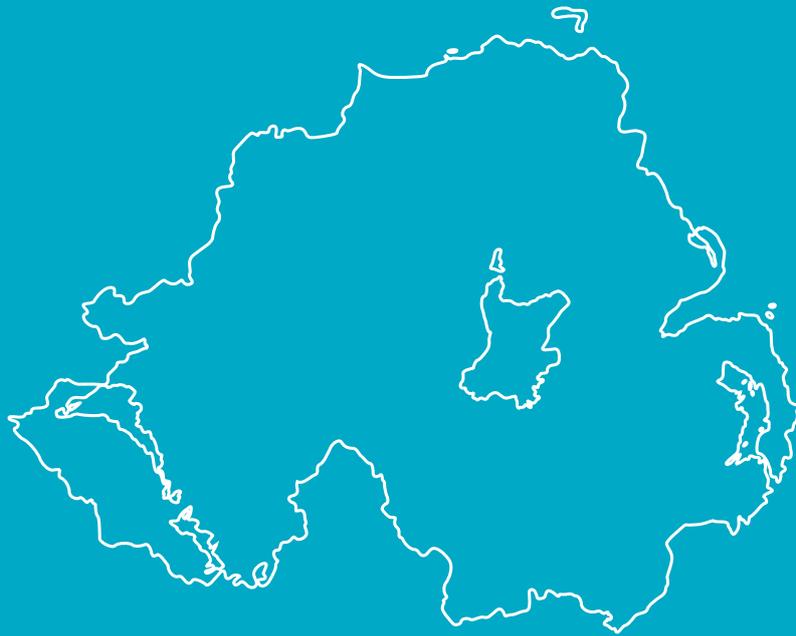


Coronavirus (COVID-19)

Monthly Epidemiological Bulletin



Northern Ireland

Summary - Up to week 38 (20 September 2020)

To week 38, there have been a total of 9,523 laboratory confirmed cases¹ of COVID-19, including 883 registered COVID-19 deaths² in Northern Ireland.

COVID-19 case epidemiology



- 9,523 laboratory confirmed cases (56% from HSC laboratories)
- 56% of total cases are female
- 28% of cases tested in HSC laboratories reside in Belfast (Local Government District)
- 54% of total cases are from the National Testing Programme, NIAS, private nursing home residents, pathology services, GPs and hospices
- In week 38, those aged 15-44 had the highest case rate (83.4 per 100,000 population; 4.3% positivity)
- In week 38, Derry and Strabane had the highest case rate (86.6 per 100,000 population; 4.2% positivity)

Care home outbreaks (suspected and confirmed)



- 237 suspected/confirmed COVID-19 outbreaks reported in total; includes 15 reported in week 38
- Involving 181 care homes (39% of all Northern Ireland care homes)
- The highest proportion of outbreaks (47%) were reported from the Southern Trust area

¹ Virological reports and the National Testing Programme

² NISRA; 2020 - up to 11 September 2020

Primary care syndromic surveillance



In week 38:

- In-hours Acute Respiratory Infections (ARI) and COVID-19 consultation rate: 62.2 per 100,000 population
- Out-of-hours (OOH) ARI consultation rate: 57.5 per 100,000 population
- OOH COVID-19 consultation rate: 8.8 per 100,000 population

Sentinel testing



- Testing started 27 April 2020
- Number of individuals tested in total: 375 (3/374 positive; 0.8% 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 - 20 September 2020: 727 (3/727 positive; 0.4% positivity)

Critical care surveillance



- 140 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 11 September 2020, the proportion of COVID-19 deaths registered was 2.4%. From the beginning of 2020 to week ending 11 September 2020 the proportion was 7.5%
- Excess deaths were reported in weeks 13-20, and week 22; mainly in those over 65 years old

Testing surveillance virology



- Number of individuals tested in total: 350,849 (2.7% positivity)
- Number of individuals tested in;
 - HSC laboratories:150,457 (43% of total tests)
 - National Testing Programme:200,392 (57% 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:

- Case epidemiology presented by epidemiological week rather than daily.
- Laboratory confirmed cases for most recent two weeks.
- Weekly laboratory confirmed case rates for most recent ten weeks.
- Positivity (%) of laboratory confirmed COVID-19 cases by epidemiological week, overall and by sex.
- Weekly laboratory confirmed cases and proportion positive, by Local Government District (LGD) and Northern Ireland includes all individuals.
- Due to the overlap in content and audience for the PHA weekly and monthly COVID-19 bulletins, every fourth week only the monthly bulletins will be published.

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 17 September 2020) 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 settings³.

Comment:

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

There have been 39 new clusters in the seven days up to 22 September 2020^{4,5}. 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.

In total, up to 22 September 2020, a total of 24 clusters with greater than five people have been identified in the following council areas; Antrim and Newtownabbey (n=3), Ards and North Down (n=1), Armagh City, Banbridge and Craigavon (n=1), Belfast City (n=6), Causeway Coast and Glens (n=1), Lisburn and Castlereagh City (n=1), Mid and East Antrim (n=4) and Newry, Mourne and Down (n=7). In addition, there

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

⁴ 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).

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.

have been 115 clusters across Northern Ireland with fewer than five people.

Source: Contact Tracing Service / PHA Health Protection Service

Case epidemiology

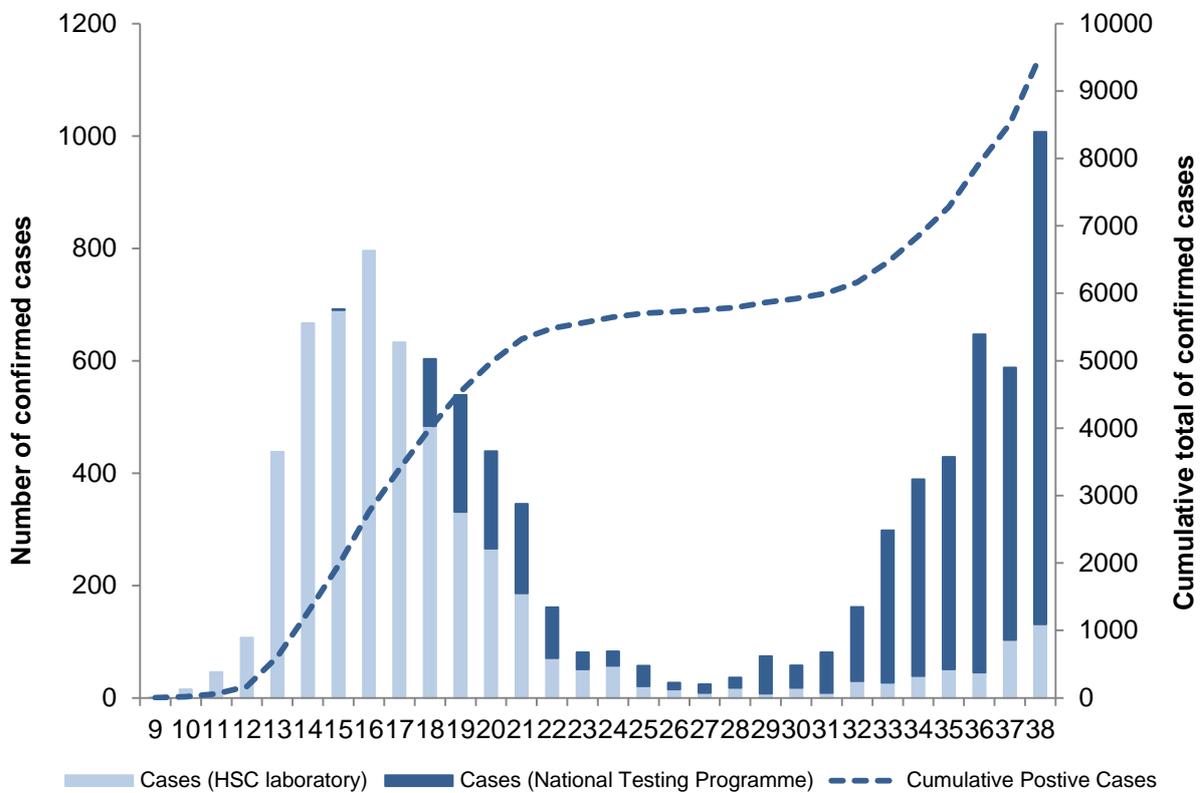


Figure 1. Laboratory confirmed COVID-19 cases by epidemiological week and source (HSC Laboratory testing and the National Testing Programme), 2020

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.

From August (week 31 onwards) we have seen increasing weekly peaks and increasing cumulative confirmed cases. This is mainly due to increasing clusters, increasing community transmission and contact tracing within a variety of settings. HSC laboratory settings are beginning to show increasing cases also.

Cases in week 38 was the highest seen since the initial peak in week 16 (13 - 19 April 2020).

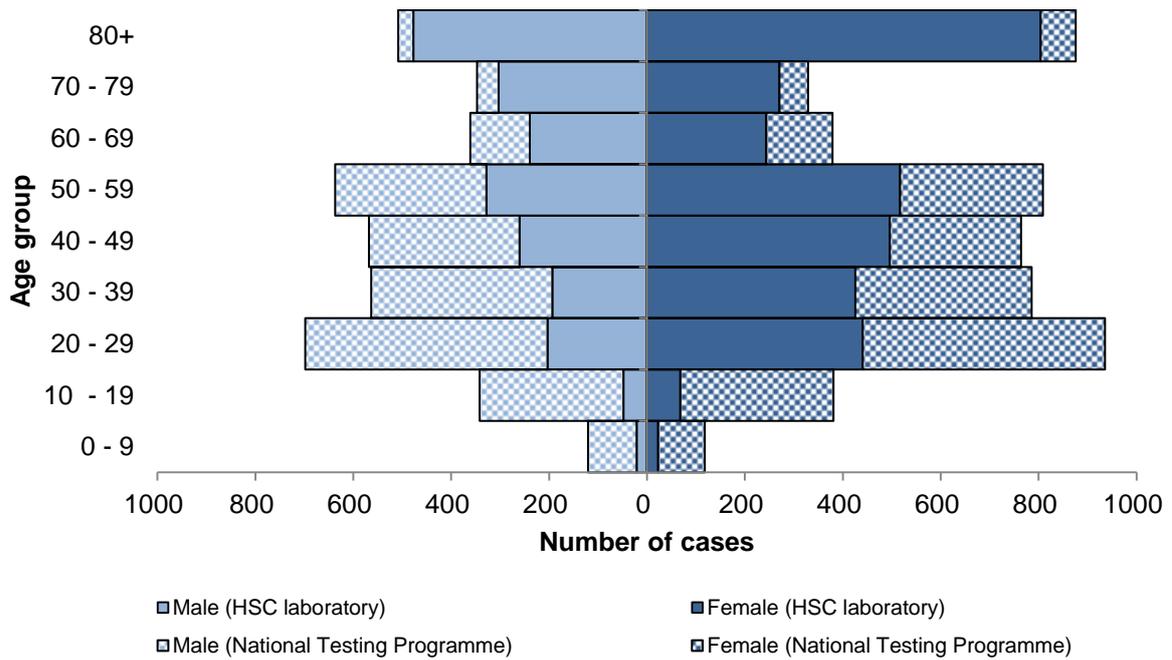


Figure 2. Laboratory confirmed cases, by age, sex and source (HSC Laboratory testing and the National Testing Programme), 2020

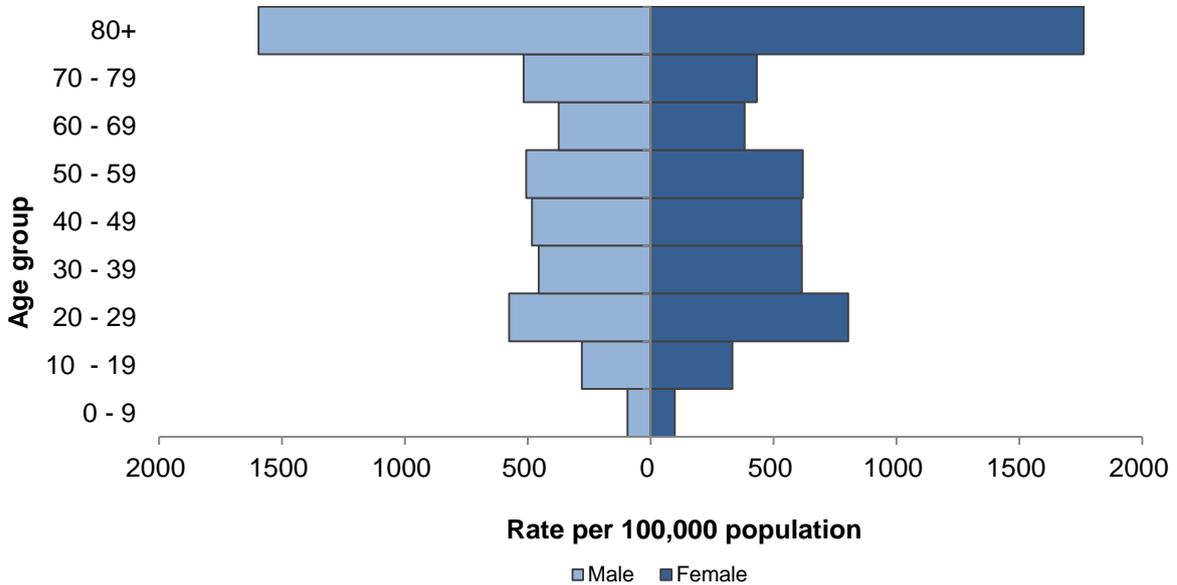


Figure 3. Laboratory confirmed cases per 100,000 population, by age and sex, for all testing data combined, 2020

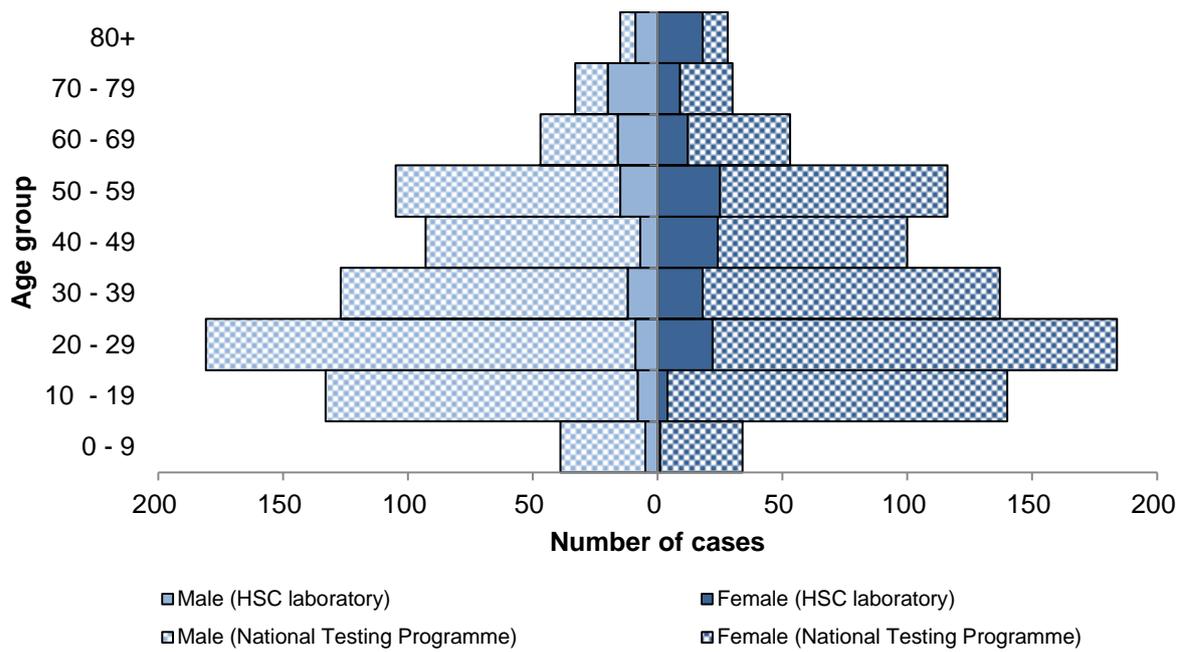


Figure 4. Laboratory confirmed cases, by age, sex and source (HSC Laboratory testing and the National Testing Programme), for weeks 37 and 38

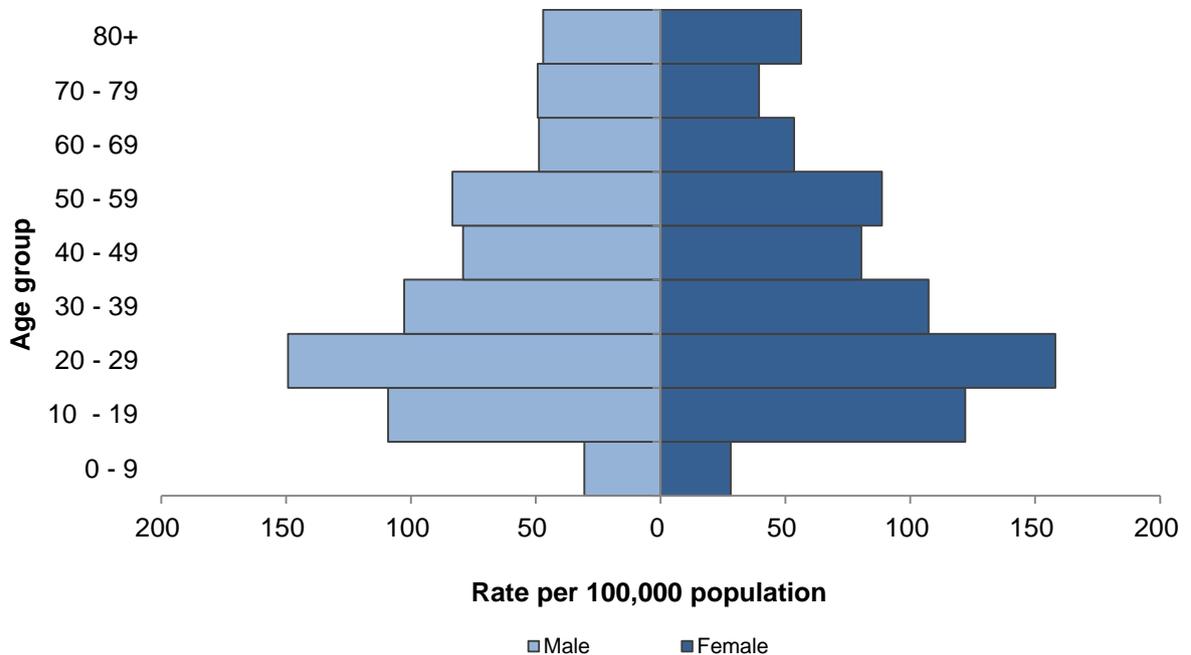


Figure 5. Laboratory confirmed cases per 100,000 population, by age and sex, for all testing data combined, for weeks 37 and 38

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 population, respectively. HSC laboratory cases were mainly detected at the beginning of the pandemic in hospital settings, resulting in higher cases and rates among the older age groups. The National Testing Programme cases came later in the pandemic and cases were mainly community based due to clusters, resulting in higher cases among the younger age groups

Figures 4 and 5 show similar 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 differ from the overall cumulative cases presented in figures 2 and 3. Also, more cases are being detected outside of hospital settings as part of the National Testing Programme.

Table 1. Total laboratory confirmed COVID-19 cases, by sex, for all testing data combined			
Age Group	Sex		
	Male	Female	Total*
0 - 9	120	118	238
10 - 19	342	381	723
20 - 29	698	936	1,634
30 - 39	563	786	1,349
40 - 49	568	764	1,332
50 - 59	637	809	1,446
60 - 69	361	379	740
70 - 79	347	329	676
80+	508	876	1,384
Unknown	-	-	-
Total	4,144	5,378	9,522

*Unknown sex for one case

Table 2. Laboratory confirmed COVID-19 cases, by Trust				
Trust Area	Epidemiological week			
	36	37	38	Total
Belfast	22	34	54	1,498
Northern	4	17	11	857
South Eastern	6	1	9	851
Southern	12	39	37	859
Western	-	9	14	315
Other*	603	488	882	5,142
Unknown	-	-	-	1
Northern Ireland	647	588	1,007	9,523

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

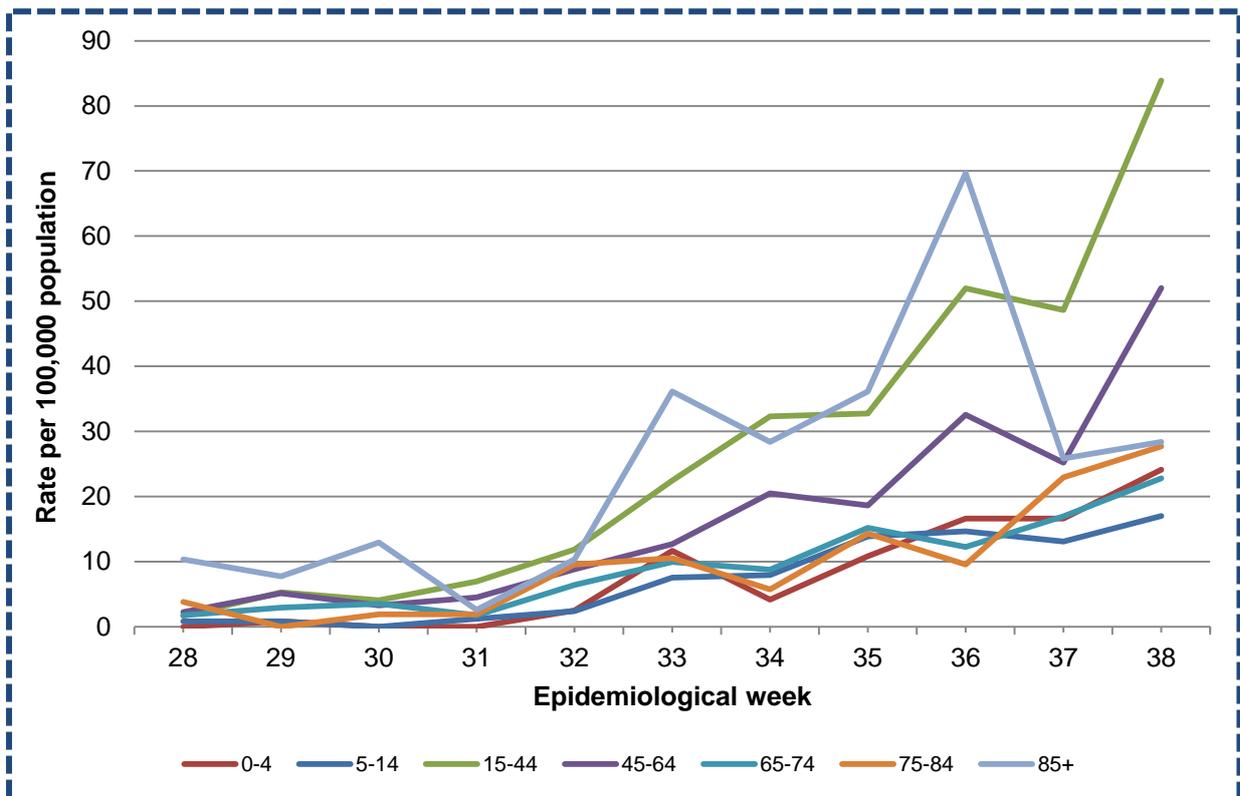
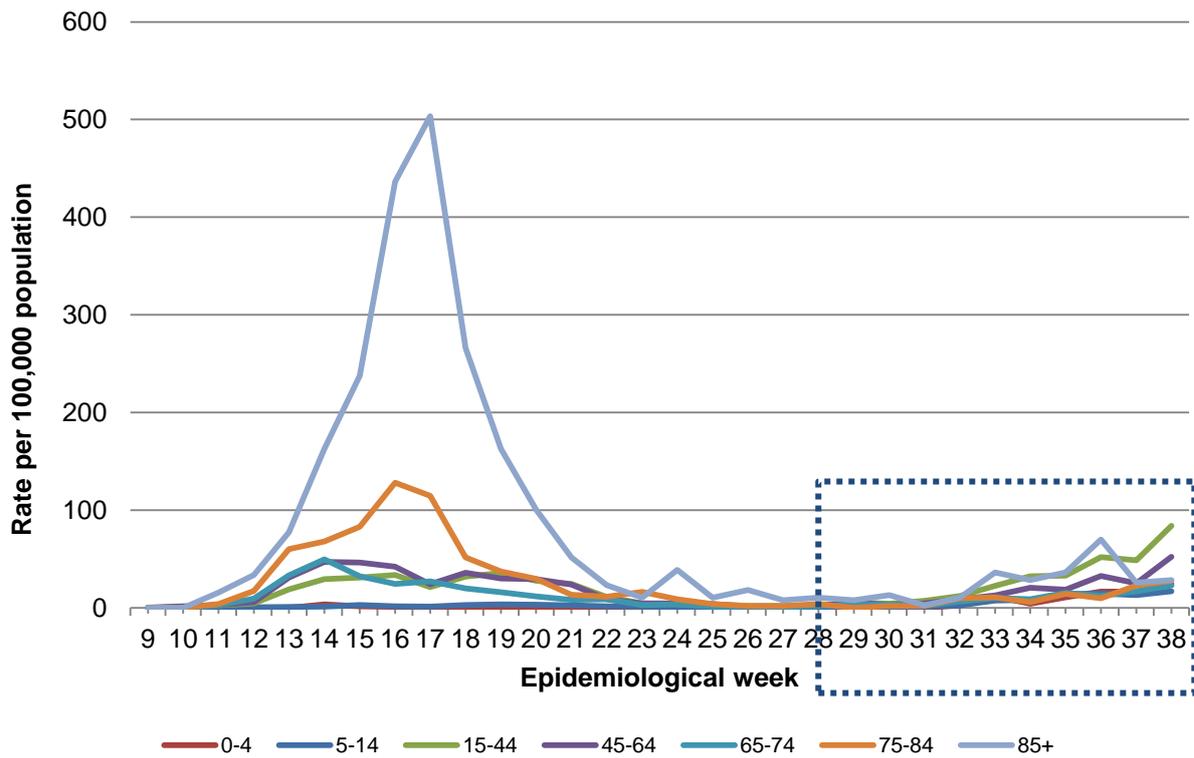


Figure 6. Weekly laboratory confirmed case rates per 100,000 population, by age group, for all testing data combined, 2020

The case rates increased in week 38 compared to week 37 in all age groups. The highest case rate in week 38 was seen in the 15-44 year age group (83.4 per 100,000 population). This is a change from what was seen during the peak when the highest rates were reported among the older age groups, peaking at 503.4 per 100,000 in the 85+ age group in week 17 (20 - 26 April 2020).

Though testing is increasing in response to clusters and increased community transmission, the proportion positive remains below 5% in 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).

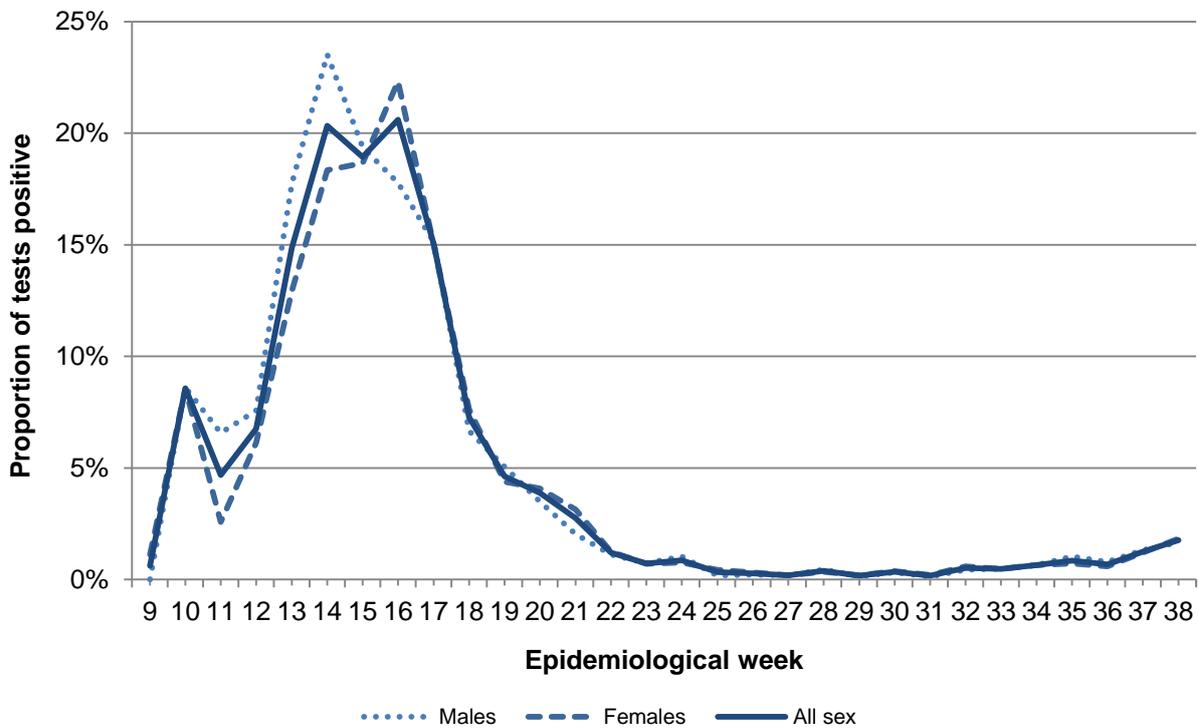


Figure 7. Positivity (%) of laboratory confirmed COVID-19 cases by epidemiological week, overall and by sex (HSC Laboratory testing), 2020

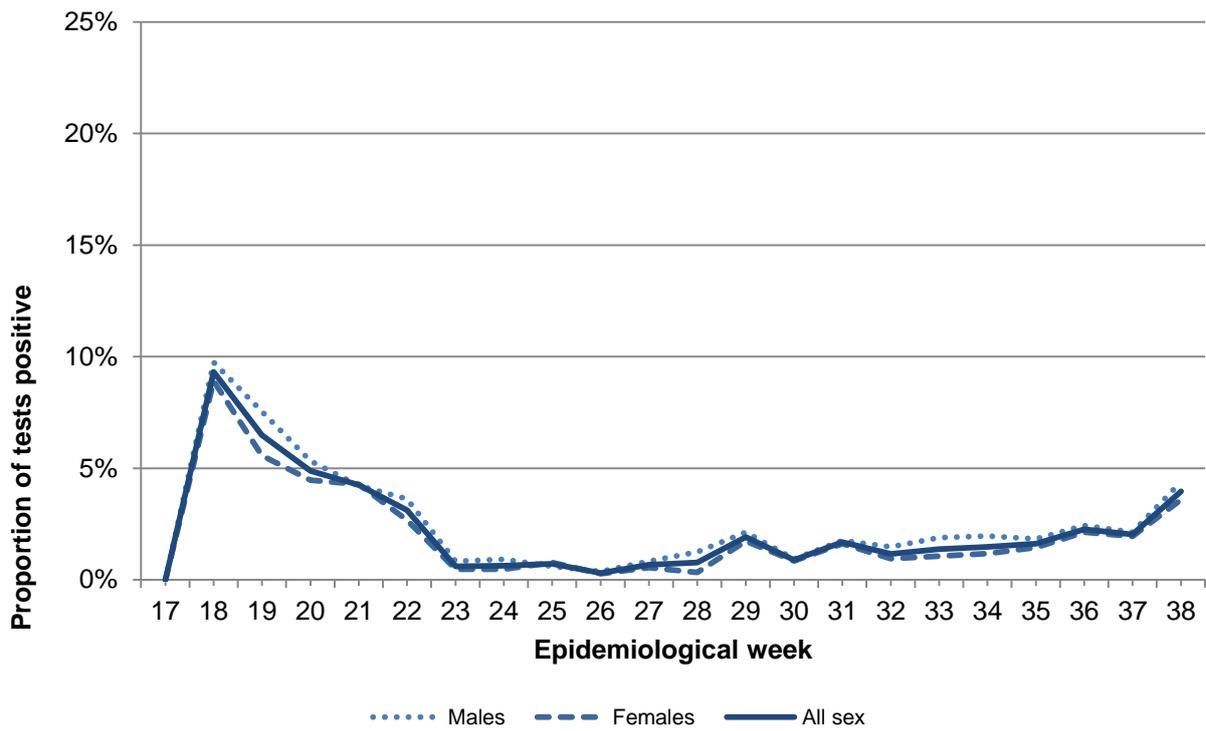


Figure 8. Positivity (%) of laboratory confirmed COVID-19 cases by epidemiological week, overall and by sex (National Testing programme), 2020

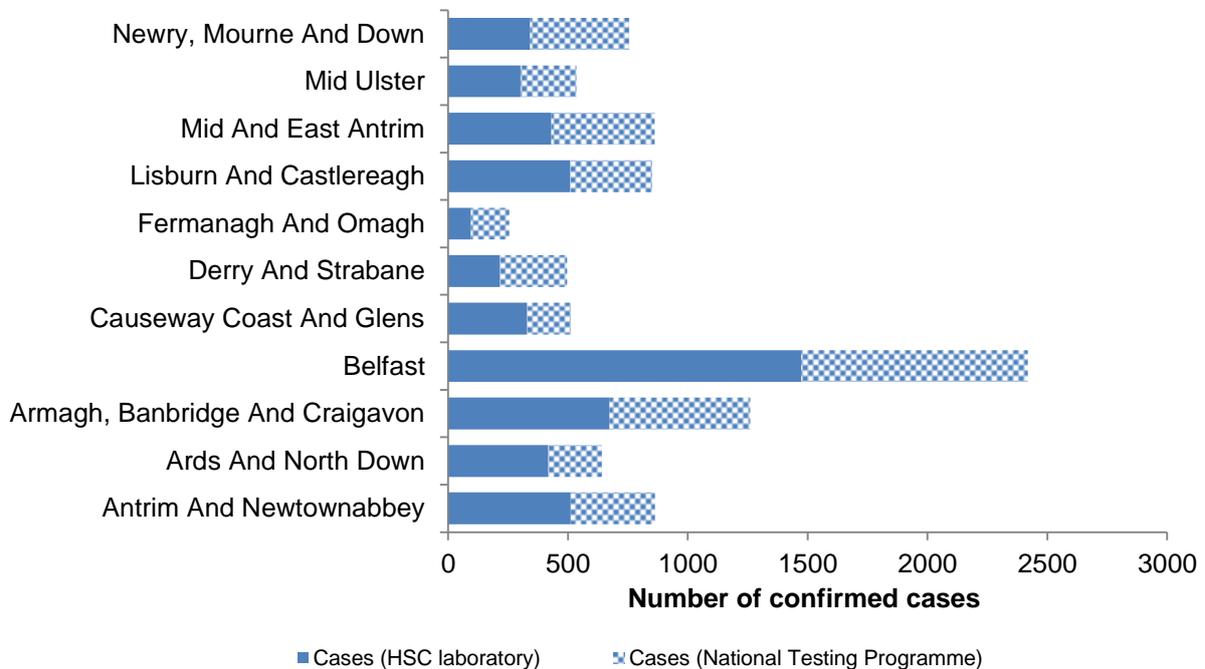


Figure 9. Total laboratory confirmed cases, by Local Government District (LGD) and source (HSC Laboratory testing and the National Testing Programme), 2020

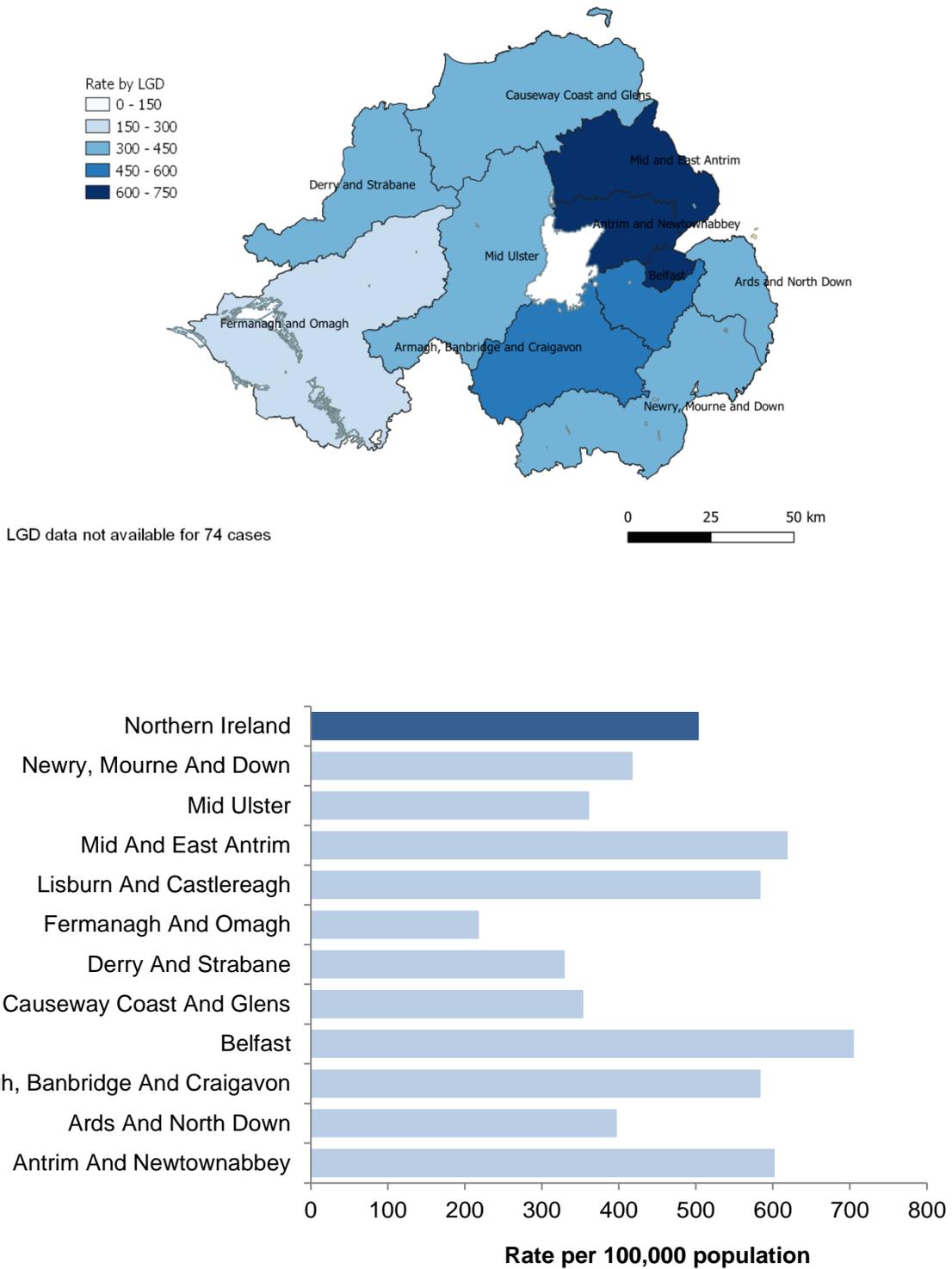
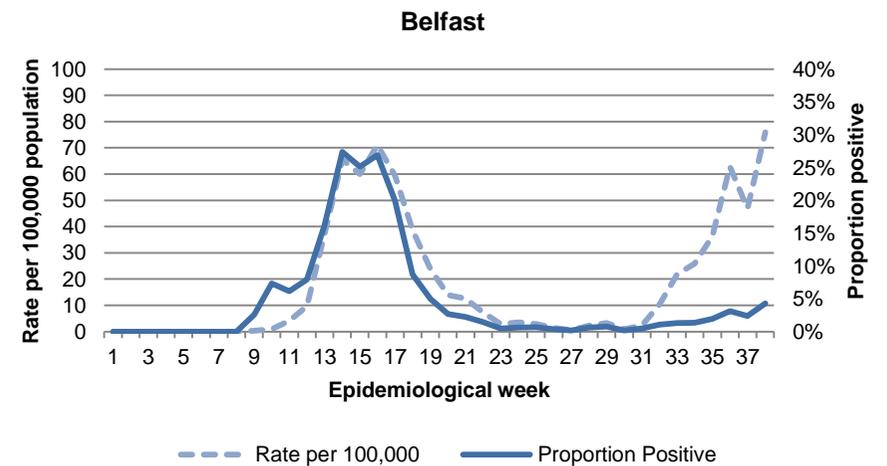
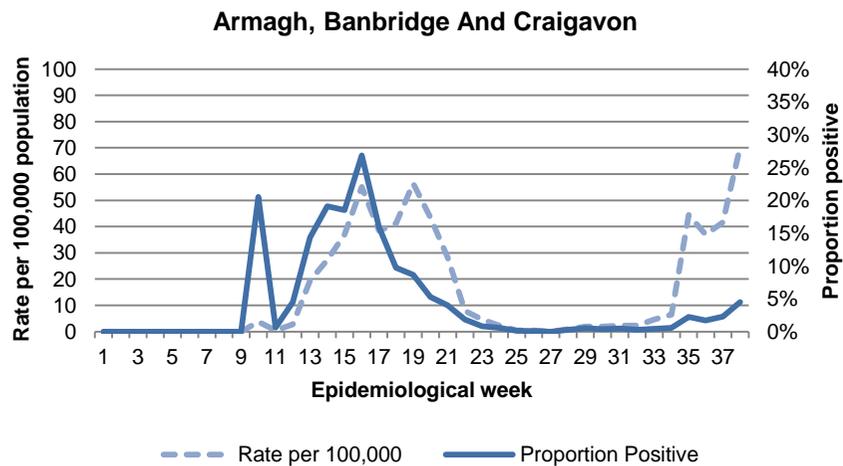
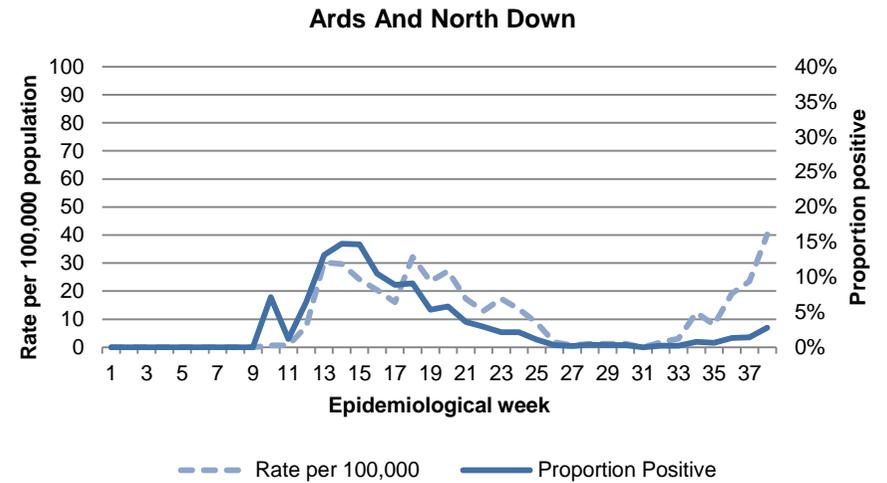
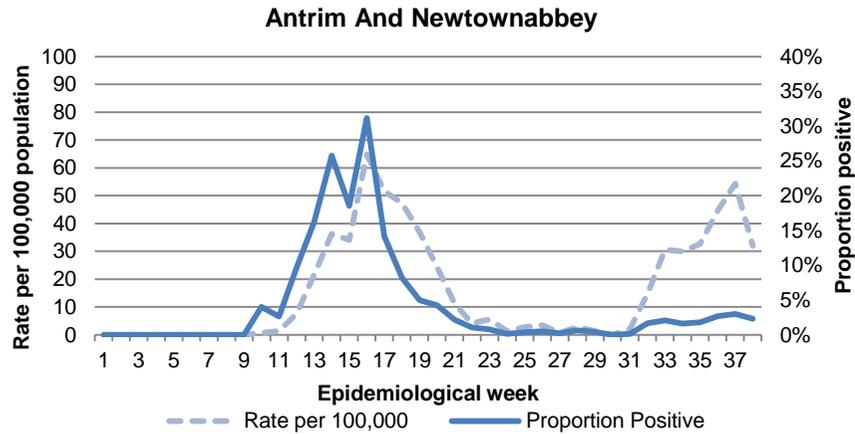
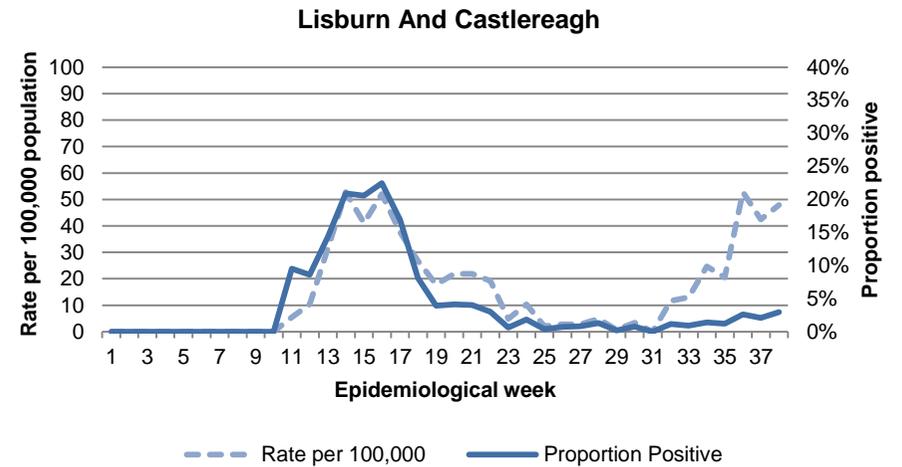
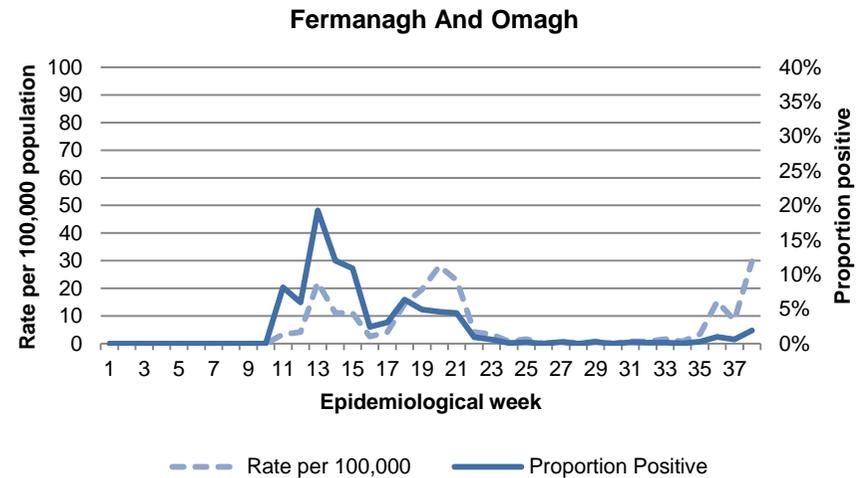
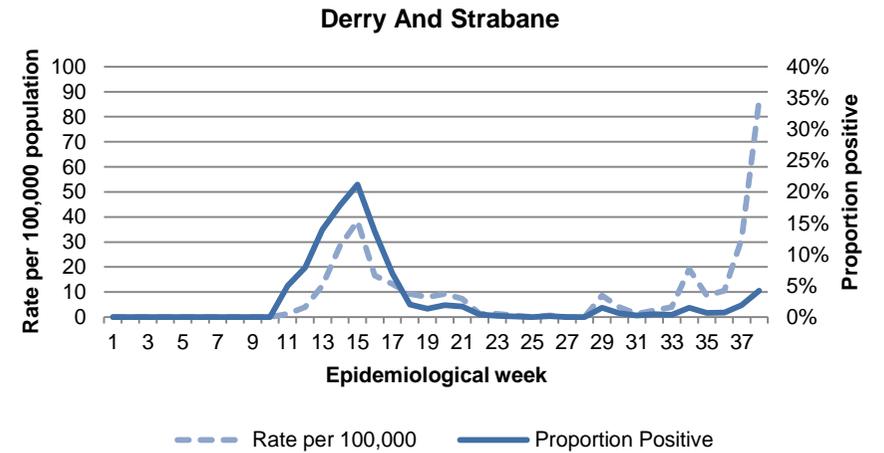
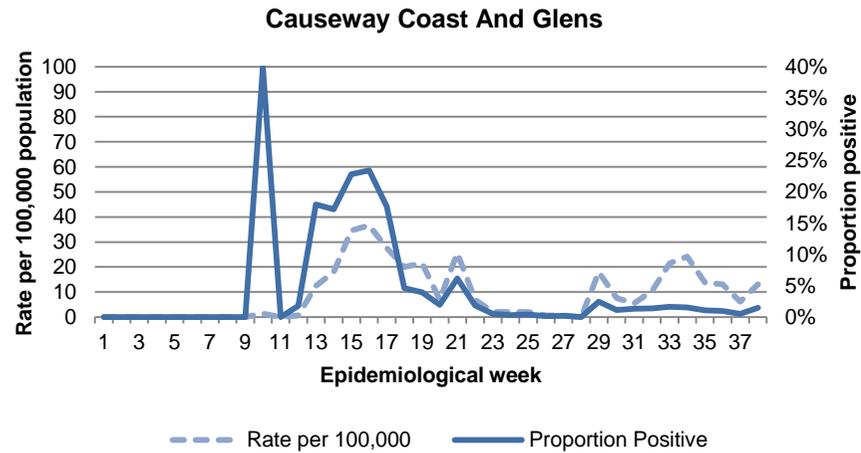


Figure 10. Total laboratory confirmed cases per 100,000 population, by Local Government District (LGD), for all testing data combined, 2020





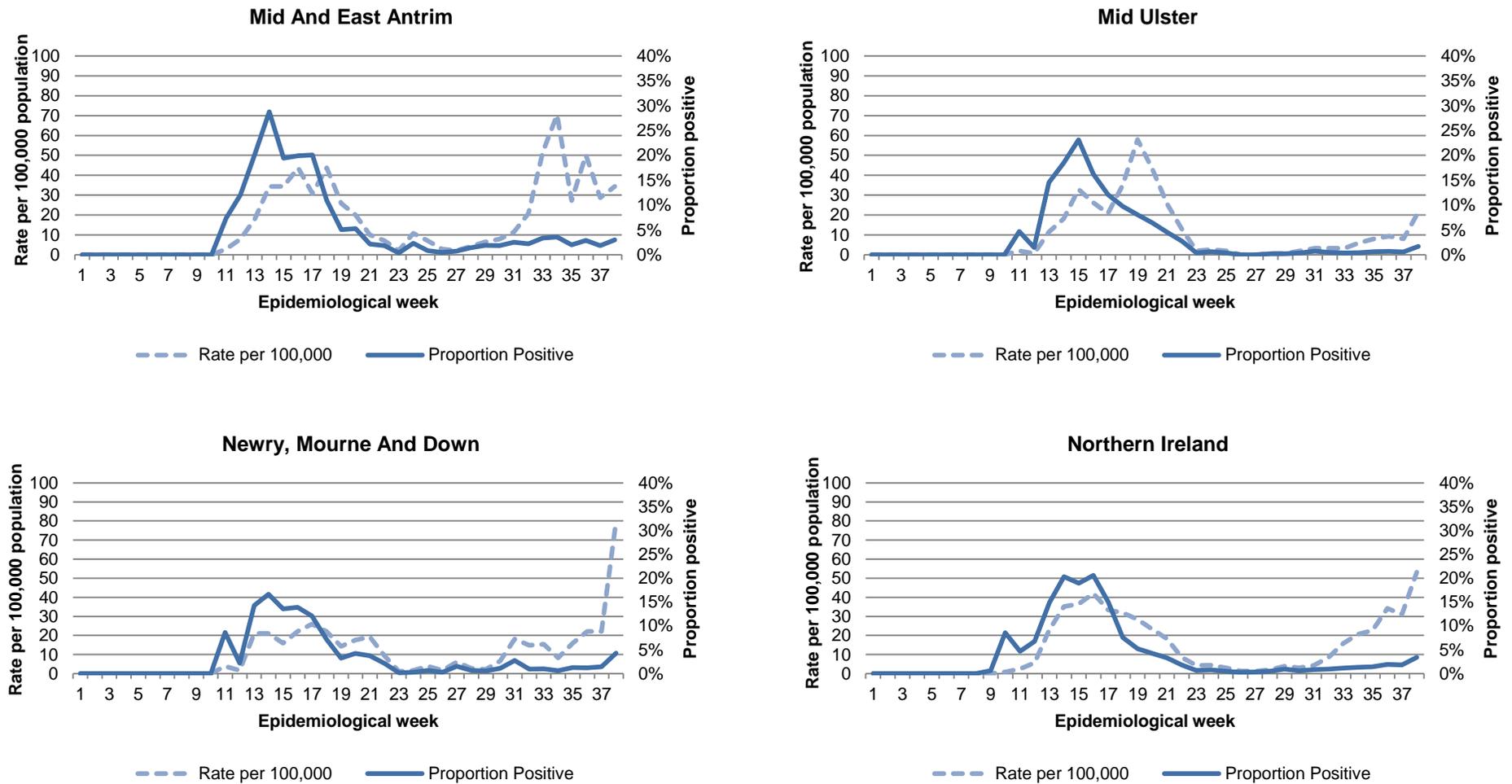


Figure 11. Weekly laboratory confirmed cases per 100,000 population and proportion positive, by Local Government District (LGD) and Northern Ireland, for all testing data combined, 2020.

The case rates decreased in week 38 compared to week 37 in Antrim and Newtonabbey. The rates increased in all other Local Government Districts (LGD), mainly driven by localised clusters and increasing community transmission. The highest rate in week 38 was seen in Derry and Strabane (86.6 per 100,000). The overall Northern Ireland rate increased from 31.1 to 52.2 per 100,000 between week 37 and 38.

Though testing is increasing overall, the proportion positive remains below 5% across all LGDs. Northern Ireland's proportion positive in week 38 was 3.4%, an increase from 1.8% in week 37. However, this is much lower than the peak positivity of 20.6% reported across Northern Ireland in week 16 (13 - 19 April 2020).

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

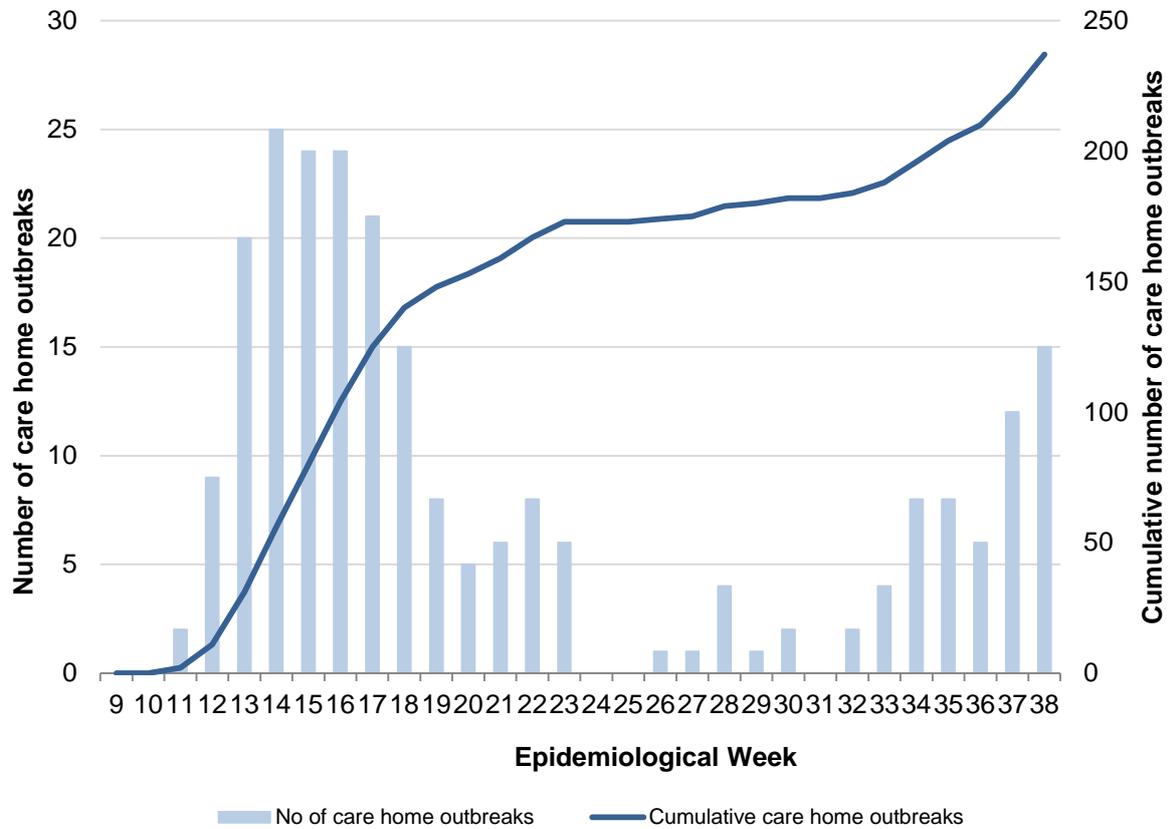


Figure 13. Confirmed and suspected COVID-19 care home outbreaks in Northern Ireland, 2020

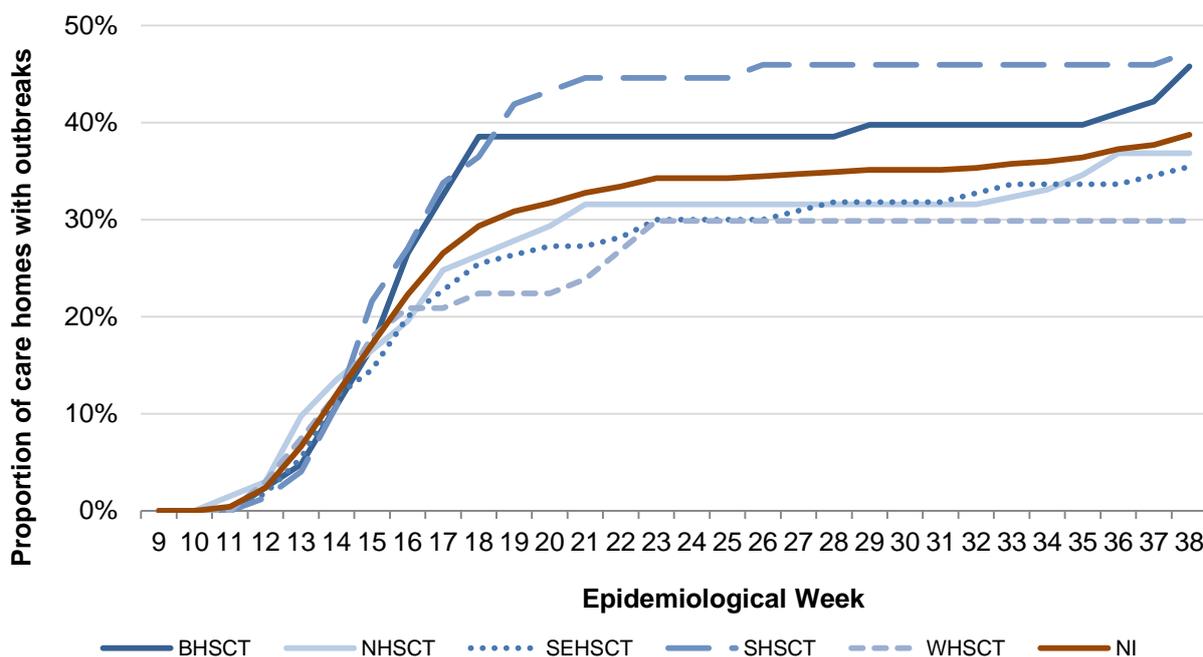


Figure 14. Proportion of care homes with confirmed/suspected COVID-19 in Northern Ireland by Trust, 2020

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	38	45.8%	83
Northern	49	36.8%	133
South Eastern	39	35.5%	110
Southern	35	47.3%	74
Western	20	29.9%	67
Northern Ireland	181	38.8%	467

To week 38, a total of 237 suspected/confirmed COVID-19 care home outbreaks were reported, involving 181 care homes (39% of all Northern Ireland care homes). 52 care homes have reported more than one outbreak. The highest proportion of care homes with suspected/confirmed COVID-19 outbreaks (47%) were reported from the Southern Trust area.

Source: PHA Health Protection duty room reports from care homes

Primary care syndromic surveillance

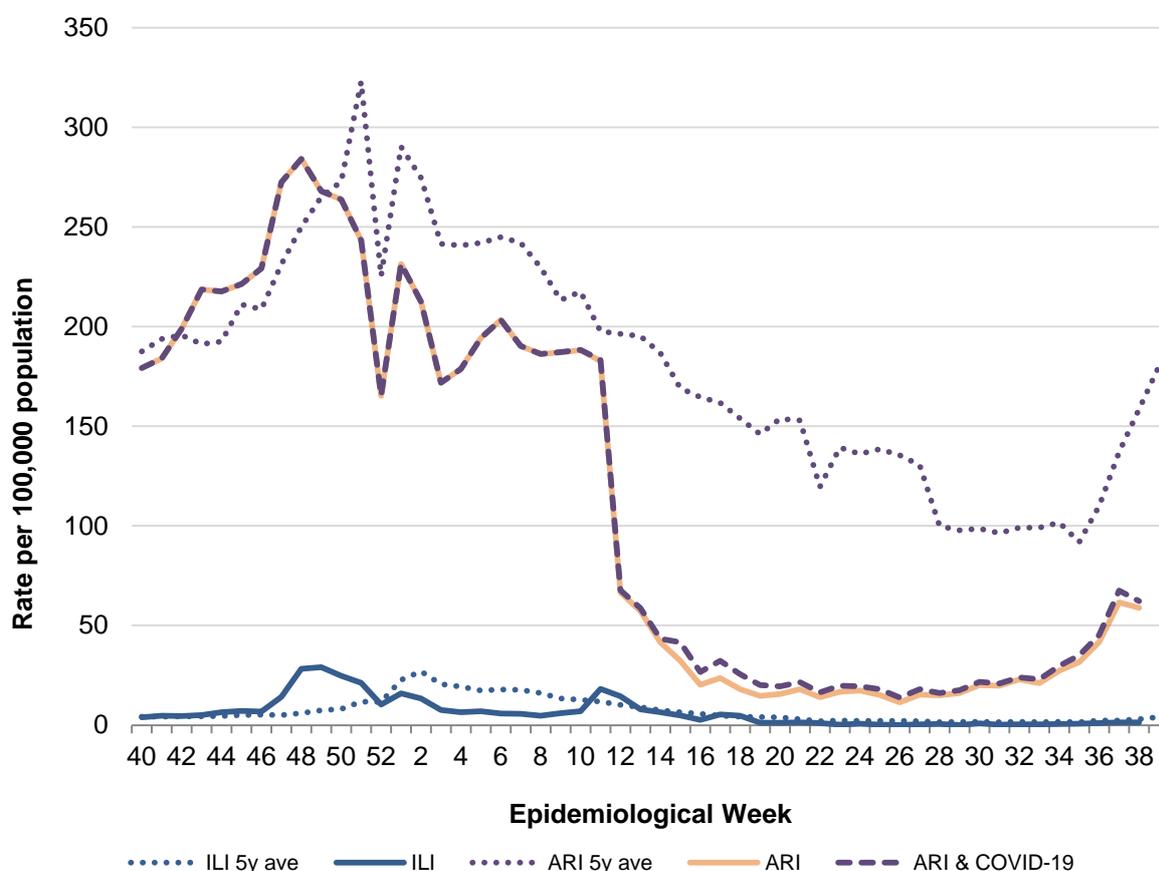


Figure 15. In-hours consultation rates for influenza- like illness (ILI), acute respiratory infections (ARI) and COVID-19

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. In recent weeks ARI consultation rates have begun increasing again, but not to the same levels as reported in 2018/19.

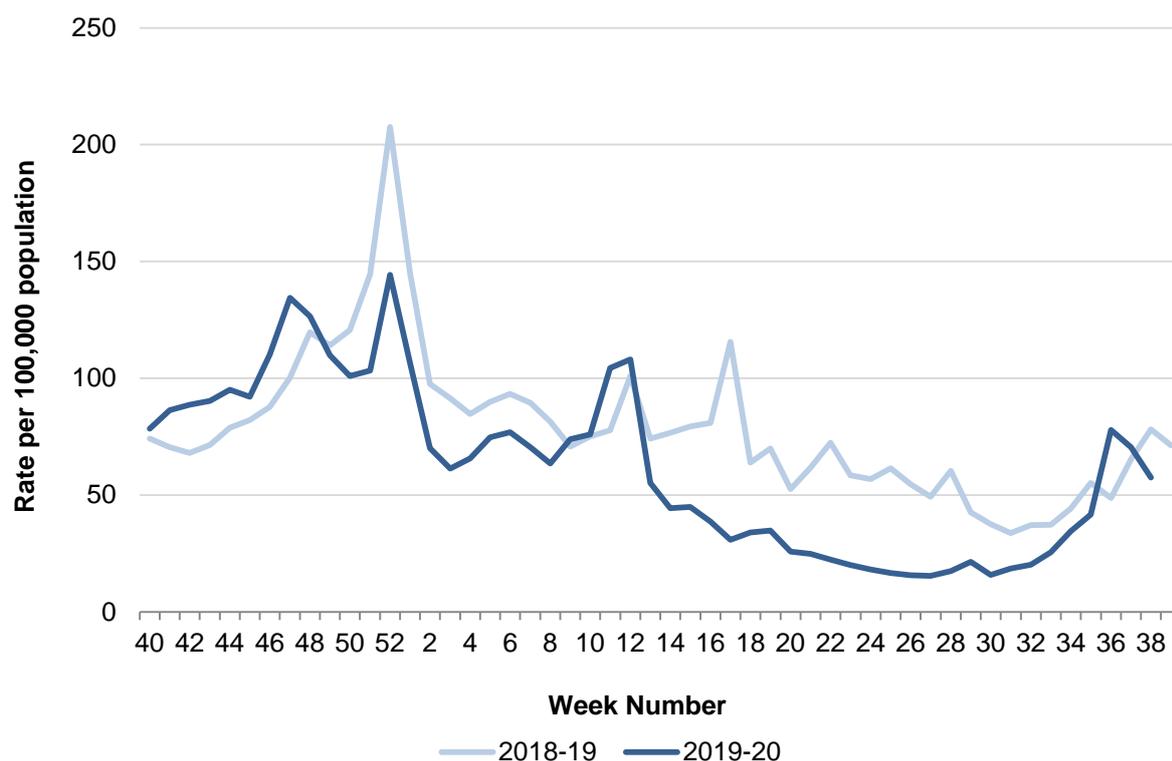


Figure 16. Out-of-hours (OOH) consultation rates for ARI, 2018/19 – 2019/20

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.

In recent weeks ARI consultation rates have returned to levels similar to 2018/19.

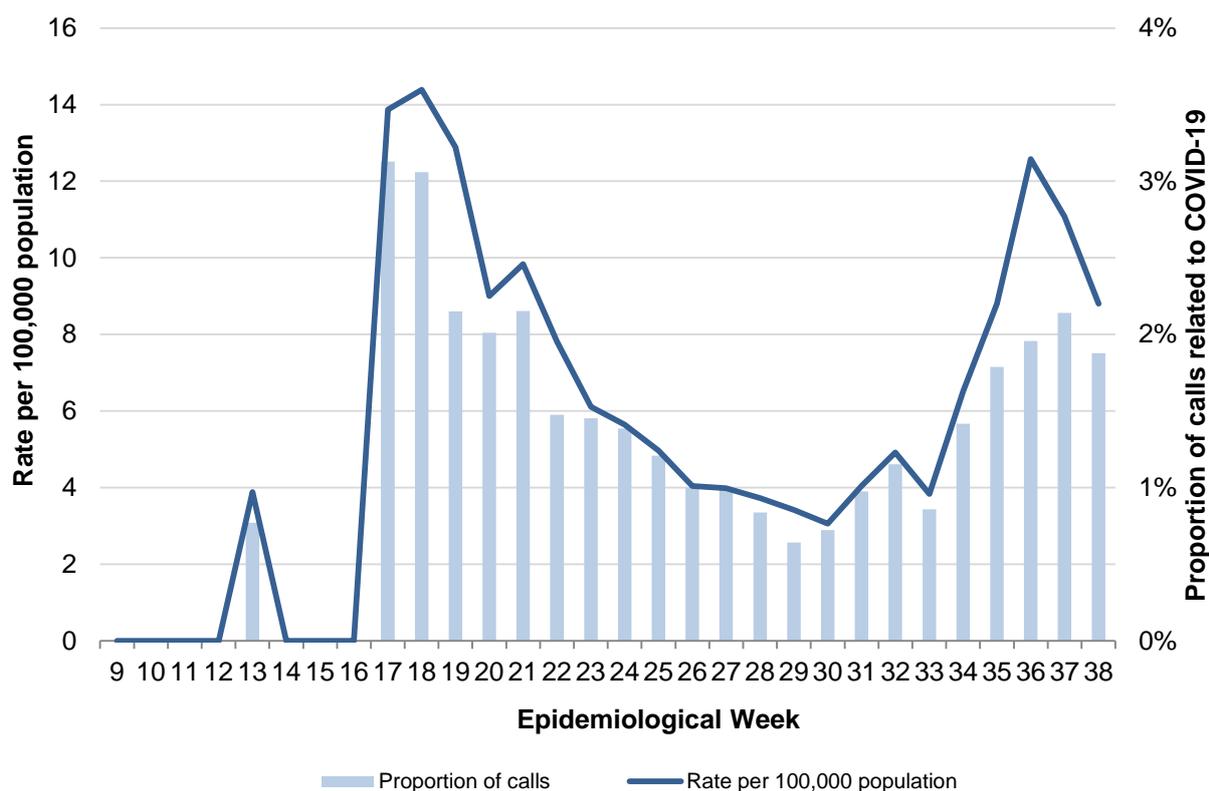


Figure 17. Out-of-hours (OOH) consultation rates for COVID-19, 2020

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.

In recent weeks COVID-19 consultation rates have increased but have been declining again since week 36. Proportion of calls related to COVID-19 also increased but remained mostly below 2%.

Source: Apollo, Wellbeing Software

Sentinel testing

Table 4. COVID-19 activity in Northern Ireland Sentinel GP Practices*, week 38, 2020

Period	Individuals tested	Number positive	Proportion positive
Current week	13	-	0.0%
Total	375	3	0.8%

*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 38, 2020

Period	Individuals tested	Number positive	Proportion positive
Current week	24	-	0.0%
Total	727	3	0.4%

* One COVID centre operational from 15 June 2020 (BHSC); 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

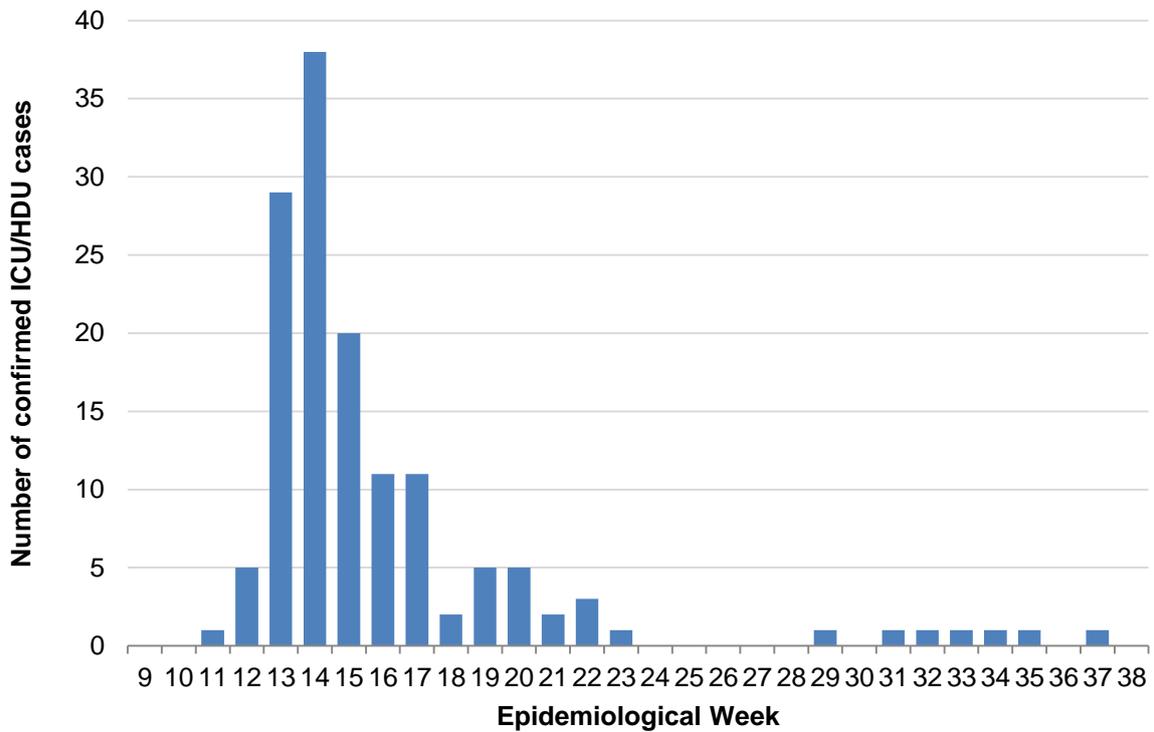


Figure 18. ICU/HDU COVID-19 cases by sample result week, 2020

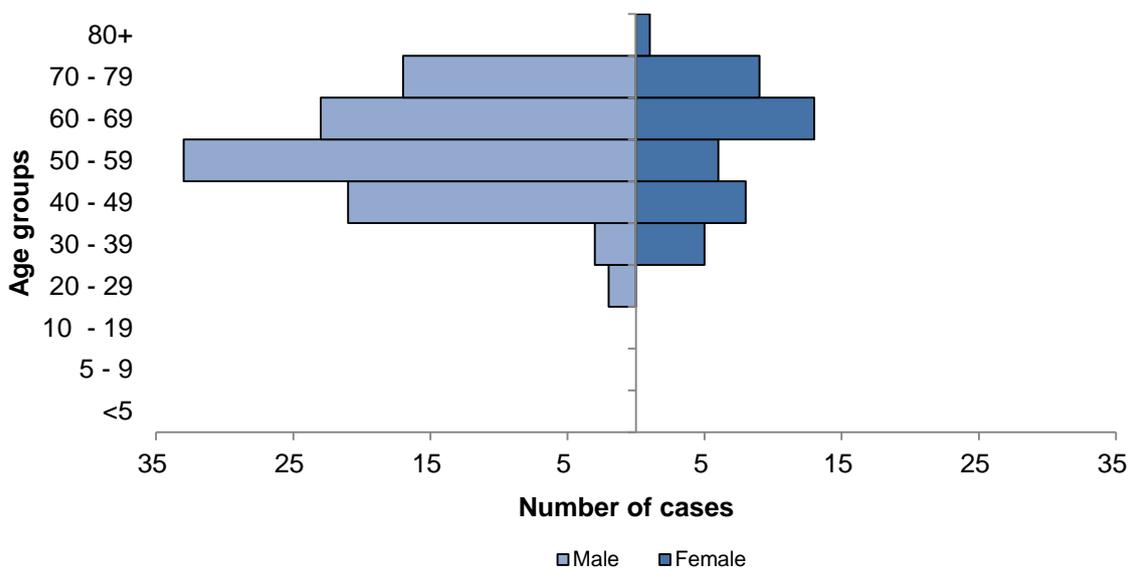


Figure 19. ICU/HDU COVID-19 cases, by age and sex, 2020

To week 38, there have been 140 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 140 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 11 September 2020, the proportion of COVID-19 deaths registered was 2.4%, and from the beginning of 2020 to week ending 11 September 2020 the proportion of COVID-19 deaths registered was 7.5%.

All-cause excess deaths

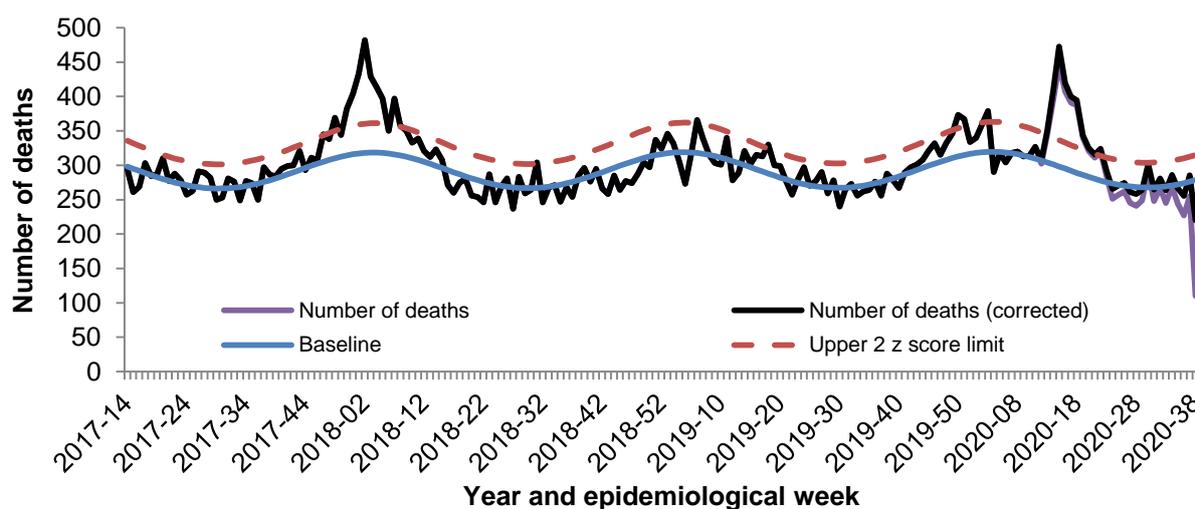


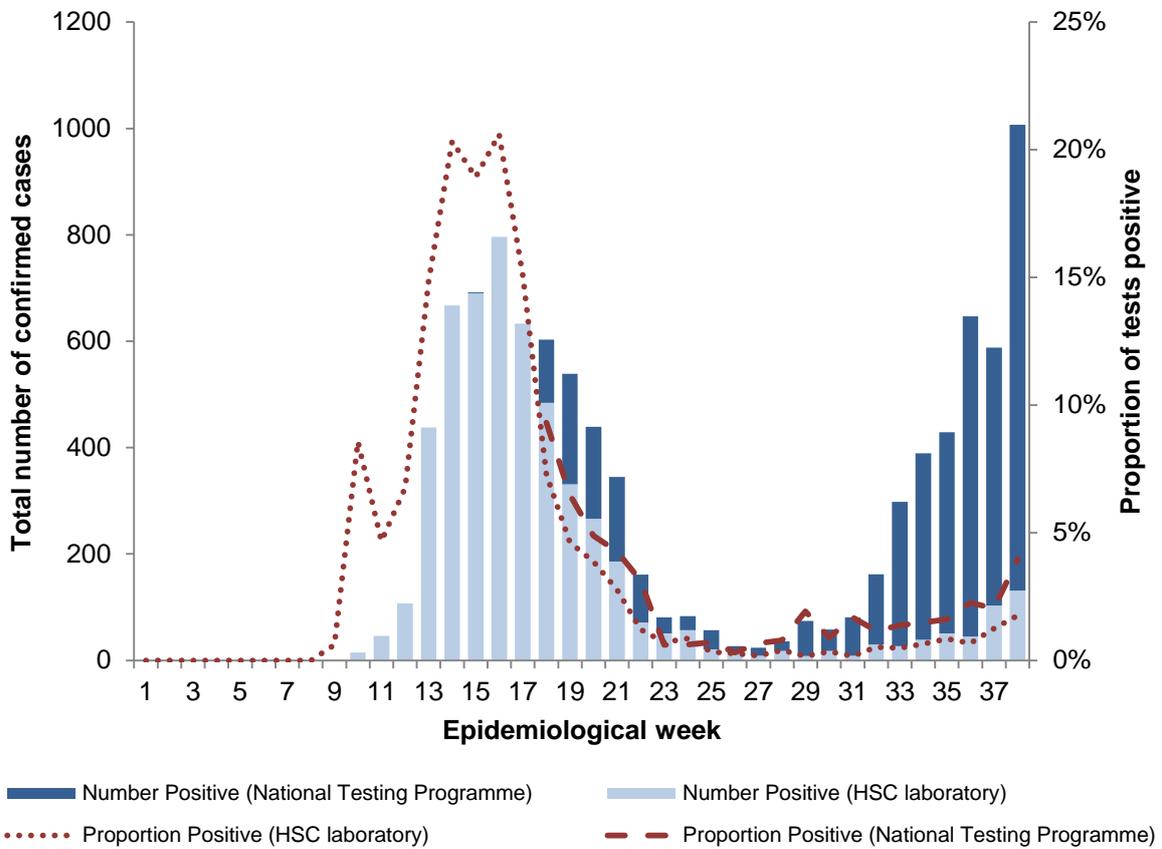
Figure 20. Weekly observed and expected number of all-cause deaths in all ages, week 40 2017 - week 38 2020

In 2020, excess all-cause deaths were reported in epidemiological weeks 13 to 20, and week 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 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 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 21. Weekly number of individuals tested for SARS-CoV2 and proportion positive, by source (HSC Laboratory testing and the National Testing Programme), 2020

Table 6. COVID-19 activity in Northern Ireland, for all testing data combined, week 38, 2020			
Period	Individuals tested	Number positive	Proportion positive
Current week	29,566	1,007	3.4%
Total	350,849	9,523	2.7%

Table 7. COVID-19 activity in Northern Ireland (HSC laboratory), week 38, 2020			
Period	Individuals tested	Number positive	Proportion positive
Current week	7,449	131	1.8%
Total	150,457	5,363	3.6%

Table 8. COVID-19 activity in Northern Ireland (National Testing Programme), week 38, 2020			
Period	Individuals tested	Number positive	Proportion positive
Current week	22,117	876	4.0%
Total	200,392	4,160	2.1%

Source: HSC Trust laboratory reports and the National Testing Programme

To week 38, the total number of individuals tested was 350,849; positivity 2.7%. Overall, more individuals have now been tested as part of the National Testing Programme, but positivity remains lower (2.1%) compared to HSC laboratories (3.6%). However, current weekly positivity among those tested as part of the National Testing Programme is higher (4%) than HSC laboratories (1.8%).

Global situation

As of 20 September 2020, WHO has been notified of 30,675,675 confirmed cases of COVID-19, including 954,417 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 health 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.⁶ 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. 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

⁶ 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]

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 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.

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.

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, 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. There are 472 active care homes in Northern Ireland.

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 rates 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.

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 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 $\geq 37.8^{\circ}\text{C}$ 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.

Influenza-like Illness (ILI)

Acute respiratory disease with sudden onset of symptoms and:

- at least one systemic symptom (fever $\geq 37.8^{\circ}\text{C}$, 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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