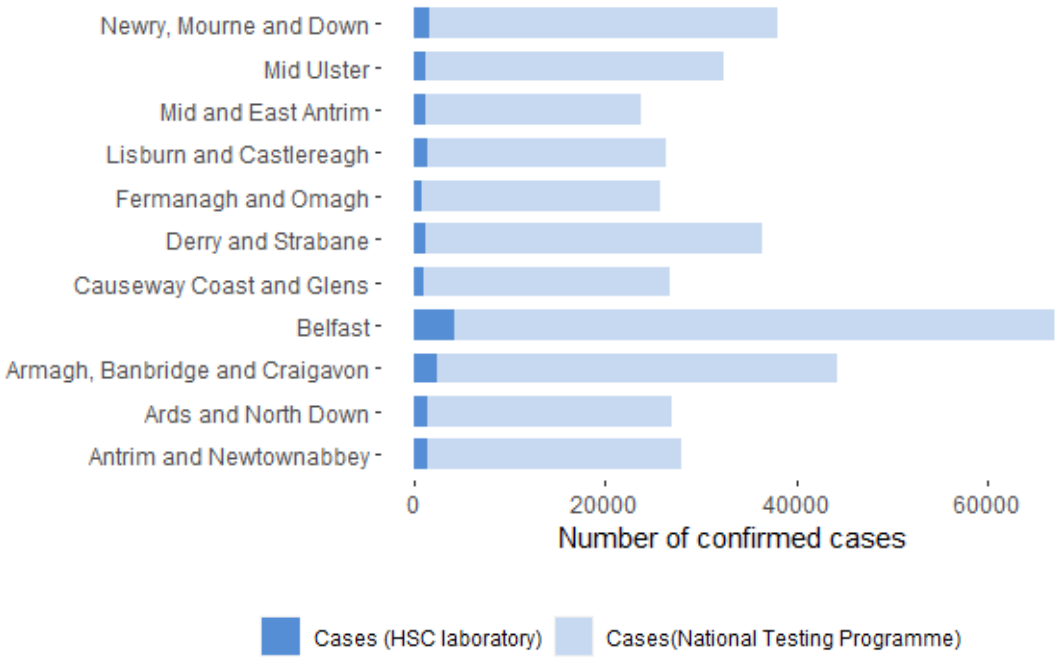


Figure 9. Total laboratory confirmed cases, by Local Government District (LGD) and source (HSC Laboratory testing and the National Testing Programme), 2021-22

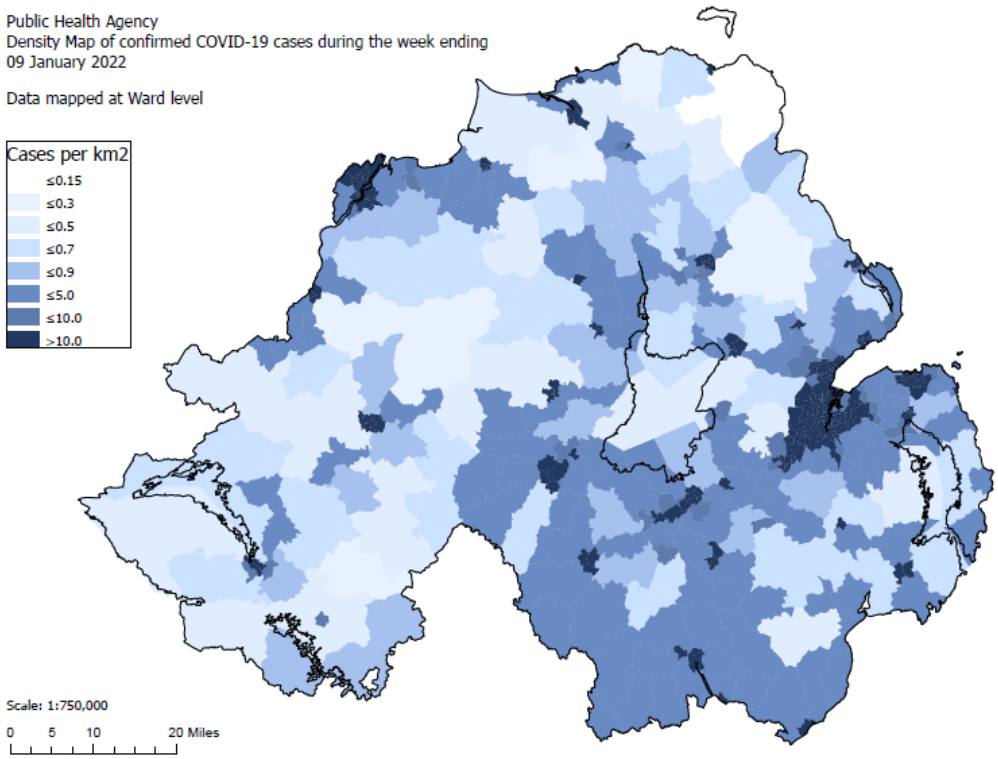


Figure 10. Density map of confirmed COVID-19 cases, for all testing combined, 2021-22

Figure 10 shows a density map based on the number of confirmed COVID-19 cases in week 1, in which data is aggregated at Ward level. The coloured shading on the map indicates density of cases, with the darkest shade of blue indicating where there is the greatest density of cases. However, information should be interpreted with caution as identified rates are based on testing which is not evenly spread across the region.

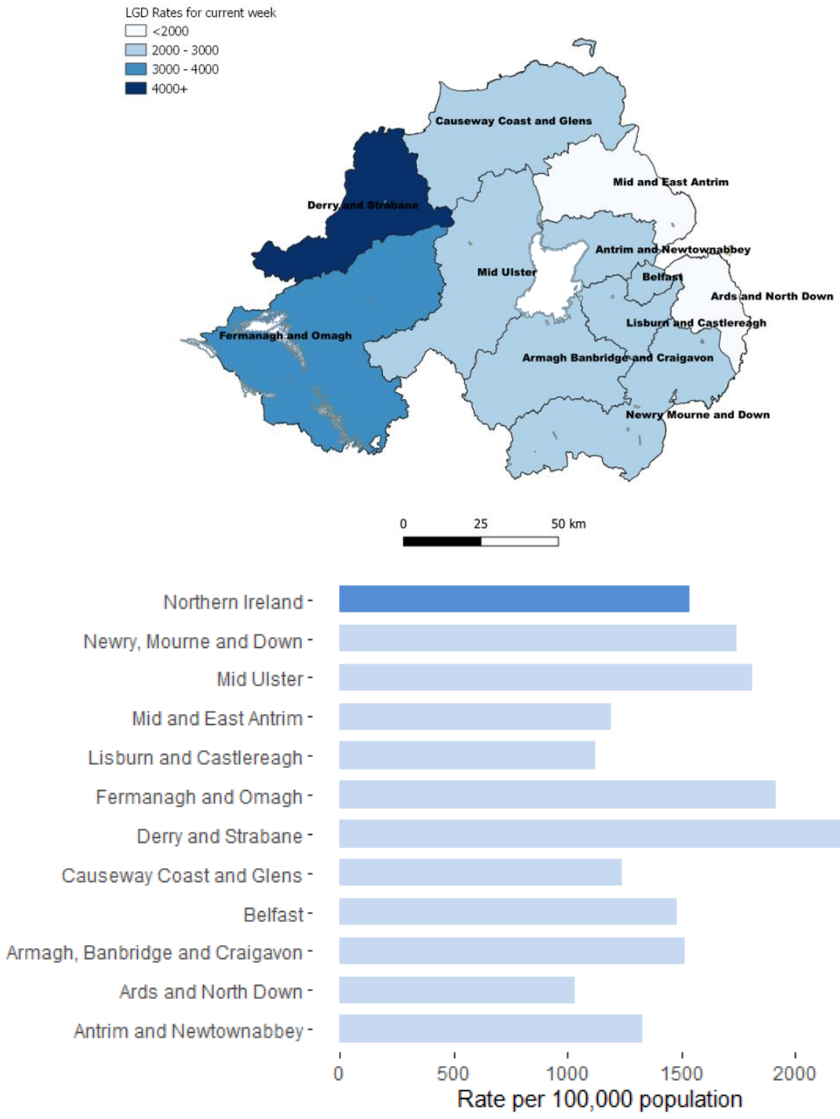
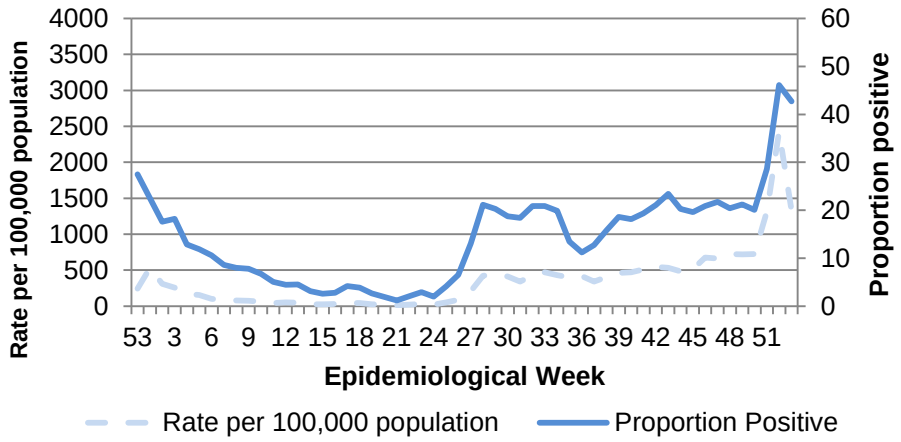


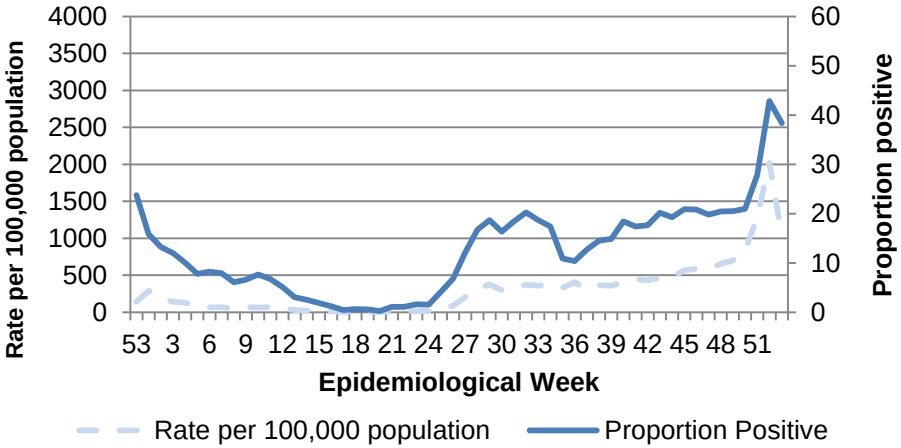
Figure 11. Total laboratory confirmed cases per 100,000 population, by Local Government District (LGD), for all testing data combined, week 1 (03 - 09 January 2022)

*Please note that due to a technical issue the case per 100,000 population map has not been updated for week 1

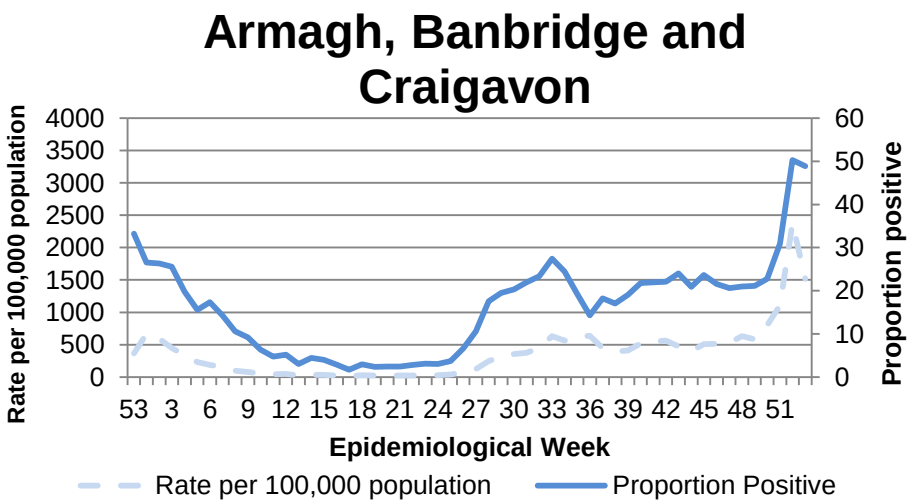
Antrim and Newtownabbey



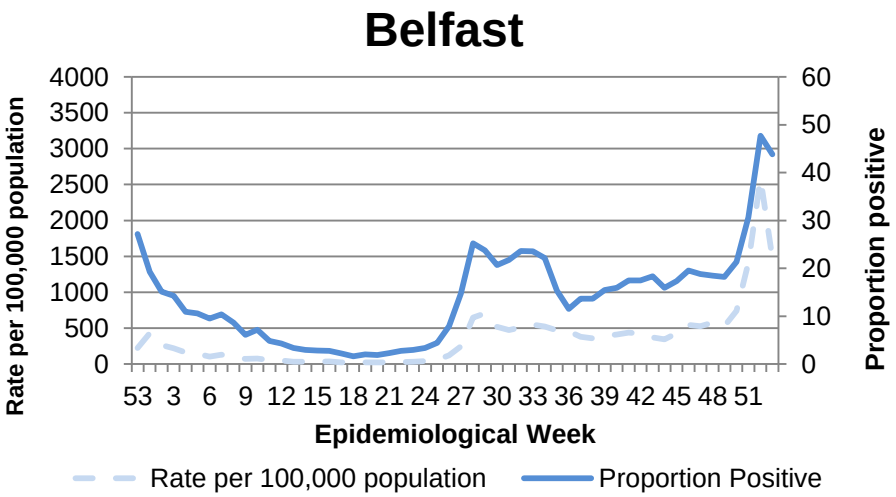
Ards and North Down



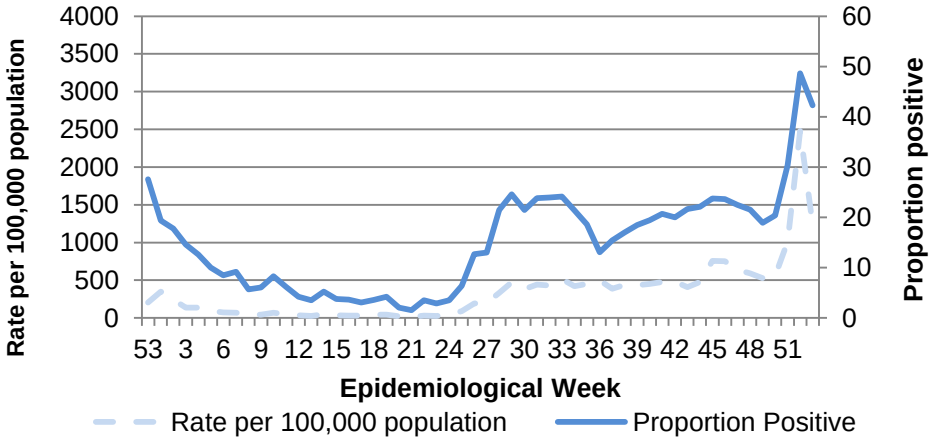
Armagh, Banbridge and Craigavon



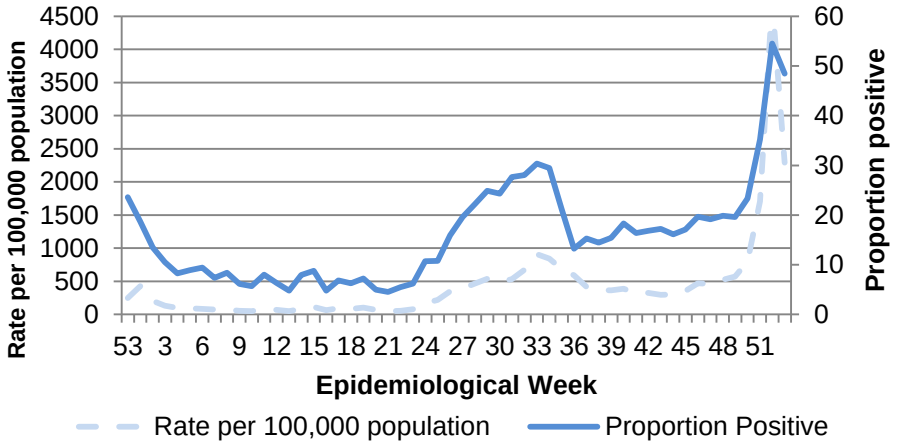
Belfast



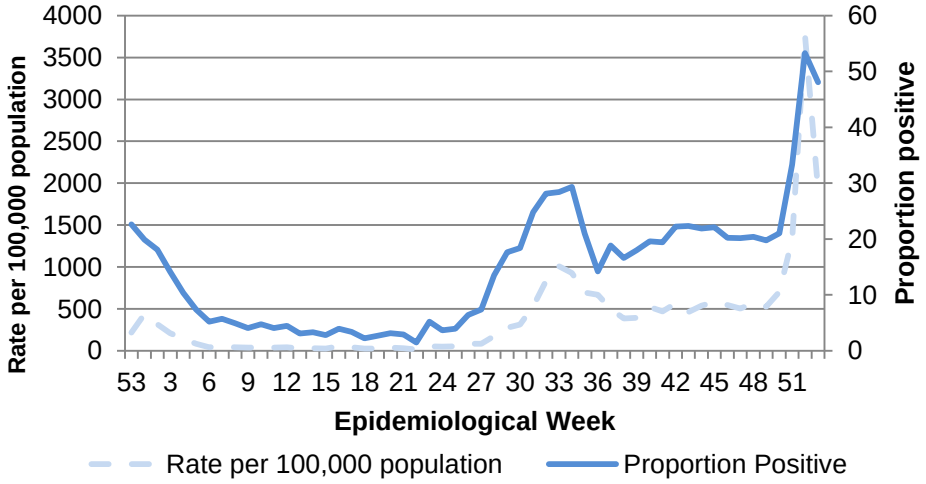
Causeway Coast and Glens



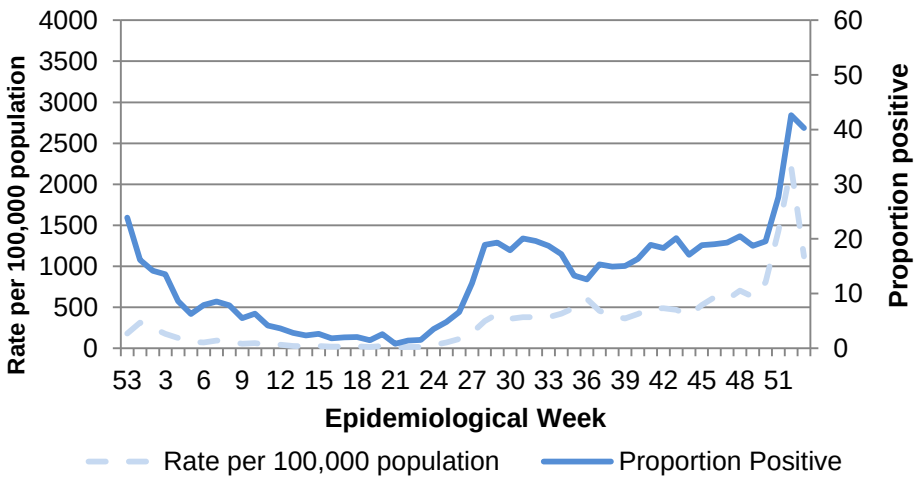
Derry and Strabane



Fermanagh and Omagh



Lisburn and Castlereagh



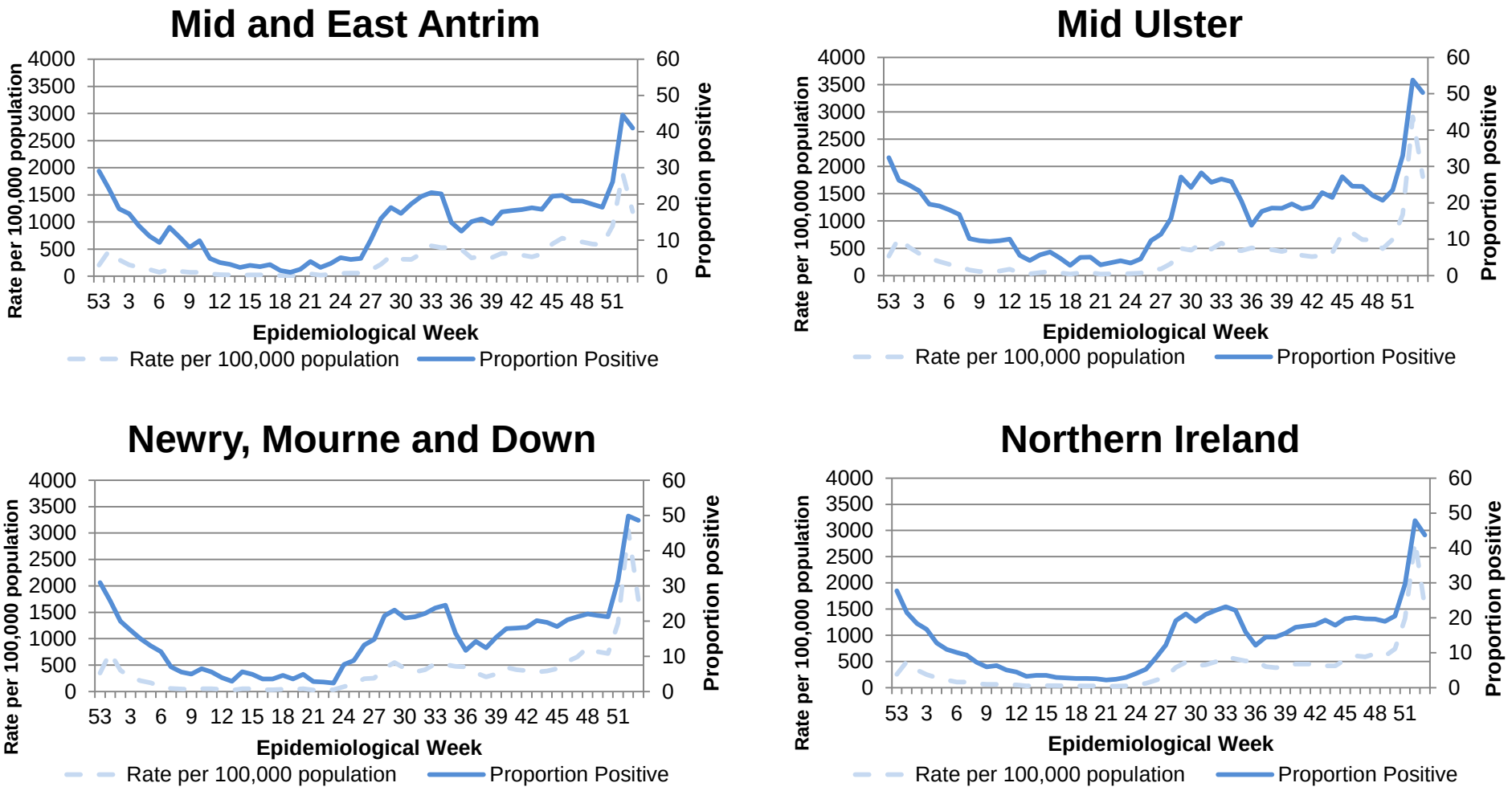


Figure 12. Weekly laboratory confirmed cases per 100,000 population and proportion positive, by Local Government District (LGD) and Northern Ireland, for all testing data combined, 2021-22

The case rates decreased in all LGDs in week 1 compared to week 52. Derry & Strabane had the highest rate in week 1 compared to other Local Government Districts (2290.4 per 100,000 population). The overall NI rate decreased from 2795.5 to 1536.2 per 100,000 population between week 52 and week 1.

The highest positivity occurred in Mid Ulster (50.3%). NI's proportion positive in week 1 was 43.7%, a decrease from 47.8% in week 52, and as a result, lower than the previous peak positivity which was 47.8% reported across NI in week 52 of 2021 (27 December 2021 – 02 January 2022).

Source: HSC Trust laboratory reports and the National Testing Programme

Deprivation

An analysis of COVID-19 related health inequalities relating positive test cases and COVID-19 related admissions between the most and least deprived areas of NI, including variations across age, sex and urban and rural areas was published by Department of Health on 16 December 2020.

Care home outbreaks

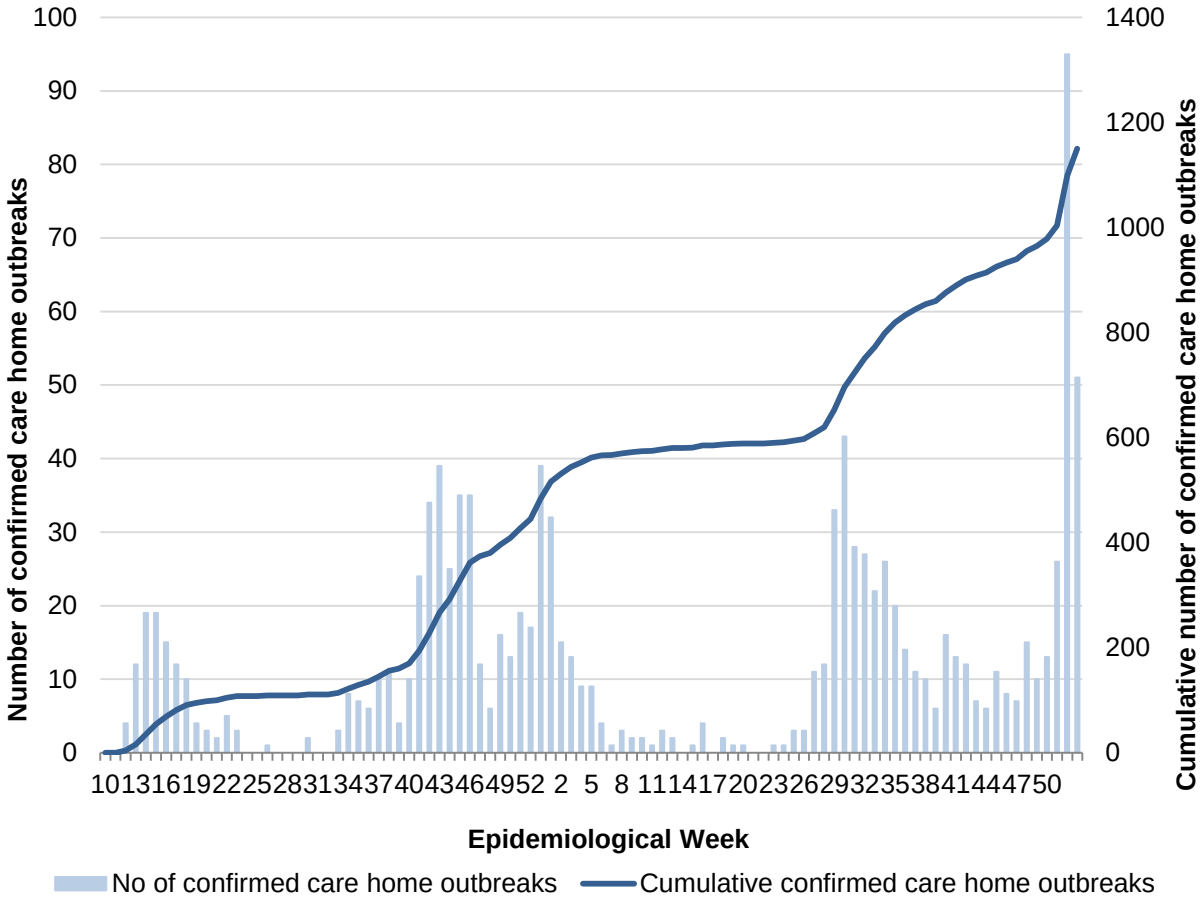


Figure 13. Confirmed COVID-19 care home outbreaks in Northern Ireland, 2020-22

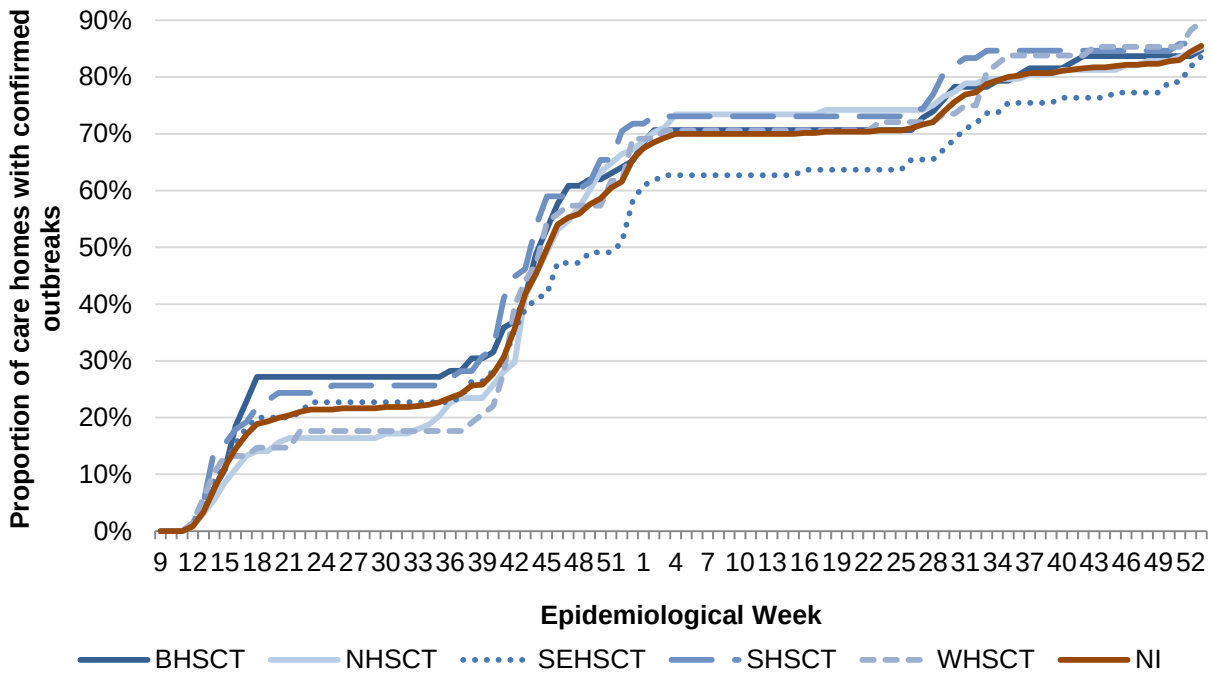


Figure 14. Proportion of care homes with confirmed COVID-19 in Northern Ireland by Trust area, 2020-22

Table 3. Proportion of care homes with confirmed COVID-19 outbreaks in Northern Ireland, by Trust Area

Trust Area	Cumulative total of care homes with outbreaks in 2020-21	% of care homes with outbreaks	Total number of care homes
Belfast	78	84.8%	92
Northern	109	85.2%	128
South Eastern	92	83.6%	110
Southern	67	85.9%	78
Western	61	89.7%	68
Northern Ireland	407	85.5%	476

**Please note the total number of registered care homes are regularly updated and may differ when compared to previous weeks*

To week 1, a total of 1150 confirmed COVID-19 care home outbreaks were reported, involving 407 care homes (85.5% of all NI care homes). The highest proportion of care homes with confirmed COVID-19 outbreaks (89.7%) were reported from the Western Trust area.

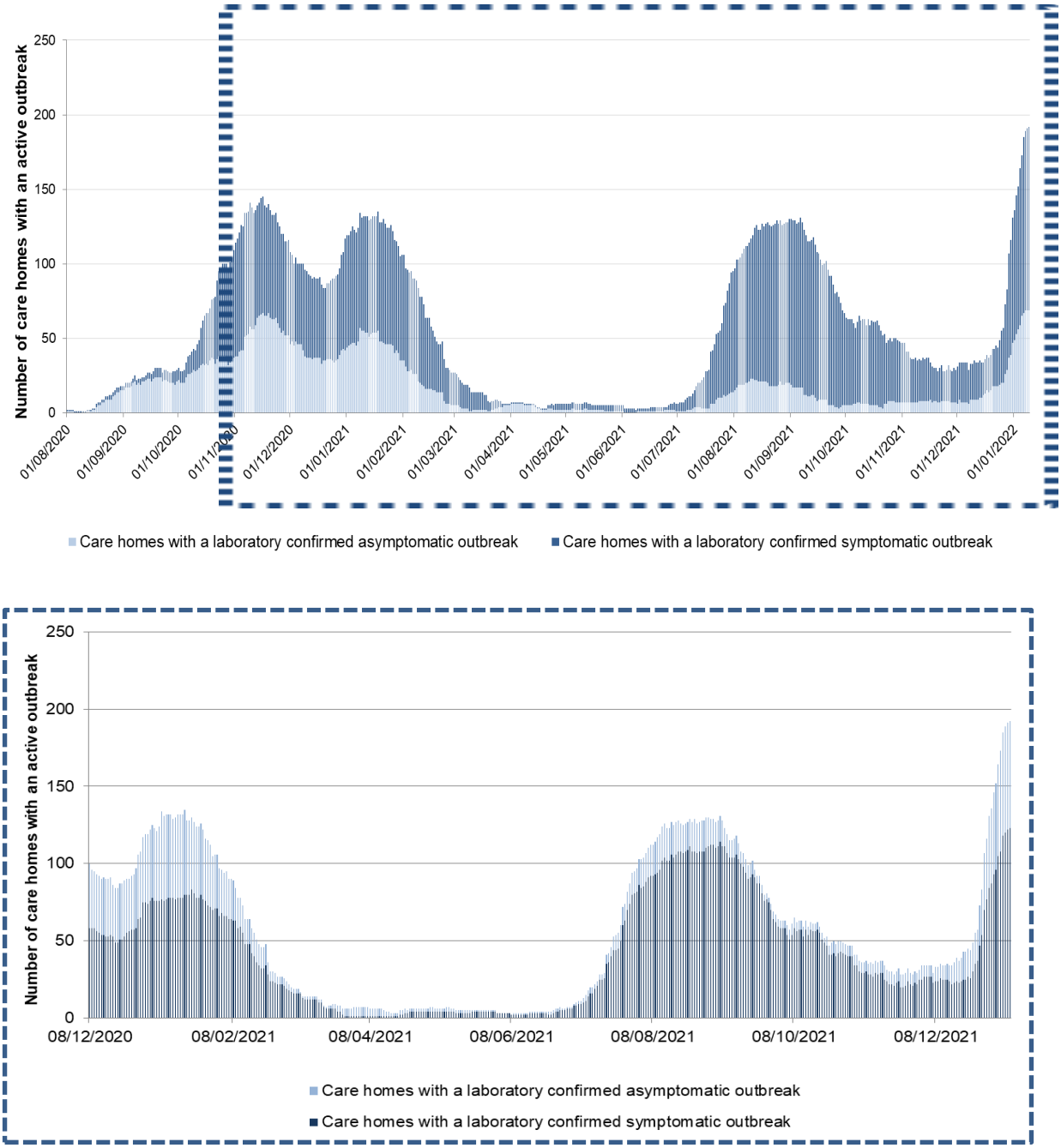
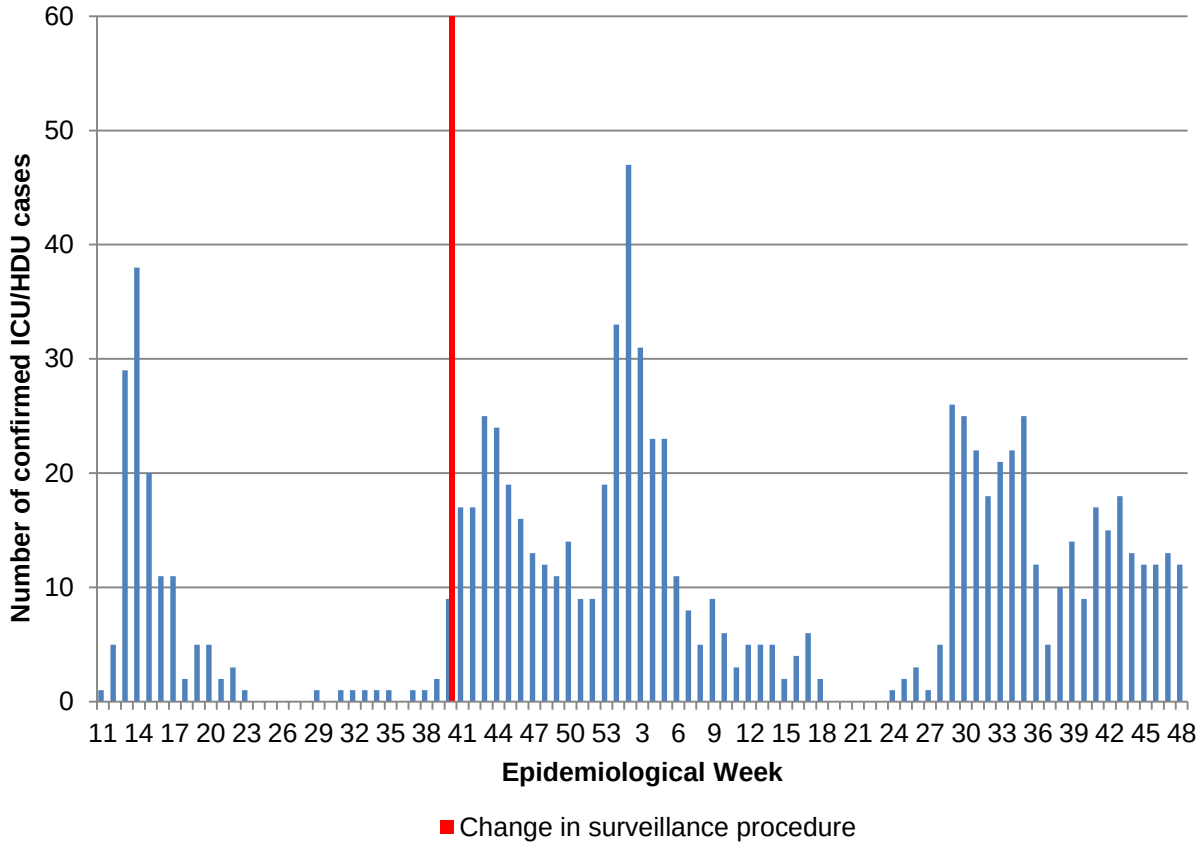


Figure 15. Number of care homes with confirmed active symptomatic or asymptomatic COVID-19 outbreak[6] in Northern Ireland, 2020-22

Source: PHA Health Protection duty room reports from care homes

[6] PHA began recording confirmed Covid-19 outbreaks as either symptomatic or asymptomatic on 1 August 2020. Confirmed COVID-19 outbreaks reported prior to 1 August 2020 and are still ongoing are not included in this graph. Additionally, other respiratory outbreaks are not included.

Critical care surveillance



*Since start of week 40 (28 September 2020), data collection for critical care surveillance has been streamlined to coincide with the well-established surveillance of influenza patients in critical care in conjunction with the Critical Care Network Northern Ireland (CaNNI). For weeks 11-40 in 2020, Epidemiological week refers to the week the positive specimen was obtained. Post week 40 it refers to the week in which the individual was admitted to ICU.

Figure 16. ICU/HDU COVID-19 cases by sample result week, 2020-21

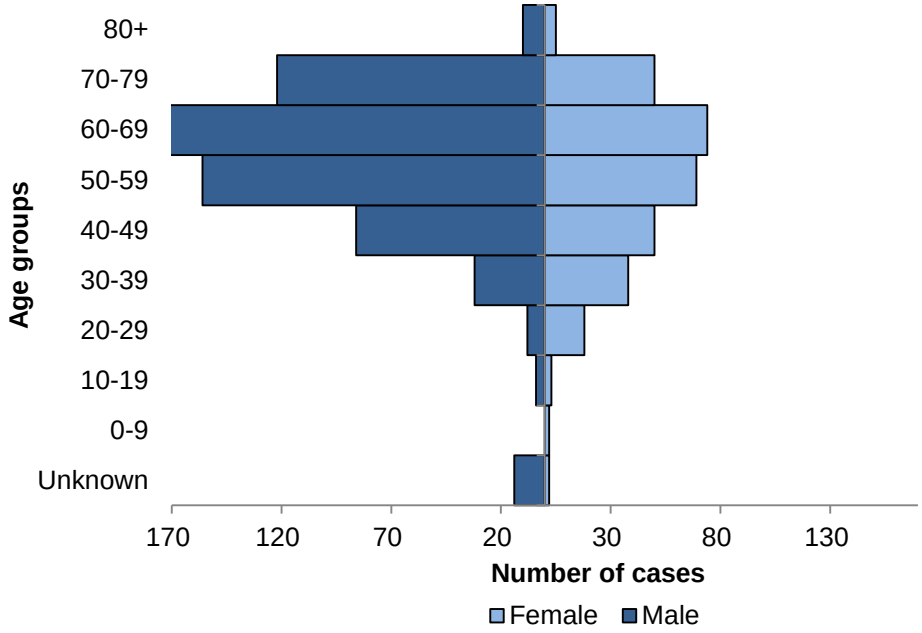


Figure 17. ICU/HDU COVID-19 cases, by age and sex, 2020-21

To week 48, there have been 920 individuals admitted to critical care with confirmed SARS-CoV2 reported to the PHA. Week 2 had the highest number of ICU reports with a positive result (n=47). Of the 920 individuals 65.9% (n=607) were male. The ages ranged from <1 year to 90 years, with a median age of 59 years.

Source: PHA COVID-19 critical care surveillance online reporting system and the Critical Care Network Northern Ireland (CaNNI)

The Intensive Care National Audit and Research Centre (ICNARC) publish a report on patients critically ill with COVID-19 (https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports). There is also a specific report which can be downloaded presenting analysis of data on patients critically ill with confirmed COVID-19 reported to ICNARC up to 23:59 on 30 December 2021 from critical care units in NI participating in the Case Mix Programme (the national clinical audit for adult critical care).

Please note there is no updated critical care data available for Week 49 to date.

Schools' Surveillance

From 10 September 2021 there was a change to contact tracing of children within schools settings[1, 2]. The change in contact tracing arrangements, data systems and recording mean data presented from that date will differ from that previously presented on schools in the PHA COVID-19 bulletin. These data is therefore not directly comparable with the schools data included in previous COVID-19 bulletins.

Reported association of cases with a school or educational institution does not necessarily mean that transmission occurred in school. COVID-19 transmission to pupils and staff can occur in a variety of settings, including their households where the risk of transmission is known to be high. Inferences should not be made from these data about where COVID-19 transmission took place.

Summary points

In the 28 days up to 09 January 2022:

1. There were 7,901 confirmed cases notified to the Contact Tracing Service (CTS) where the case advised they attended or worked in a school (4,626 primary, 3,055 post primary and 220 special school cases) (Table 4).
2. 58.8% of cases were associated with primary schools, 38.7% with post primary schools and 2.8% with special schools (Table 4).
3. The proportion of confirmed cases which were pupils was 1.9% of the total enrolled school population (Table 5).
4. 81% of cases were pupils (Table 6).
5. 88.8% of primary, 99% of post primary and 95% of special schools have had at least one case. Of schools with at least one case in the last 28 days, 71.7% had 10 cases or fewer (Tables 7 and 8).
6. In 92.7% of schools the number of cases in pupils was less than 5% of their enrolled school population (Table 9).

7. No post primary schools had cases in pupils in the last 28 days greater than 10% of their enrolled school population, compared to 1.6% in primary schools (Table 9).

1. Joint memo from the Offices of the Ministers of Education and Health regarding revised arrangements for contact tracing of children in schools - https://www.educationni.gov.uk/sites/default/files/publications/education/Joint%20Memo%20from%20DE%20and%20DoH%20Ministers.pdf
2. Updated CMO guidance regarding schoolchildren - https://www.health-ni.gov.uk/sites/default/files/publications/health/CMO-letter-to-school-community.pdf

Methodology and caveats

- This report contains data related to COVID-19 cases (PCR and LFD positive) entered onto the CTC database between 13 December and 09 January 2022 (Epi weeks 50 to 1 based on date of sample) where the case is reported to be associated with a school. Data was extracted at 10am on Wednesday 12 January 2022.
- Weeks 51, 52, 1 etc. refer to Epidemiological weeks, running Monday to Sunday.
- It is important to note that the definitive source for the number of COVID-19 confirmed cases in school aged children is from PCR testing via the National Testing Programme and HSC laboratories and results reported via the government portal. Direct comparisons should not be made between laboratory data and data in this report. This report is subject to change as data quality and methods develop.
- Cases associated with nurseries, pre-schools, further education colleges and universities are not included in this report.
- The association of cases with a primary, post primary or special school is based on self-reported data collected as part of the contact tracing process. These data presented were analysed using data from the CTC database, which is designed for contact tracing purposes and not for identifying where transmission took place. Reported association of cases with a school or educational institution does not mean that cases were in school during their infective period or at the date of the test, nor that transmission occurred in school. Inferences should not be made from these data about where COVID-19 transmission took place.
- Cases aged 4 to 19 years are categorised as pupils and those over 19 years categorised as staff. Cases without a recorded date of birth were excluded from pupil/staff totals, which may be slightly different from other table totals.
- School enrolment numbers are taken from https://www.education-ni.gov.uk/publications/school-enrolment-school-level-date-202021. Data on the number of school institutions has been updated

(http://apps.education-ni.gov.uk/appinstitutes/default.aspx) and may differ from previous reports.

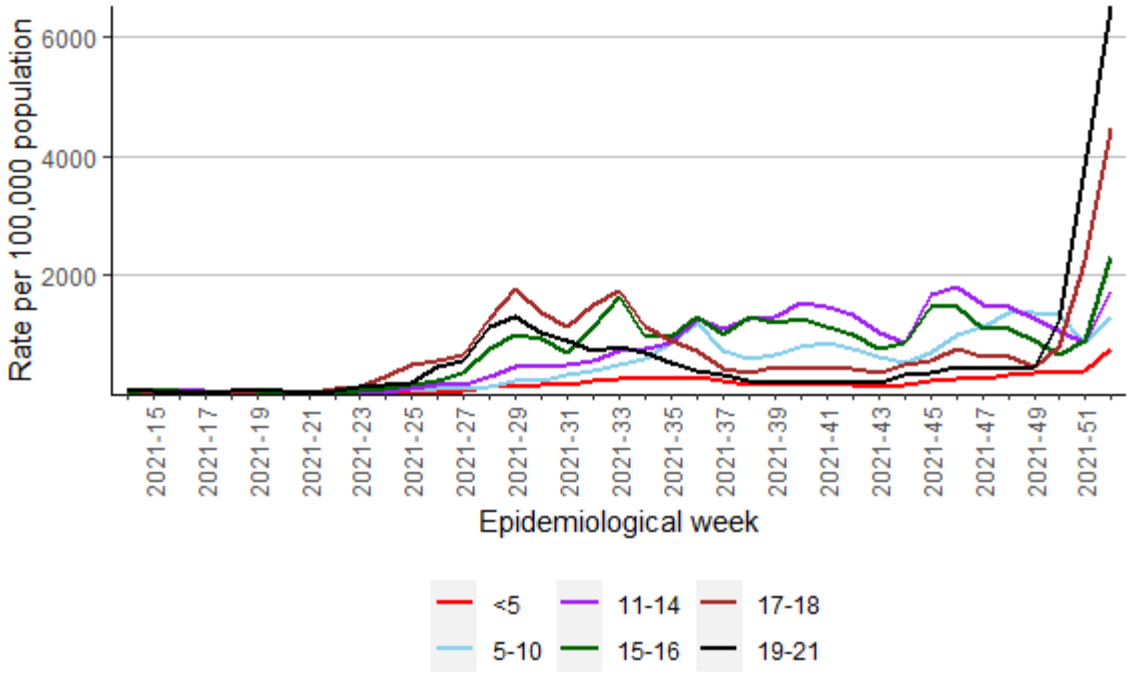


Figure 18. Weekly COVID-19 laboratory confirmed case rates per 100,000 population, by age group, for all testing data combined, in those aged 21 and under.

In week 1, case rates decreased across all age groups compared to week 52. The 19-21 age group had the highest case rates (2609.2 per 100,000), followed by the 17-18 age group (2446.8 per 100,000), which is the same as week 52 in which the highest case rates were also seen in the 19-21 age group.

Please note: This figure shows case rates derived from laboratory testing data and NOT from CTC data.

Table 4 shows the total number of cases (includes pupils and staff) by school type in the 4 weeks up to Epidemiological Week 1 (09 January 2022).

Table 4. Number of COVID-19 cases reported by school type				
Epidemiological Week and Week ending	Primary	Post Primary	Special	Total Cases
Wk 50 (19 Dec)	2098	1038	61	**3197**
Wk 51 (26 Dec)	972	607	47	**1626**
Wk 52 (02 Jan)	668	651	52	**1371**
Wk 1 (09 Jan)	888	759	60	**1707**
Total	**4626**	**3055**	**220**	**7901**

Primary: includes primary and preparatory schools. Post primary: includes secondary and grammar schools.

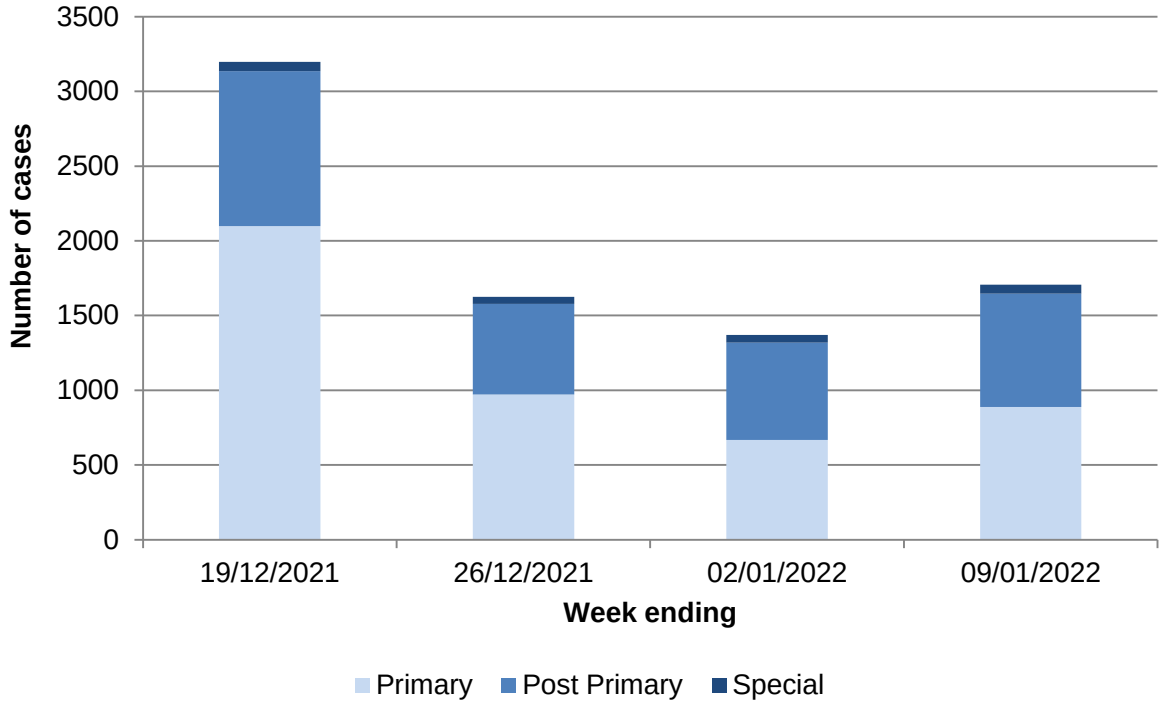


Figure 19. Number of COVID-19 cases reported by school type in the 4 weeks up to Epidemiological Week 1 (09 January 2022).

Table 5 shows the number cases that are pupils by school type and as a proportion of all enrolled pupils in NI, in the last 7 and 28 days, up to Epidemiological Week 1 (09 January 2022).

Table 5. Number of cases and as a proportion of all school age children, by school type, in the previous 7 and 28 days to 09 January 2022

	7 days		28 days	
School Type	**Cases**	**Proportion of pupil enrolment for sector**	**Cases**	**Proportion of pupil enrolment for sector**
Primary	721	**0.4%**	3763	2.1%
Post Primary	622	**0.4%**	2463	1.7%
Special	31	**0.5%**	85	1.3%
Total	**1374**	**0.4%**	**6311**	**1.9%**

Table 6 shows the number of pupils and staff cases, by school type, in the previous 28 days, up to Epidemiological Week 1 (09 January 2022).

Table 6. Number of pupil and staff cases, by school type, in the previous 28 days to 09 January 2022				
School Type	**Pupils**	**Staff**	**Total**	**Proportion of all cases that are pupils**
Primary	3763	767	4530	**83.1%**
Post Primary	2463	575	3038	**81.1%**
Special	85	135	220	**38.6%**
Total	**6311**	**1477**	**7788**	**81.0%**

Table 7 shows number of schools with cases and the proportion, by school type, in the previous 28 days, up to Epidemiological Week 1 (09 January 2022).

Table 7. Number and proportion of schools with COVID-19 cases by school type			
School Type	**Number schools with at least one case**	**Proportion of schools with at least one case**	**Total number of schools in NI**
Primary	713	88.8%	**803**
Post Primary	191	99.0%	**193**
Special	38	95.0%	**40**
Total	**942**	**90.9%**	**1036**

**Please note the total number of schools has been updated and may differ when compared to previous weeks*

Table 8 shows the number and percentage of schools with cases in pupils or staff, by type of school in the previous 28 days, up to Epidemiological Week 1 (09 January 2022).

Table 8. Number and percentage of schools with cases by school type					
	Schools with COVID-19 cases				
School Type	1-5	6-10	11-15	>15	Total
Primary	430 (60.3%)	150 (21.0%)	62 (8.7%)	71 (10.0%)	**713**
Post Primary	27 (14.4%)	34 (17.8%)	36 (18.8%)	94 (49.2%)	**191**
Special	21 (55.3%)	13 (34.2%)	*	*	**38**
Total	**478 (50.7%)**	**197 (20.9%)**	**102 (10.8%)**	**165 (17.5%)**	**942**

** Data not disclosed due to small numbers. Percentages may not add to 100% due to rounding.*

Table 9 shows positive cases in the context of school pupil population by considering the number of pupil cases in each school relative to the number of pupils in that school. It shows the number and percentage of schools categorised by the proportion of pupil cases relative to the enrolled school population, by type of school in the previous 28 days, up to Epidemiological Week 1 (09 January 2022).

Table 9. Number and percentage of schools categorised by the proportion of pupil cases relative to the enrolled school population by school type

	Percentage of cases relative to school population					
School Type	**0.1 to 2.4%**	**2.5 to 4.9%**	**5.0 to 7.4%**	**7.5 to 9.9%**	**≥10%**	**Total**
Primary	444 (66.2%)	162 (24.1%)	40 (6.0%)	14 (2.1%)	11 (1.6%)	**671**
Post Primary	162 (85.3%)	28 (14.7%)	*	*	*	**190**
Special	24 (80.0%)	6 (20.0%)	*	*	*	**30**
Total	**630 (70.7%)**	**196 (22.0%)**	**40 (4.5%)**	**14 (1.6%)**	**11 (1.2%)**	**891**

** Data not disclosed due to small numbers. Percentages may not add to 100% due to rounding. The total number of schools in Table 8 (which considers pupil cases only) may differ from Table 7 (which includes pupil and staff cases). Percentage of cases relative to school population = number of pupil cases/ total pupils enrolled. Table does not include schools with no cases.*

School sizes vary a great deal, with some having fewer than 100 pupils and others having more than 1,000. Having 10 cases in a school with 1,000 pupils is very different in its impact to having 10 cases in a school with 50 pupils. Pupil cases divided by the enrolled pupil populations

have been calculated as percentages for all schools with at least one case. These have then been grouped into five categories, ranging from those with less than 2.5% of pupils testing positive in the 28 day period to those with 10% or more. This is shown in Table 9.

No post primary schools had cases in pupils in the last 28 days greater than 10% of their enrolled school population, compared to 1.6% in primary schools.

Source: PHA Education Cell and Contact Tracing Cell

Mortality Surveillance

Medical Certificate of Cause of Death for confirmed / suspected COVID-19

The Northern Ireland Statistics and Research Agency (NISRA) provide the weekly number of **registered respiratory and COVID-19 deaths each Friday (here).** In week ending 31 December 2021, the proportion of COVID-19 deaths registered was 5.8%, and from 19 March 2020 to week ending 31 December 2021 the proportion of COVID-19 deaths registered was 12.8%.

Weekly published data are provisional and is based on registrations of deaths, not occurrences. The majority of deaths are registered within five days in NI. Respiratory deaths include any death where terms directly relating to respiratory causes were mentioned anywhere on the death certificate (this includes COVID-19 deaths). This is not directly comparable to the ONS figures relating to 'deaths where the underlying cause was respiratory disease'. Figures relate to all deaths registered up to 31 December with a mention of COVID-19 on the death certificate. Please note: Where COVID-19 is mentioned in part 1 it may not be the underlying cause of death. COVID-19 deaths include any death where Coronavirus or COVID-19 (suspected or confirmed) was mentioned anywhere on the death certificate. NISRA quarterly statistics provide detail of underlying cause following coding to ICD-10 rules; figures are available here. Figures may be impacted by General Registration Office closures over public holidays.

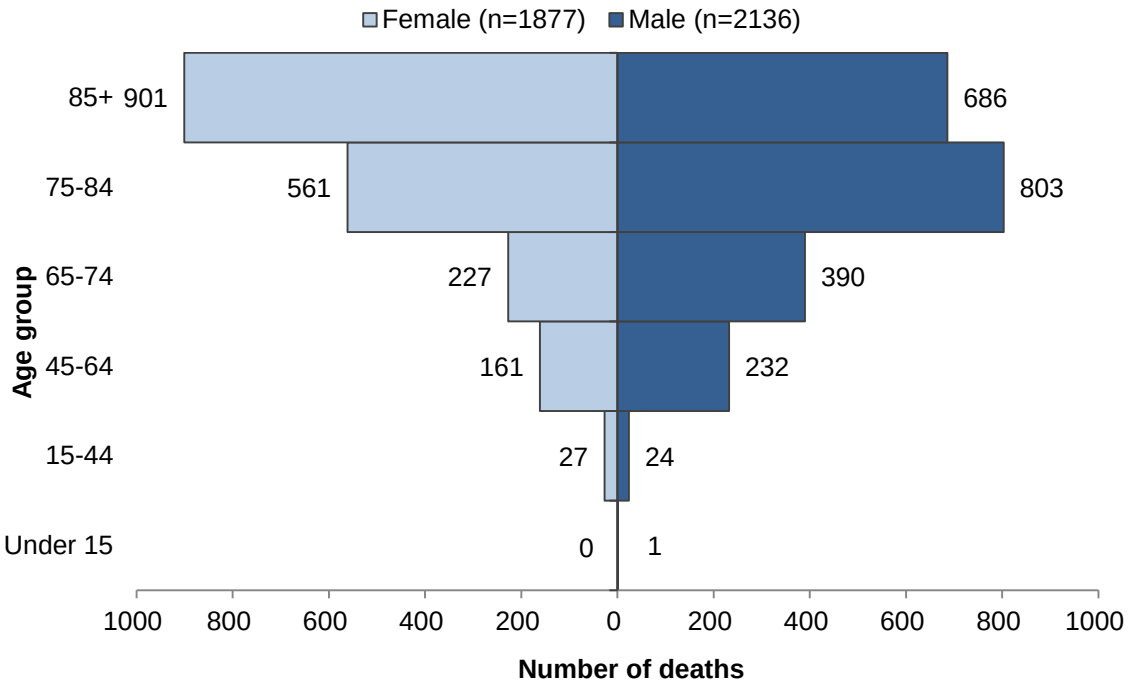
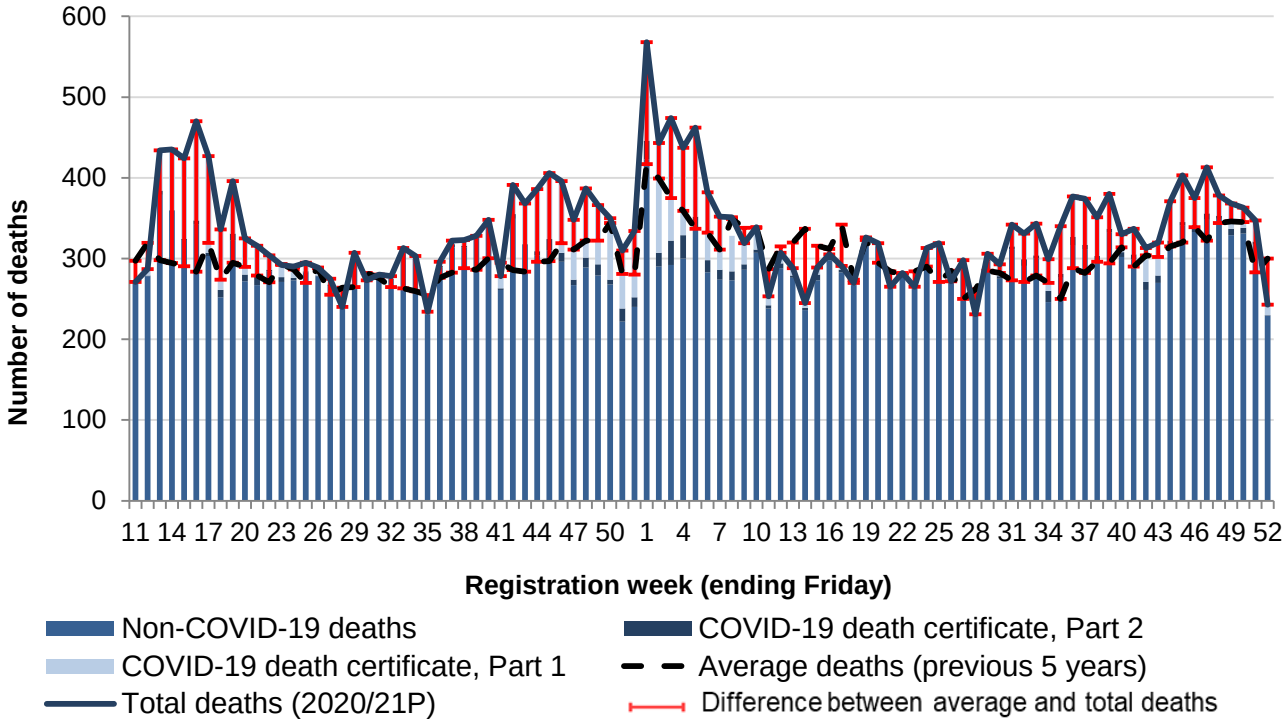


Figure 21. NISRA registered COVID-19 deaths by sex and age group, up to week ending 31 December 2021



Up to 2020 week 52, the Average deaths (previous 5 years) period ranged from 2015-2019. From 2021 week 1 onwards, this period ranges from 2016-2020

Figure 22. Northern Ireland registered deaths, including COVID-19 associated deaths, Week 11 (ending 20 March 2020) to Week 52 (ending 31 December 2021)

Table 10.1 Northern Ireland registered deaths, including COVID-19 associated deaths, Week 1 (ending 08 January 2021) to Week 26 (ending 02 July 2021)

Registration week (ending Friday)	1	2	3	4	5	6	7	8	9	10	11*	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
COVID-19 death certificate, Part 1	122	136	152	108	110	84	66	44	26	28	11	16	9	6	9	4	5	2	4	3	2	1	1	1	0	1
COVID-19 death certificate, Part 2	23	17	30	29	16	15	12	11	7	4	4	3	3	3	7	3	3	1	3	1	1	1	1	0	2	0
Non-COVID-19 deaths	423	290	292	300	336	283	274	273	286	307	238	288	276	236	273	298	283	267	319	315	263	280	263	312	317	271
Average deaths (previous 5 years)	417	399	375	359	337	332	311	349	338	338	287	315	320	337	316	312	342	274	323	295	284	280	284	290	271	285
Total deaths (2021P)	568	443	474	437	462	382	352	351	319	339	253	307	288	245	289	305	291	270	326	319	265	282	265	313	319	272

Table 10.2 Northern Ireland registered deaths, including COVID-19 associated deaths, Week 27 (ending 09 July 2021) to Week 52 (ending 31 December 2021)

Registration week (ending Friday)	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
COVID-19 death certificate, Part 1	2	2	7	15	27	32	39	39	59	50	57	48	43	22	32	42	41	49	58	34	57	25	31	25	26	13
COVID-19 death certificate, Part 2	1	1	2	3	4	8	4	14	5	11	6	7	5	6	6	10	9	10	4	8	8	4	8	7	4	1
Non-COVID-19 deaths	295	228	297	275	311	291	300	246	276	316	311	296	332	302	299	261	270	312	341	331	348	349	329	331	317	229
Average deaths (previous 5 years)	250	262	285	282	273	271	279	270	250	288	282	296	294	314	290	304	302	315	320	339	322	344	346	345	283	300
Total deaths (2021P)	298	231	306	293	342	331	343	299	340	377	374	351	380	330	337	313	320	371	403	375	413	378	368	363	347	243

Source: Northern Ireland Statistical Research Agency (NISRA)

All-cause excess deaths

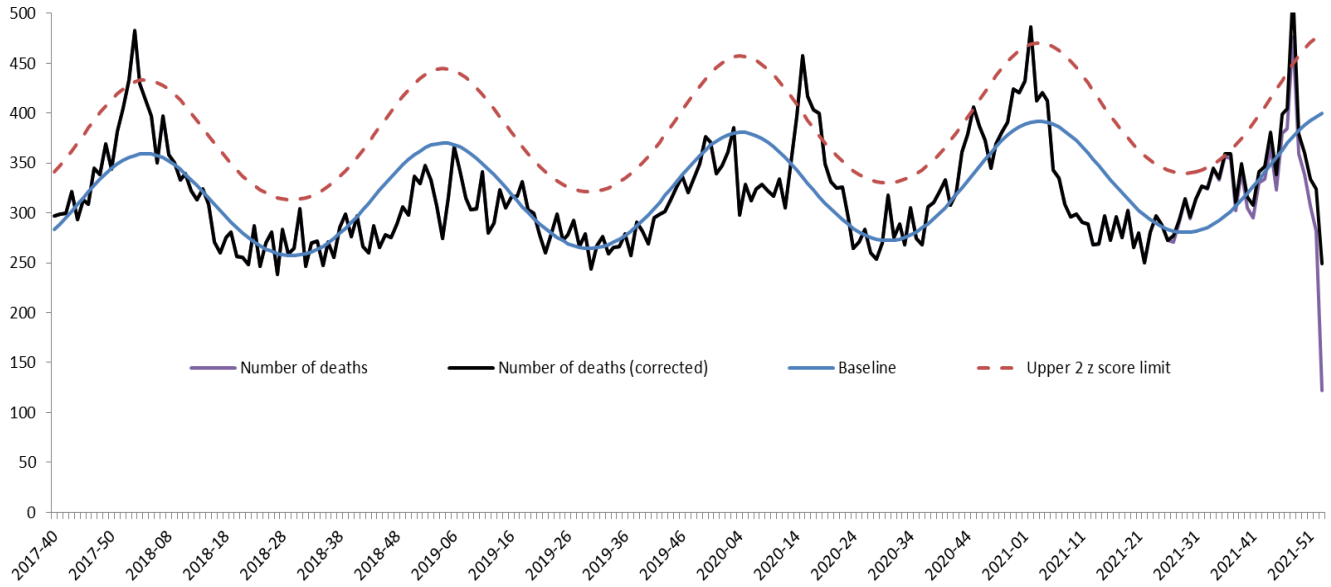
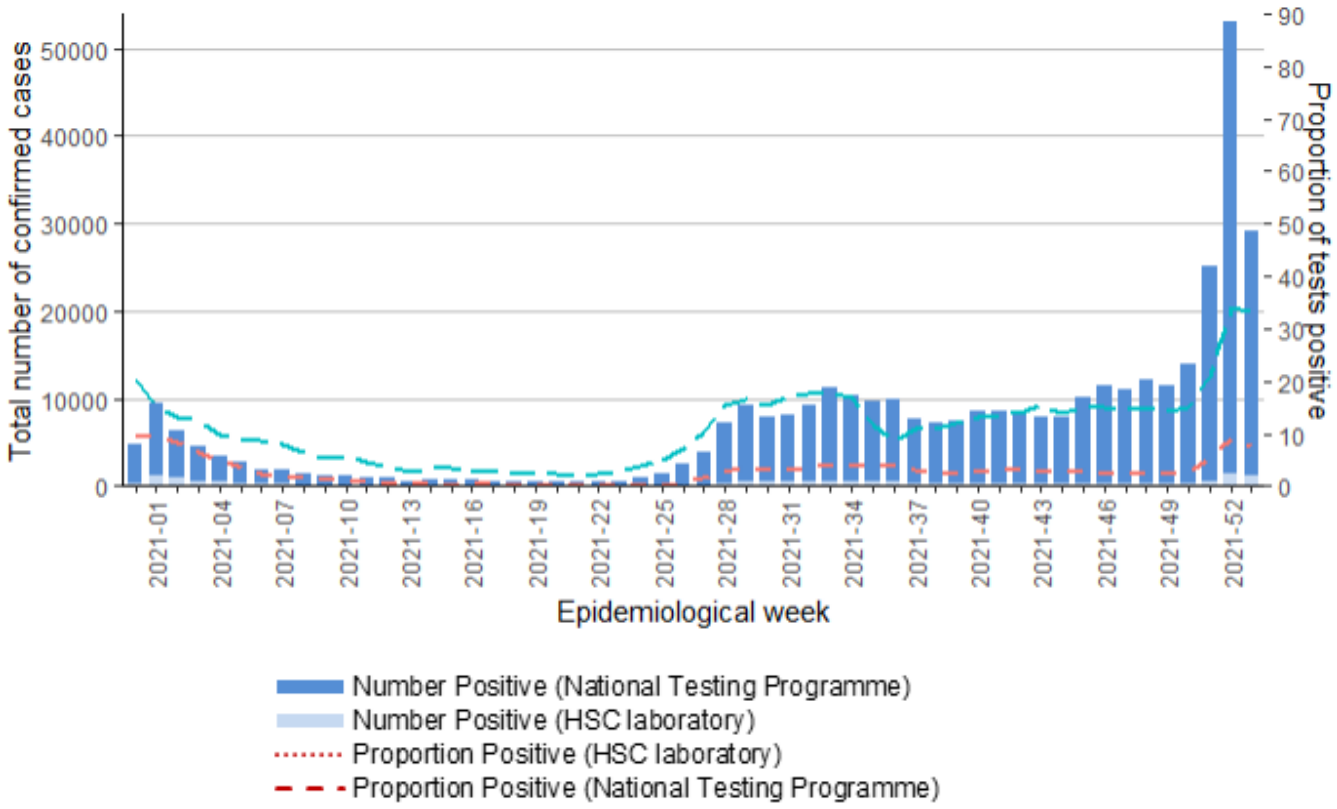


Figure 23. Weekly observed and expected number of all-cause deaths in all ages, week 40 2017 - week 01 2022

In 2020, excess all-cause deaths were reported in epidemiological weeks 13 to 20, week 22 and 45. During 2021, excess deaths were reported in week 2 (11 – 17 January), in week 36 (06 – 12 September), and in week 48 (29 Nov – 05 December), particularly in those aged 65+. This increase in deaths happened outside the influenza season and at a time when we know flu was not circulating (here).

While these more recent excesses have occurred within the flu season, reports show flu was not widely circulating. This suggests the excess mortality may in part be related to COVID-19 deaths and to a fall in presentation to hospital with other conditions (data not shown). Excess deaths were mainly in those over 65 years, which is in line with the age profile of COVID-19 deaths. Despite delay correction, reported mortality data are still provisional due to the time delay in registration and observations which can vary from week to week; not all registrations for the current week will have been included this bulletin.

Virology testing surveillance



Total individuals tested include those that were reported as indeterminate

Figure 24. Weekly number of individuals tested for COVID-19 and proportion positive, by source (HSC Laboratory testing and the National Testing Programme), 2021-22

Table 11. COVID-19 activity in Northern Ireland, for all testing data combined, week 1, 2022			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	66,650	29,118	43.7%
Total	**2,113,733**	**381,149**	**18%**

Table 12. COVID-19 activity in Northern Ireland (HSC laboratory), week 1, 2022			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	10,898	1,270	11.7%
Total	**423,256**	**17,879**	**4.2%**

Table 13. COVID-19 activity in Northern Ireland (National Testing Programme), week 1, 2022			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	55,752	27,848	49.9%
Total	**1,690,477**	**363,270**	**21.5%**

Source: HSC Trust laboratory reports and the National Testing Programme

From 01 January 2021 to 09 January 2022 (week 1), the total number of individuals tested was 2,113,733 and positivity was 18%. Overall, more individuals have now been tested as part of the National Testing Programme, and positivity is now higher (21.5%) compared to HSC laboratories (4.2%).

Global situation

As of 11 January, WHO has been notified of 308,458,509 confirmed cases of COVID-19, including 5,492,595 related deaths.

Appendix

PHA Health Protection COVID-19 surveillance systems

The PHA Health Protection Directorate has established the following surveillance systems to monitor COVID-19 activity across the spectrum of community and heath care settings. As new systems are developed they will be added to this report.

Case epidemiology

SARS-CoV2 testing was first developed by the National Reference Laboratory (Public Health England) for all of the United Kingdom on 24 January 2020. On 7 February 2020, SARS-CoV2 testing was developed locally by the Regional Virus Laboratory, Belfast Health and Social Care (HSC) Trust and performed testing across NI. Since 23 March, 28 March, 3 April and 13 May respectively, Northern HSC Trust, Southern HSC Trust, Western HSC and South Eastern HSC Trust laboratories, have been performing SARS-CoV2 testing.

The PHA Health Protection Directorate laboratory surveillance system collates SARS-CoV2 laboratory data on all tests from HSC Trust laboratories.

As an individual may have more than one test for clinical purposes, the laboratory data is then collated to enable monitoring of individuals rather than tests performed by laboratories. This is done using the Organism-Patient-Illness-Episode (OPIE) principle, a standard approach used across the UK.[7] The episode length used nationally is 6 weeks (42 days), and is being reviewed as more data becomes available.

[7] Public Health England. 2016. Laboratory reporting to Public Health England: A guide for diagnostic laboratories. [ONLINE] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739854/PHE_Laboratory_Reporting_Guidelines.pdf. [Accessed 21 April 2020]

If an individual is infected on two separate occasions by the same organism (within the episode of infection) they will be represented by one distinct record. It is still unclear to what extent second infections occur in COVID-19. The exception to this is where the first result is negative and is then followed by a positive result on a second occasion. In such circumstances, the later positive result will be recorded rather than the earlier negative one. If an individual is infected on two separate occasions by the same organism (outside the episode of infection with recovery implied) they will be represented by two distinct records, regardless of the test result. This is a standard approach which is taken across a range of infectious diseases.

All laboratories report a standardised data set which includes individual demographics, test result and source (location) at the time the specimen was taken. Data are collated to produce information on the number and trend of individuals tested at HSC Trust laboratories and the number and trend of confirmed cases in NI.

National Testing Programme

The National Testing Programme in NI consists of drive through (regional test sites), mobile test unit sites, home testing and satellite testing of nursing homes.

Everyone in NI with symptoms of COVID-19 is eligible for testing. Close contacts of COVID-19 positive individuals will also be contacted to book a test.

Testing is prioritised through the website gov.uk for essential workers who are self-isolating because they are symptomatic, or have household members who are symptomatic, to help enable essential workers to return to work as soon as safe.

Testing is available for the general public through the website nhs.uk.

The StopCOVID NI contact tracing app is now available from the Google or Apple App store.

Testing for non-HSC essential workers and the general public is currently conducted in drive-through sites operating in Belfast,

Enniskillen, Craigavon, Derry/Londonderry and Antrim. In addition there are also mobile testing units currently operating within NI, and walk through test sites operating in Omagh, Newry, Lisburn, Ballymena and on Ulster University and Queen's University campuses.

Home testing can be requested by any individual meeting the criteria with a test kit(s) being mailed to the individual and household contacts.

Tests are processed in laboratories outside the normal health and social care network and data fed back to the Public Health Agency via the Business Services Organisation.

The data has been included in the case epidemiology and virology testing surveillance sections. These data should be interpreted with caution when interpreted alongside the HSC laboratory data, because they include testing undertaken as part of the outbreak response i.e. possibly asymptomatic people with a certain age, gender or area profile. Testing numbers may be skewed to different local government districts depending on whether an outbreak was detected and managed.

For more information, see here.

Care home outbreak surveillance

Care home is a term that includes all nursing homes and residential homes in Northern Ireland that are registered with the Regulation and Quality Improvement Agency (RQIA) and can either be HSC Trust or independently owned. There are 476 active care homes in NI.

All care homes have a requirement to notify the PHA Health Protection duty room of suspected outbreaks of any infectious disease. A suspected outbreak of COVID-19 occurs when two or more residents and/or staff meet the case definitions for suspected COVID-19, confirmed COVID-19, influenza-like illness or worsening shortness of breath.

The PHA Health Protection Directorate care home outbreak surveillance system collects and collates data on all initial notifications of suspected COVID-19 outbreaks from the duty room clinical records.

The care home COVID-19 outbreak surveillance system is updated every day to reflect public health management. If the risk assessment subsequently excludes an outbreak of the initial notification then the surveillance data will be updated.

Primary care surveillance

Sentinel testing

The GP sentinel testing surveillance system builds on the existing flu sentinel testing system where 36 general practices ('spotter' practices), representing approximately 11% of practices across Northern Ireland, are commissioned to carry out flu testing in suspected influenza-like illness.

Individuals registered at a spotter practice with symptoms of suspected COVID-19 and who are well enough to self-care in their own home are referred to a Trust testing facility for testing. The service commenced in 13 spotter practices in Belfast and South Eastern HSC Trust locality at the end of April and is currently being rolled out to the other 23 practices in Northern, Southern and Western HSC Trust localities.

Laboratories reports from spotter practices are identified from the laboratory (virology) surveillance and are collated to produce information on the number of individuals tested and the number of confirmed cases.

Critical care surveillance

Until 28 September 2020, the PHA Health Protection COVID-19 critical care online reporting system captured the incidence of COVID-19 infections in critical care and aims to improve the understanding of severe disease.

This system should complement critical care data collected by the Health and Social Care Board for service planning purposes and the publicly available reports on COVID-19 in critical care NI by the Intensive Care National Audit and Research Centre (iCNARC) (here).

Since 28 September 2020, data collection for critical care surveillance has been streamlined to coincide with the well-established surveillance

of influenza patients in critical care in conjunction with the Critical Care Network Northern Ireland (CaNNI).

Data is collected on all individuals admitted to an Intensive Care Unit (ICU) or High Dependency Unit (HDU) with a positive COVID-19 result, from either before or during the ICU/HDU admission.

Mortality surveillance

Medical Certificate of Cause of Death for confirmed/suspected COVID-19

The traditional method for examining the number of deaths, and the range of causes of death, takes information from death certificates that are reported to the General Registrar's Office (GRO). The death certificate contains two parts. Part 1 describes the immediate causes of death and Part 2 provides information on related conditions that may also have contributed to death. The numbers of deaths from COVID-19 are based on COVID-19 being recorded on any part of the death certificate (i.e. Part 1 or Part 2).

These include all deaths in which a doctor feels that COVID-19 was either a direct or indirect cause of death. It includes confirmed cases (deaths with a positive laboratory result) and probable or suspected cases, where a doctor assesses that COVID-19 was a cause of death but there is either no lab test or the test was negative. It captures deaths in all settings, such as hospitals, care homes, hospices and the community. It takes up to five days for most deaths to be certified by a doctor, registered and the data processed, meaning these deaths will be reported on about a week after they occurred.

Inclusion of references to COVID-19 in Part 2 of the death certificate may slightly over estimate the number of individuals where COVID-19 is a significant contributor to death.

All-cause excess deaths

The PHA Health Protection Directorate reports the weekly number of excess deaths from any cause for NI using the Mortality Monitoring in Europe (EuroMOMO) model. EuroMOMO provides a coordinated, timely and standardised approach to monitoring and analysing mortality data

across the UK and Europe, to ensure that signals are comparable between countries. Further information is available here.

Based on mortality data supplied by NISRA, EuroMOMO produces the number of expected and observed deaths every week, corrected for reporting delay and standardised for the population by age group and region. Excess mortality is reported if the number of observed deaths exceeds the number of expected deaths, and is defined as a statistically significant increase in the number of deaths reported over the expected number for a given point in time.

Case definitions

Case definitions are determined by Public Health England, on the advice of the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG). As the pandemic evolves and more evidence emerges the definitions will change to ensure individuals are appropriately identified.

Possible case of COVID-19 (as of 28 September 2020)

As of 02 October, case definitions for inpatient and community settings were consolidated into one list. Unusual presentations are also highlighted.

Individuals with

- new continuous cough **OR**
- high temperature **OR**
- a loss of, or change in, normal sense of smell (anosmia) or taste (ageusia)

Individuals with any of the above symptoms but who are well enough to remain in the community should follow the stay at home guidance and get tested.

Clinicians should be alert to the possibility of atypical presentations in patients who are immunocompromised.

Alternative clinical diagnoses and epidemiological risk factors should be considered.

A wide variety of clinical symptoms have been associated with COVID-19.

Patients with acute respiratory infection, influenza-like illness, clinical or radiological evidence of pneumonia, or acute worsening of underlying respiratory illness, or fever without another cause should have a COVID-19 test, whether presenting in primary or secondary care.

In addition, the following situation should prompt clinicians to consider COVID-19 testing:

- Onset of delirium (acute confusion) in older people, or in those with dementia or cognitive impairment. New infections in people with dementia may manifest as delirium.

Confirmed case of COVID-19

An individual with clinical symptoms and a positive SARS-CoV2 specimen result.

Critical care COVID-19 case

A case that has either been admitted to an ICU/HDU in NI with a pre-existing positive result for SARS-CoV2, or received a positive result for SARS-CoV2 post-admission to ICU/HDU.

Influenza-like Illness (ILI)

Acute respiratory disease with sudden onset of symptoms and:

- at least one systemic symptom (fever ≥37.8°C, myalgia, malaise, headache) AND
- at least one respiratory symptom: cough (with or without sputum), shortness of breath (and/or wheezing), sore throat, nasal discharge, sneezing or congestion

Further Information

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