HSC Public Health Agency

Weekly COVID-19 Bulletin

Week up to 27 September 2020

Introduction

COVID-19 is an illness that can affect your lungs and airways. It is caused by a type of virus called SARS-CoV-2 (coronavirus). This bulletin aims to provide a weekly update on the current situation relating to the virus in Northern Ireland. It presents high level data on key areas currently being used to monitor COVID-19 activity and highlights current issues and public health messages.

The data presented complements the current range of existing data available from other sources including the PHA Monthly Epidemiological bulletin, Department of Health COVID-19 Daily Dashboard and NISRA Deaths Registered Dashboard. It should be noted that the data included may be subject to change as systems are updated and comparisons with existing data sources may not be possible, for example, due to variations in data extraction and processing.

Key messages

Compared to week 38, in week 39 there has been a 58% increase in the number of positive COVID-19 cases across Northern Ireland. Increases have been seen across all age groups, but particularly in the 20-29 year age group where the rate of positive cases has almost doubled. The increase in positive cases and clusters has been accompanied by increases in COVID-19 admissions and intensive care cases.

Regional restrictions have been introduced with the aim of limiting spread of the virus among households. We are grateful to everyone who is playing their part by complying with these restrictions and helping to prevent spread of the virus. People are also encouraged to download the StopCOVID NI app, which is now also available to young people 11-17 years, to help with contact tracing in preventing spread of the virus.

Further information and advice is regularly updated and available from the PHA website

Incidence and prevalence

Estimated incidence (number of new cases in the seven days up to 27 September 2020)

The current incidence of positive laboratory cases is 85 per 100,000 of the Northern Ireland population (or 1 in 1,179 people)[1].
However, if we assume that there are 1.3 infected individuals for every laboratory confirmed case we know about, the estimated weekly incidence is 195 per 100,000 population (1 in 513)[2].

[1] Rates calculated using 2019 Mid-Year Population Estimates for Northern Ireland https://www.nisra.gov.uk/publications/2019-mid-year-population-estimates-northern-ireland

Estimated prevalence

The prevalence of active cases, as of 27 September 2020, is estimated to be 170 per 100,000 population (1 in 590), assuming that 50% of cases experience no symptoms[3]; 100 per 100,000 population (1 in 1,002) if only 15% experience no symptoms[4]; and 424 per 100,000 (1 in 236) if 80% experience no symptoms[5,6,7].

COVID-19 testing by age group

Figures 1a and 1b show the trend in rates (per 100,000 population) of laboratory confirmed COVID-19 cases by age group and by epidemiological week[8] from week 9 (ending 1 March 2020) to week 39 (ending 27 September 2020) (1a) with a focus on the last ten weeks, from week 29 (ending 5 July 2020) to week 39 (ending 27 September 2020) (1b).

Figure 1a: Laboratory confirmed COVID-19 cases by age group and epidemiological week; week 9 (ending 1 March 2020) to week 39 (ending 27 September 2020)

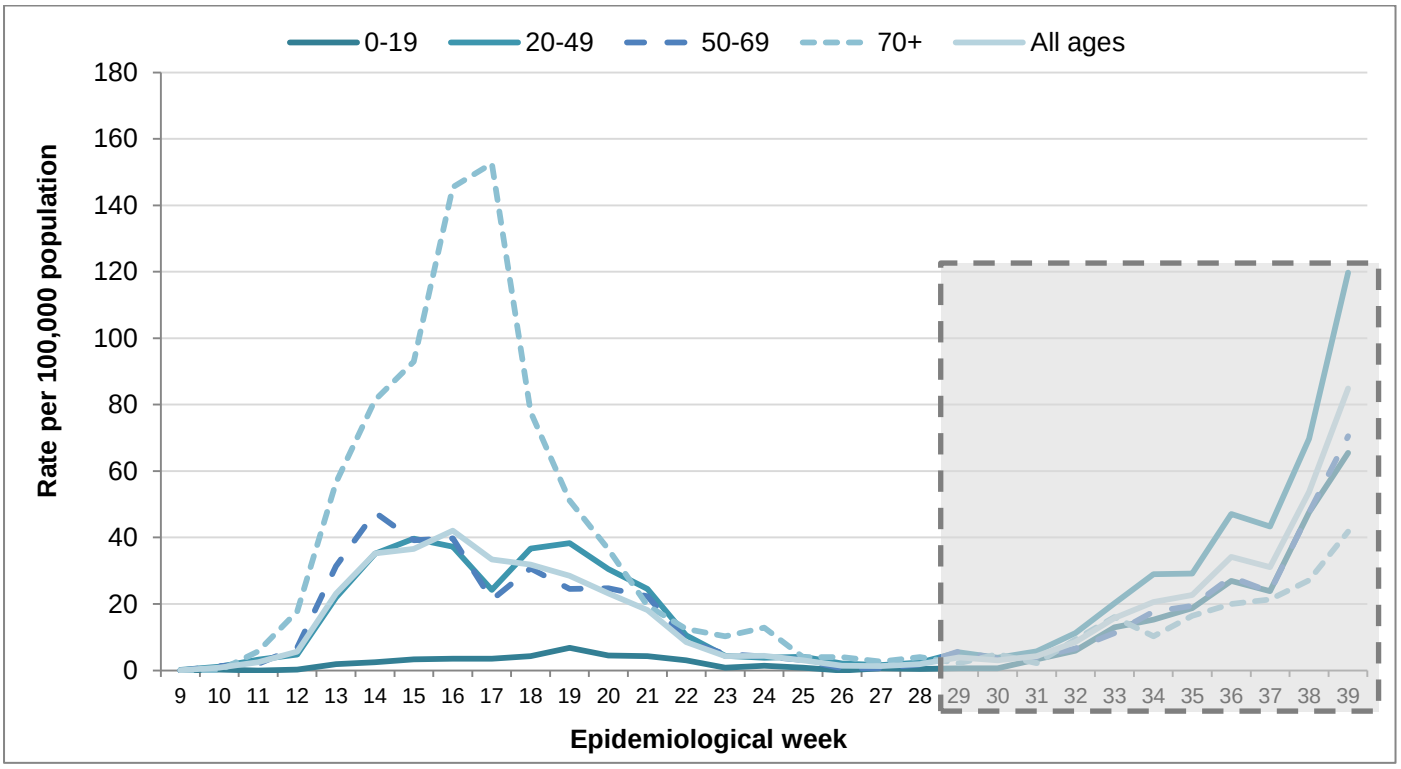
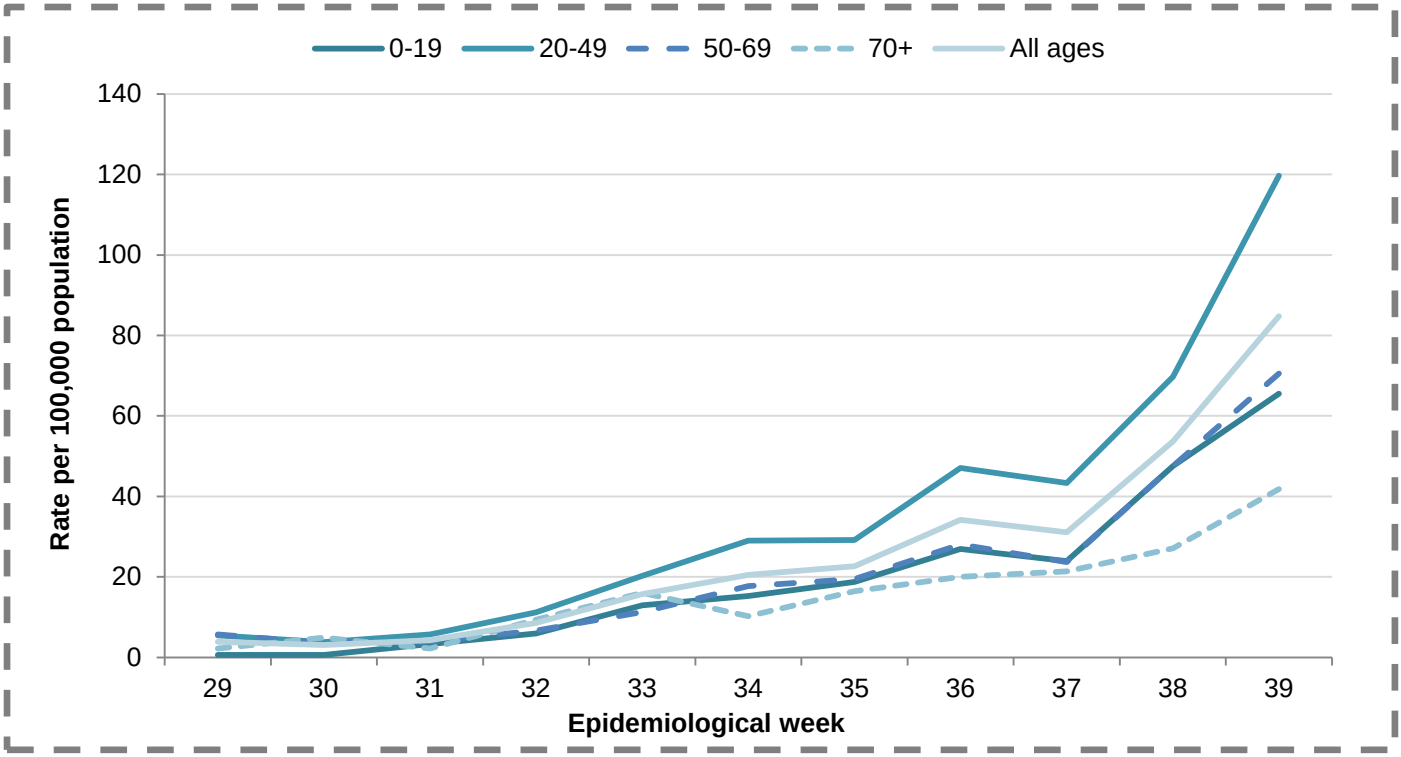


Figure 1b on the following page provides further detail on the highlighted time period.

[2] Bohning D, Maruotti A, Rocchetti I, and Holling H. (2020). Estimating the undetected infections in the Covid-19 outbreak by harnessing capture-recapture methods. International Journal of Infectious Diseases.
[3] https://hub.jhu.edu/2020/05/12/gigi-gronvall-asymptomatic-spread-covid-19-immunity-passports/
[4] Mizumoto K, Kagaya K, Zarebski A, Chowell G. Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020. Eurosurveillance. 2020;25(10):2000180.
[5] Lavezzo E, Franchin E, Ciavarella C, Cuomo-Dannenburg G, Barzon L, Del Vecchio C, Rossi L, Manganelli R, Loregian A, Navarin N, Abate D. Suppression of a SARS-CoV-2 outbreak in the Italian municipality of Vo'. Nature. 2020;30:1-5.
[6] Day M. Covid-19: four fifths of cases are asymptomatic, China figures indicate. BMJ, 2020.
[7] Ing AJ, Cocks C, Green JP. COVID-19: in the footsteps of Ernest Shackleton. BMJ Thorax. 2020.
[8] Epidemiological week is a standardised method of counting weeks [Monday–Sunday] to allow for the comparison of data from year to year.

Figure 1b: Laboratory confirmed COVID-19 cases by age group and epidemiological week; week 29 (ending 5 July 2020) to week 39 (ending 27 September 2020)



Source: PHA Health Protection Directorate; 30 September 2020; includes all testing data (HSC Laboratory and the National Testing Programme).

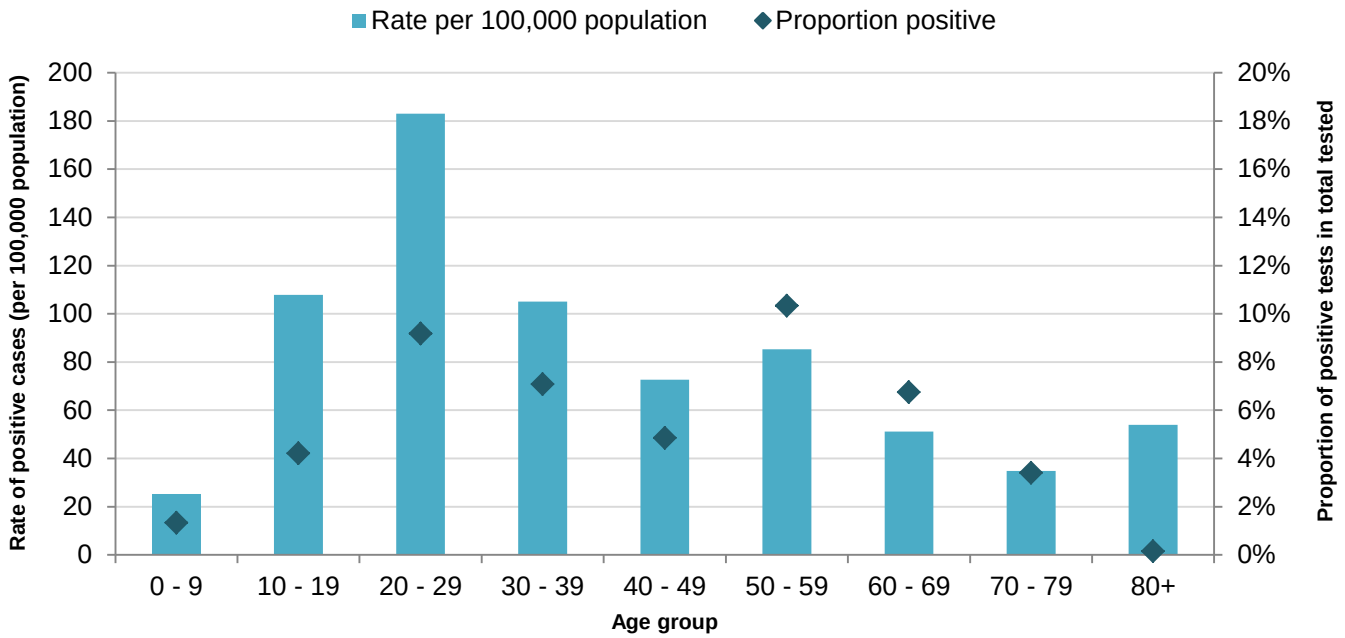
Comment: In week 39 (ending 27 September 2020) the number of new laboratory confirmed COVID-19 cases continues to increase. The highest rates are observed in the 20-49 year age group (120 per 100,000 population) followed by those aged 50-69 years (71 per 100,000 population), 0-19 years (66 per 100,000 population) and 70+ years (42 per 100,000 population).

Between week 38 (ending 20 September 2020) and week 39 the rate of positive cases across Northern Ireland increased by 58% from 54 per 100,000 population to 85 per 100,000 population. Increasing rates were observed for all age groups; however, the increase was highest in the 20-49 year age group at 72%.

While the rate of positive cases was lowest in the 70+ year age group, this rate increased by more than half (54%) from 27 per 100,000 population to 42 per 100,000 population, highlighting the risk that increasing rates in younger age groups may result in transmission to those in older age groups.

Figure 2 provides further detail on rates of laboratory confirmed COVID-19 cases in week 39 by ten year age group intervals.

Figure 2: Laboratoratory confirmed COVID-19 cases by age group, week 39 (ending 27 September 2020)



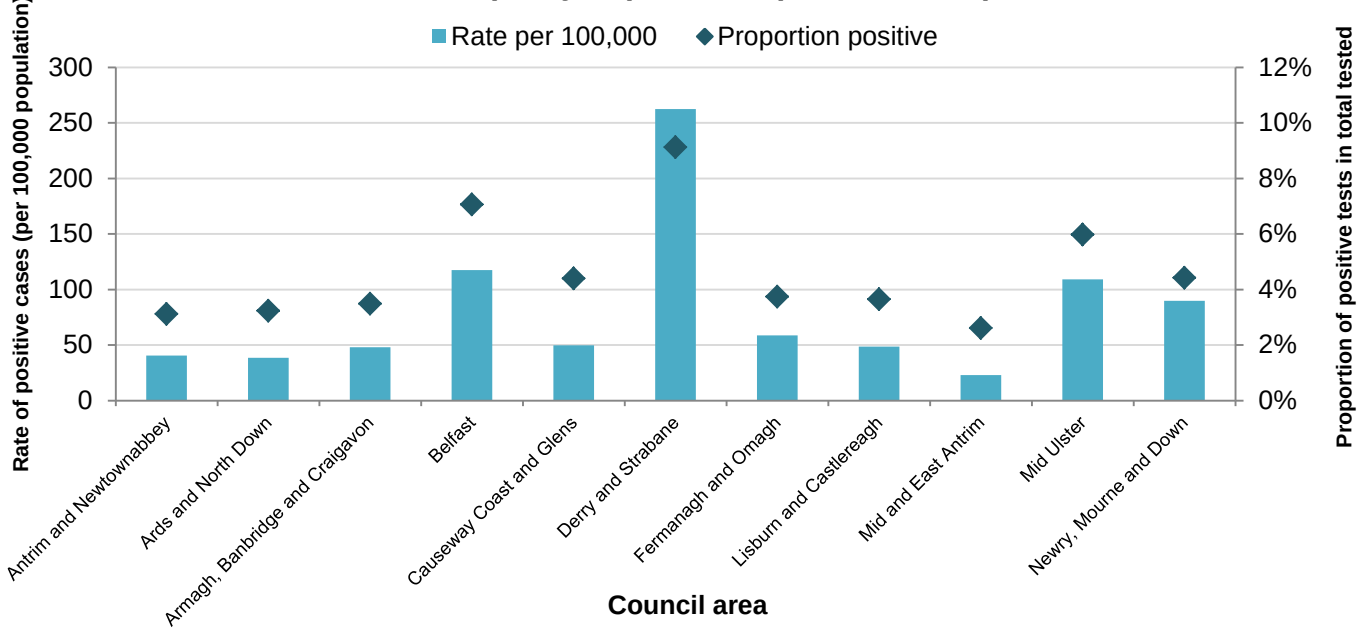
Source: PHA Health Protection Directorate; 30 September 2020; includes all testing data (HSC Laboratory and the National Testing Programme).

Comment: In week 39 (ending 27 September 2020) the highest rate of new COVID-19 cases was seen in the 20-29 year age group, followed by the 10-19 and 30-39 year age groups. Compared to week 38 (ending 20 September 2020), the rates of new COVID-19 cases increased across all age groups with the greatest increase seen in those aged 20-29 years where the rate almost doubled (an increase of 96%) compared to week 38.

The proportion of positive tests for Northern Ireland in week 39 was 5.3%, with a range of 0.1% to 10.3% across all age groups.

COVID-19 testing by council area

Figure 3: Laboratory confirmed COVID-19 cases by Council area, week 39 (7 days up to 27 September 2020)

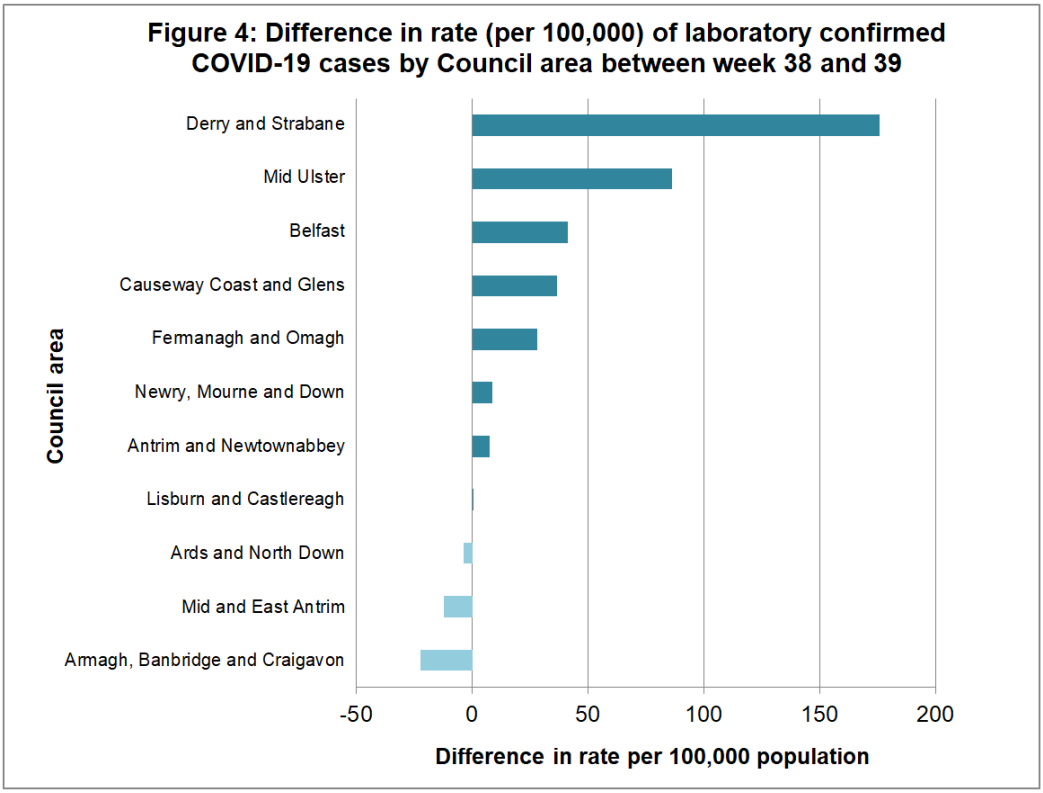


Source: PHA Health Protection Directorate; 30 September 2020; LGD data not available for 13 cases.

Comment: In week 39 (ending 27 September 2020) the rates of laboratory confirmed COVID-19 cases varied from 23 per 100,000 population in Mid and East Antrim council area, up to 262 per 100,000 population in Derry and Strabane council area. The proportion of positive tests ranged from 2.6% in Mid and East Antrim council area to 9.1% in Derry and Strabane council area.

Figure 4 shows the difference in the rate of laboratory confirmed COVID-19 cases by council area between week 38 (ending 20 September 2020) and week 39.

Figure 4: Difference in rate (per 100,000) of laboratory confirmed COVID-19 cases by Council area between week 38 and 39



Source: PHA Health Protection Directorate; 30 September 2020.

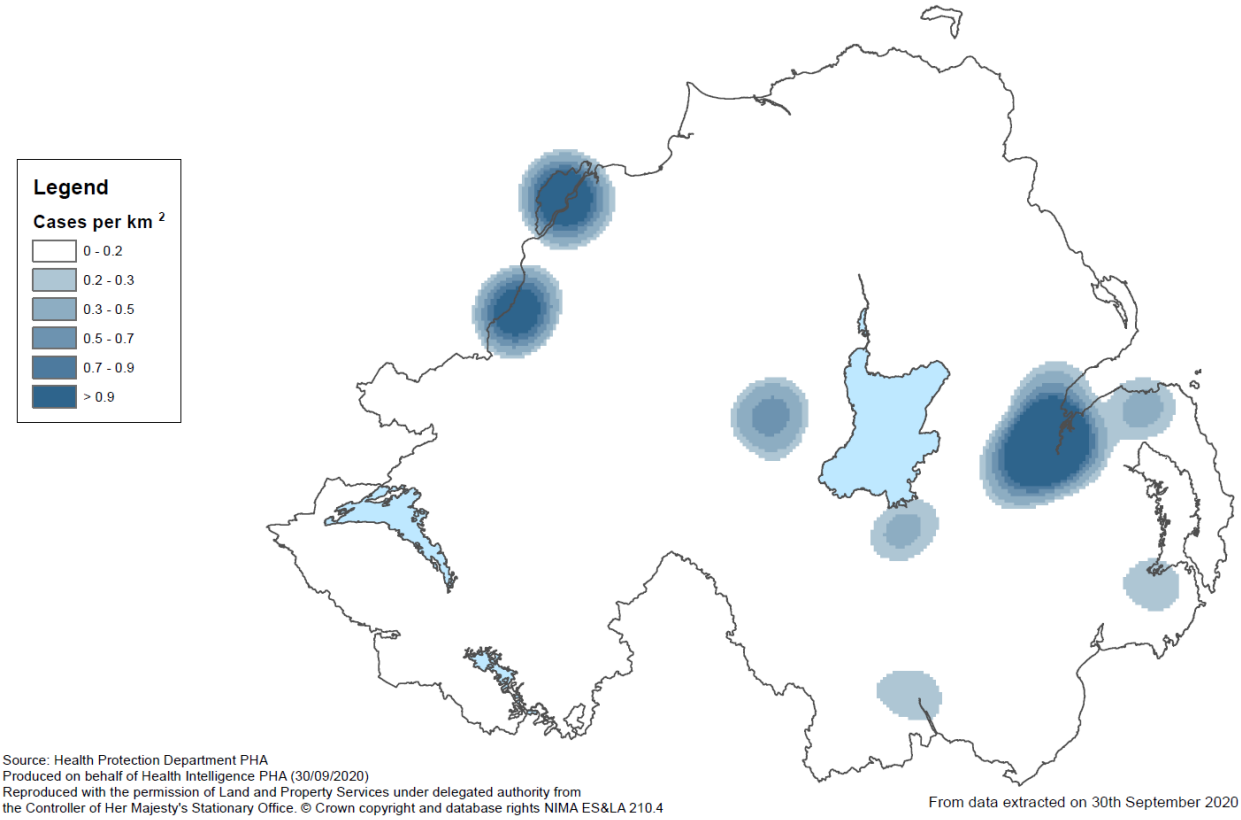
Comment: Between week 38 (ending 20 September 2020) and week 39 (ending 27 September 2020) the greatest increase in new COVID-19 cases was seen in Derry and Strabane council area where the rate of new cases more than tripled from 87 per 100,000 population to 262 per 100,000 population.

Other council areas with relatively low rates in week 38 have also seen large increases in week 39 including Causeway Coast and Glens (from 13 per 100,000 population to 50 per 100,000 population) and Mid Ulster (23 per 100,000 population to 109 per 100,000 population).

In week 39, Armagh, Banbridge and Craigavon, Mid and East Antrim and Ards and North Down council areas showed decreased rates compared to week 38.

Figure 5 shows a contour density map based on the number of confirmed COVID-19 cases in week 39 (ending 27 September 2020). The contour lines on the map indicate increasing density of cases, with the darkest shade of blue indicating where there is the greatest density of cases. The map removes administrative boundaries and reflects the true geographical pattern of disease.

Figure 5: Density map of confirmed COVID-19 cases for the week ending 27 September 2020



Note: The scale used for mapping may be adjusted in line with disclosure control and may not be directly comparable with previous weeks.

Comment: The map indicates three areas with a density of COVID-19 cases greater than 0.9 per square kilometre in week 39 (ending 27 September 2020). However, such information should be interpreted with caution. Identified rates are based on testing which is not evenly spread across the region.

Clusters

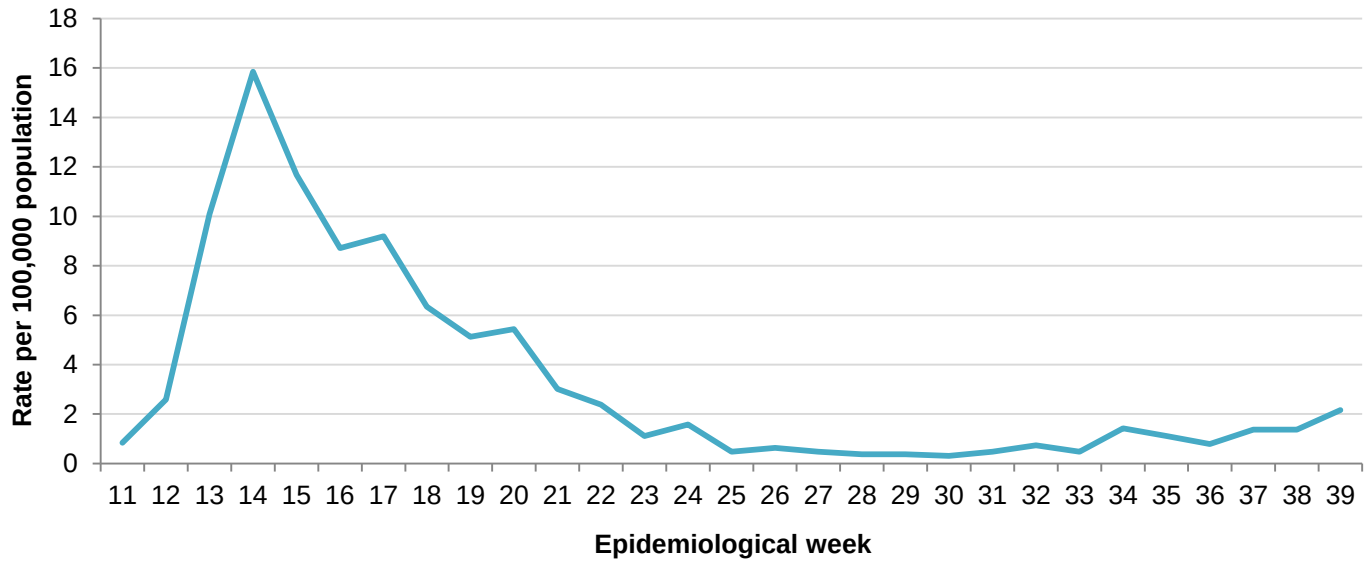
Definition: A cluster is currently defined as two or more laboratory confirmed cases of COVID-19 among individuals associated with a key setting, who have illness onset dates within a 14 day period. Key settings in which clusters have occurred include: workplaces, retail, hospitality and leisure premises[9]. **Please note that the cluster data provided below from Tuesday 22 September 2020 onwards no longer includes information on schools which will be reported separately.**

Comment: Since 22 September 2020 there have been 30 new clusters recorded (up to 12.00pm on 29 September 2020).[10,11,12]

In total, up to 29 September 2020, 128 clusters have been identified. Of these, 26 clusters with greater than five people have been identified in the following council areas; Newry, Mourne and Down (n=6), Antrim and Newtownabbey (n=3), Mid and East Antrim (n=3), Belfast (n=5), Ards and North Down (n=1), Armagh City, Banbridge and Craigavon (n=2), Derry City and Strabane (n=2), Lisburn and Castlereagh (n=2), Causeway Coast and Glens (n=1) and Mid Ulster (n=1). In addition, there have been 102 clusters across Northern Ireland with fewer than five people.

Secondary Care

Figure 6: Rate of hospital admissions due to COVID-19 (Confirmed only)



Source: Health and Social Care Board, Performance Management and Service Improvement, Information Team; 29 September 2020.

Comment on the trend: In week 39 (ending 27 September 2020) the rate of confirmed hospital admissions for COVID-19 increased by 58% to 2.2 per 100,000 population compared to 1.4 per 100,000 population in week 38.

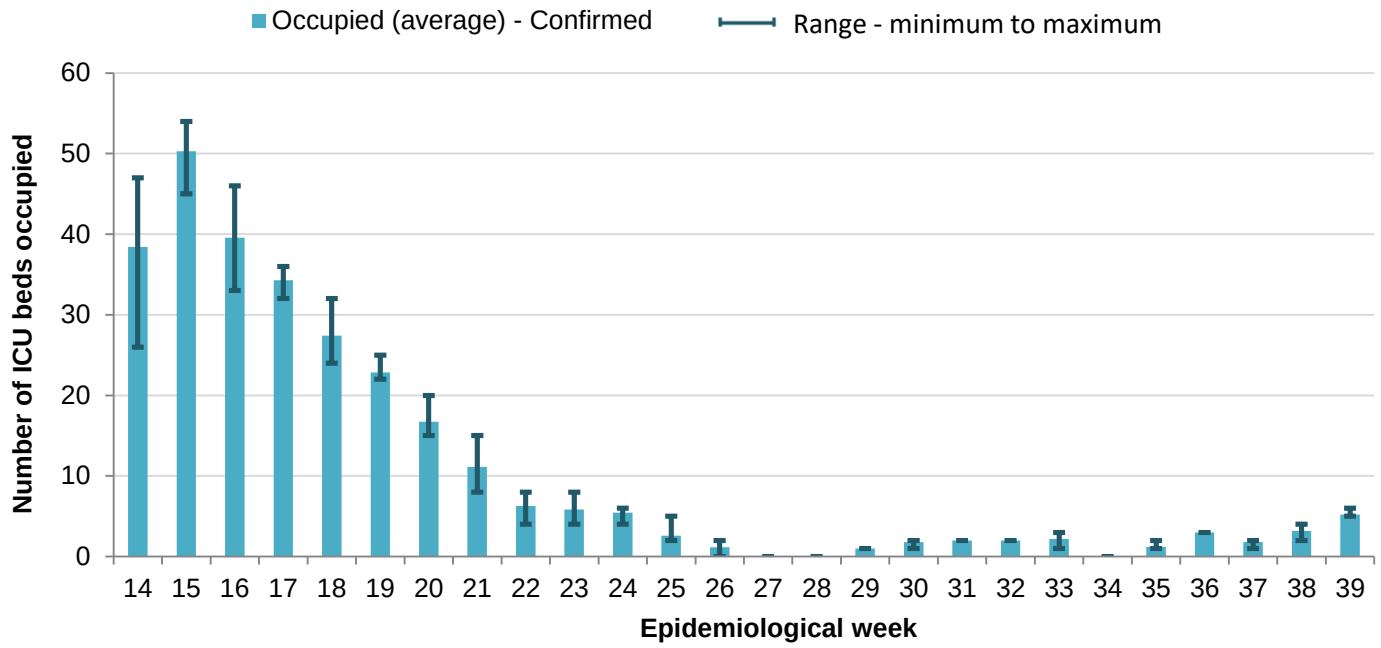
[9] COVID-19 transmission is most common in household settings and the number of affected households is not reported. Data also excludes Trust, Educational settings and Nursing homes.

[10] The reporting period for cluster information has changed and information will now be reported weekly on Tuesday.

[11] Number of all clusters (open and closed) that have been recorded by the contact tracing service up to 12.00pm Tuesday 22 September 2020. Note: the reporting period for cluster data is slightly different to the remainder of the report in order to provide the most up to date cluster information at the time of the bulletin. Some clusters may overlap (larger clusters may contain or overlap with several smaller clusters).

[12] 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.

Figure 7: ICU occupancy of COVID-19 cases (Confirmed), weekly average from 30 March 2020



Source: Critical Care Network Northern Ireland (CCaNNI) daily returns, Health and Social Care Board, Performance Management and Service Improvement, Information Team; 29 September 2020.
Note: The recording and reporting of occupancy at weekends ceased from the 4 July 2020.

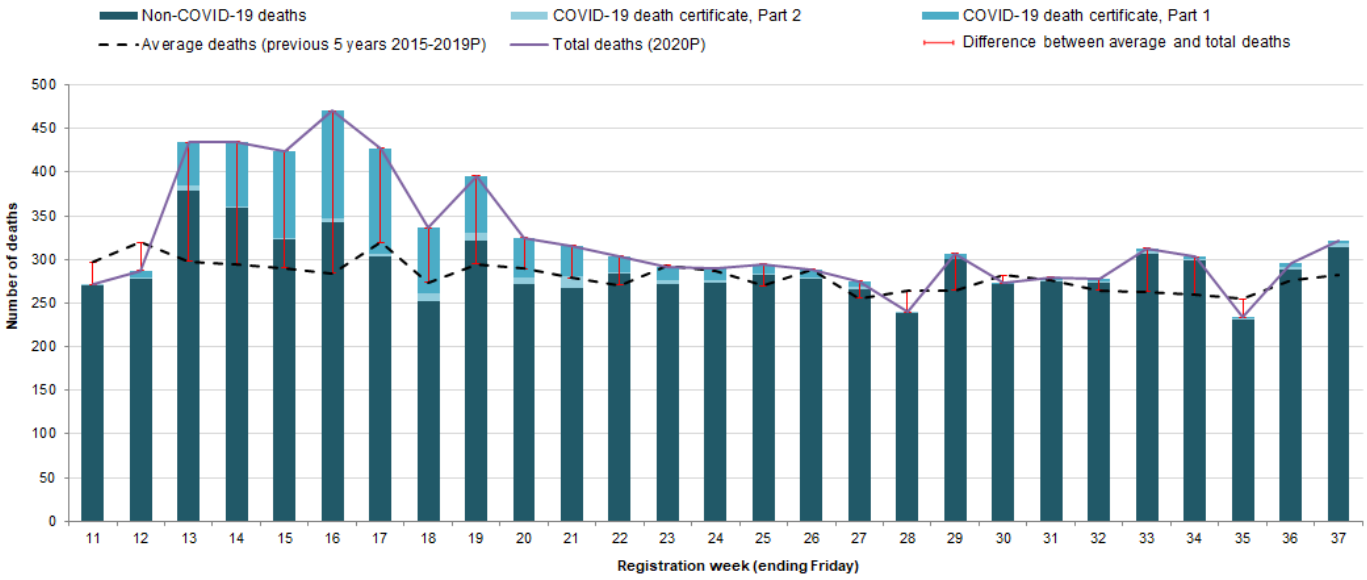
Comment on the trend: On 25 September 2020 there were five confirmed COVID-19 cases in ICU. During the five day period 21-25 September 2020 (week 39) the average ICU occupancy for COVID-19 confirmed cases was 5.2 and ranged from five to six during this time.

Mortality surveillance

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

The Northern Ireland Statistics and Research Agency (NISRA) provide a weekly update on the number of **registered respiratory and COVID-19 associated deaths each Friday**. Figure 8 highlights the total weekly number of deaths registered[13] in Northern Ireland from week 11 (ending 20 March 2020) and compares these to the average number of deaths registered in the corresponding week for the five year period 2015-2019[14]. It also highlights the weekly breakdown of registered deaths that were non-COVID-19 related and those associated with COVID-19.[15]

Figure 8: Northern Ireland registered deaths^, including COVID-19 associated deaths, Week 11 (ending 20 March 2020) to Week 37 (ending 18 September 2020)



Registration week (ending Friday)	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
COVID-19 death certificate, Part 1	0	8	50	75	100	123	120	75	65	45	35	18	15	14	11	10	7	0	6	1	4	3	4	3	2	5	4
COVID-19 death certificate, Part 2	1	1	5	1	1	5	4	9	9	8	14	2	6	3	1	1	2	2	1	0	1	1	2	1	1	2	4
Non-COVID-19 deaths	270	278	379	359	323	342	303	252	322	272	267	284	271	273	283	278	266	238	300	272	275	274	307	299	231	289	314
Average deaths (previous 5 years 2015-2019P)	297	320	298	295	290	284	320	274	295	290	279	271	293	286	270	288	255	264	265	282	276	265	263	259	255	276	282
Total deaths (2020P)	271	287	434	435	424	470	427	336	396	325	316	304	292	290	295	289	275	240	307	273	280	278	313	303	234	296	322

Source: NISRA; Figures relate to all deaths registered up to 18 September 2020 with a mention of COVID on the death certificate; P Weekly published data are provisional; ^ This data is based on registrations of deaths, not occurrences. The majority of deaths are registered within five days in Northern Ireland. Please note: Where COVID is mentioned in part 1 it may not be the underlying cause of death. NISRA quarterly statistics provide detail of underlying cause following coding to ICD-10 rules; figures are available up to Q1 at https://www.nisra.gov.uk/statistics/registrar-general-quarterly-report/registrar-general-quarterly-tables and Q2 will be published on 17 September 2020.

Comment: In week 37 (ending 18 September 2020), eight COVID-19 related deaths were registered, an increase of one from the previous week. From week 11 (ending 20 March 2020) to week 37 there have been 891 deaths associated with COVID-19. Over the same period, 1122 'excess deaths' (ie deaths above the average for the corresponding weeks in previous years) have been registered in Northern Ireland.

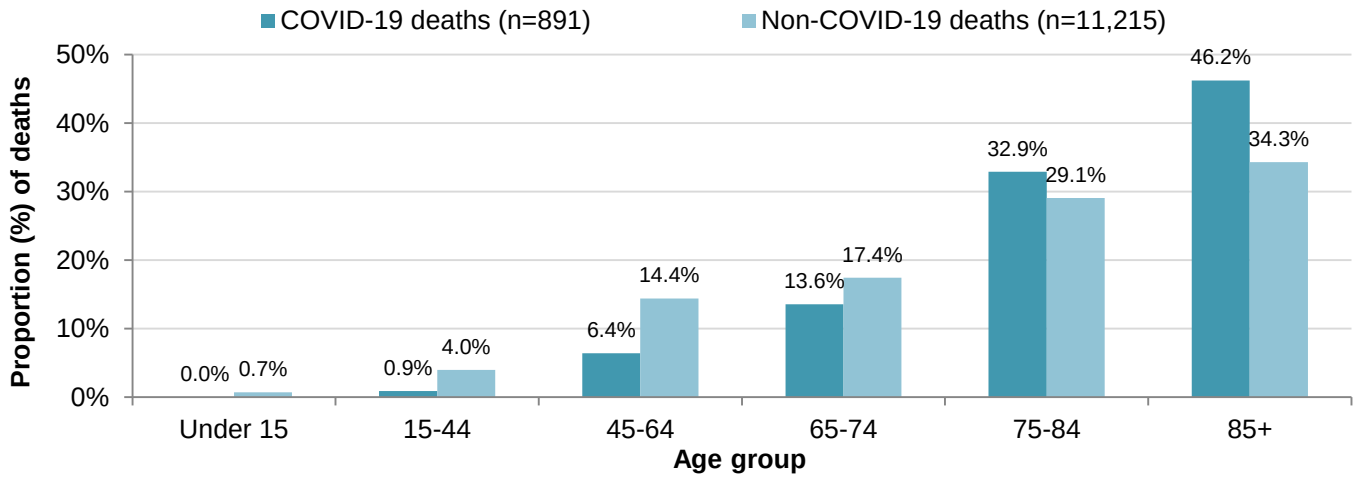
The number of deaths from all causes, in the week to 18 September 2020, is higher than the number expected based on the average for the last five years; the proportion of COVID-19 associated deaths as a proportion of all deaths during that week was 2.5%. Of the eight COVID-19 associated deaths, in the week to 18 September 2020, SARS CoV-2 infection was the primary cause of death in four cases (50%).

[13] P Weekly published data are provisional and subject to change.
[14] The 5-year average is not a whole number so comparisons with 2020 week-on-week can vary by up to one death due to rounding.
[15] COVID-19 deaths include any death where coronavirus or COVID-19 (suspected or confirmed) was mentioned anywhere on the death certificate (Part 1 or Part 2). Part 1 includes the diseases or conditions that led directly to death while Part 2 includes other conditions that were not part of the main cause of death but may have contributed in hastening death.

COVID-19 deaths by age and sex

Figure 9 shows the proportions of **registered deaths** by age group for non-COVID-19 and COVID-19 related deaths up to 18 September 2020. Ninety three percent (93%) of registered COVID-19 deaths were in those aged 65+ years, compared to 81% of non-COVID-19 deaths registered in this age group.

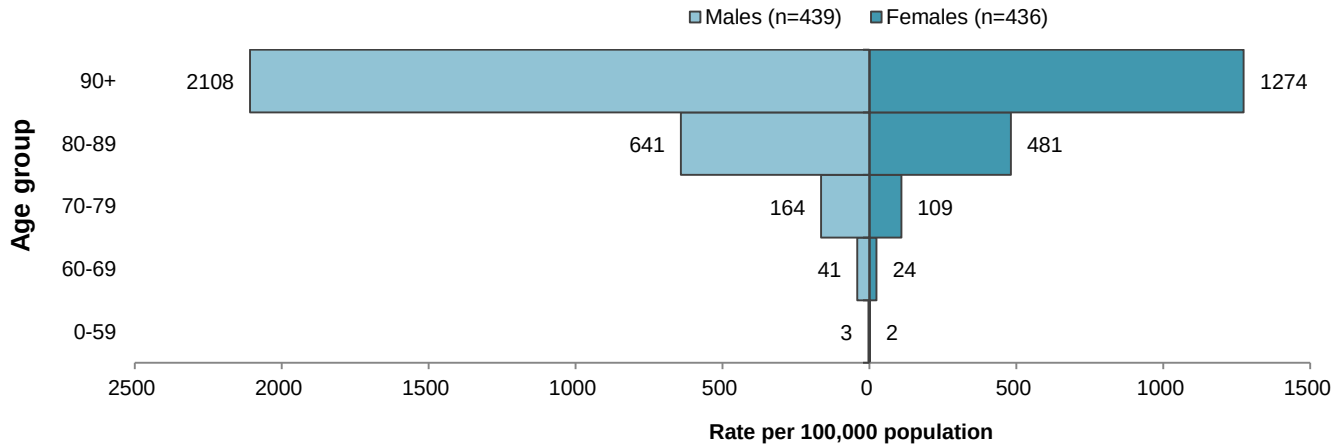
Figure 9: Registered deaths[1] by age group, 2020 to 18 September 2020



Source: NISRA; https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/Weekly_Deaths.xls
P Weekly published data are provisional. [1] This data is based on registrations of deaths, not occurrences. The majority of deaths are registered within five days in Northern Ireland. [2] Covid-19 deaths include any death where Coronavirus or Covid-19 (suspected or confirmed) was mentioned anywhere on the death certificate.

Figures published by NISRA relating to Covid-19 deaths **occurring** in Northern Ireland for the period March to August 2020 provide further detail on age-specific mortality rates.[16] Of the 875 deaths involving COVID-19, 439 were male and 436 were female. Across all age groups the age specific rate of COVID-19 mortality was higher for males compared to females. For example, in the 90+ age group the rate for males was 2,108 per 100,000 population (86 deaths) compared to females 1,274 per (123 deaths); however, as there are fewer males than females in the older age groups, males have a proportionately higher rate of death.

Figure 10: Age-specific COVID-19 related mortality rates (per 100,000 population) by sex and age group, 1 March 2020 to 31 August 2020



Source: NISRA; www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/Covid-19%20deaths-%20March-August%202020%20-%20Bulletin.pdf Notes: COVID-19 deaths include any death where Coronavirus or Covid-19 (suspected or confirmed) was mentioned anywhere on the death certificate; Based on the date a death occurred rather than when a death was registered. Based on death registrations up to and including 21 September 2020. The majority of deaths are registered within five days in Northern Ireland. 2019 Mid-year population estimates for Northern Ireland have been used to calculate all mortality rates.

[16] Northern Ireland Statistics and Research Agency (NISRA).Covid-19 related deaths in Northern Ireland. Deaths occurring during March to August 2020. Published 01 October 2020 https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/Covid-19%20deaths-%20March-August%202020%20-%20Bulletin.pdf

Appendix

Incidence and prevalence

Data provided jointly with the Department of Health COVID-19 Modelling Group. Estimates presented are based on data sourced from the PHA Health Protection Directorate laboratory surveillance system.

COVID-19 testing by age group and council area

Data are sourced from the PHA Health Protection Directorate laboratory surveillance system. The system collates SARS-CoV-2 laboratory data on all tests from HSC Trust laboratories and data from the National Testing Programme in Northern Ireland. Further detail on collation and analysis of this data is available from the PHA Monthly Epidemiological bulletin

Clusters

Data are sourced from the Contact Tracing Service / PHA Health Protection Service.

Primary Care

GP in-hours respiratory syndromic surveillance data is extracted from the Apollo GP Flu Surveillance System (Wellbeing Software) and is sourced by the PHA Health Protection Surveillance team. Data are analysed to produce trends of ARI, ILI and COVID-19 consultation rates. Further details on collation and analysis of this data is available from the PHA Monthly Epidemiological bulletin

Note: No update on primary care data is included in this bulletin for the week up to 27 September 2020 as the data system is offline for essential maintenance and testing.

Admissions

Data are sourced from the Patient Administration System through the Health and Social Care Board, Performance Management and Service Improvement, Information Team.

ICU Occupancy

Data are sourced from daily Critical Care Network Northern Ireland (CCaNNI) report and provided by the Health and Social Care Board, Performance Management and Service Improvement, Information Team. Data are included from 30 March 2020; includes Adults, Paediatrics and Cardiac Intensive Care Units. The recording and reporting of occupancy at weekends ceased from 4 July 2020 and the average occupancy presented is an average for the five day period Monday to Friday of the epidemiological week.

Mortality surveillance

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

Data are sourced from the Northern Ireland Statistics and Research Agency (NISRA). NISRA provide a weekly update on the number of **registered** respiratory and COVID-19 associated deaths each Friday. Additional analyses of death data, for example on COVID-19 related deaths **occurring** (March-August) may also be referenced.

This bulletin is produced by the Health Intelligence Team on behalf of the Director of Public Health.