Summary - Up to week 34 (23 August 2020)

To week 34, there have been a total of 6,850 laboratory confirmed cases[1] of COVID-19, including 863 registered COVID-19 deaths[2] in Northern Ireland.

COVID-19 case epidemiology

- 6,850 laboratory confirmed cases (73% from HSC laboratories)
- 58% of total cases are female
- 27% of cases tested in HSC laboratories reside in Belfast (Local Government District)
- 41% of total cases are from the National Testing Programme, NIAS, private nursing home residents, pathology services, GPs and hospices
- In week 34, those aged 15-44 had the highest case rate (32.2 per 100,000 population; 1.8% positivity)
- In week 34, Mid and East Antrim had the highest case rate (70.4 per 100,000 population; 3.7% positivity)

Care home outbreaks (suspected and confirmed)

- 196 suspected/confirmed COVID-19 outbreaks reported in total; includes 2 reported in week 34
- Involving 168 care homes (36% of all Northern Ireland care homes)
- The highest proportion of outbreaks (45.9%) were reported from the Southern Trust area

[1] Virological reports and the National Testing Programme

[2] NISRA; 2020 - up to 14 August 2020

Primary care syndromic surveillance

In week 34:

- In-hours Acute Respiratory Infections (ARI) and COVID-19 consultation rate: 29.8 per 100,000 population
- Out-of-hours (OOH) ARI consultation rate: 34.6 per 100,000 population
- OOH COVID-19 consultation rate: 6.5 per 100,000 population

Sentinel testing

- Testing started 27 April 2020
- Number of individuals tested in total: 307 (3/307 positive; 1% positivity)

COVID centres

- Testing started 15 June 2020 (one COVID centre: BHSCT)
- Virology data from the COVID centre became available from 1 July 2020
- Number of individuals tested 15 - 30 June 2020: 182 (all negative)
- Number of individuals tested 1 July - 23 August 2020: 468 (1/468 positive; 0.2% positivity)

Critical care surveillance

- 137 confirmed COVID-19 individuals reported to the PHA through the COVID-19 critical care online reporting system
- The majority of reported critical care cases were male (71%)
- Median age of cases was 58 years (range 26 – 81 years)

Mortality surveillance

- In week ending 14 August 2020, the proportion of COVID-19 deaths registered was 1.4%. From the beginning of 2020 to week ending 14 August 2020 the proportion was 8%
- Excess deaths were reported in weeks 13-22; mainly in those over 65 years

Testing surveillance virology

- Number of individuals tested in total: 226,219 (3% positivity)
- Number of individuals tested in;
  - HSC laboratories:122,135 (54% of total tests)
  - National Testing Programme:104,084 (46% of total tests)

Introduction

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

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 impact 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 Dashboard and *Deaths involving coronavirus in Northern Ireland* by the Northern Ireland Statistics and Research Agency). This report presents data from existing and newly developed PHA Health Protection surveillance systems that monitor COVID-19 activity in Northern Ireland 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. All updates will be documented in “what’s new” section below.

Unless otherwise stated, data is 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 comparisons not yet possible due to the recent emergence of this novel virus.

There is a large amount of data being regularly published regarding COVID-19 (for example, Department of Health COVID-19 Daily Dashboard Updates and NISRA Deaths Registered Dashboard). This bulletin complements the range of existing data currently available.

What's new

In this edition we have added information about:

- Weekly laboratory confirmed case rates per 100,000, by age group, for all testing data combined.
- Weekly laboratory confirmed cases per 100,000 population and proportion positive, by Local Government District (LGD), for all testing data combined.
- Due to the overlap in content and audience for the PHA weekly and monthly COVID-19 bulletins, every fourth week the bulletins will be combined.

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 20 August 2020) can be found here*.

* 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.

Case epidemiology

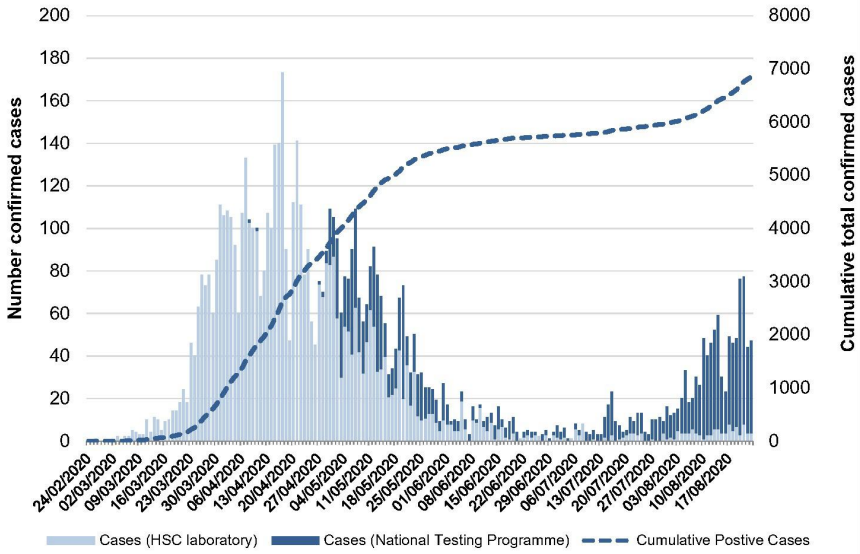


Figure 1. Laboratory confirmed COVID-19 cases by sample date and source (HSC Laboratory testing and the National Testing Programme), 2020

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

Throughout August we have seen large daily peaks and increasing cumulative confirmed cases relating to localised clusters within a variety of settings rather than within HSC laboratories.

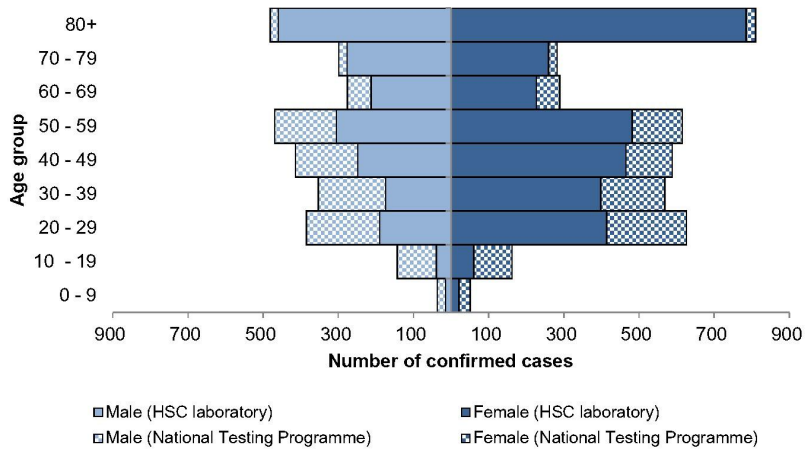


Figure 2. Laboratory confirmed cases, by age and sex and source (HSC Laboratory testing and the National Testing Programme), 2020

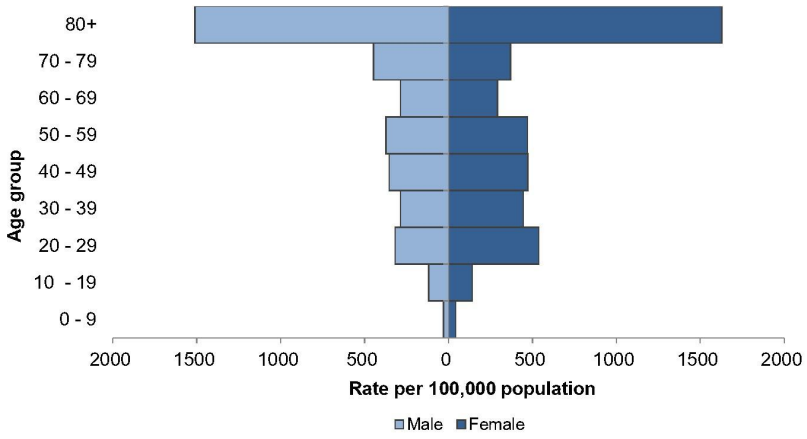


Figure 3. Laboratory confirmed cases per 100,000 population, by age and sex, for all testing data combined, 2020

Presentation of rates per 100,000 enables monitoring of cases taking into account different population

Table 1. Total laboratory confirmed COVID-19 cases, by sex, for all testing data combined			
Age Group	Sex		
	Male	Female	Total*
0 - 9	37	51	88
10 - 19	143	162	305
20 - 29	385	626	1,011
30 - 39	353	569	922
40 - 49	414	588	1,002
50 - 59	469	615	1,084
60 - 69	276	289	565
70 - 79	299	282	581
80+	481	810	1,291
Unknown	-	-	-
Total	**2,857**	**3,992**	**6,849**

**Unknown sex for one case*

Table 2. Total laboratory confirmed COVID-19 cases, by Trust, for all testing data combined	
Trust Area	Total cases
Belfast	1,379
Northern	818
South Eastern	831
Southern	742
Western	292
Other*	2,787
Unknown	1
Northern Ireland	**6,850**

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

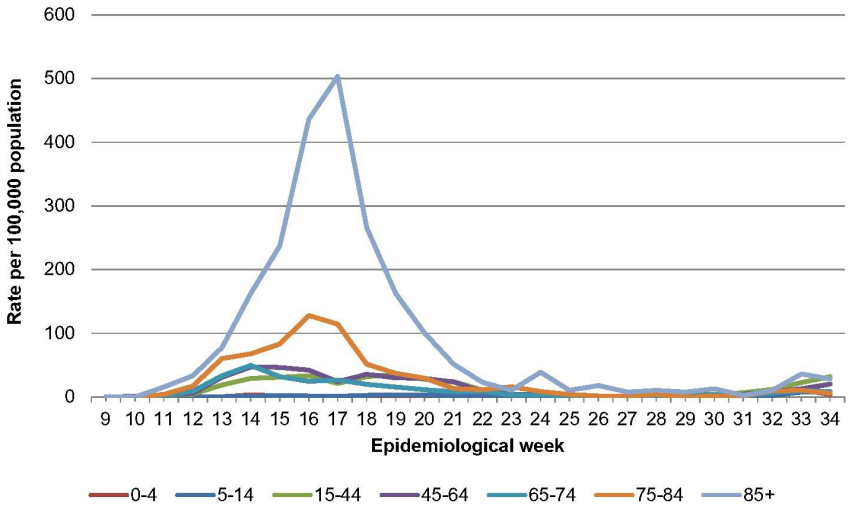


Figure 4. Weekly laboratory confirmed case rates per 100,000 population, by age group, for all testing data combined, 2020

Case rates decreased in week 34 compared to week 33 in the 0-4, 65-74, 75-84 and 85+ year age groups, while increasing in the 5-14, 15-44 and 45-64 year age groups. This is a change from what was observed during the peak when the highest rates were reported among the older age groups, peaking at 503.4 per 100,000 population in the 85+ age group in week 17 (20 - 26 April 2020).

Though testing is increasing in response to localised clusters, the proportion positive remains below 2% across all age groups. Again this a change from a peak positivity of 38% in the 85+ age group in week 16 (13 - 19 April 2020).

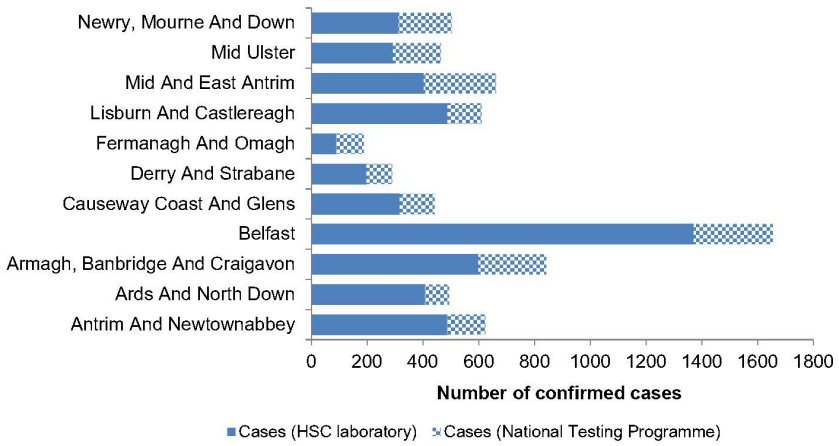
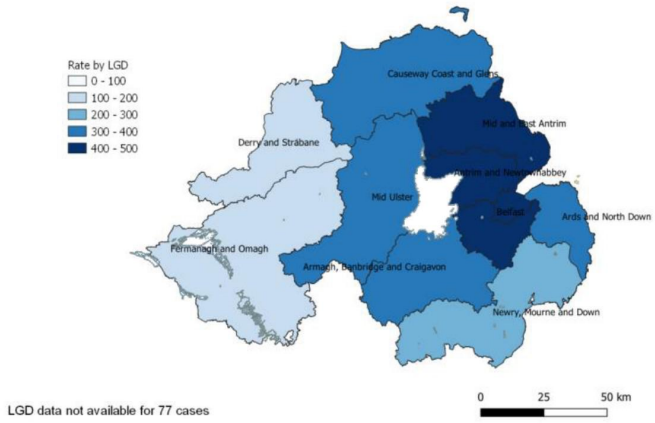


Figure 5. Total laboratory confirmed cases, by Local Government District (LGD) and source (HSC Laboratory testing and the National Testing Programme), 2020



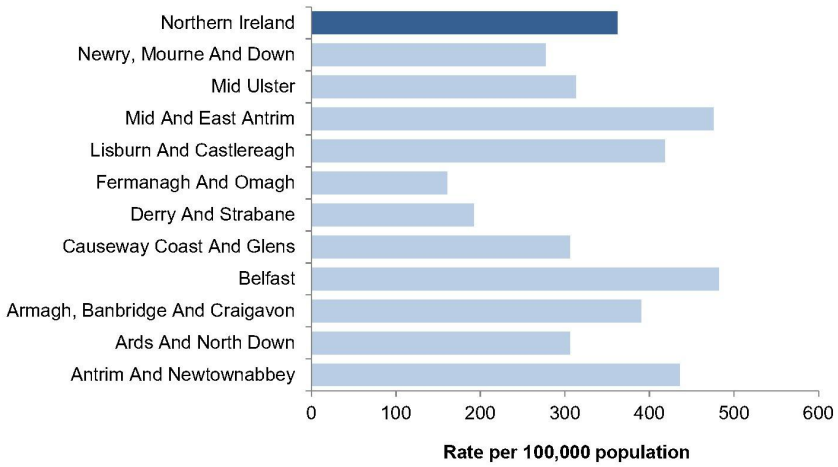
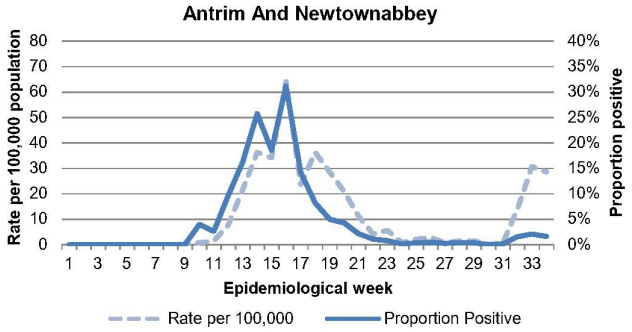
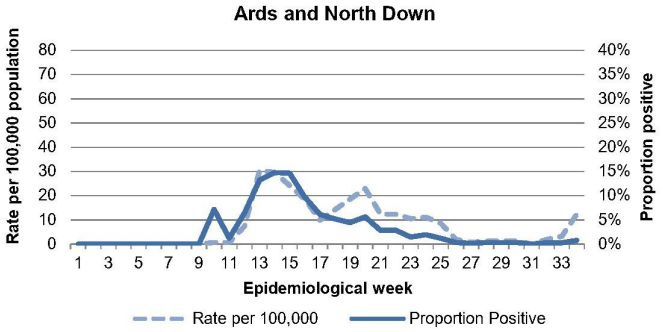
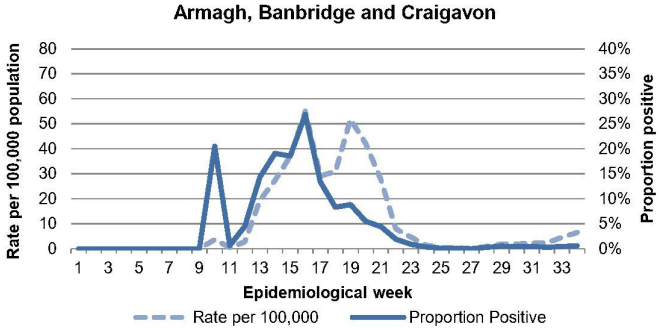


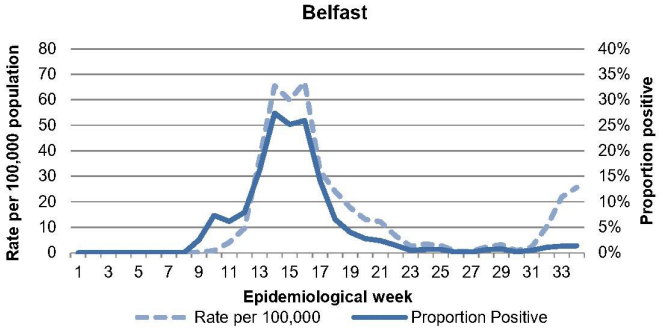
Figure 6. Total laboratory confirmed cases per 100,000 population, by Local Government District (LGD), for all testing data combined, 2020

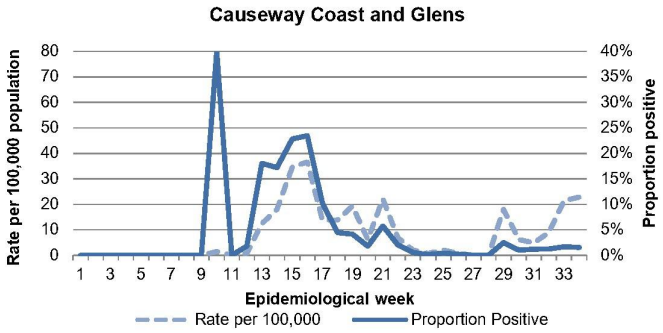
LGD data not available for 77 cases. Presentation of rates per 100,000 enables monitoring of cases taking into account different population sizes.

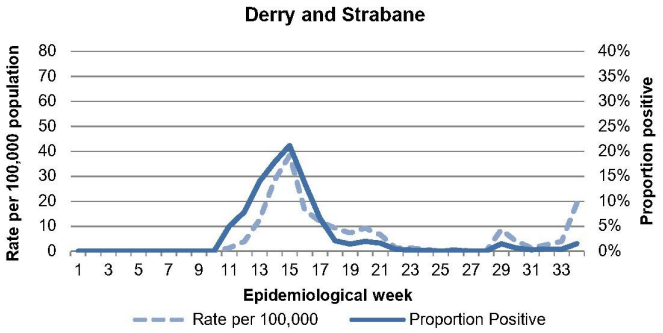

Antrim And Newtownabbey
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive

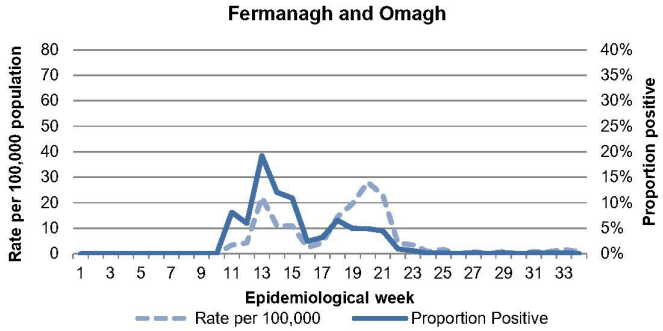

Ards and North Down
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive

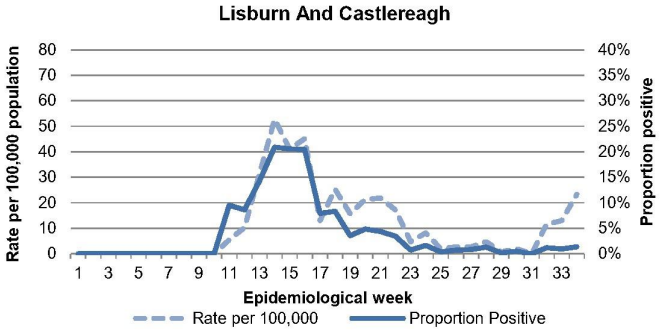

Armagh, Banbridge and Craigavon
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive


Belfast
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive


Causeway Coast and Glens
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive


Derry and Strabane
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive


Fermanagh and Omagh
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive


Lisburn And Castlereagh
Rate per 100,000 population
Proportion positive
Epidemiological week
Rate per 100,000
Proportion Positive

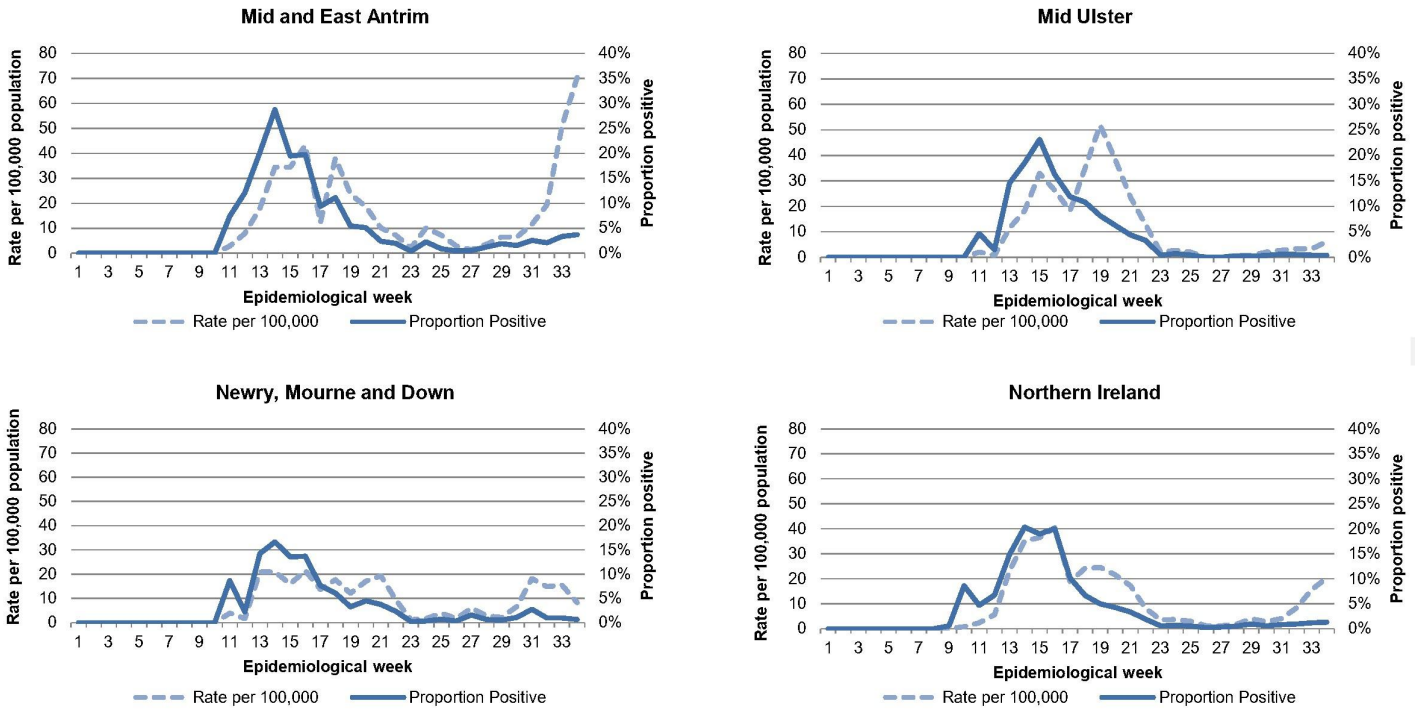


Figure 7. Weekly laboratory confirmed cases per 100,000 population and proportion positive, by Local Government District (LGD) and Northern Ireland, for all testing data combined, 2020. *Does not include care/nursing home residents.*

Case rates decreased in week 34 compared to week 33 in Antrim and Newtonabbey, Fermanagh and Omagh, and Newry, Mourne and Down. The rates increased in all other Local Government Districts (LGD), mainly driven by localised clusters. The highest rate in week 34 was observed in Mid and East Antrim (70.4 per 100,000 population). The overall Northern Ireland rate increased from 15.7 to 20.3 per 100,000 between week 33 and 34.

Though testing is increasing in response to localised clusters, the proportion positive remains below 2% across all LGDs except Mid and East Antrim (3.7%). Northern Ireland's proportion positive is below 1.5%. This is a change from a peak positivity of 20.3% reported across Northern Ireland in week 14 (30 March - 5 April 2020). This data excludes nursing and care home residents because the care home outbreaks are managed in a different way and this data are more focused on community transmission.

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 Northern Ireland, including variations across age, sex and urban and rural areas was published by Department of Health on 17 June 2020.

As at 26 May 2020, the infection rate in the 10% most deprived areas (379 cases per 100,000 population) was a fifth higher than the rate in the 10% least deprived areas (317 cases per 100,000) and two-fifths higher than the NI average (272 cases per 100,000). The admission rate for COVID-19 (confirmed or suspected cases) in the 10% most deprived areas (581 admissions per 100,000) was almost double the rate in the 10% least deprived areas (317 admissions per 100,000).

Care home outbreaks

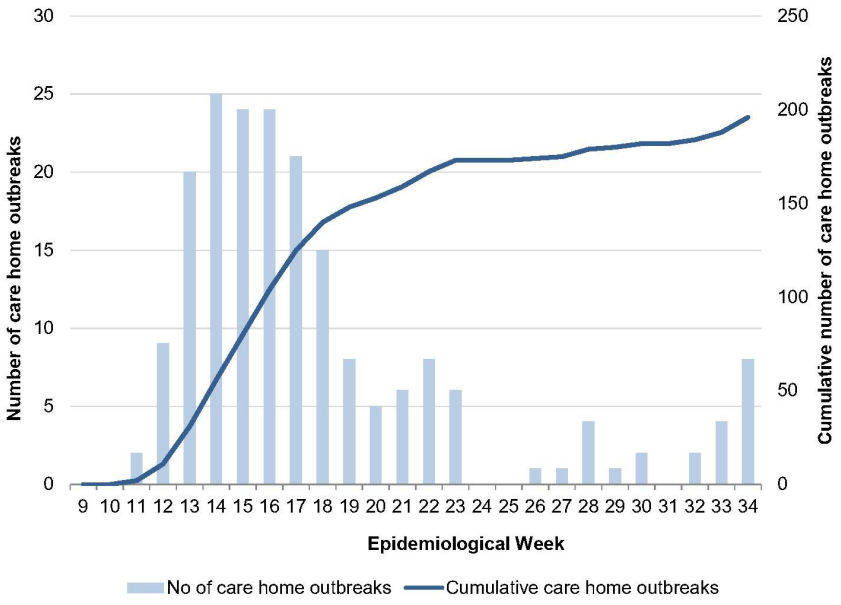


Figure 8. Confirmed and suspected COVID-19 care home outbreaks in Northern Ireland, 2020

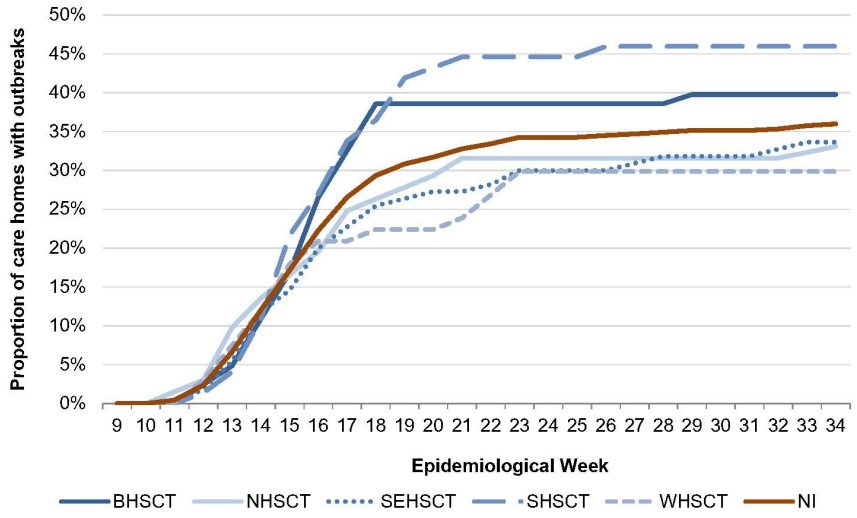


Figure 9. Proportion of care homes with confirmed/suspected COVID-19 in Northern Ireland by Trust, 2020

Table 3. Proportion of care homes with confirmed/suspected COVID-19 outbreaks in Northern Ireland, by Trust			
Trust Area	**Cumulative total of care homes with outbreaks in 2020**	**% of care homes with outbreaks**	**Total number of care homes**
Belfast	33	39.8%	83
Northern	44	33.1%	133
South Eastern	37	33.6%	110
Southern	34	45.9%	74
Western	20	29.9%	67
Northern Ireland	168	36.0%	467

To week 34, a total of 196 suspected/confirmed COVID-19 care home outbreaks were reported, involving 168 care homes (36.0% of all Northern Ireland care homes). 26 care homes have reported more than one outbreak. The highest proportion of care homes with suspected/confirmed COVID-19 outbreaks (45.9%) were reported from the Southern Trust area.

Source: PHA Health Protection duty room reports from care homes

Primary care syndromic surveillance

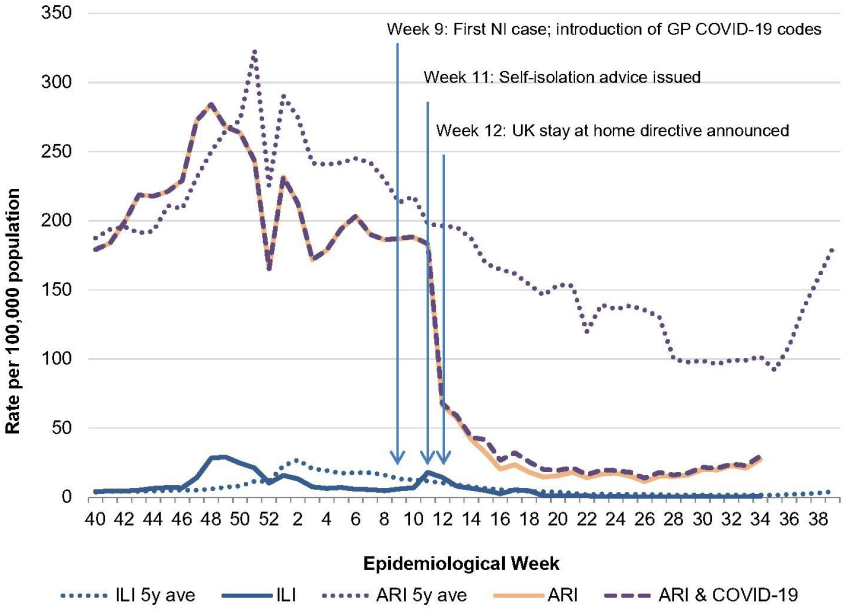


Figure 10. In-hours consultation rates for influenza- like illness (ILI), acute respiratory infections (ARI) and COVID-19

The ARI consultation rate trend during 2019/20 increased from week 40 to a peak in week 48 (284.1 per 100,000 population), before declining. The trend pattern for ILI is similar although rates are much smaller. The peak occurred earlier than the previous five year average reflecting the earlier 2019/20 influenza season.

In week 11 ARI consultation rates dramatically fell from 182.8 per 100,000 to 66.6 per 100,000 in week 12, which coincides with the introduction of self-isolation advice, the stay at home directive ("lockdown") and a change to primary care delivery in managing COVID-19 cases.

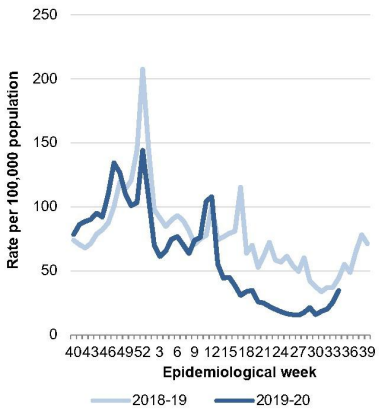


Figure 11. Out-of-hours (OOH) consultation rates for ARI, 2018/19 – 2019/20

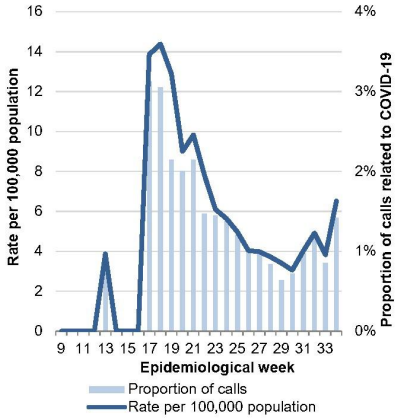


Figure 12. Out-of-hours (OOH) consultation rates for COVID-19, 2020

The ARI consultation rate in primary care out-of-hours (OOH) trend during 2019/20 increased from week 40 to a peak in week 52 (144.2 per 100,000 population), before declining. In week 10 ARI consultation rates in OOH increased from 76.0 to 108.1 per 100,000 by week 12, before dramatically falling again to 55.2 per 100,000 in week 13. This follows a similar trend to in-hours consultations.

The COVID-19 consultation rate in OOH centres during 2020 started increasing from week 17. It peaked in week 18 at 14.4 per 100,000 before declining. A similar trend was seen in terms of proportion of calls related to COVID-19, though this proportion has so far remained small. This trend coincides with the introduction of GP COVID-19 codes and the change from using established respiratory codes, such as ARI, to COVID-19.

Source: Apollo; Wellbeing Software

Sentinel testing

Table 4. COVID-19 activity in Northern Ireland Sentinel GP Practices*, week 34, 2020			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	10	-	0.0%
Total	**307**	**3**	**1.0%**

**Sentinel testing programme started 27 April 2020; members of the public so excludes individuals tested in a care home setting and healthcare workers. Work is ongoing to improve the quality of data to identify sentinel samples so it is subject to change.*

COVID centre testing

Table 5. COVID-19 activity in Northern Ireland COVID Centres*, week 34, 2020			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	67	1	1.5%
Total	**468**	**1**	**0.2%**

** One COVID centre operational from 15 June 2020 (BHSCT); virology data in table above from 01 July 2020. Data provided from the COVID centre directly reported 182 individuals tested between 15 June and 30 June 2020 inclusive. All results were negative. This data is subject to change as we continue to quality assure the COVID centre information against virology.*

Source: HSC Trust laboratory reports and the National Testing Programme

Critical care surveillance

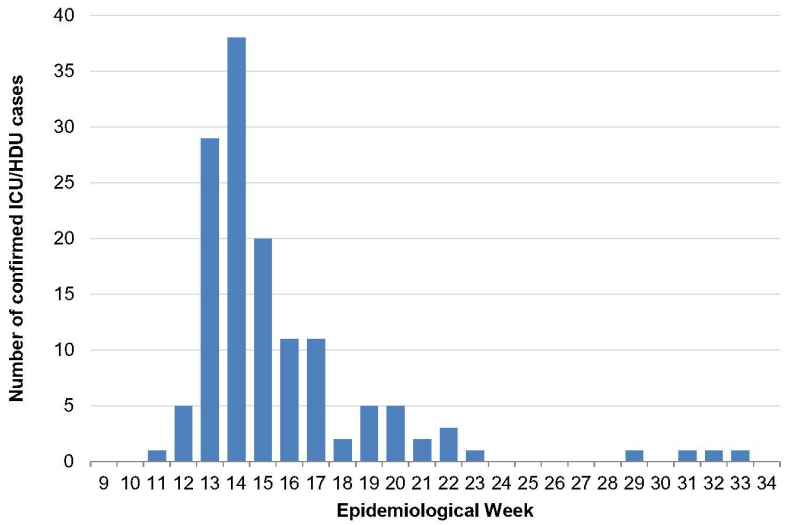


Figure 13. ICU/HDU COVID-19 cases by sample result week, 2020

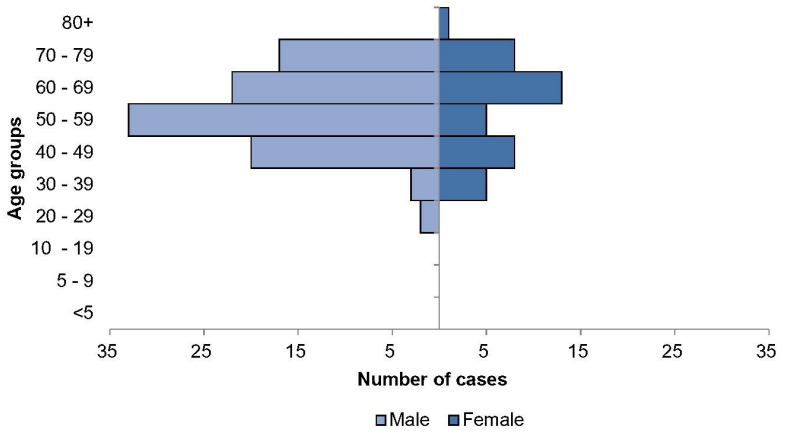


Figure 14. ICU/HDU COVID-19 cases, by age and sex, 2020

To week 34, there have been 137 individuals admitted to critical care with confirmed SARS-CoV2 reported to the PHA. Week 14 saw the highest number of ICU reports with a positive result (n=38).

Of the 137 individuals, 71% (n=97) were male. The ages ranged from 26 years to 81 years, with a median age of 58 years.

Source: PHA COVID-19 critical care surveillance online reporting system

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 14 August 2020, the proportion of COVID-19 deaths registered was 1.4%, and from the beginning of 2020 to week ending 14 August 2020 the proportion of COVID-19 deaths registered was 8%.

All-cause excess deaths

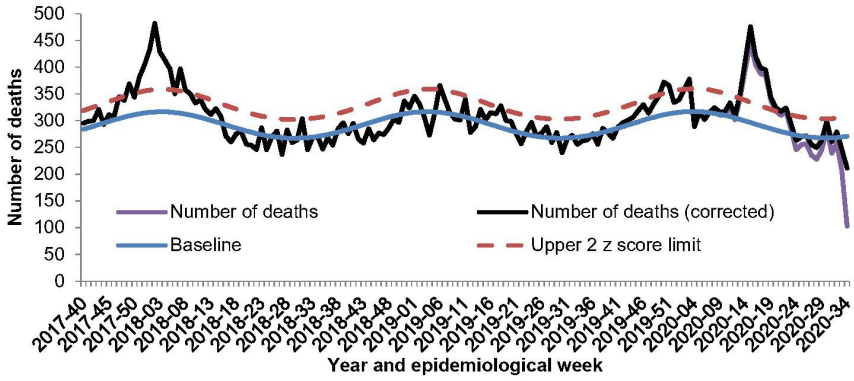


Figure 15. Weekly observed and expected number of all-cause deaths in all ages, week 40 2017 - week 34 2020

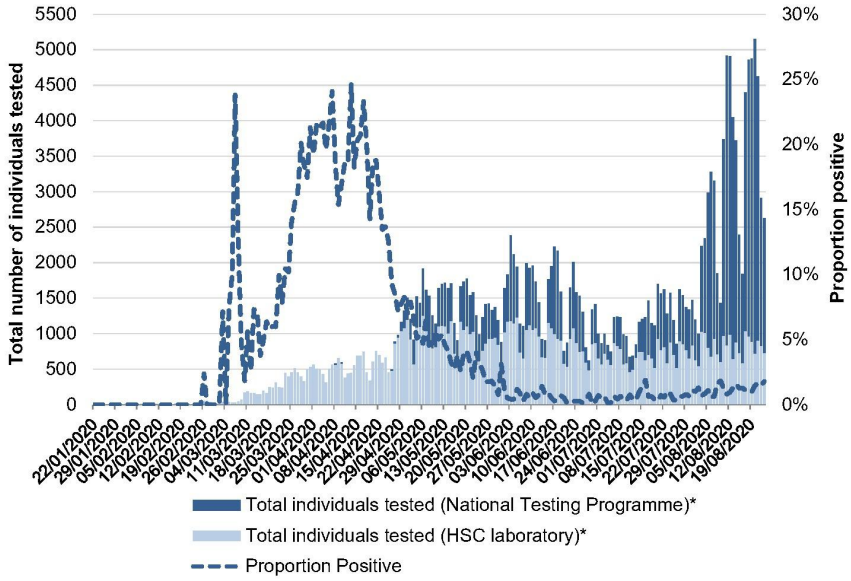
In 2020, excess all-cause deaths were reported in epidemiological weeks 13 to 22. This increase in deaths happened outside the influenza season and at a time when we know flu was not circulating (here). This suggests the excess mortality was likely driven by COVID-19 deaths. Excess deaths were mainly in those over 65 years, which is in line with

the age profile of COVID-19 deaths.

Despite delay correction, reported mortality data is 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.

Source: Northern Ireland Statistical Research Agency (NISRA)

Virology testing surveillance



**Total individuals tested include those that were reported as indeterminate*

Figure 16. Daily number of individuals tested for SARS-CoV2 and proportion positive, by source (HSC Laboratory testing and the National Testing Programme), 2020

To week 34, the total number of individuals tested was 226,219; positivity 3%.The daily proportion testing positive remains below 2%, but overall testing increased due to localised clusters within a variety of settings.

Table 6. COVID-19 activity in Northern Ireland, for all testing data combined, week 34, 2020			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	29,416	387	1.3%
Total	**226,219**	**6,850**	**3.0%**

Table 7. COVID-19 activity in Northern Ireland (HSC laboratory), week 34, 2020			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	6,109	39	0.6%
Total	**122,135**	**5,033**	**4.1%**

Table 8. COVID-19 activity in Northern Ireland (National Testing Programme), week 34, 2020			
Period	**Individuals tested**	**Number positive**	**Proportion positive**
Current week	23,307	348	1.5%
Total	**104,084**	**1,817**	**1.7%**

Global situation

Globally, up to 23 August 2020, WHO has been notified of 23,057,288 confirmed cases of COVID-19, including 800,906 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 Northern Ireland. 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.[3] The episode length used nationally is 6 weeks (42 days), and is being reviewed as more data becomes available.

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. The exception to this is if the first result is negative which is followed by a positive result on a second occasion, the positive

[3] 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]

result will be recorded rather than the negative. 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.

All laboratories report a standardised data set which includes individual demographics, test result and source (location) at the time the specimen was taken. Data is 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 Northern Ireland and at HSC Trust or Local Government District level, overall and by age and sex.

National Testing Programme

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

Everyone in Northern Ireland with symptoms of coronavirus is now eligible for testing.

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.

Testing for non-HSC essential workers and the general public is currently conducted in drive-through sites operating in Belfast, Enniskillen, Derry/Londonderry and Portadown. In addition there is a mobile testing unit currently operating within Northern Ireland.

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. This data should be interpreted with caution, when interpreted alongside the HSC laboratory data, because it includes 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

A 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 independent sector owned.

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.

Currently, care homes with multiple facilities, i.e. nursing and residential, but the same name may be reported as one outbreak, rather than two (if both units are affected) which may underestimate the number of care homes affected.

Primary care surveillance

a. GP in-hours respiratory syndromic surveillance

The GP in-hours respiratory-related syndromic surveillance system collects and analyses anonymised respiratory-related data from over 320 GP practices via the Apollo GP Flu Surveillance System (Wellbeing Software), hereafter referred to as Apollo. This covers approximately 98% of the population.

Based on standardised definitions and extracted using READ codes in the GP Clinical Systems, respiratory-related data is collected on:

- Influenza Like Illness (ILI)
- Acute Respiratory Infections (ARI)
- Suspected COVID-19 (introduced late March 2020).

Data is analysed on a weekly basis to produce trends of ARI, ILI and COVID-19 consultation rates for Northern Ireland and at HSC Trust level.

GP out-of-hours syndromic surveillance

The GP respiratory-related syndromic surveillance system collects and analyses anonymised ARI, ILI and COVID-19 data from five OOH practices via Apollo. This system covers 100% of the population and complements the existing GP surveillance systems that cover in-hours consultations.

Data is analysed on a weekly basis to produce trends of ARI, ILI and COVID-19 consultation rated for Northern Ireland and at HSC Trust level. The system also monitors the number of unscheduled visits and calls to GPs every day during evenings, overnight, on weekends and on public holidays.

b. 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.

c. COVID centre testing

A COVID centre is a separate facility created as an extension of primary care to help direct suspected COVID positive patients for assessment.

This keeps practices free to deal with any other medical problems. Triage will still occur at the practice, most likely via phone followed by referral to the centre if required.

There are three categories of patient that might be assessed at a COVID centre:

1. patients symptomatic for COVID, or already test positive who are clinically worsening: there will also be direct pathways for investigation and/or admission from the centre
2. patients where there is diagnostic uncertainty: symptoms similar to COVID but could be another clinical problem ranging from tonsillitis to meningitis requiring an assessment to exclude or confirm
3. patients being discharged from hospital: this group will grow with time but on many occasions will still have a need for clinical assessment and follow up.

Centres are staffed by GPs, helped by other members of staff, including nurses, health care workers etc.

Centres run from 8am to 10pm and see patients after triage and referral (by CCG) from the practice.

Patients can either be seen in their car outside the centre if a straightforward examination is needed, or brought into the centre for assessment. Patients are told to wait in their car until phoned to come in to prevent any crowding or grouping of patients.

Centres are hosted by the trusts and operate in each trust area.

Critical care surveillance

The PHA Health Protection COVID-19 critical care online reporting system captures 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 Northern Ireland by the Intensive Care National Audit and Research Centre (iCNARC) (here).

Data is collected on all individuals admitted to an Intensive Care Unit (ICU) or High Dependency Unit (HDU) with a positive SARS-CoV2 result, from either before or during the ICU/HDU admission.

As the online reporting system is newly developed, the quality of the data will continue to improve as it is validated against other information sources.

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 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 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.

All-cause excess deaths

The PHA Health Protection Directorate reports the weekly number of excess deaths from any cause for Northern Ireland 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.

Suspected case of COVID-19 (as of 18 May 2020)

Patients who meet the following criteria (inpatient definition):

- requiring admission to hospital (a hospital practitioner has decided that admission to hospital is required with an expectation that the patient will need to stay at least one night) **AND**
- have either clinical or radiological evidence of pneumonia **OR**
- acute respiratory distress syndrome **OR**
- influenza like illness (fever ≥37.8°C and at least one of the following respiratory symptoms, which must be of acute onset: persistent cough (with or without sputum), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing, sneezing **OR**
- a loss of, or change in, normal sense of taste or smell (anosmia) in isolation or in combination with any other symptoms

Patients who meet the following criteria and are well enough to remain in the community

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

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.

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 Northern Ireland with a pre-existing positive result for SARS-CoV2, or received a positive result for SARS-CoV2 post-admission to ICU/HDU.

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

NISRA define a death associated with COVID-19 as one where COVID-19 or suspected COVID-19 was mentioned anywhere on the death certificate, including in combination with other health conditions.

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

This bulletin is produced by the Health Protection Surveillance Team on behalf of the Director of Public Health. Correspondence should be directed to: Professor Hugo van Woerden, Director of Public Health, Public Health Agency, 12 – 22 Linenhall Street, Belfast, BT2 8BS. Email: hugo.vanwoerden@hscni.net.

Weekly COVID-19 Bulletin

Week up to 23 August 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

Coronavirus continues to circulate in our community and we are seeing cases across council areas. We are at a crucial stage and cannot afford to become complacent. That's why following the public health advice remains important. We all have a responsibility to take steps to keep ourselves and each other safe from coronavirus by maintaining social distance, washing or sanitising hands regularly and wearing face coverings on public transport and in shops, particularly where social distancing cannot be maintained.

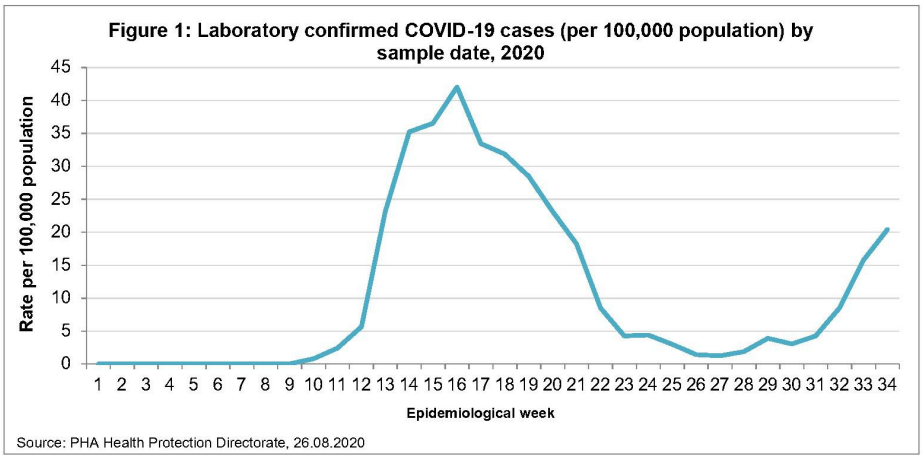
We should all act on the basis that COVID-19 may be circulating in the area where we live and take steps to help protect ourselves and others. We can spread the virus even if we don't have symptoms, so these steps will help to prevent cases and reduce the number of clusters.

It is vital that individuals self-isolate from when they **first** develop symptoms (a high temperature, a new continuous cough or a loss/change in sense of smell or taste) and arrange to be tested.

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

Commented [JN1]: Has been updated by PHA communications

Incidence[4]



Comment: In recent weeks there has been an increasing trend in the number of new COVID-19 cases.

Estimated incidence (number of new cases in the seven days up to 23 August 2020)

The current incidence of positive laboratory cases is 20 per 100,000 of the Northern Ireland population (or 1 in 4,893 people)[5].

However, if we assume that there are 1.3 infected individuals for every laboratory confirmed case we know about, the estimated weekly incidence is 47 per 100,000 population (1 in 2,127 people)[6].

Estimated prevalence

The prevalence of active cases, as of 23 August 2020, is estimated to be 41 per 100,000 population (1 in 2,447), assuming that 50% of cases experience no symptoms[7]; 24 per 100,000 (1in 4,159) if only 15% experience no symptoms[8]; and 102 per 100,000 (1 in 979) if 80% experience no symptoms[9,10,11].

[4] Epidemiological week is a standardised method of counting weeks [Monday–Sunday] to allow for the comparison of data from year to year.

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

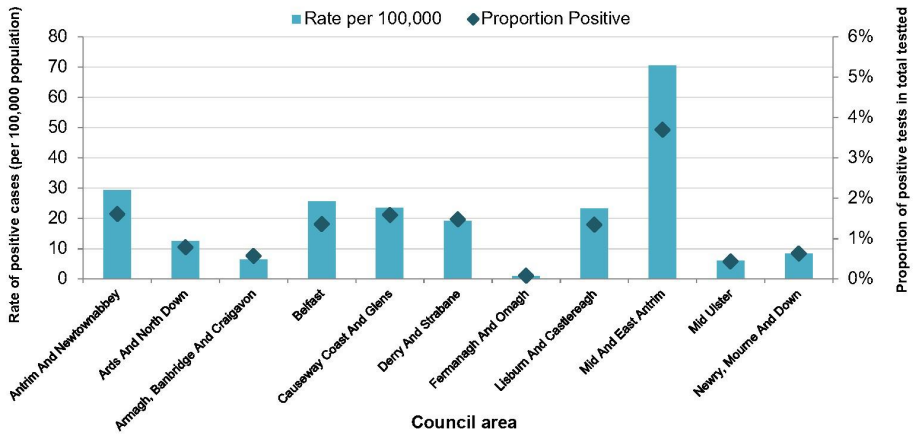
[6] Bohning D, Maruotti A, Rocchetti I, and Holling H. (2020). Estimating the undetected infections in the Covid-19 outbreak by harnessing capture-recapture methods. *International Journal of Infectious Diseases.*

[7] https://hub.jhu.edu/2020/05/12/gigi-gronvall-asymptomatic-spread-covid-19-immunity-passports/

[8] 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.

COVID-19 testing by council area

Figure 2: Positive laboratory confirmed (per 100,000) cases of SARS-CoV-2 by Council area, for the 7 days up to 23 August 2020



Source: PHA Health Protection Directorate, 26.08.2020; LGD information not available for three cases.

Comment: In the seven days up to 23 August 2020 the rate of positive cases across Northern Ireland was 20 per 100,000 population, an increase from 15 per 100,000 in the previous week. Rates varied by council area from 1 per 100,000 population in Fermanagh and Omagh council area, up to 70 per 100,000 population in Mid and East Antrim council area.

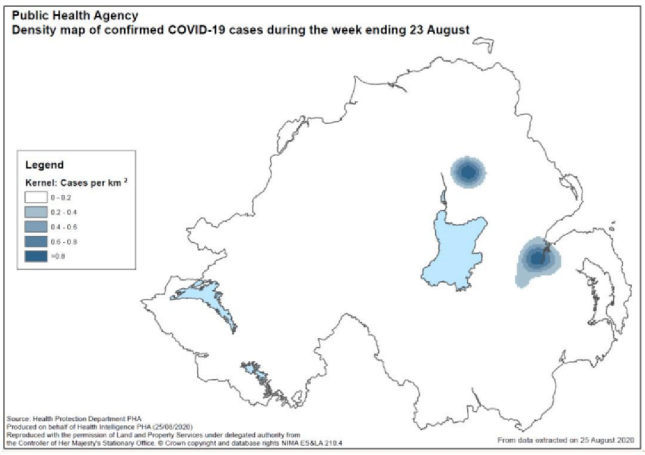
The proportion of positive tests for Northern Ireland was 1.3%, ranging from 0.1% in Fermanagh and Omagh council area in to 3.7% in Mid and East Antrim.

[9] 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.

[10] Day M. Covid-19: four fifths of cases are asymptomatic, China figures indicate. BMJ, 2020.

[11] Ing AJ, Cocks C, Green JP. COVID-19: in the footsteps of Ernest Shackleton. BMJ Thorax. 2020.

Figure 3: Density map of confirmed COVID-19 cases for the week ending 23 August 2020



Commented [JN2]: Based on download at 25.08.20
Scale can be adjusted as required

Comment: Figure 3 shows a contour density map based on the number of confirmed COVID-19 cases in the week ending 23 August 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 of COVID-19. The map removes administrative boundaries and reflects the true geographical pattern of disease.

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 in recent weeks include: workplaces, retail and hospitality premises, house parties and sporting settings[12].

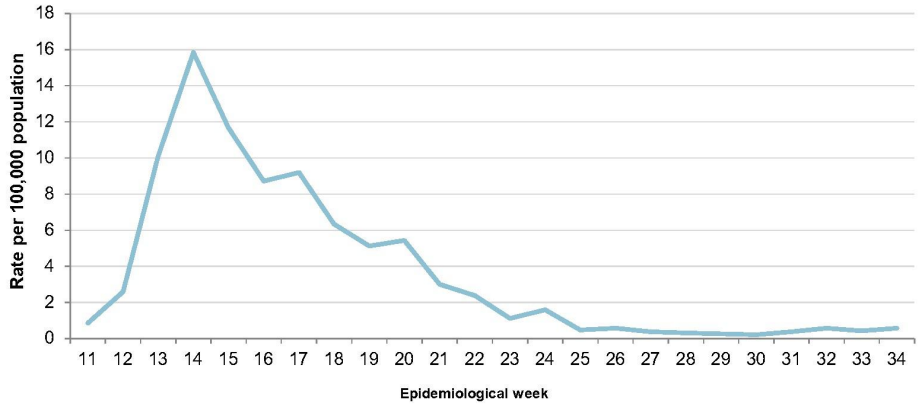
Comment: There have been seven new clusters in the seven days up to 19 August 2020. In total, up to 19 August 2020, a total of 11 clusters with greater than five people have been identified in the following council areas; Newry, Mourne and Down (n=4), Mid and East Antrim (n=3), Antrim and Newtownabbey (n=1), Ards and North Down (n=1), Armagh City, Banbridge and Craigavon (n=1) and Causeway Coast and Glens (n=1). In addition, there have been 27 clusters across Northern Ireland with fewer than five people.

Commented [JN3]:
FOR UPDATE Wed 26/08/2020

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

Secondary Care

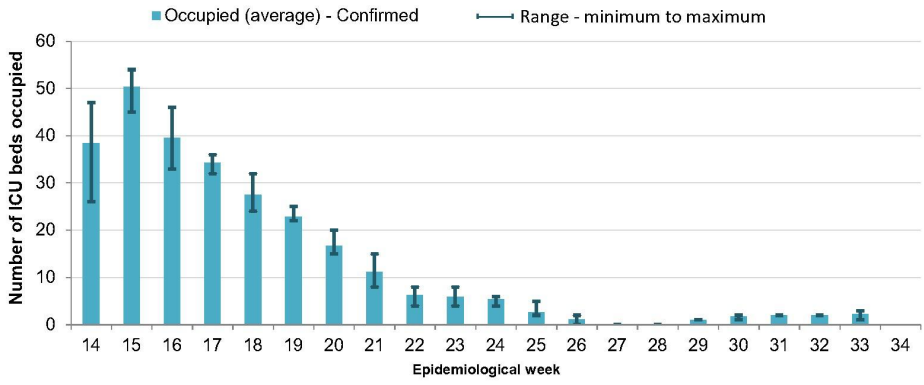
Figure 4: Rate of hospital admissions due to COVID-19 (Confirmed only)



Source: Health and Social Care Board, Performance Management and Service Improvement, Information Team 25.08.2020

Comment on the trend: In week 34 (ending 23 August 2020) the rate of hospital admissions for COVID-19 was 0.6 per 100,000 population. Compared to the lowest rate of 0.2 per 100,000 observed in week 30, recent weeks have seen a slight in hospital admission rates for COVID-19.

Figure 5: 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, 25.08.2020
Note: The recording and reporting of occupancy at weekends ceased from the 4 July 2020.

Comment on the trend: In week 34 (ending 23 August 2020) there were no confirmed COVID-19 cases in ICU beds.

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**. In the week ending 14 August 2020, four COVID-19 deaths were registered. From the beginning of 2020 to the week ending 14 August 2020 the proportion of COVID-19 deaths registered was 8% of the total number of registered deaths.

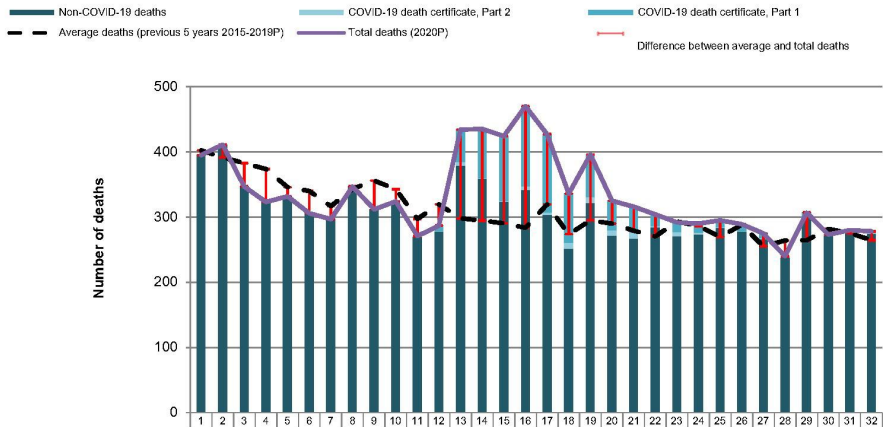
Registered deaths and COVID-19

Figure 6 highlights the total weekly number of deaths registered[13] in Northern Ireland from the beginning of 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. 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.

[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.

Figure 6: Northern Ireland registered deaths^, including COVID-19 associated deaths, up to week 32 (ending 14 August 2020)



	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	27	28	29	30	31	32
COVID-19 death certificate, Part 1	0	0	0	0	0	0	0	0	0	0	0	8	50	75	100	123	120	75	65	45	35	18	15	14	11	10	7	0	6	1	4	3
COVID-19 death certificate, Part 2	0	0	0	0	0	0	0	0	0	0	1	1	5	1	1	5	4	9	9	8	14	2	6	3	1	1	2	2	1	0	1	1
Non-COVID-19 deaths	395	411	347	323	332	306	297	347	312	324	270	278	379	359	323	342	303	252	322	272	267	284	271	273	283	278	266	238	300	272	275	274
Average deaths (previous 5 years 2015-2019P)	402	391	383	374	346	340	317	343	356	343	297	320	298	295	290	284	320	274	295	290	279	271	293	286	270	288	255	264	285	282	276	265
Total deaths (2020P)	395	411	347	323	332	306	297	347	312	324	271	287	434	435	424	470	427	336	396	325	316	304	292	290	295	289	275	240	307	273	280	278

Registration week (ending Friday)

Source: NISRA; Figures relate to all deaths registered up to 14 August 2020 with a mention of COVID on the death certificate; 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. 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 17th September.

Comment:

In week 32 (ending 14 August), four COVID-19 deaths were registered, down one from the previous week.

From week 11 (ending 20 March 2020), when the first COVID-19 death was registered, to week 32 (ending 14 August 2020), 990 ‘excess deaths’ (ie deaths above the average for the corresponding weeks in previous years) have been registered in Northern Ireland.

To date (week 11 to week 32) there have been 863 deaths associated with COVID-19. Variation in the proportion of COVID-19 associated deaths relative to excess deaths suggests that COVID-19 associated deaths may not account for all excess deaths during the period.

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 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

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.

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