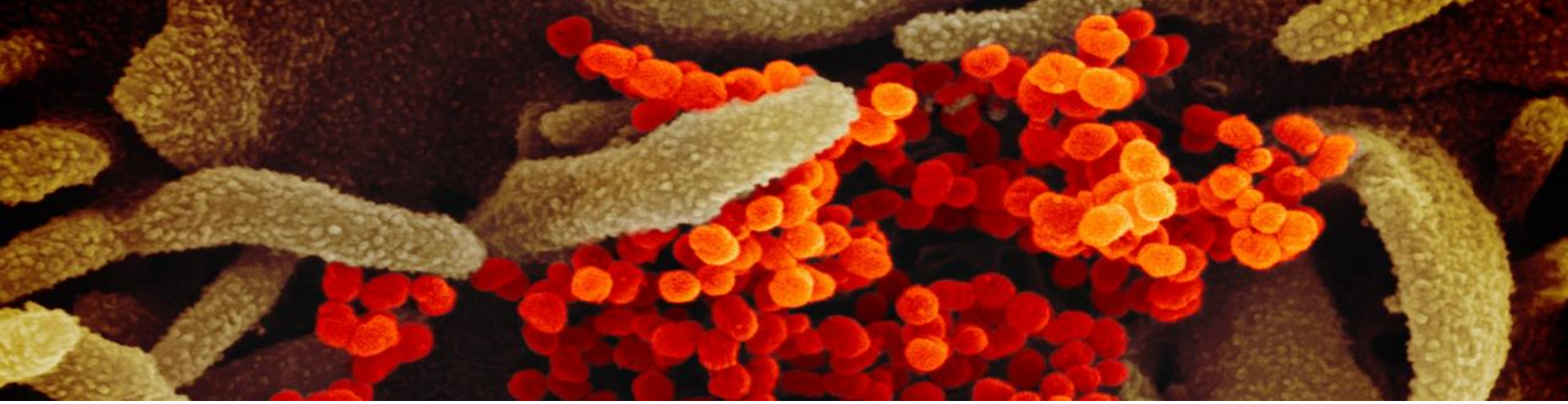
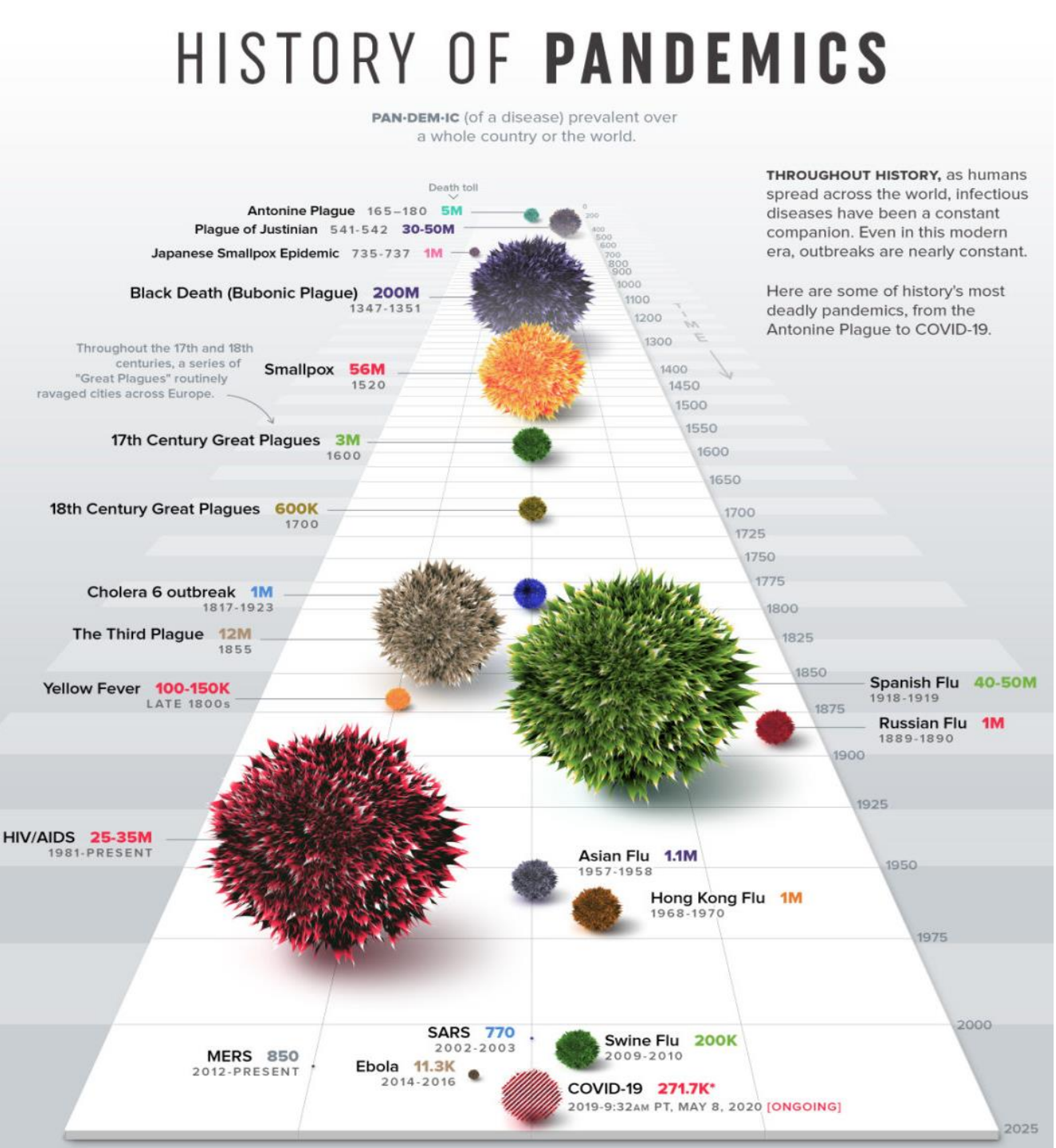


COVID-19 in Northern Ireland

Daily Dashboard Charts & Graphs: 7th June 2020

INFORMATION ANALYSIS DIRECTORATE

Department of Health
An Roinn Sláinte
Männystrie O Poustie
www.health-ni.gov.uk



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INTRODUCTION

The difficulties in controlling COVID-19 are due to several factors:

- Its incubation period is relatively long, some five to six days and longer for some.
- Those who are infected become infectious, and infect others, before they display any symptoms or become aware of the disease.
- A significant fraction of cases remain asymptomatic - they never develop symptoms, but they still infect others.

Certain parameters characterise the virus itself, these include:

- **Incubation period** - the time between contracting the infection and the appearance of symptoms
- **Virulence** - the severity of its health effects.
- **Reproduction number** (infectiousness) - the number of new infections each case typically generates, and
- **Case fatality** - the number of infected people that die from the infection

UNDERSTANDING MEASURES TO 'FLATTEN THE CURVE'

COVID-19 infections, like many other viruses, grow exponentially. Fixed rate exponential growth means that the number of cases doubles in a defined amount of time. The doubling time is dynamic and informs us of the impact (or lack of impact) of interventions on epidemic growth. When we talk about '***flattening the curve'***, we mean lengthening the doubling period. Flattening the curve, or slowing the rate of growth of new infections, is crucial to the maintenance of capacity in the health sector.

A failure to moderate growth of infections rapidly overwhelms any nation's health systems, hence the need for radical social policy interventions. Flattening the curve, or increasing the doubling period, is achieved through official policies and social behaviours. These range from simple but effective practices such as:

- Washing hands correctly
- Social distancing practices (as recently introduced in many countries including Northern Ireland)
- Cessation of all non-essential activities, and stay-at-home policies (as seen in China & Italy).

All of these policies are designed to reduce the opportunity for transmission of infections – in effect aiming to slow the growth rate. The doubling period therefore is an important barometer of the effects of national policies and behaviours on the impact of the virus. Changes in the doubling period in effect, reflect policy effectiveness.

THE DOUBLING PERIOD

The effect of **doubling period** is best illustrate by comparing for example numbers between Japan and Italy. On 23rd February, Italy reported 132 cases, and Japan reported 144: virtually the same. Japan's doubling period was close to eight days, Italy's was initially less than one day. Infections in Italy were therefore doubling at many times the rate of those in Japan. Eight days later, Italy reported 1,700 cases whilst Japan reported 254. One month later (23rd March), Italy reports more than 50 times the number of cases in Japan, at nearly 60,000 cases to Japan's 1,089.

While it is informative to know both the number of cases and deaths, it is their **growth rate** that matters most. The trajectory is what is most important. This shows the rise in confirmed cases and deaths since the outbreak began. South Korea spread slowed from initial pace and in fact has now plateaued. Northern Ireland Trajectory seems to be tracking similar to that of South Korea albeit with significantly fewer cases and deaths.

The **population of countries** differ significantly but we don't need to adjust for this. If for example we were to adjust for population size and to express confirmed cases or deaths as per million all that would happen is that we would just make larger countries look like their outbreaks aren't quite as bad, and smaller countries look like theirs are much worse. Since the virus spreads exponentially the population is not a limiting factor. Its spread will be determined by the behaviour of individuals and how they mix in their communities. It will tend to spread as the people in cities across the world interact with each other in a similar manner and at a similar rate.

HOW DO WE TREAT CASES AND MANAGE TESTING?

There is the view that the number of **confirmed cases** in a country is a function of the number of tests it conducts. It is important to note despite the focus on testing large numbers of the population we do not actually know the number of people who have coronavirus in the population.

There may be a great many who are symptom free but nevertheless have the virus but just not ever been tested. It is for this reason that we plot laboratory confirmed cases and not simply refer to cases, the true number of which we do not know.

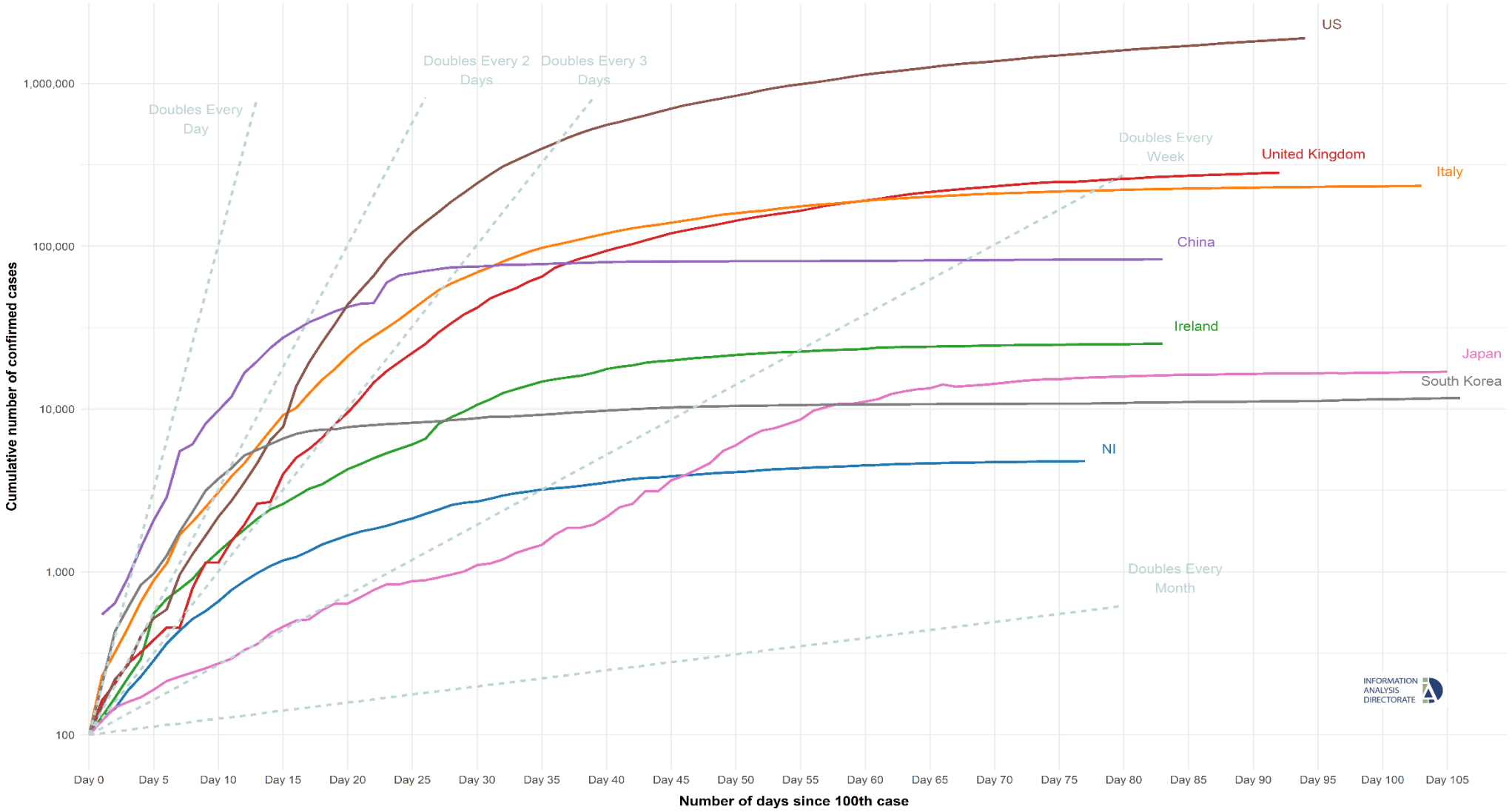


Figure 1: Cumulative number of individuals with a laboratory confirmed test for COVID-19 after the 100th case.
The 100th case for all countries are aligned by calculating the first time the cumulative number of positive cases was greater than or equal to 100 and rounding down to exactly 100. Data is not available for China before their 500th case.

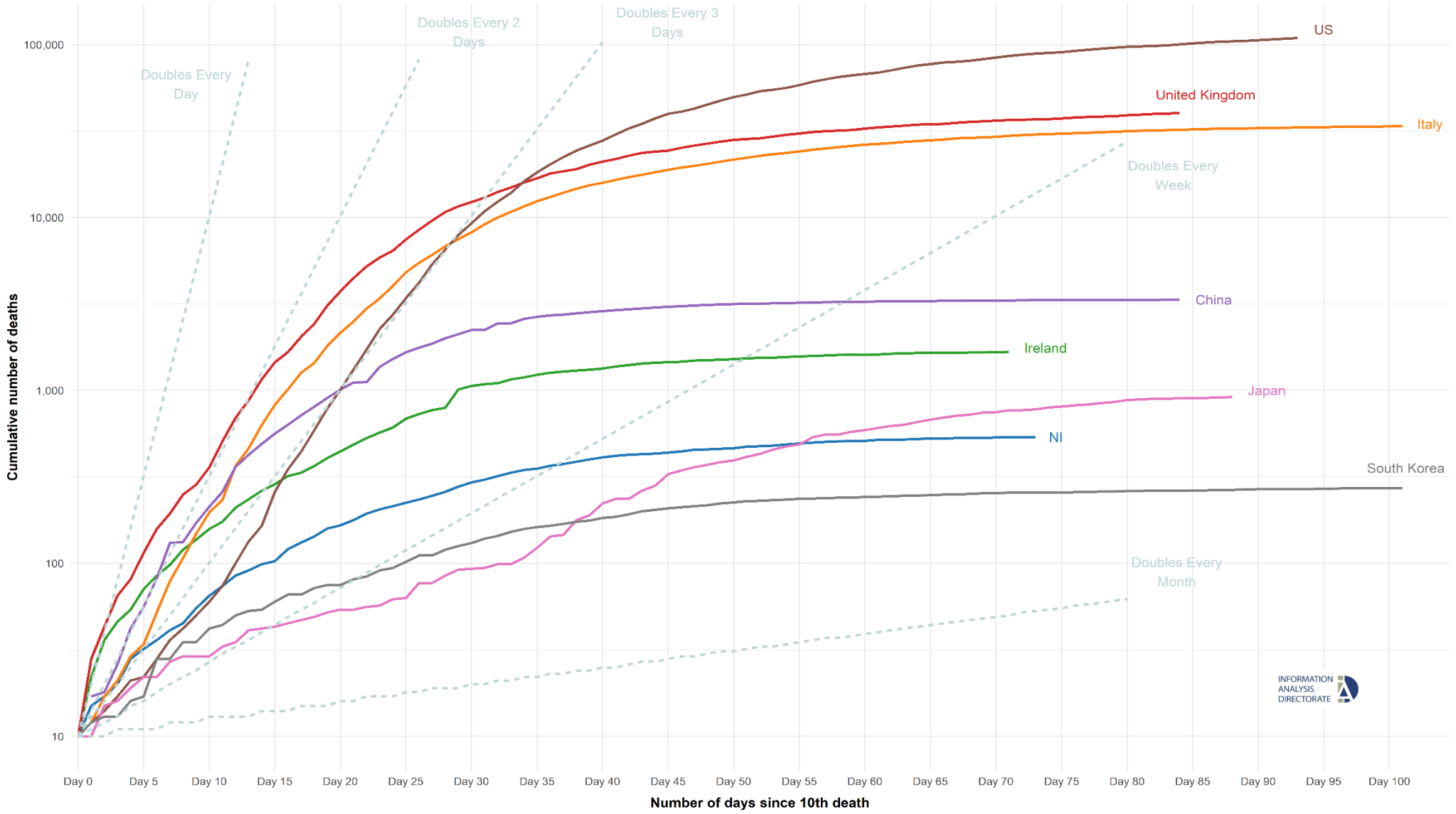


Figure 2: Cumulative number of deaths after the 10th death, where the deceased has had a positive test for COVID-19 and died within 28 days, whether or not COVID-19 was the cause of death. The 10th death for all countries are aligned by calculating the first time the number of deaths was greater than or equal to 10 and rounding down to exactly 10.

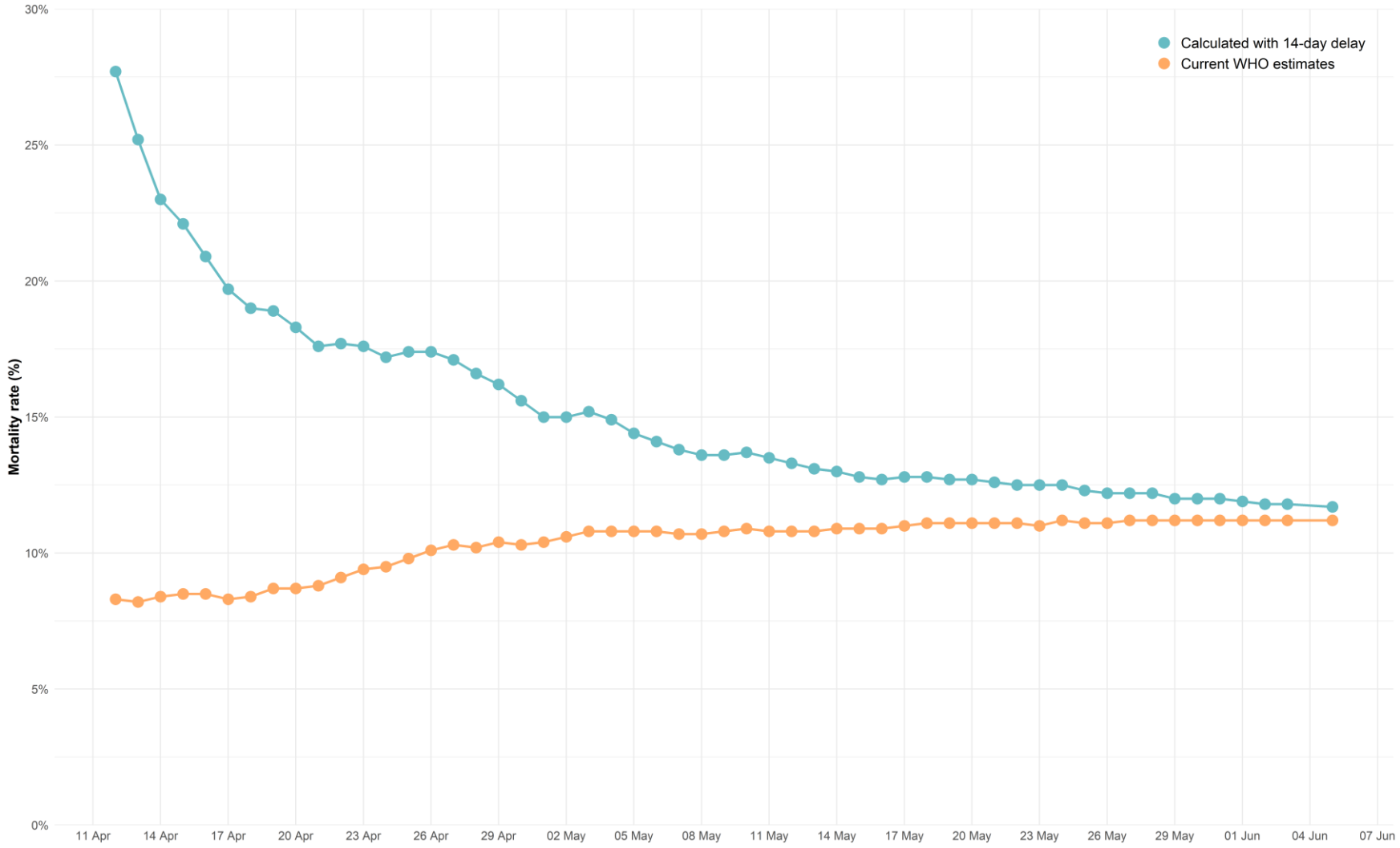


Figure 3: Mortality rate estimates are often based on the number of deaths relative to the number of confirmed cases, however, this isn't representative of the actual death rate, as patients who die on any particular day were infected much earlier. In other words, current deaths belong to the same group of patients that were infected in the past. The maximum incubation period for COVID-19 is assumed to be up to 14 days, therefore the chart below recalculates mortality by dividing the number of cumulative deaths at a specific date by the number of confirmed COVID-19 cases 14 days before.

Doubling Time in the Last 5 Days and Confirmed Cases

	Doubling Time (in Days)			Confirmed Cases		
Country	Last 5 Days	5 Days Before That	Change	Last 5 Days	5 Days Before That	Change
Northern Ireland	**289.9**	254.9	↑ 35	**57**	64	↓ -7
Ireland	**719.6**	333.6	↑ 386	**121**	259	↓ -138
United Kingdom	**114.2**	103.8	↑ 10.4	**8,558**	9,117	↓ -559
Italy	**505.6**	391.0	↑ 114.6	**1,604**	2,058	↓ -454
China	**20565.2**	10660.8	↑ 9904.4	**14**	27	↓ -13
Japan	**274.9**	426.1	↓ -151.2	**213**	136	↑ 77
United States	**59.3**	54.4	↑ 4.9	**109,041**	111,844	↓ -2,803
Germany	**344.6**	305.6	↑ 39	**1,856**	2,070	↓ -214
France	**466.8**	102.3	↑ 364.5	**1,411**	6,310	↓ -4,899
Spain	**498.5**	244.1	↑ 254.4	**1,672**	3,379	↓ -1,707
South Korea	**171.9**	201.3	↓ -29.4	**235**	197	↑ 38

Source: Information & Analysis Directorate | Department of Health | Johns Hopkins CSSE
Data updated: [1] Sunday 07 June 2020
Please note: [a] United Kingdom data includes Northern Ireland

Table 1: Comparison of doubling times of confirmed cases in the last five days with the doubling time in the five days before; as well as the number of confirmed cases in the last five days with the number of confirmed cases in the five days before that. The 'change' column compares whether cases doubled faster or slower or remained about the same; or if countries reported more or less or about the same number of cases. The number of confirmed cases in Northern Ireland is doubling at a slower rate (289.9 days) over the last 5 days compared with the doubling rate in the 5 days before that (254.9 days).

COVID-19 Testing overview: Laboratory Completed Positive Test by Local Government District and Number of Persons who have had samples/swabs taken at National Testing Centres

74,857
Total Lab Completed Tests

59,026
Individuals Lab Completed Tests

4,796
Individuals Positive Lab Test

255
Positive Tests per 100,000-pop

Individuals with a Laboratory Completed Positive Test for SARS-COV2 Virus by Local Government District

Breakdown of Individuals with a Laboratory Completed Test by Local Government District

Local Government District	Individuals Tested	Individuals Tested Positive	Individuals Tested Negative	Indeterminate Tests	Positive Tests per 100k pop
Antrim and Newtownabbey	4,274	409	3,863	2	287
Ards and North Down	4,891	370	4,516	5	230
Armagh City, Banbridge and Craigavon	6,954	538	6,412	4	252
Belfast	12,187	1,314	10,865	8	385
Causeway Coast and Glens	3,647	248	3,395	4	172
Derry City and Strabane	3,791	177	3,609	5	117
Fermanagh and Omagh	2,534	86	2,446	2	74
Lisburn and Castlereagh	4,860	442	4,415	3	304
Mid and East Antrim	3,664	327	3,337	0	236
Mid Ulster	4,083	253	3,830	0	172
Newry, Mourne and Down	4,860	289	4,568	3	160
Not Known	3,281	343	2,928	10	
Total	**59,026**	**4,796**	**54,184**	**46**	**255**

Note 1: Local Government Districts assigned as 'Not Known' refer to individuals with insufficient address / postcode details.

Testing for the SARS-COV2 Virus in NI is currently being carried out by (i) **HSC Trust Labs** and (ii) **National Testing Centres**; although, information on the outcome of completed laboratory tests is ONLY available for HSC Trust Labs at this time. *Refer to notes for further detail.*

i. HSC Trust Labs - Cumulative Number of Completed Laboratory Tests

05 June 2020

73,692	58,127	4,790
Total Lab Tests	Individuals Tested	Individuals Tested Positive

06 June 2020

74,857	59,026	4,796
Total Lab Tests	Individuals Tested	Individuals Tested Positive

Daily Change

1,165	899	6
Total Lab Tests	Individuals Tested	Individuals Tested Positive

ii. National Testing Centres - Cumulative Number of Samples Taken (Date Sample Taken)

05 June 2020
24,345
Samples Taken

06 June 2020
24,748
Samples Taken

Daily Change
403
Samples Taken

IMPORTANT NOTE:
Data from National Testing Centres refers only to the number of persons who have had samples / swabs taken at the SSE Arena, City of Derry Rugby Club, Craigavon Test Centre, St. Angelo Airfield Enniskillen and the mobile testing unit . These sample are sent to the laboratories for analysis and will be reported as a laboratory completed test in due course. They should NOT be added to the Completed laboratory results presented above.

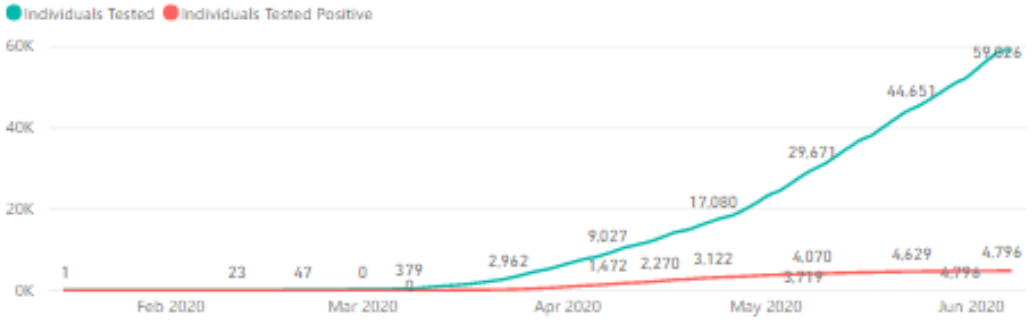
Cumulative Total of Laboratory Completed Tests by Date & Individual with a confirmed Laboratory completed test for Sara-Cov2 by Age group and Gender.

The information below shows the total number of laboratory completed tests for SARS-COV2 Virus at 9am on the date presented. The total number of tests will include each laboratory completed test, i.e. if an individual had more than one test for the SARS-COV2 Virus, each laboratory completed test will be included.

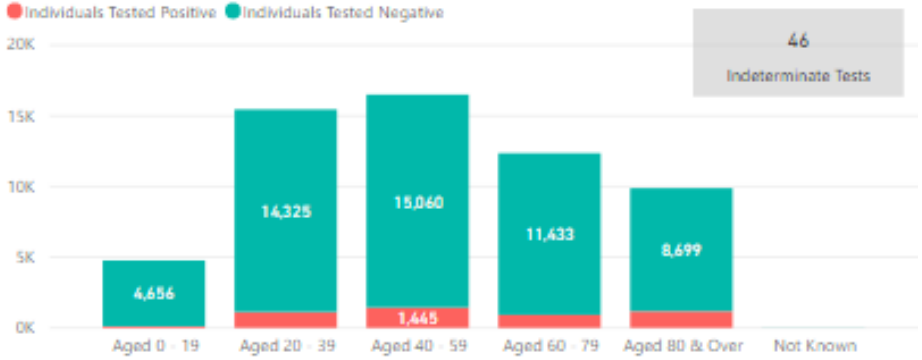
Cumulative Total of Laboratory Completed Tests by Date of Laboratory Test

The cumulative number of individuals with a laboratory completed test is presented below by the date on which the specimen (sample / swab) had been taken at a testing location, and not the date the labortory test was completed. If an individual has been tested more than once, only the first laboratory completed positive result will be counted, with all other laboratory completed test results excluded, regardless of when the test took place.

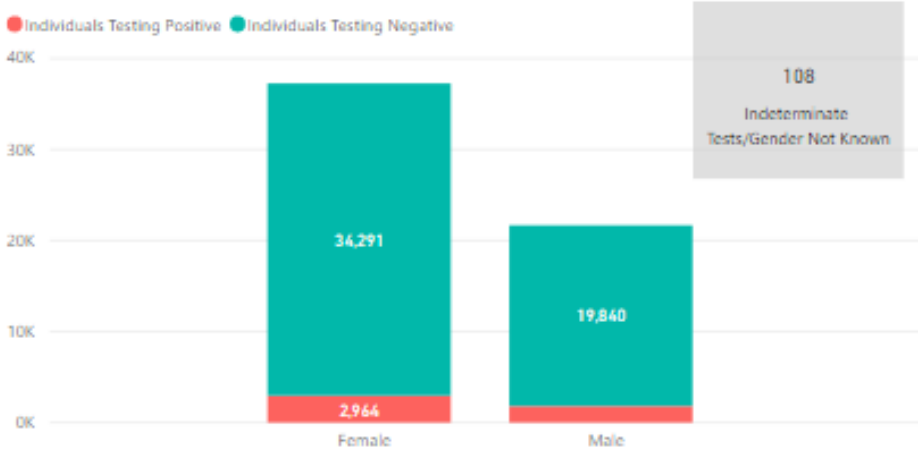
Cumulative Individuals with Laboratory Completed Test for SARS-COV2 Virus by Date of Specimen



Individuals with a Laboratory Completed Test for SARS-COV2 Virus by Age Group



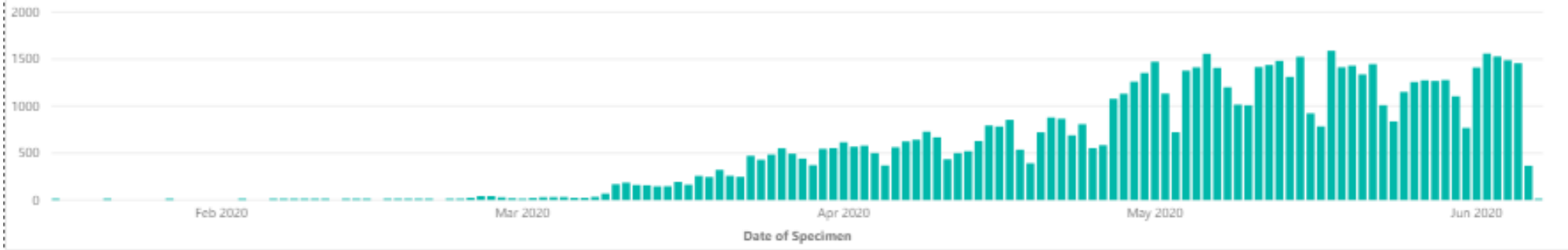
Individuals with a Laboratory Completed Test for SARS-COV2 Virus by Gender



Testing Trend Analysis of Individuals with a confirmed Laboratory completed test for Sara-Cov2

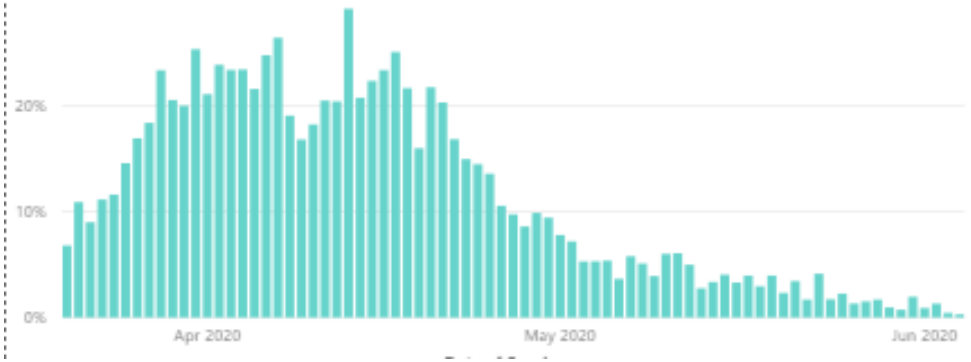
Information below refers to the number of laboratory completed tests by the date on which the specimen (sample / swab) had been taken at a testing location, and not the date the labortory test was completed. Whilst this gives the most accurate analysis of how cases progress over time it does mean that the latest days' figures are usually incomplete, so it shouldn't be seen as a sudden large drop in cases.

Laboratory Completed Tests by Date of Specimen



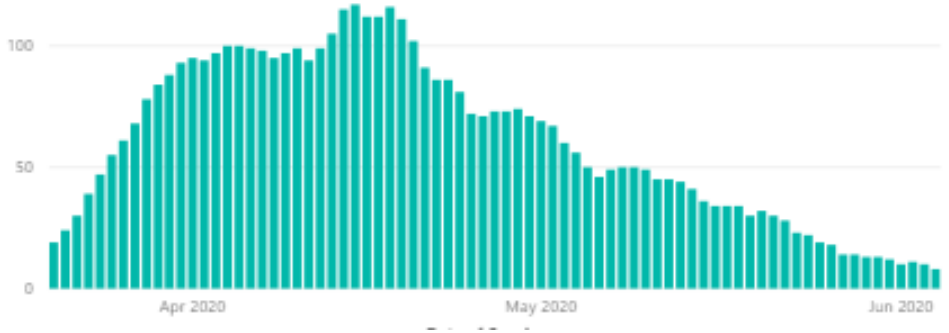
Information below shows the percentage of laboratory completed tests which were identfiied as positive by the date on which the specimen (sample / swab) had been taken at a testing location.

Proportion of Laboratory Completed Tests Identified as Positive by Date of Specimen



Information is presented below on the 7-day rolling average of individuals with a positive laboratory completed test, by the date on which the specimen (sample / swab) had been taken at a testing location.

7 Day Rolling Average (mean) of Individuals with Positive Laboratory Completed Tests by Date of Specimen



Cumulative COVID-19 Deaths and By Local Government District by Age, Gender and Previously Report Deaths and Deaths in Current Reporting Period by Date of Death

Breakdown of Deaths During Current Reporting Period

537
Cumulative COVID-19 Deaths reported up to 10:00am on 07 June 2020

=

537
Deaths previously reported up to 10:00am on 06 June 2020

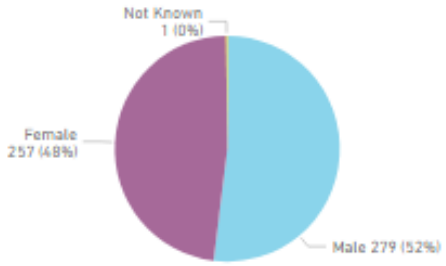
+

0
Deaths reported and occuring within current reporting period

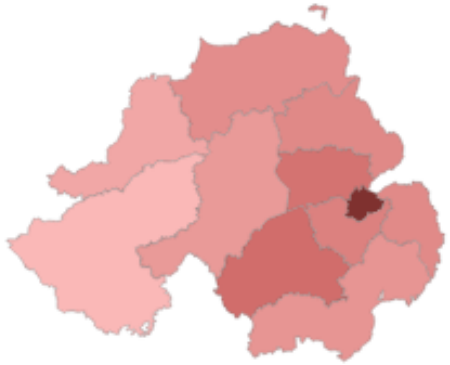
+

0
Deaths reported, but not occuring within current reporting period

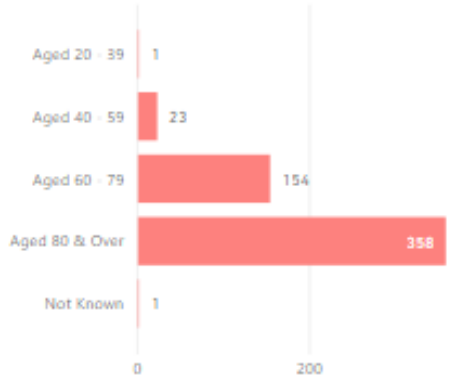
COVID-19 Deaths by Gender



COVID-19 Deaths by Local Government District



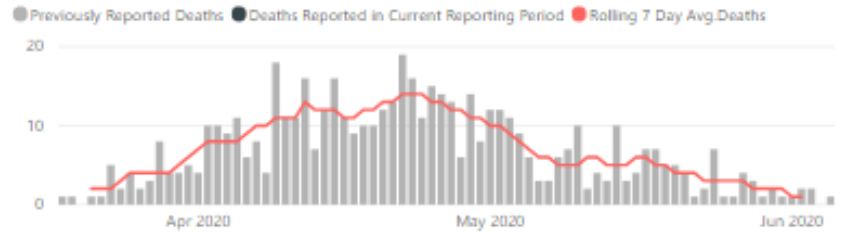
COVID-19 Deaths by Age Group



COVID-19 Deaths by Local Government District

Cumulative COVID-19 Deaths by Date of Death

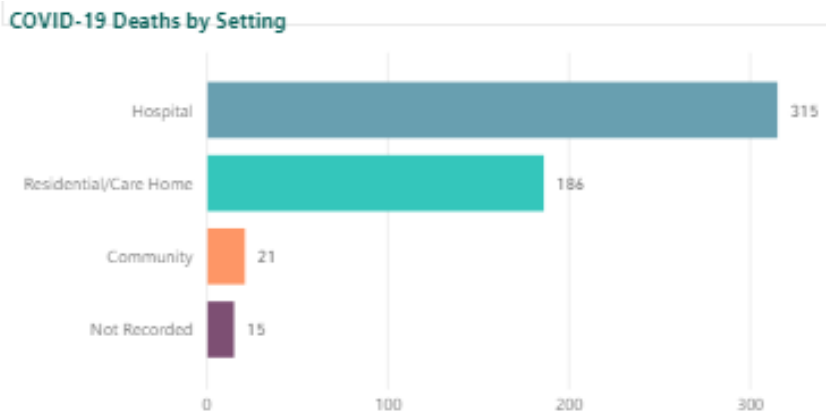
Previously Reported Deaths and Deaths in Current Reporting Period by Date of Death

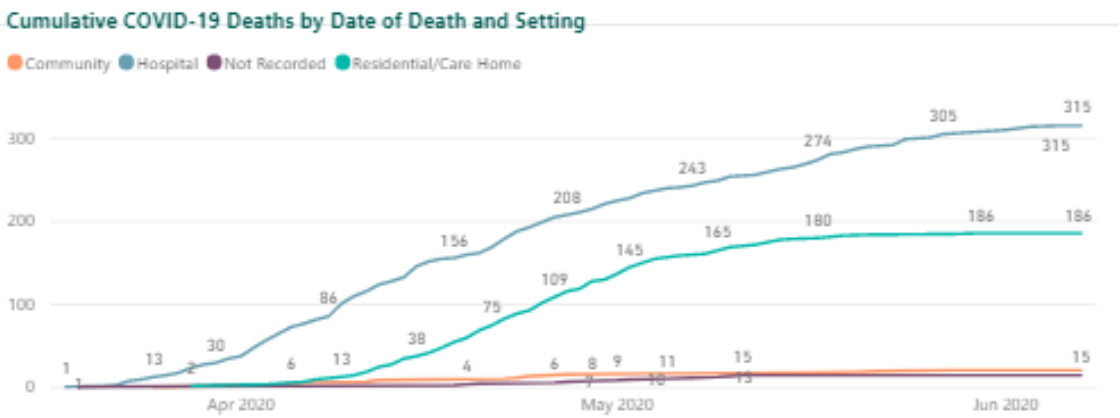


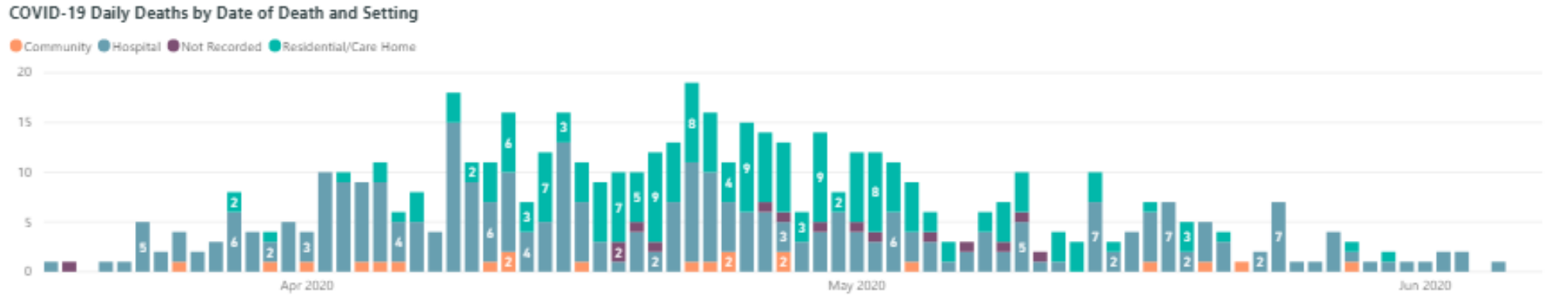
Note 1: Deaths in current reporting period include deaths which will have occured in that period, along with deaths which have only been reported within that period. For example, A death may occur on Thursday 30th April but not be reported until Saturday 2nd May

Note 2: Current Reporting Period = 10:00 on 06 June 2020 - 10:00 on 07 June 2020

Cumulative COVID-19 Deaths by Death Setting

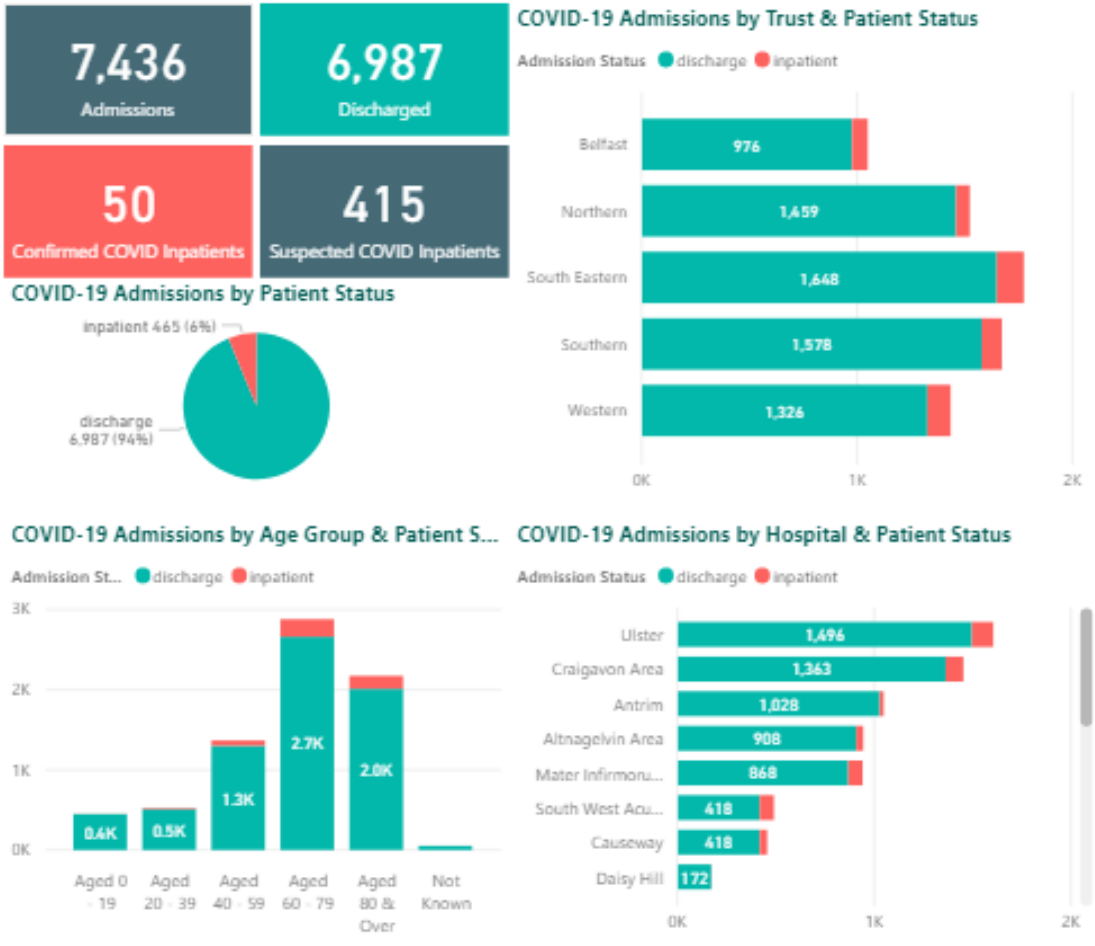


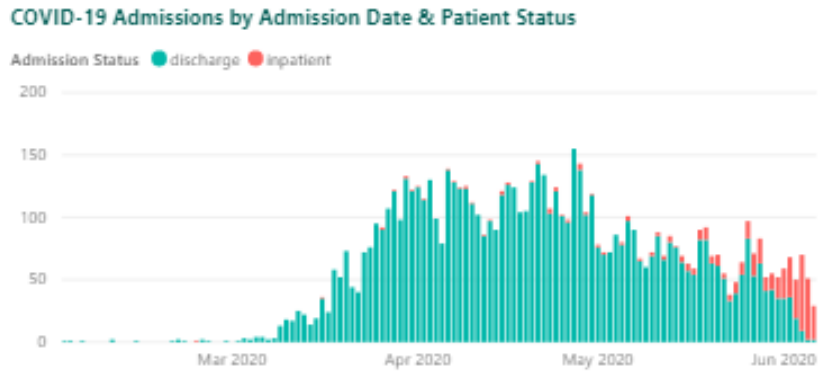


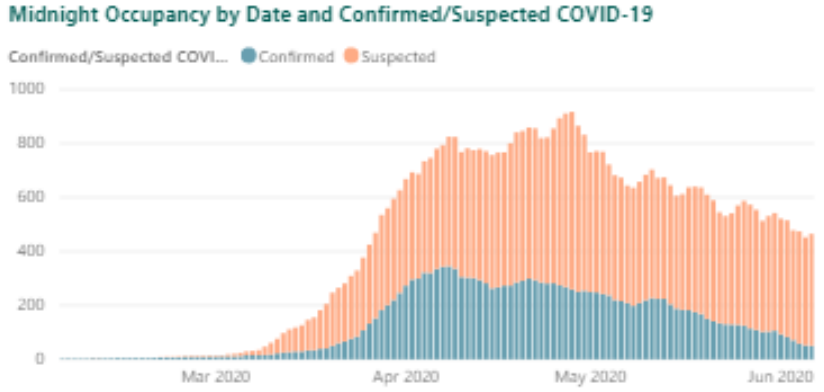


Note: The Community setting includes deaths recorded as occuring in Community, Hospice and Other settings. Information displayed reflects deaths reported to the PHA up to the end of the current reporting period, and includes individuals who have had a positive test for COVID-19 and died within 28 days, whether or not COVID-19 was the cause of death. A broader picture on COVID-19 fatalities is provided in the weekly NISRA bulletin which details deaths across hospital and community settings. NISRA figures are derived from the formal process of death registration and may include cases where the doctor completing the death certificate diagnosed suspected cases of COVID-19.

COVID-19 Admissions by HSC Trust, Age Group & Patient Status:
Covid-19 Admissions by Admission Date & Occupancy by Date and Confirmed and Suspected Covid-19

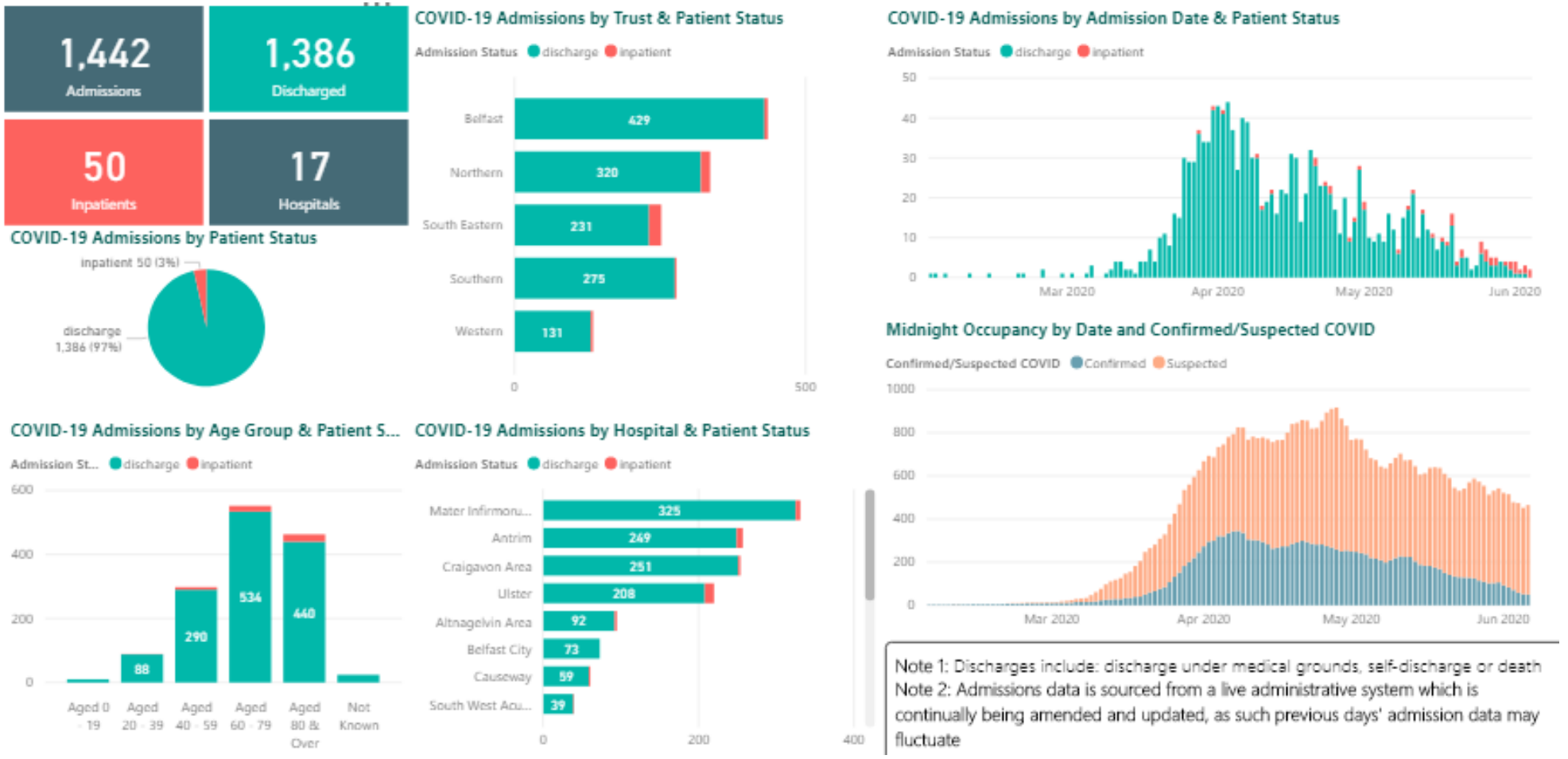




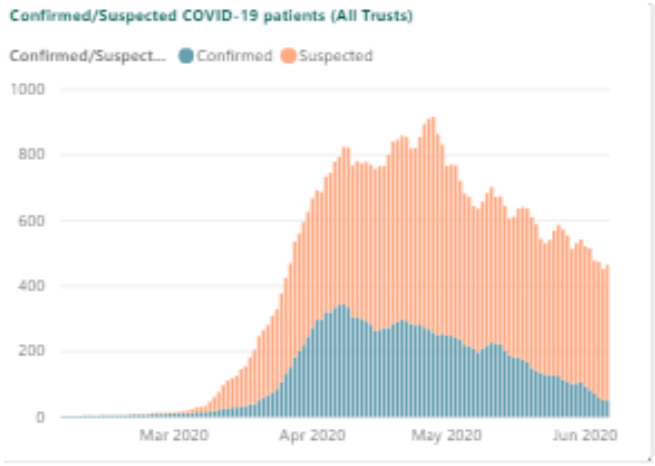


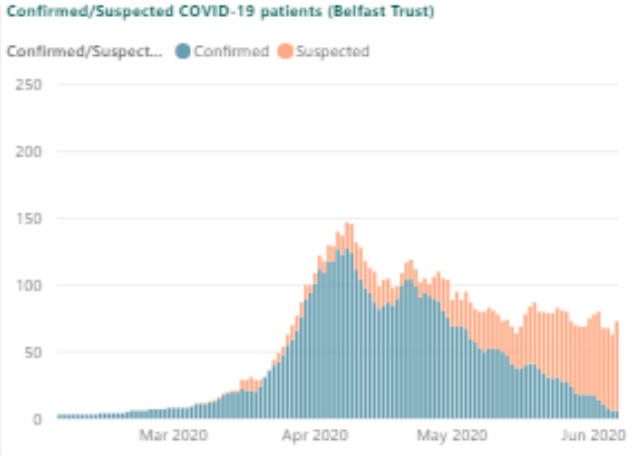
Note 1: Discharges include: discharge under medical grounds, self-discharge or death
Note 2: Admissions data is sourced from a live administrative system which is continually being amended and updated, as such previous days' admission data may fluctuate

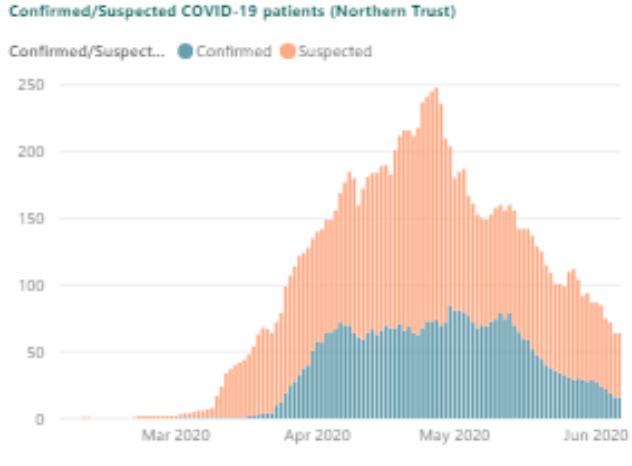
Confirmed COVID-19 Admissions by HSC Trust, Age Group & Patient Status: Covid-19 Admissions by Admission Date & Occupancy by Date

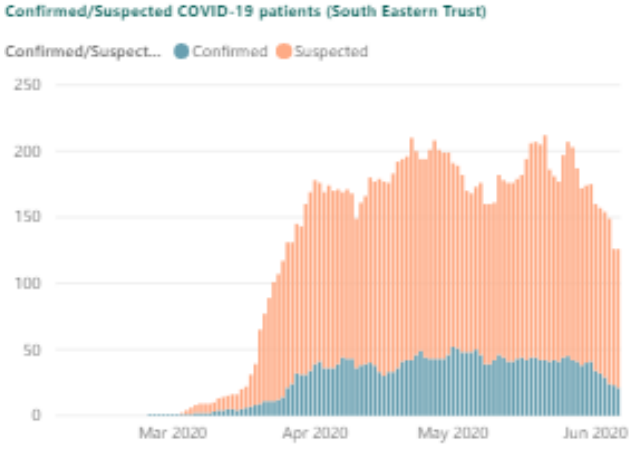


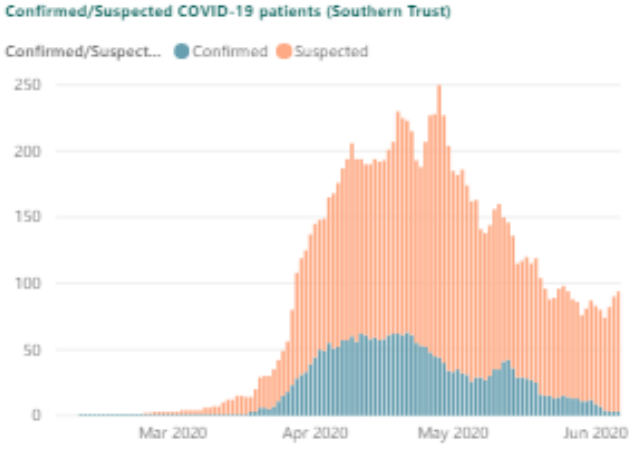
COVID-19 Inpatients by HSC Trust: Confirmed and Suspected COVID-19

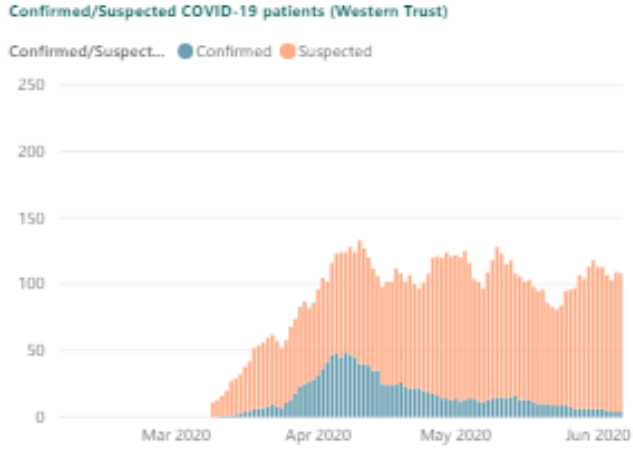




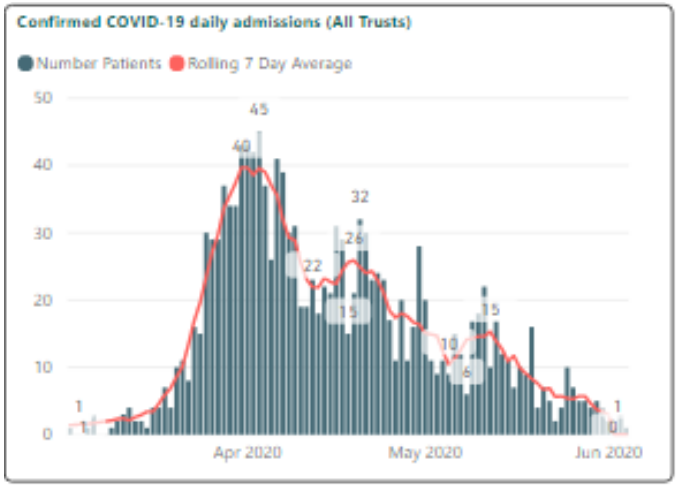


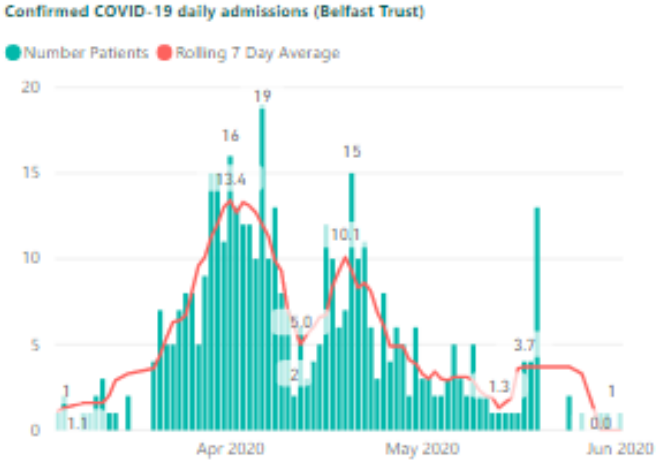


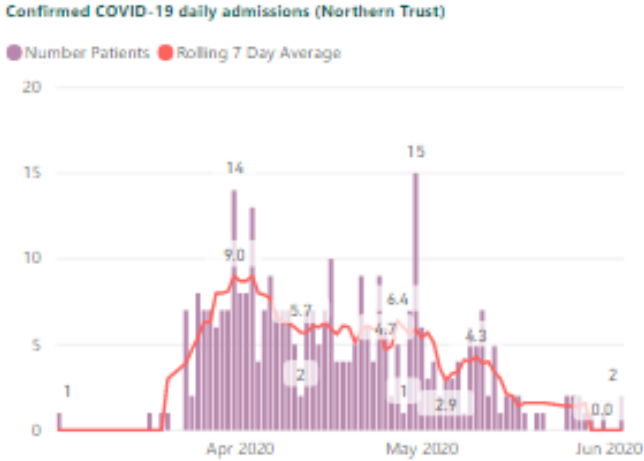


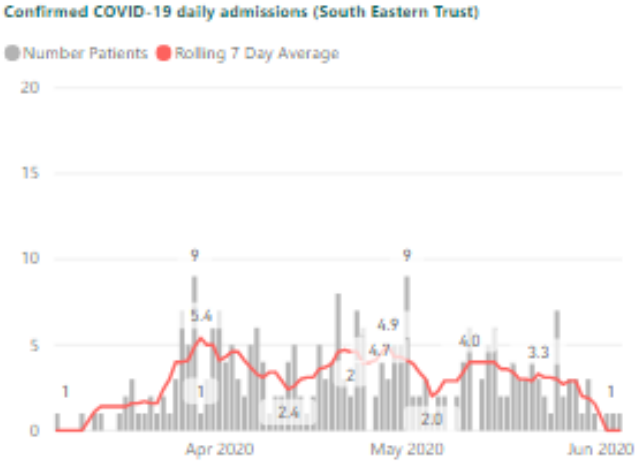


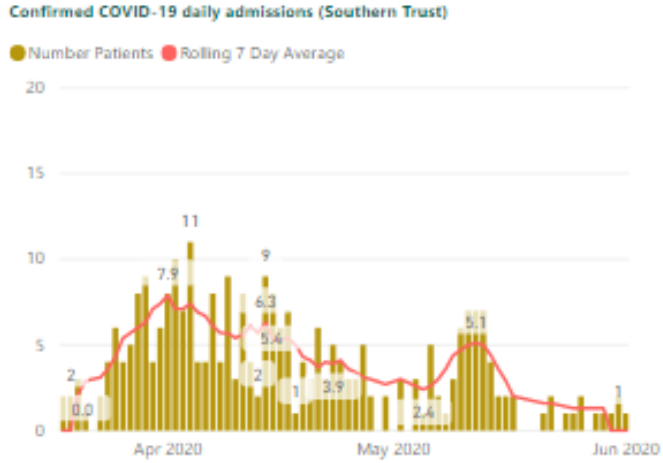
Confirmed COVID-19 Daily Admissions by HSC Trust

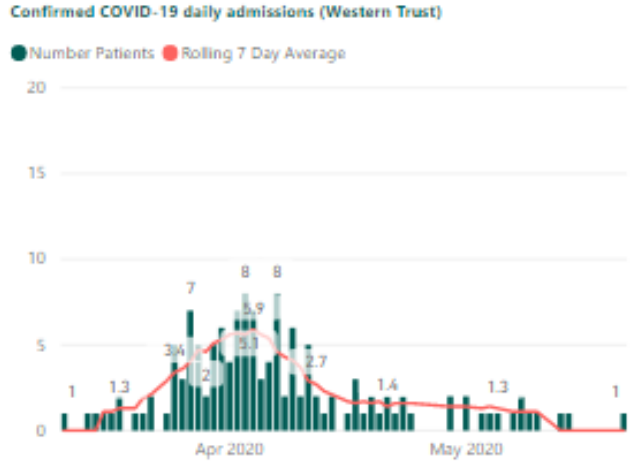








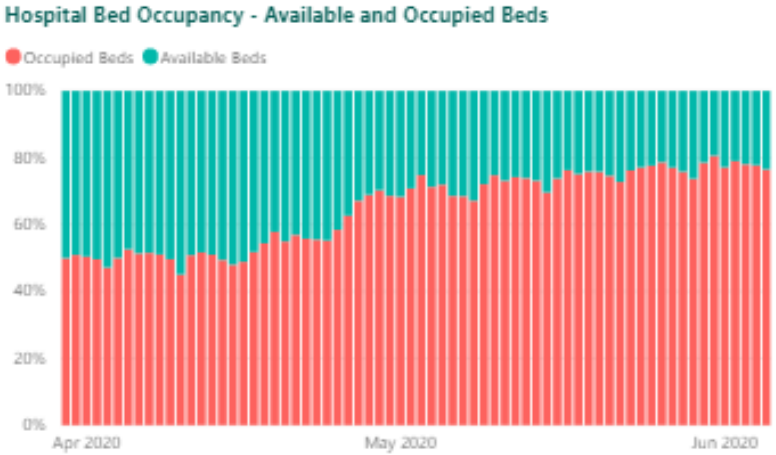


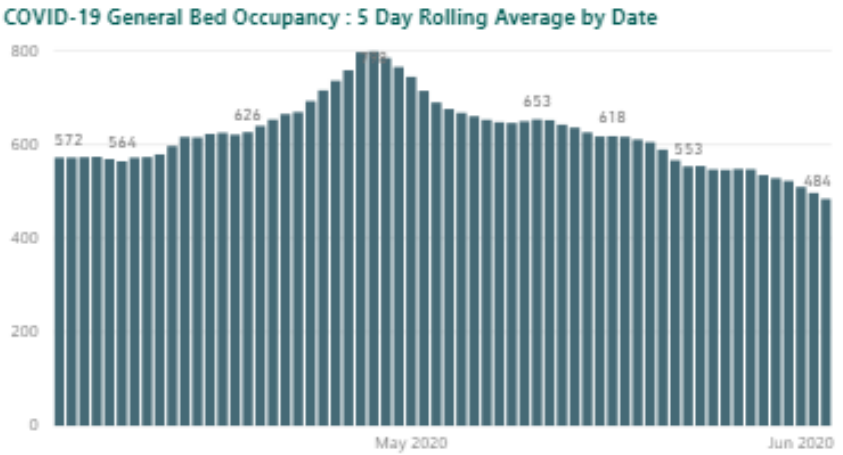


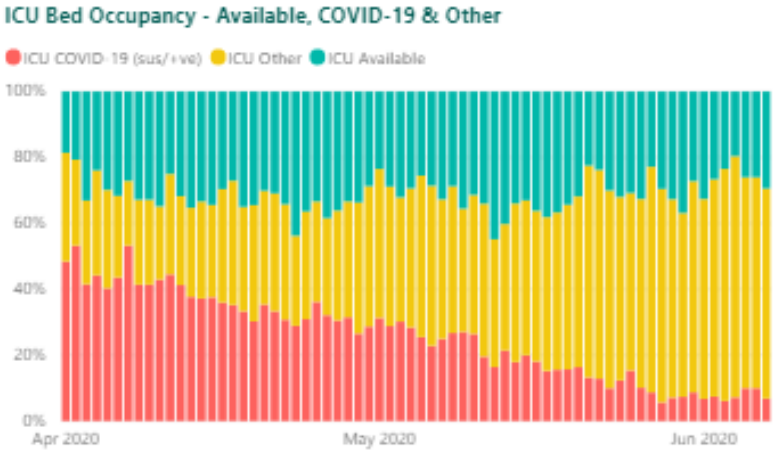
Bed Capacity:

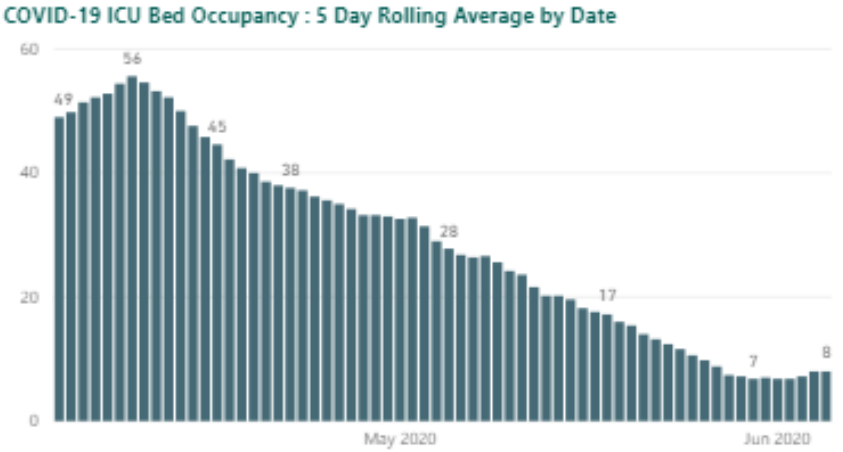
Available & Occupied Beds, ICU COVID-19 suspected and positive, ICU Other and ICU Beds Available. COVID-19 Bed Occupancy-General and ICU 5-day Rolling Average.

3,561	Total Beds
2,725	Total Occupied Beds
77%	Occupancy %
102	Total ICU Beds
7	Total ICU COVID-19 (sus/+ve)
30	Total ICU Available
65	Total ICU Other









COVID-19 Care Home Total Acute Respiratory Outbreaks: Active Cases Confirmed COVID-19, Suspected COVID-19 and Closed Outbreaks.

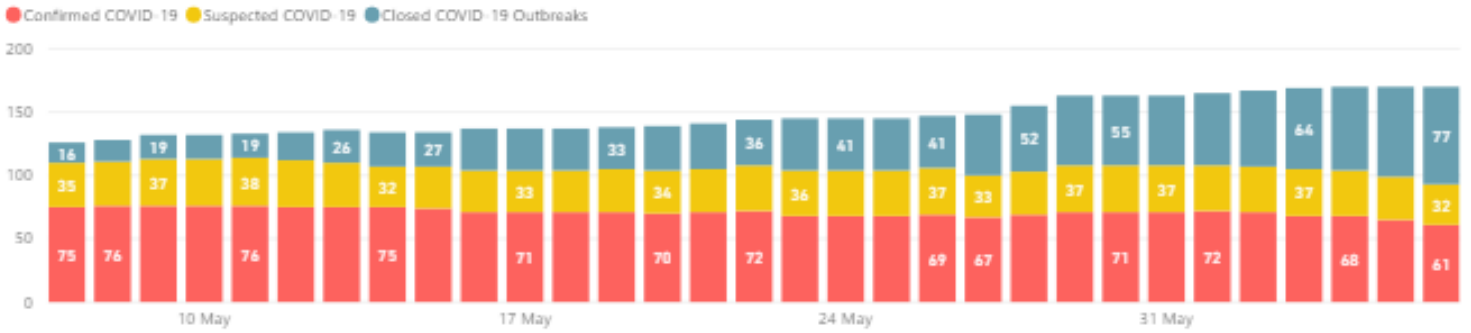
170
Total Acute Respiratory Outbreaks

61
Confirmed COVID-19

32
Suspected COVID-19

77
Closed COVID-19 Outbreaks

Confirmed COVID-19, Suspected COVID-19 and Closed COVID-19 Outbreaks by Reporting Date



Key Definitions

Suspected case of COVID-19*

Any resident (or staff) with symptoms of COVID-19 (high temperature or new continuous cough), or new onset of influenza like illness or worsening shortness of breath. *Symptoms may be more nuanced in older people with co-morbidities in care homes who may present with Flu Like Illness (FLI), respiratory illness, new onset confusion, reduced alertness, reduced mobility, or diarrhoea and sometimes do not develop fever. This may be true for COVID-19, so such changes should alert staff to the possibility of new COVID infection

Confirmed case of COVID-19

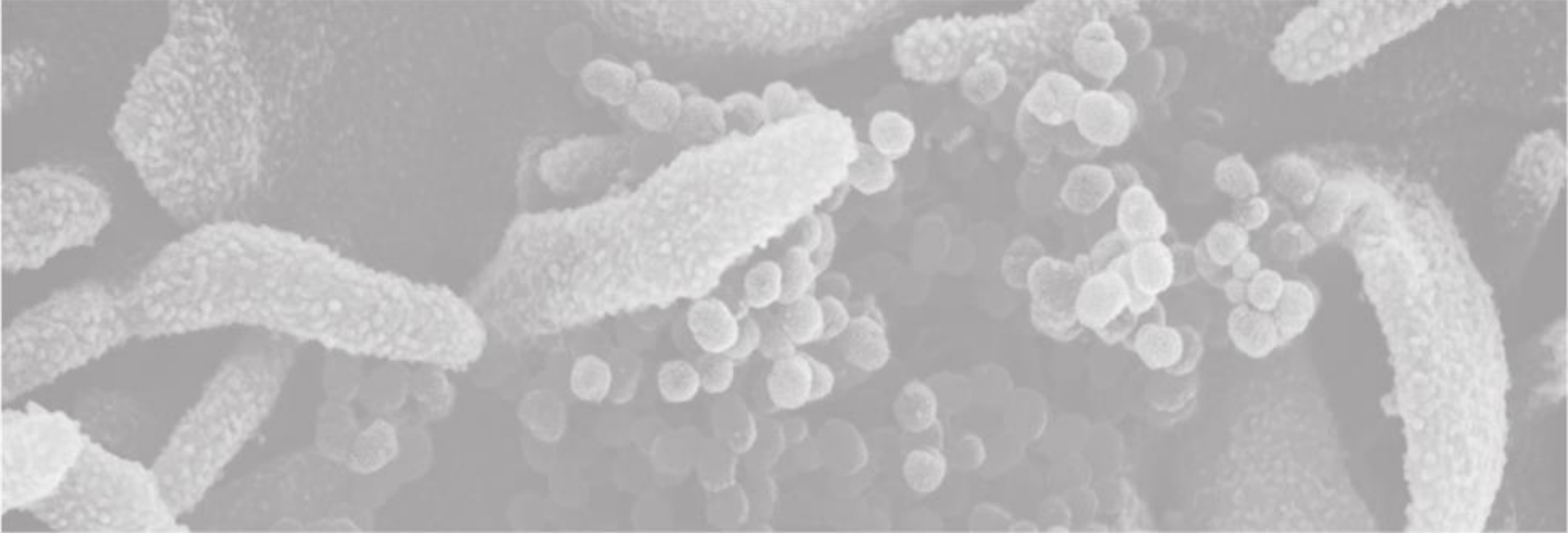
Any resident (or staff) with laboratory confirmed diagnosis of COVID-19.

Outbreak definition

Two or more cases in a facility which meet the case definition of a possible or confirmed case of COVID-19, within a 14-day period among either residents or staff in the care home **Note:** In a situation where a care home is reporting one possible case, the duty room in PHA will arrange for a swab to be undertaken for the symptomatic patient. If the test results for the single case is positive or any additional cases are reported during the monitoring period than further testing is advised for all staff and residents in line with the new guidance for testing.

Declaring the End of an Outbreak/outbreak closed

An outbreak can be declared over when there are no new cases for 14 days after symptom onset of most recent case.



INFORMATION ANALYSIS DIRECTORATE

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