

Epidemiological Report

First year of the COVID-19 pandemic in Ireland

May 2022

COVID-19 pandemic in Ireland, 2nd March 2020 – 6th March 2021

Summary	Number	Percent
Total number of confirmed cases	223,142	
National cumulative incidence of confirmed cases per 100,000 population	4686.0	
Total number of cases hospitalised	13,082	5.86
National cumulative incidence of confirmed hospitalised cases per 100,000 population	274.7	
Total number of cases admitted to ICU	1,407	0.63
National cumulative incidence of confirmed cases admitted to ICU per 100,000 population	29.6	
Total number of deaths among confirmed cases (as of 09/08/2021)	4,600	2.06
Case fatality ratio (CFR, %)		2.06
National cumulative incidence of confirmed deaths per 100,000 population	96.6	
Total number of outbreaks, excluding private houses	4,180	
Total number of cases associated with outbreaks, excl. family outbreaks/private houses	45,951	20.59
Total number of imported cases	1,286	0.58
Number of cases in healthcare workers	27,878	12.49
Males	106,303	47.53
Females	117,340	52.47
M:F ratio	0.91	
Median age (years)	38	
Mean age (years)	40	
Age range (years)	0 - 108	

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First year of the COVID-19 pandemic in Ireland

Overview

- 223,708 COVID-19 cases were reported in Ireland during the first complete year of the pandemic (2nd March 2020 – 6th March 2021), of which 223,142 cases were confirmed
- The incidence rate of confirmed cases was 4,686 per 100,000 population: this corresponds to almost 1 in 20 people in Ireland being diagnosed with COVID-19 during this time period
- There were three distinct waves to the pandemic during the first complete year of the pandemic (Figure 1):
 - **Wave 1** occurred in spring/early summer and covered the period from weeks 10 to 31 2020 (2nd March – 1st August 2020)
 - **Wave 2** occurred in late summer/autumn from Week 32 to Week 47 2020 (2nd August – 21st November 2020)
 - **Wave 3** covered the winter period from Week 48 2020 to Week 9 2021 (22nd November 2020 – 6th March 2021) and continued beyond year 1
- 4,859 deaths were reported, of which 4,600 (94.7%) were in confirmed cases
- The mortality rate among confirmed cases was 96.6 per 100,000 population: this corresponds to almost 1 in 1,000 people in Ireland dying with COVID-19

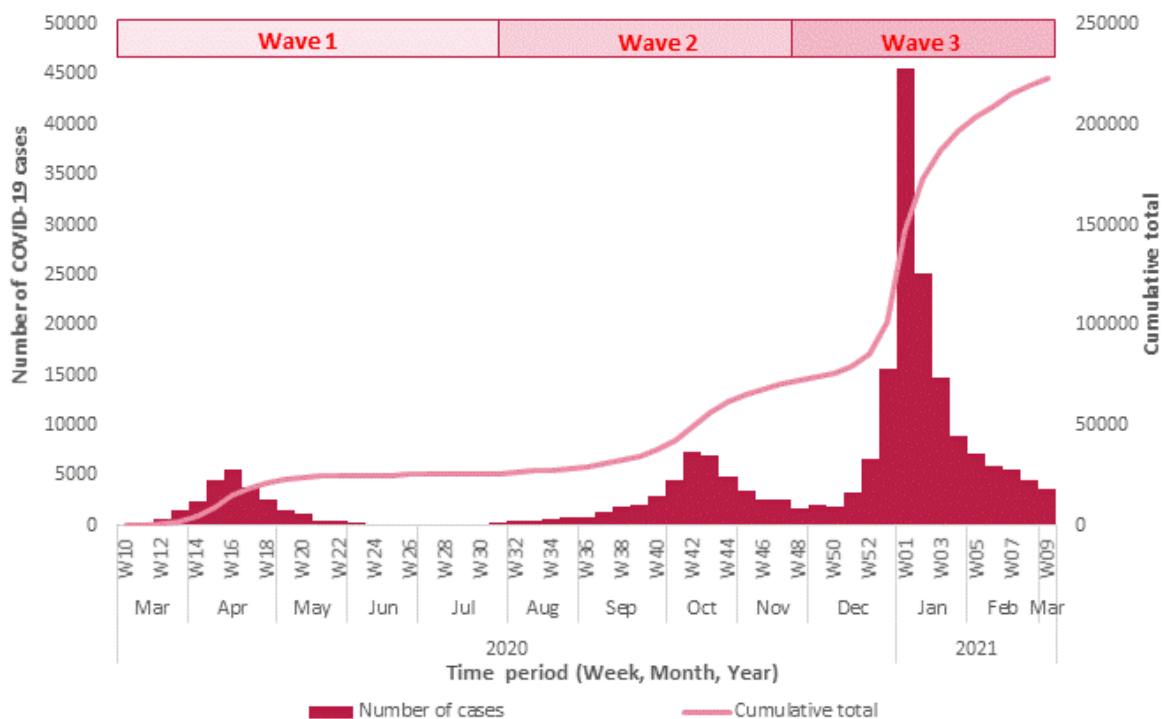


Figure 1. Number and cumulative number of confirmed COVID-19 cases notified in Ireland by notification week for the period 2nd March 2020 (Week 10 2020) – 6th March 2021 (Week 9 2021)

Please note, there was a delay in processing cases in late December/early January due to the surge in COVID-19 over this period so the magnitude of the peak in Week 1 2021 may be exaggerated

Timeline

Global

- By late December 2019, the first reports of an outbreak of viral pneumonia of unknown cause were coming from Wuhan in Hubei Province, China
- On 9th January 2020, a novel coronavirus, SARS-CoV-2, was identified as the causative agent of the outbreak in Wuhan
- By late January 2020, the first cases were being reported in Europe with Lombardy and the surrounding regions in Northern Italy becoming the initial European epicentre
- On 11th March 2020, a global pandemic was declared by the World Health Organisation (WHO)

Ireland

- On 29th February 2020, the first case of COVID-19 in Ireland was reported
- On 12th March 2020, schools, colleges and childcare facilities were closed and people were asked to work from home
- On 16th March 2020, advice was given to avoid all non-essential travel
- On 27th March 2020, the first national lockdown in Ireland was announced with the “Stay at home” order
- Wave 1 peaked during Week 16 2020, with 1,130 cases reported on 14th April 2020
- On 18th May, the Government published a roadmap for the phased easing of lockdown restrictions
- In August 2020, increasing cases of COVID-19 were reported in Kildare, Offaly and Laois, including a number of outbreaks occurring in meat processing plants, resulting in a regional lockdown being implemented
- On 15th September 2020, a medium-term plan for living with COVID-19 was announced by the Irish government with details of a 5-level approach (with the highest restrictions at Level 5) to deal with the pandemic in Ireland (<https://www.gov.ie/en/campaigns/resilience-recovery-2020-2021-plan-for-living-with-covid-19/>)
- On 18th September 2020, Dublin was placed under Level 3 restrictions with the remainder of the country under Level 2 restrictions
- Wave 2 peaked during Week 42 2020, with 1,267 cases reported on 16th October 2020
- On 21st October 2020, Level 5 restrictions were introduced nationwide for a period of 6 weeks up to 1st December 2020
- Many restrictions were lifted from early December 2020 in the lead-up to the Christmas and New Year holidays
- By the end of Week 51 2020 (late December), there were signs that COVID-19 cases were increasing again
- There was a surge in cases from Week 53 2020 to Week 3 2021 (last week of December 2020 and first 3 weeks of January 2021)
- On 31st December 2020, Level 5 restrictions were re-introduced nationwide
- Wave 3 peaked during Week 1 2021, with 8,238 cases reported on 7th January 2021; however, the surge in COVID-19 at this time resulted in a delay in processing cases with many cases from Week 53 2020 not being notified until Week 1 2021. Based on the epidemiological date (see definition in the Methods section below), the peak of Wave 3 occurred in Week 51. The alpha variant dominated during wave 3

- On 29th December 2020, the COVID-19 vaccination campaign started when a 79-year old woman became the first person in Ireland to receive the Pfizer-BioNTech vaccine in St James's Hospital, Dublin

Methods

The data presented in this report cover the period from **Week 10 2020 to Week 9 2021 (2nd March 2020 – 6th March 2021)**

Data were extracted from the Health Protection Surveillance Centre's **Computerised Infectious Disease Reporting (CIDR)** System on **10th May 2021**. Data validation is an ongoing process and the numbers presented here are subject to change. Please exercise caution when comparing reports over time.

Data on deaths were extracted on **9th August 2021**.

Data on outbreaks were extracted on **9th August 2021**.

Notification dates are the dates when cases are reported to Departments of Public Health; Epidemiological dates relate more closely to when symptoms were first experienced by a patient: it is the earliest available date on case review of onset date, laboratory specimen collected date, laboratory received date, date of diagnosis, laboratory reported date, notification date. Usually there is very little difference between these two dates, but occasionally there may be a lag in reporting to Departments of Public Health, such as when there is a surge in cases (e.g. Week 53 2020 – Week 1 2021).

Notification rates are expressed per 100,000 population and are calculated using population data from the 2016 census (www.cso.ie).

Case definition

- The latest case definition can be found at:
<https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casedefinitions/covid-19interimcasedefinitionforireland/>
- Please be aware that the case definition has changed over time throughout the pandemic
- Unless stated, only **CONFIRMED** cases are included in this report

Epidemiology

Beginning of the pandemic in Ireland

The first case of COVID-19 in Ireland was notified to HPSC on the 2nd March 2020 and over 1,000 cases were notified within three weeks of that first case. The early cases were related to travel, most commonly from Italy, United Kingdom, Austria, Spain and France, but non-travel related cases were soon identified in healthcare settings and in the community.

As COVID-19 was an entirely new disease, it took time for Irish laboratories to build up testing capacity and there were delays between disease onset/specimen collection and testing in March and April 2020, as illustrated by the difference in the distribution of cases by notification date and epidemiological date (earliest date associated with the case) (**Figure 2**). In the early stages of the

pandemic, some specimens were sent overseas for testing while capacity was being strengthened in Ireland.

At the end of December 2020, the surge in COVID-19 resulted in a delay in processing cases on CIDR with many being notified in the subsequent week; hence, the case numbers for Week 53 appear lower while there is a large peak in Week 1 2021. Based on the epidemiological date, the real peak for Wave 3 was during Week 53 2020, not in Week 1 2021.

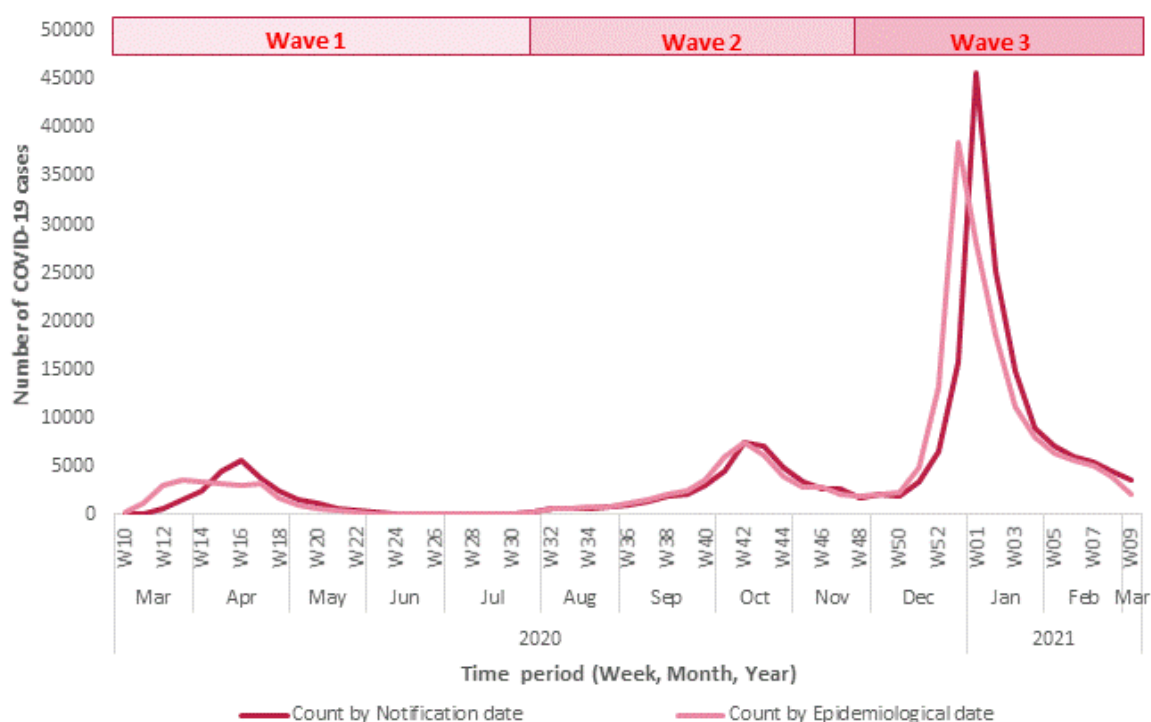


Figure 2. Confirmed cases of COVID-19 per 100,000 population by notification date and epidemiological date in Ireland, Week 10 2020 – Week 9 2021

*Epidemiological date is the earliest of the following dates: onset date, laboratory specimen collected date, laboratory received date, date of diagnosis, laboratory reported date, notification date

The first case in Ireland was notified to public health during Week 10 2020; however, 29 cases had earlier epidemiological dates, which are excluded from the count by epidemiological date

Cases

- 223,708 cases were reported in Ireland during the first complete year of the pandemic, of which 223,142 (99.7%) were confirmed cases
- The incidence rate of confirmed cases was 4,686 per 100,000 population: this is equivalent to almost 1 in 20 people (or 5%) who were resident in Ireland being diagnosed with COVID-19 infection

Age and sex profile of cases

- The distribution of COVID-19 cases by age group by week is shown in [Figure 3a](#), while the age-specific incidence rates for cases of COVID-19 by week are shown in [Figure 3b](#)

- The age- and sex-specific incidence rates for confirmed cases of COVID-19 are shown, along with deaths, by infection wave and for the entire first year of the pandemic in [Figures 4a-d](#)
- Age- and sex-specific incidence rates for confirmed cases of COVID-19 are shown, along with hospitalisations, ICU admissions and deaths for the entire first year of the pandemic in [Figure 5a-d](#)

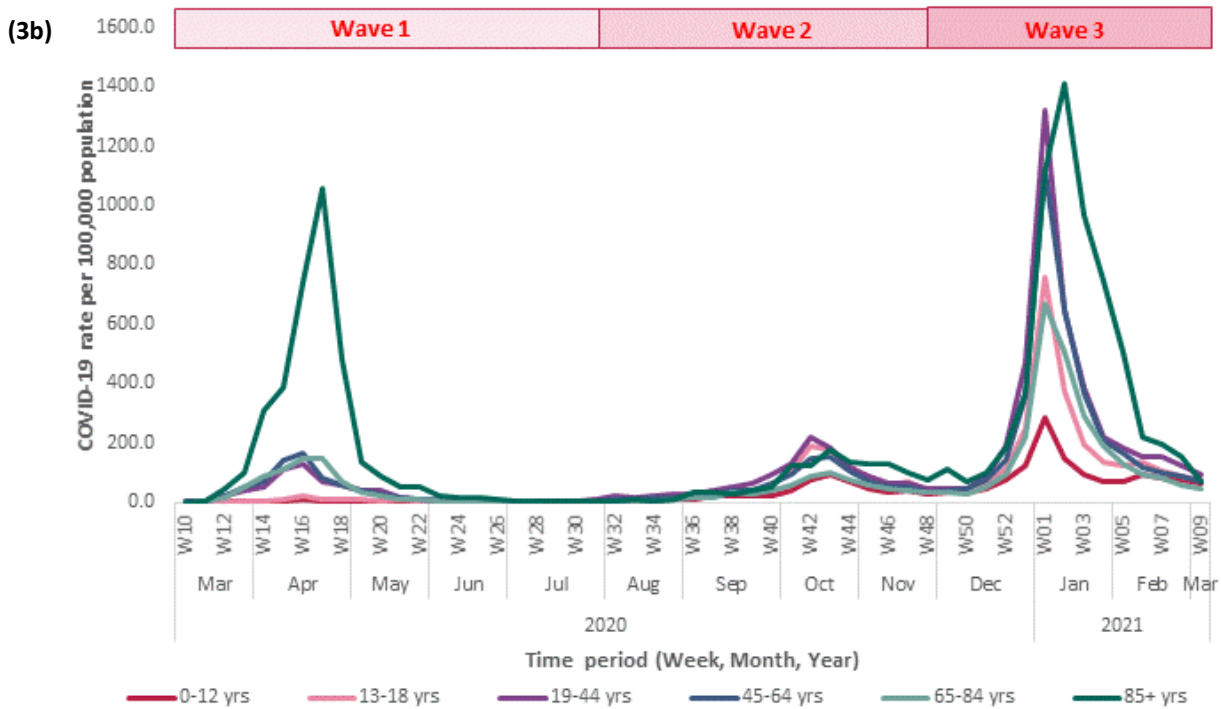
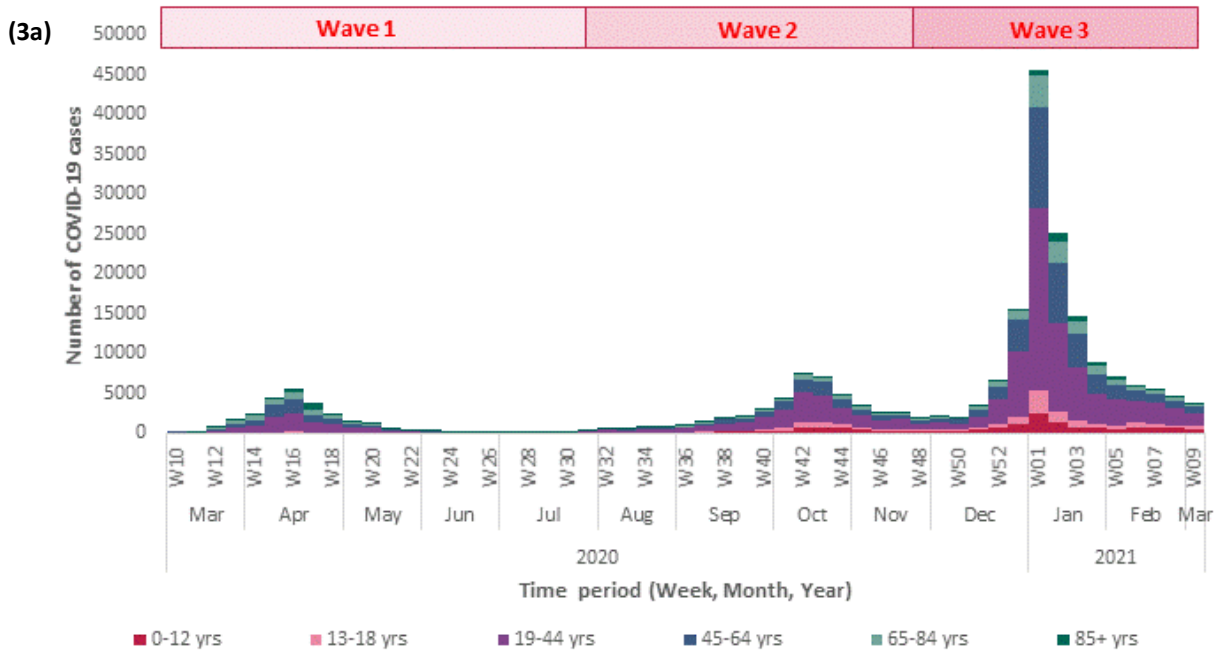
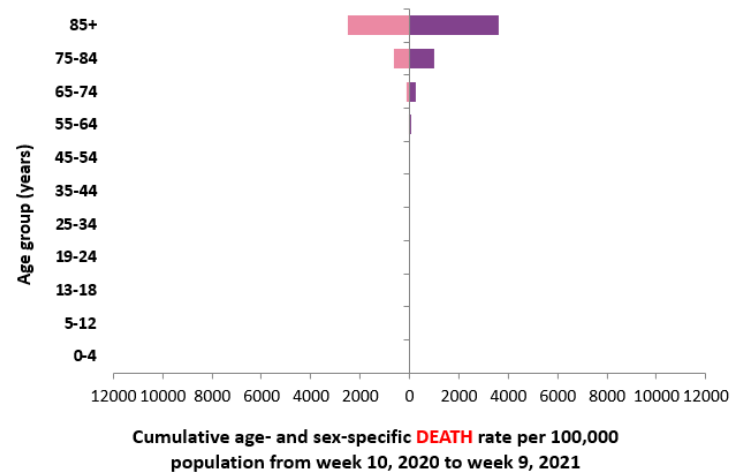
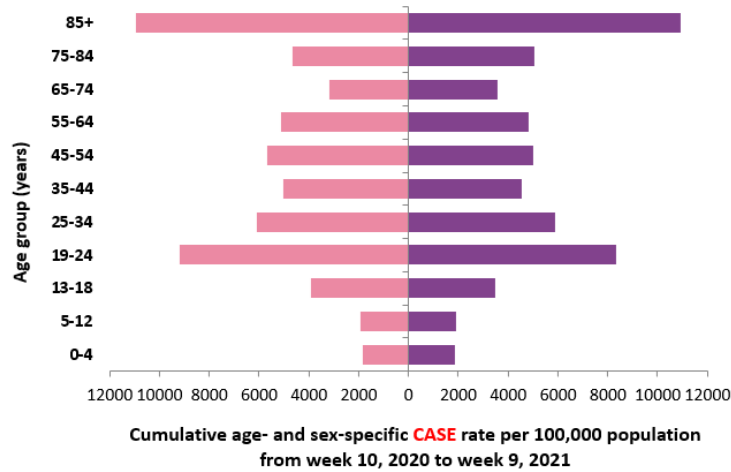


Figure 3. Numbers (3a) and rates (3b) of confirmed cases of COVID-19 by age group and week in Ireland, Week 10 2020 – Week 9 2021

(4a)



(4b)

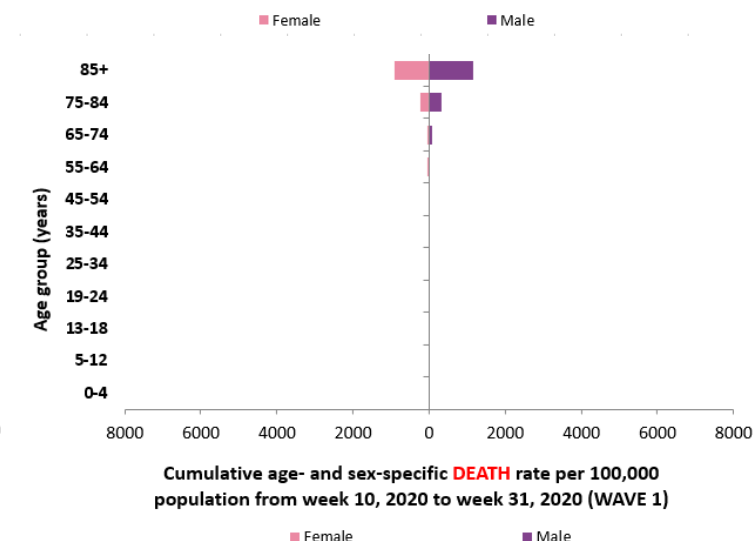
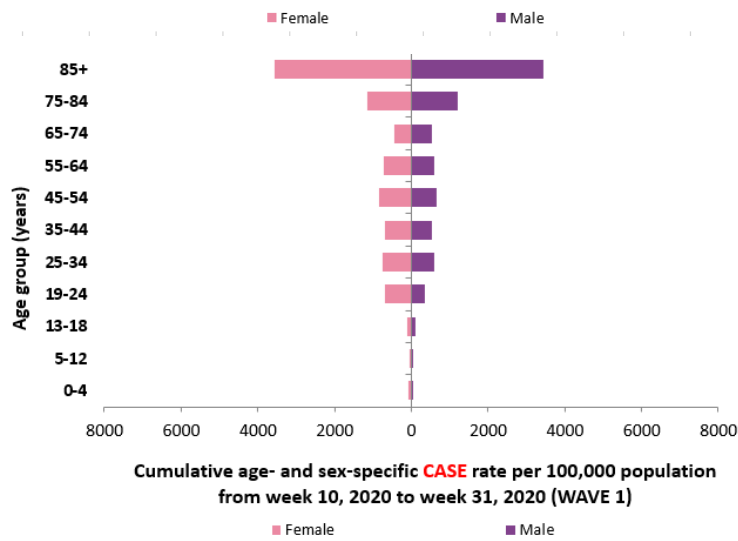
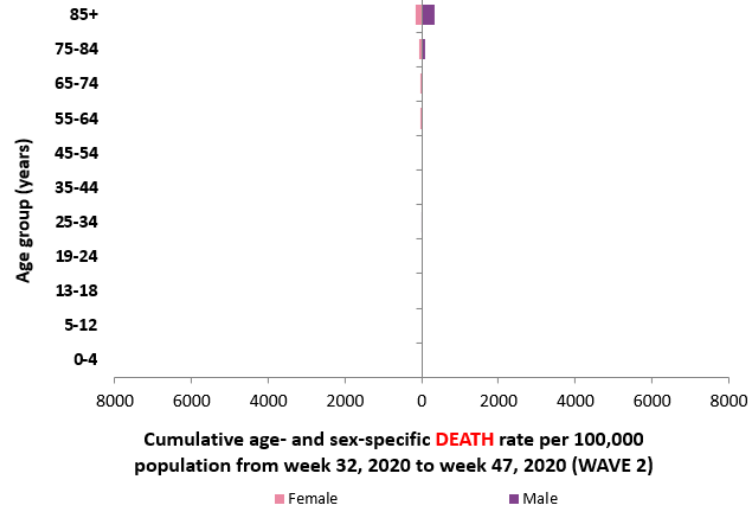
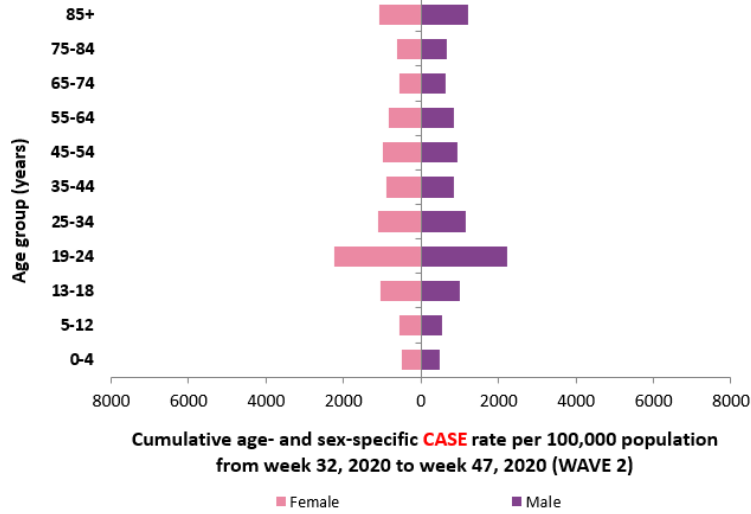


Figure 4. Comparison of age- and sex-specific case and deaths rates for (4a) first full year, (4b) Wave 1, (4c) Wave 2, and (4d) Wave 3 of the pandemic in Ireland, 2nd March 2020 – 6th March 2021

Note: the X-axis scales are the same for cases and deaths across all 3 waves of the pandemic (4b-4d) for ease of comparison; a different scale is used for the first full year (4a). hence these charts are not directly comparable with the others (4b-4d)

(4c)



(4d)

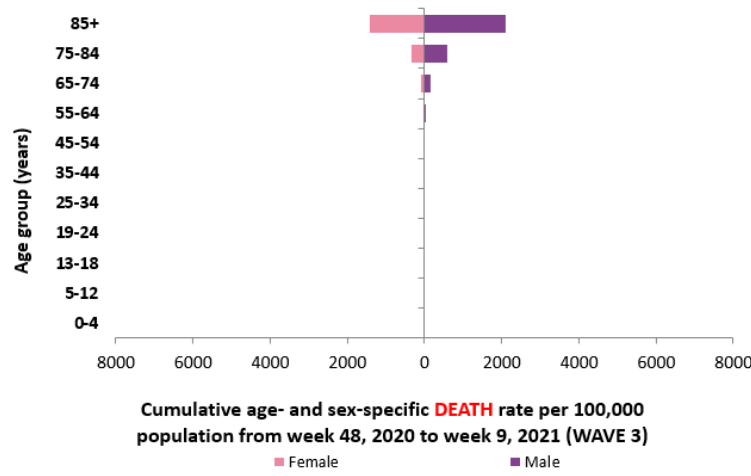
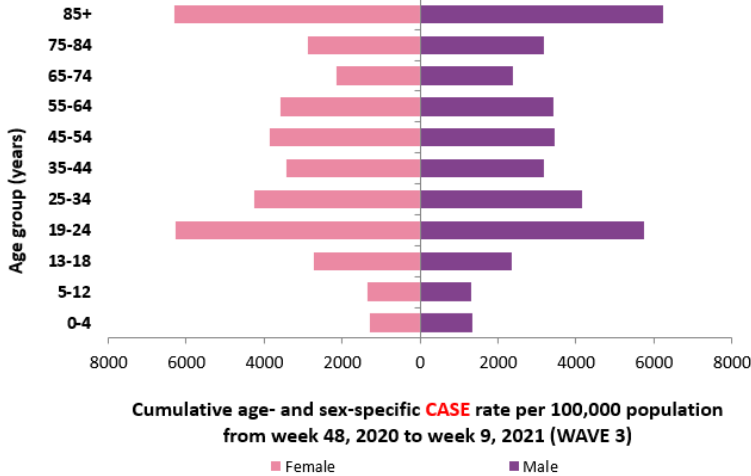


Figure 4 continued. Comparison of age- and sex-specific case and deaths rates for (4a) first full year, (4b) Wave 1, (4c) Wave 2, and (4d) Wave 3 of the pandemic in Ireland, Week 10 2020 – Week 9 2021

Please note: the X-axis scales are the same for cases and deaths across all 3 waves of the pandemic (4b-4d) for ease of comparison; a different scale is used for the first full year (4a) hence these charts are not directly comparable with the others (4b-4d)

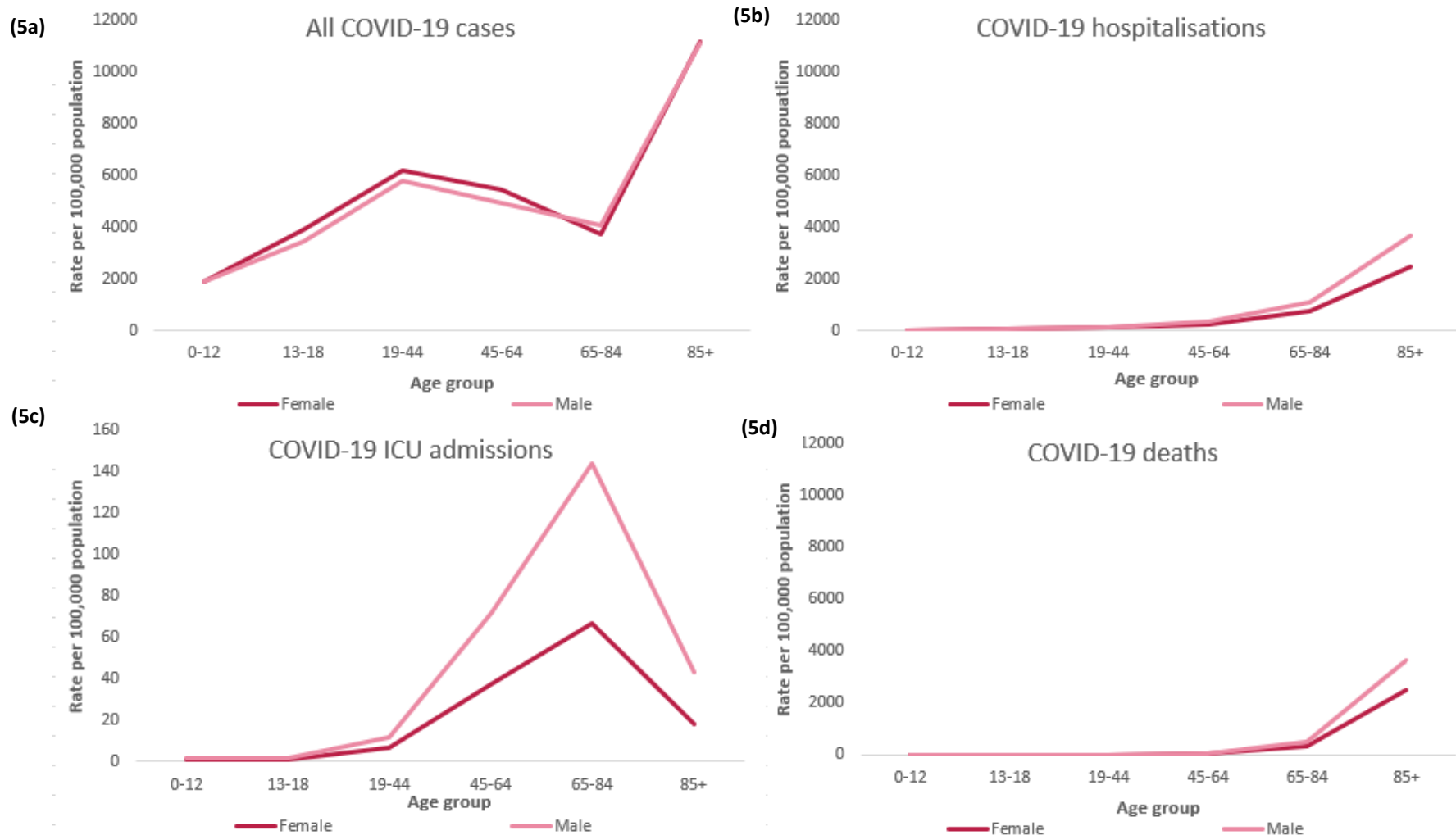


Figure 5. Age- and sex-specific rates for all COVID-19 cases, hospitalisations, ICU admissions and deaths during Year 1 of the pandemic in Ireland, Week 10 2020 – Week 9 2021

Please note: the Y-axis for 5a, 5b and 5d are the same for ease of comparison; the Y-axis for 5c differs from the others due to the smaller numbers admitted to ICU compared with the total cases, hospitalisations and deaths

Age and sex profile of cases (continued)

- Across all three waves, people aged under 65 years accounted for almost 87% of all cases; increasing from 75% in Wave 1 to 90% and 88% in Waves 2 and 3, respectively
- People aged 65 years and older accounted for just 13% of all cases; however, there was a significant decrease from 25% in Wave 1 and to 10% and 12% in Waves 2 and 3, respectively. This reflects the major impact of COVID-19 on nursing homes (NHs) and community hospital and long-stay institutions during Wave 1
- During Wave 1 (between March and July 2020), infection rates were highest in people aged 85 years and older, reflecting significant outbreaks in NHs and community hospital and long-stay institutions
- During Wave 2 (between August and November 2020), the age distribution changed significantly with the highest infection rates in adults aged 19-44 years followed by teenagers aged 13-18 years, reflecting outbreaks in food production and direct provision settings, in addition to increased socialising in general over the summer period following the easing of restrictions and the re-opening of schools
- During Wave 3 (from December 2020 onwards), the highest infection rates were in people aged 85 years and older, closely followed by adults aged 19-44 years and those aged 45-64 years. This reflects the surge in cases seen in Wave 3 following the lifting of restrictions in early December and the increased vulnerability of older people to COVID-19 infection due to the high level of multigenerational social mixing associated with the holiday period and a more transmissible dominant Alpha variant
- Overall, females accounted for 52.5% of all cases; however, in terms of rates of COVID-19 infection per 100,000 population, there was no major difference between the sexes across all age groups (Figure 5a)
- The COVID-19 incidence rates among hospitalised cases, ICU admissions and deaths due to COVID-19 were highest among males aged 65 years and older (Figures 5b-d). See sections on **Hospitalisations** and **ICU admissions** for more details on these cases

Geographic distribution

- COVID-19 has presented major challenges throughout Ireland with certain counties affected more than others at different points in the pandemic
- During the first year of the pandemic in Ireland (Figure 6 and Appendix B), the counties with the highest incidence rates (cases per 100,000 population) of COVID-19 were:
 - Monaghan (7861.7)
 - Louth (6602.8)
 - Cavan (6089.8)
 - Dublin (5750.8)
 - Limerick (5433.1)
 - Donegal (5352.7)
- The lowest rates were seen in Leitrim (2318.7), Wicklow (2903.3) and Kerry (2934.2)
- The counties most affected changed over the course of the year (Figure 7a-c):
 - Wave 1 – Cavan, Dublin, Monaghan
 - Wave 2 – Cavan, Donegal, Meath
 - Wave 3 – Monaghan, Louth, Limerick

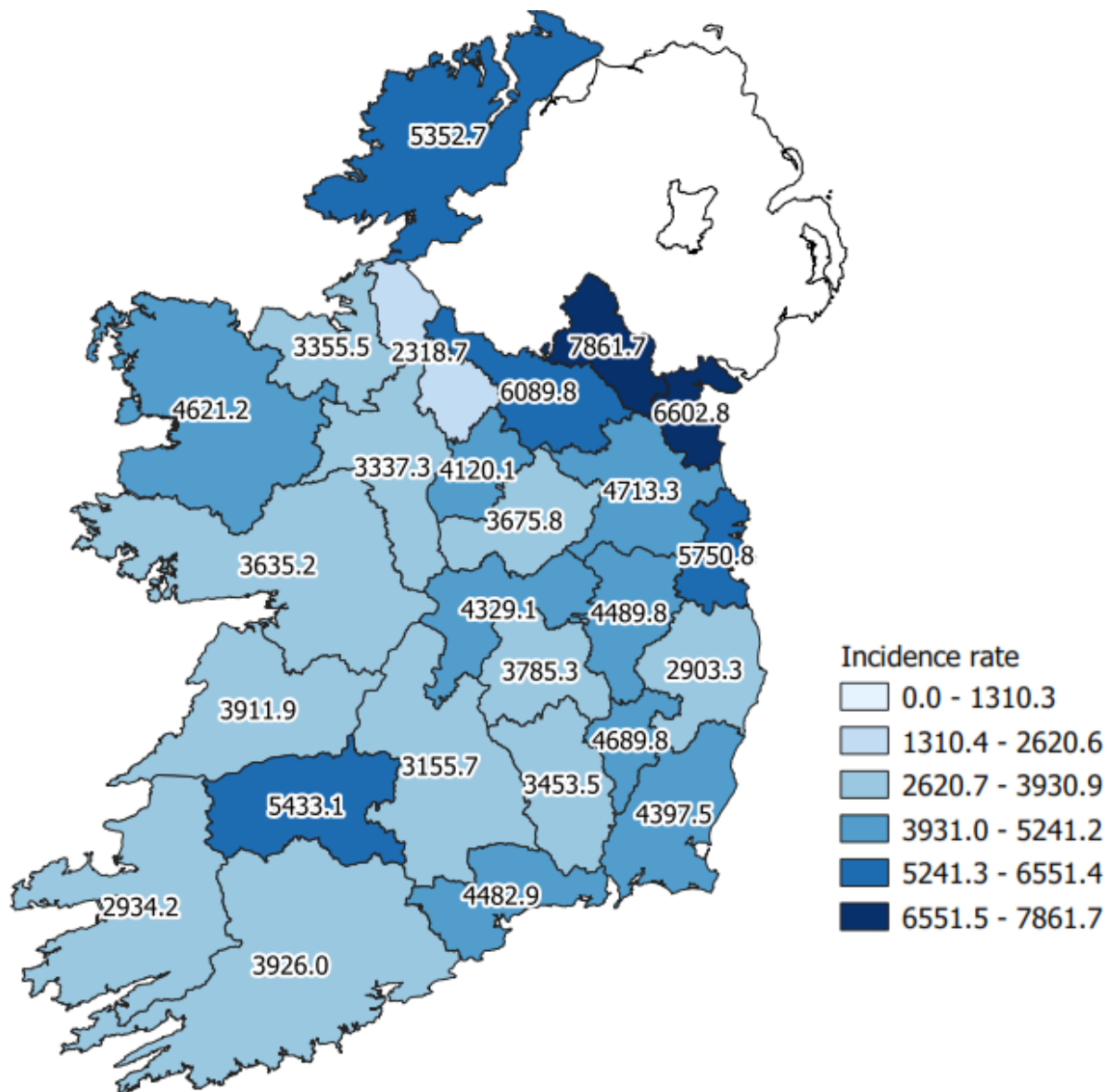


Figure 6. COVID-19 incidence rates (cases per 100,000 population) by county for the first complete year of the pandemic in Ireland, Week 10 2020 – Week 9 2021

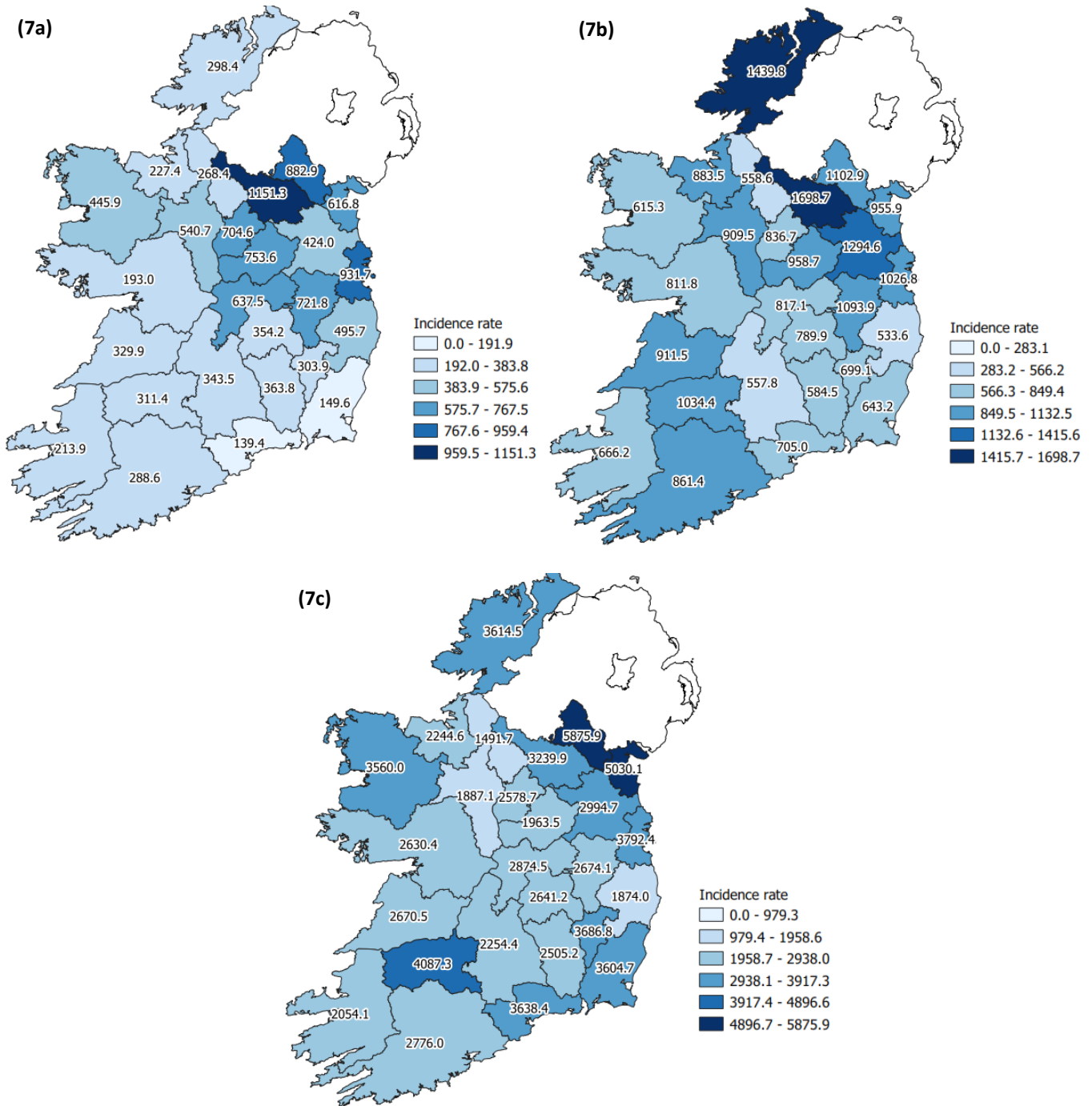


Figure 7a-c. COVID-19 incidence rates (cases per 100,000 population) by county for (7a) Wave 1, Week 10-31 2020; (7b) Wave 2, Week 32-47 2020; and (7c) Wave 3, Week 48 2020 – Week 9 2021

Please note: the scales and colour gradations for each map do not correspond with one another and should not be compared directly

Ethnicity

- Data on ethnicity were available for 73% of all cases
- According to the 2016 Republic of Ireland Census, ethnic minorities make up approx. 8% of the Irish population. Approx. 91% of reported COVID-19 cases have occurred in the white population and 9% among ethnic minorities (assuming that there is no bias in the reporting of ethnicity and/or with any specific ethnic minority being more likely to be reported as unknown)
- The highest incidence rates of COVID-19 were seen in Irish Travellers (Figure 8) followed by Black/Black Irish and Asian/Asian Irish (Table 1). Data from the UK during the first year of pandemic has shown that ethnic minorities are disproportionately affected by COVID-19 compared with their white counterparts. The reasons behind these disparities are multifaceted, including socio-economic circumstances, pre-existing health conditions and societal discrimination
- Poor outcome, in terms of deaths per 100,000 population, is slightly lower for Irish Travellers than for White Irish

Table 1. COVID-19 cases by ethnicity in Ireland, Week 10 2020 – Week 9 2021

Ethnicity	Total cases	Rate per 100,000 cases	Deaths	Deaths per 100,000 cases
White	143,451	3335.3	2,028	47.2
Asian/Asian Irish	4,452	4509.8	7	7.1
Black/Black Irish	3,948	6107.8	9	13.9
Irish Traveller	3,569	11517.7	13	42.0
Mixed background	1,582	2240.7	1	1.4
Unknown	66,140	-	2,470	-
Total	223,142	4,757.9	4,533	96.7

Please note: Some Irish Travellers may identify as White Irish

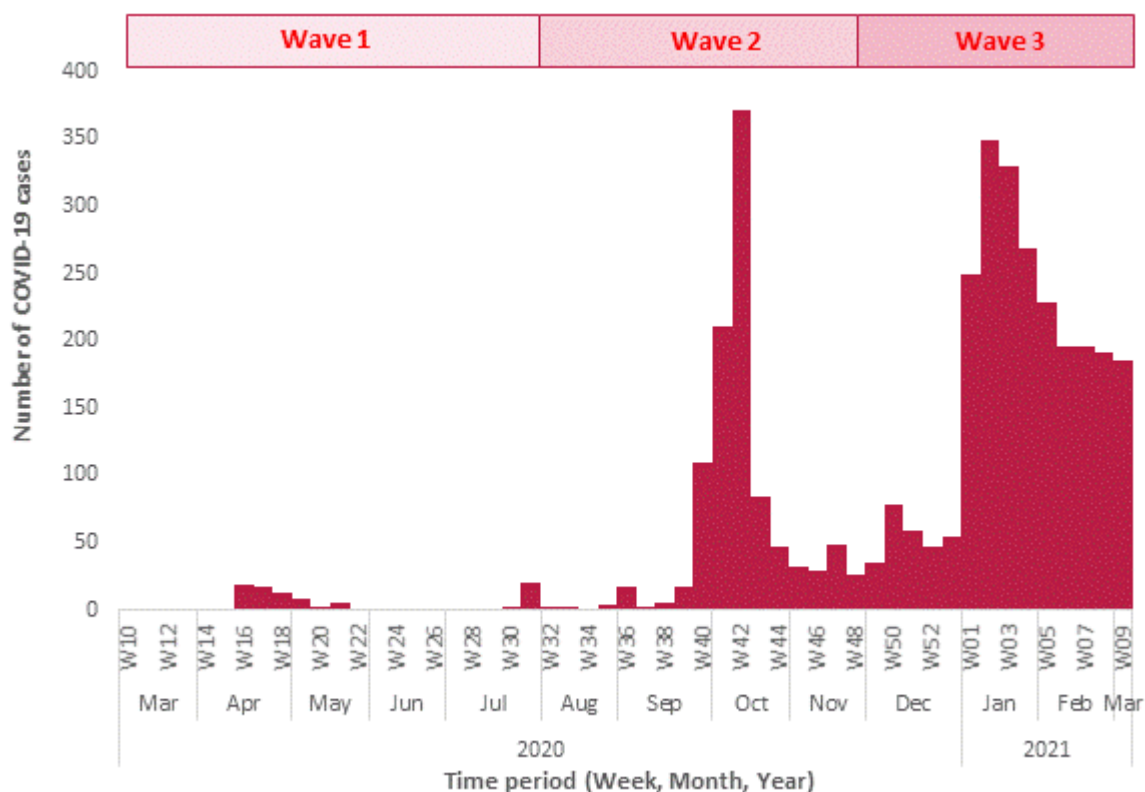


Figure 8. Cases of COVID-19 in people identifying as Irish Travellers by ethnicity by week, Week 10 2020 – Week 9 2021

Please note: data on ethnicity were not consistently collected until mid-June 2020 of the pandemic and thus the numbers of cases reported in Irish Travellers prior to this are likely to be an under-representation of the true figure

Presence of symptoms

- The majority of COVID-19 cases were reported to have been symptomatic (82%) (Figure 9)
- In Wave 1, 93% of cases were symptomatic, reflecting the stricter criteria used for testing during the earlier stage of the pandemic
- With the availability of testing becoming more widespread as the pandemic progressed, close contacts of confirmed cases who were asymptomatic became eligible for testing with the proportion of asymptomatic cases increasing from just 7% in Wave 1 to 26% in Wave 2 and 17% in Wave 3
- The surge in cases during Wave 3 resulted in asymptomatic close contacts not being tested from 15th January 2021 to 10th February 2021

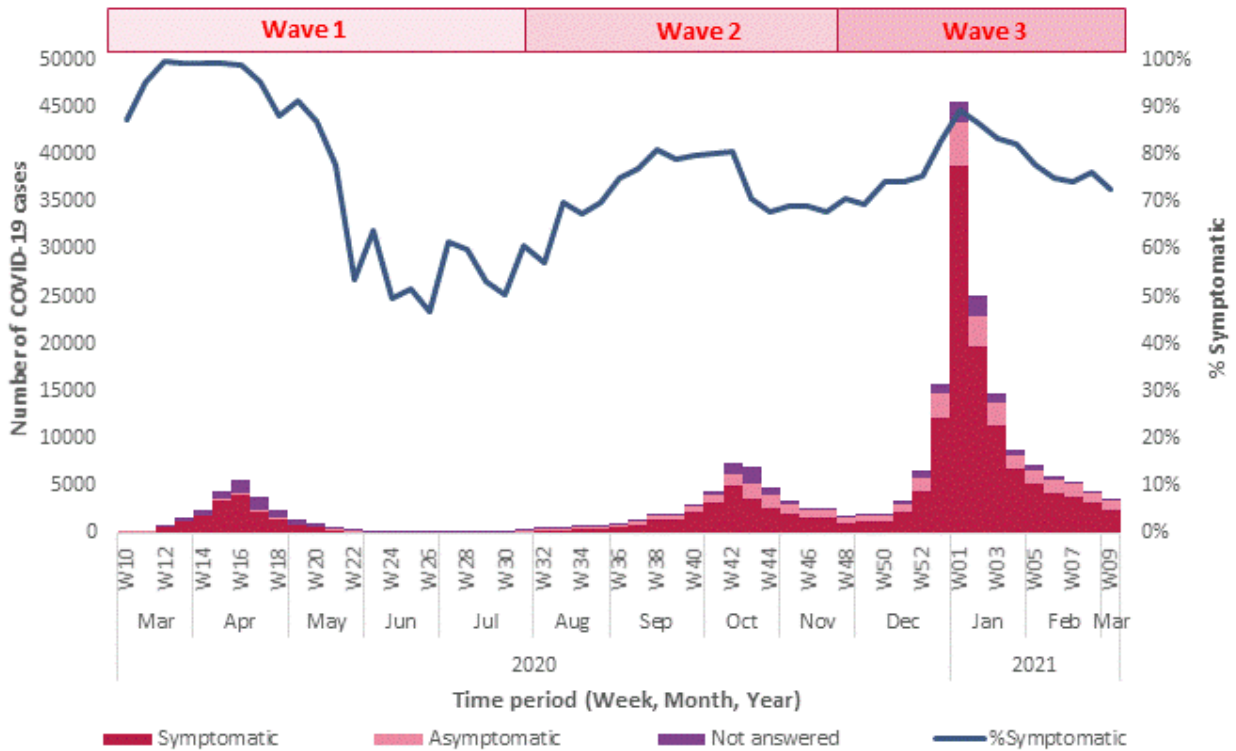


Figure 9. Cases of COVID-19 in people presenting as symptomatic versus asymptomatic and proportion of cases that are symptomatic by week, Week 10 2020 – Week 9 2021

Most Likely Transmission Sources

- Over the course of the pandemic, cases were asked to identify the most likely transmission source (MLTS) for their infection:
 - 57% of cases reported that they were close contacts of a confirmed case
 - 27% of cases were due to community transmission, i.e. they could not identify exactly how they had acquired COVID-19
 - 15% of cases were healthcare-acquired
 - 2% of cases were travel-related (cases associated with travel to another country, i.e. imported cases, or cases who acquired COVID-19 in Ireland from close contact with an imported case)
- Summaries of the MLTS for COVID-19 by wave and by week are shown in [Figures 10 and 11](#), respectively
- During Wave 1, the most likely source of transmission was healthcare-acquired (49%). This reflects the unique circumstances in Wave 1 with more serious cases being tested and with limited testing capacity, the majority of testing was done in healthcare settings. Travel-related cases also accounted for a higher proportion than in the other two waves (4%). Advice against non-essential travel for all Irish residents was introduced on 16th March 2020
- Close contact with a confirmed case was the most likely source of transmission in Waves 2 and 3 at 66% and 58% of cases, respectively. Community transmission also increased during these subsequent waves (26% and 28%, respectively)
- Healthcare-acquired cases increased from 6% of all cases in Wave 2 to 12% in Wave 3, reflecting the surge in cases at the end of 2020/start of 2021

- 1,286 cases were reported with a country of infection other than Ireland; the majority of these (90%) were reported as travel-related (Figure 12):
 - The countries most frequently reported were the United Kingdom (n=301) and Spain (n=135), accounting for 34% of all imported cases, with cases from 85 other countries making up the remainder
 - Distinct differences were seen in the profile of countries across the three waves (see Figures 13 and 14):
 - Cases from the UK were the highest of any country during Waves 1 and 3, reflecting the close links and proximity with Ireland
 - High numbers of cases from Italy, Austria and France during Wave 1, many of which were associated with skiing trips
 - Lowest overall numbers in Wave 2
 - Highest numbers overall in Wave 3 coinciding with Christmas/New Year: people returning to Ireland for the holidays; others returning early 2021 from family visits overseas
 - Increasing numbers from Brazil, United Arab Emirates (UAE), Poland, Romania and other countries in Wave 3

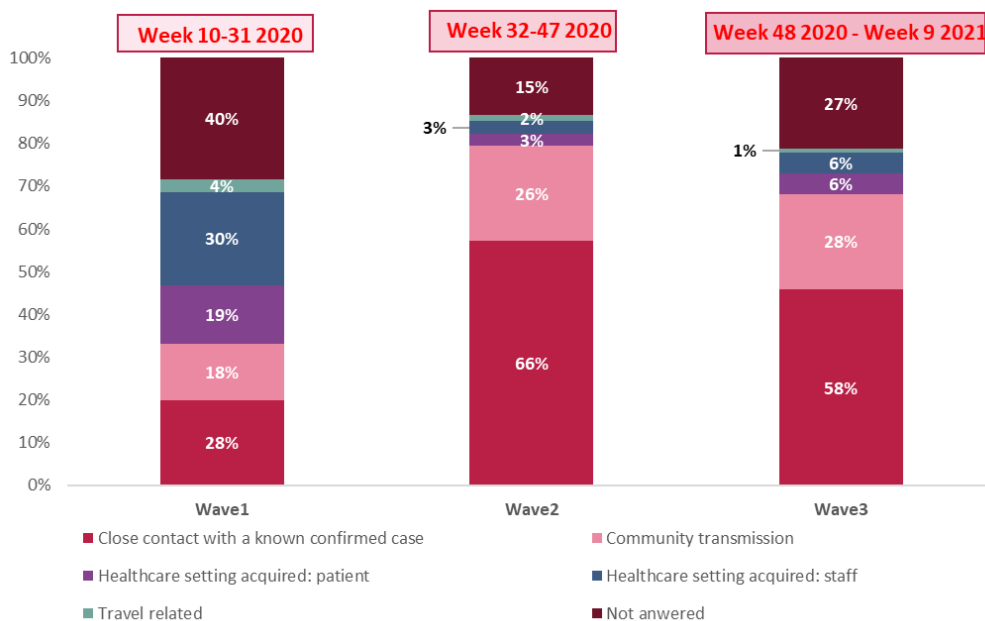


Figure 10. Most likely transmission source for cases of COVID-19 in Ireland by wave of infection

Please note: These data were not collected from a significant number of cases during Week 53 2020 and Week 1 2021 due to the surge in COVID-19 over this period; hence there are a high number of unknowns for those weeks

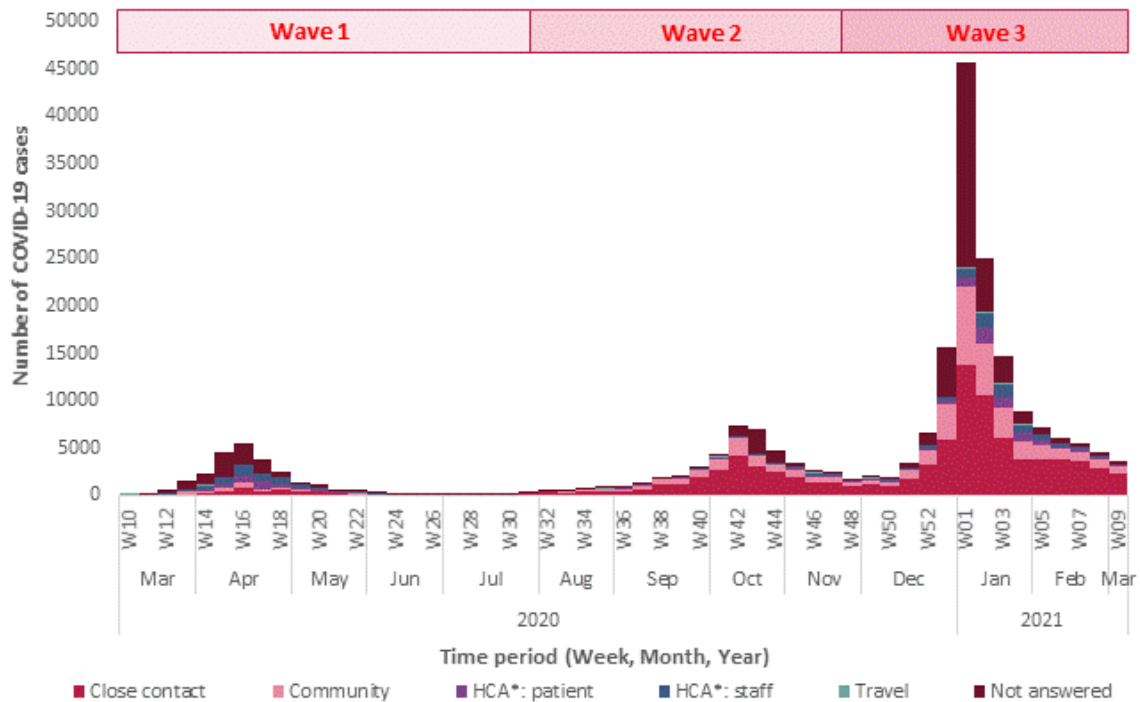


Figure 11. Most likely transmission source for cases of COVID-19 in Ireland by week, Week 10 2020 – Week 9 2021

*HCA, Healthcare-associated

Please note, this data was not collected from a significant number of cases during Week 53 2020 and Week 1 2021 due to the surge in COVID-19 over this period; hence there are a high number of unknowns for those weeks

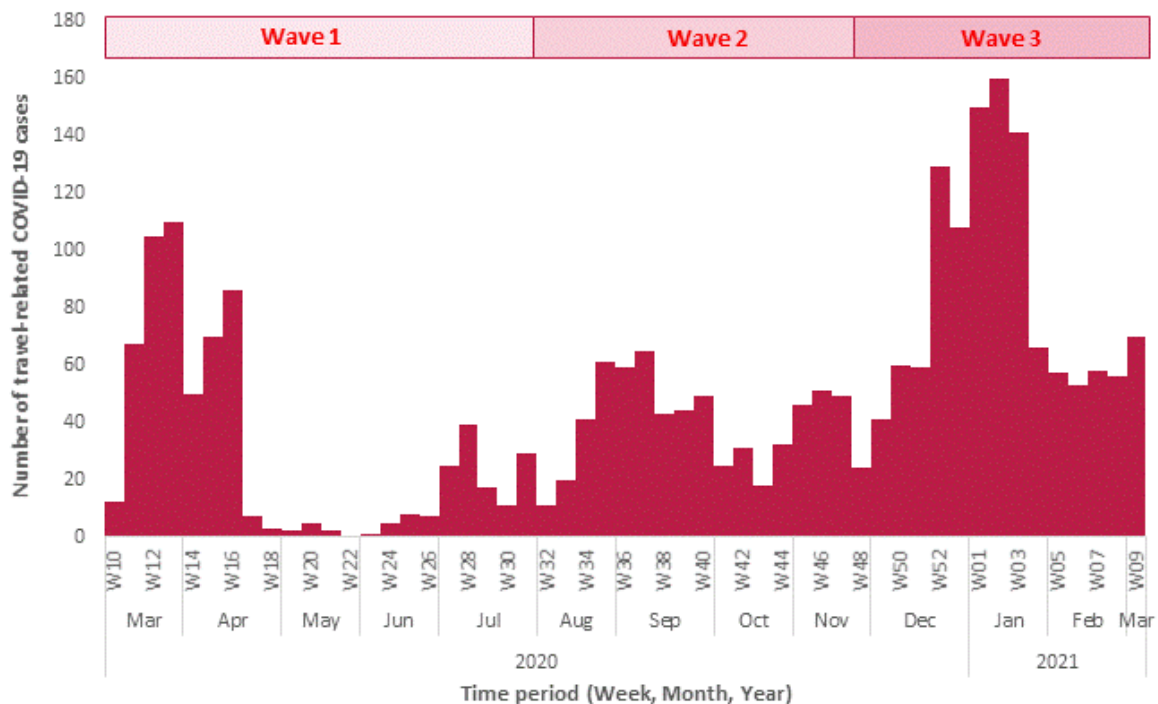


Figure 12. Travel-related cases of COVID-19 in Ireland by week, Week 10 2020 – Week 9 2021

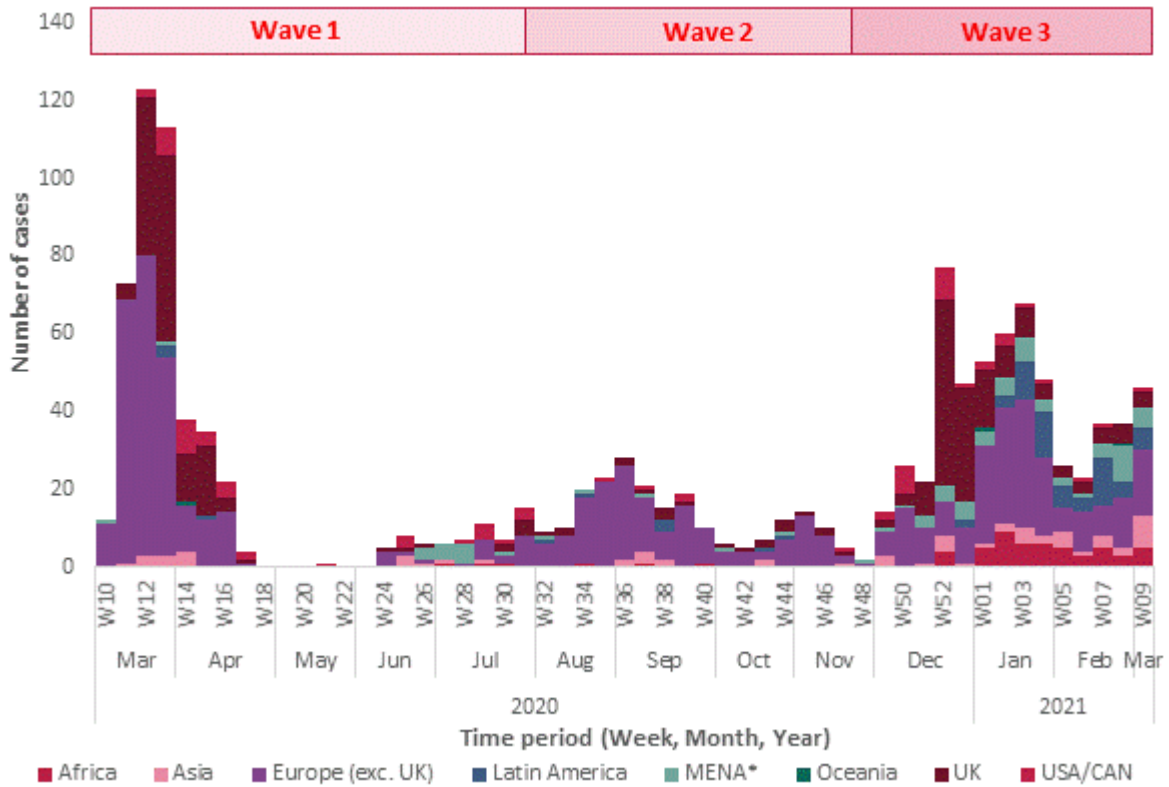
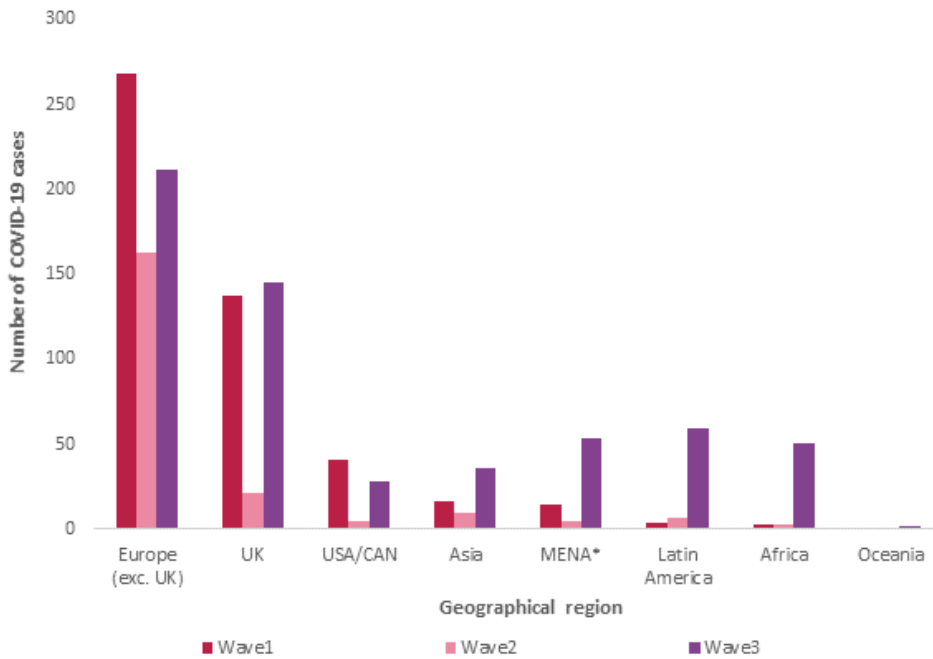


Figure 13. Geographical region of infection (other than Ireland) for cases of COVID-19 by week, Week 10 2020 – Week 9 2021

*MENA, Middle-East and North Africa



Figures 14. Geographical region of infection (other than Ireland) for imported cases of COVID-19 in Ireland by wave, Week 10 2020 – Week 9 2021

MENA, Middle-East and North Africa

Hospitalisations and ICU admissions

- **Table 2** shows the numbers and percentages of cases that were hospitalised and admitted to ICU by age group
- The age profiles for both cases hospitalised and admitted to ICU compared with those for all COVID-19 cases and deaths are shown in **Figure 15**. Older age groups are most at risk of being adversely affected by COVID-19
- A comparison of hospitalisations and ICU admissions by week is presented in **Figure 16**:
 - Hospital admissions peaked in Week 14 2020 (corresponding to Wave 1), Week 43 2020 (Wave 2) and Week 2 2021 (Wave 3)
- Peaks in ICU admissions were observed in Week 14 2020 (Wave 1) and Week 1 2021 (Wave 3)

Table 2. Number and percentage of confirmed cases who were hospitalised, admitted to ICU and died in Ireland, 2nd March 2020 – 6th March 2021

	0-4 yrs	5-12 yrs	13-18 yrs	19-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75-84 yrs	85+ yrs	Unk	Total
Number of cases (n)	6,141	10,540	13,691	29,031	39,605	35,803	33,545	25,332	12,529	9,497	7,387	41	223,142
Cases hospitalised (n)	148	81	145	383	820	991	1,482	1,821	2,318	2,962	1,927	4	13,082
Cases hospitalised (%)	2.41%	0.77%	1.06%	1.32%	2.07%	2.77%	4.42%	7.19%	18.50%	31.19%	26.09%	9.76%	5.86%
Cases admitted to ICU (n)	4	7	6	10	47	104	245	375	401	190	18		1,407
Cases admitted to ICU (%)	0.07%	0.07%	0.04%	0.03%	0.12%	0.29%	0.73%	1.48%	3.20%	2.00%	0.24%		0.63%
Deaths (n)	2	0	2	2	13	34	81	250	717	1,557	1,942		4,600
Case fatality ratio (%)	0.03%	0.00%	0.01%	0.01%	0.03%	0.09%	0.24%	0.99%	5.72%	16.39%	26.29%		2.06%

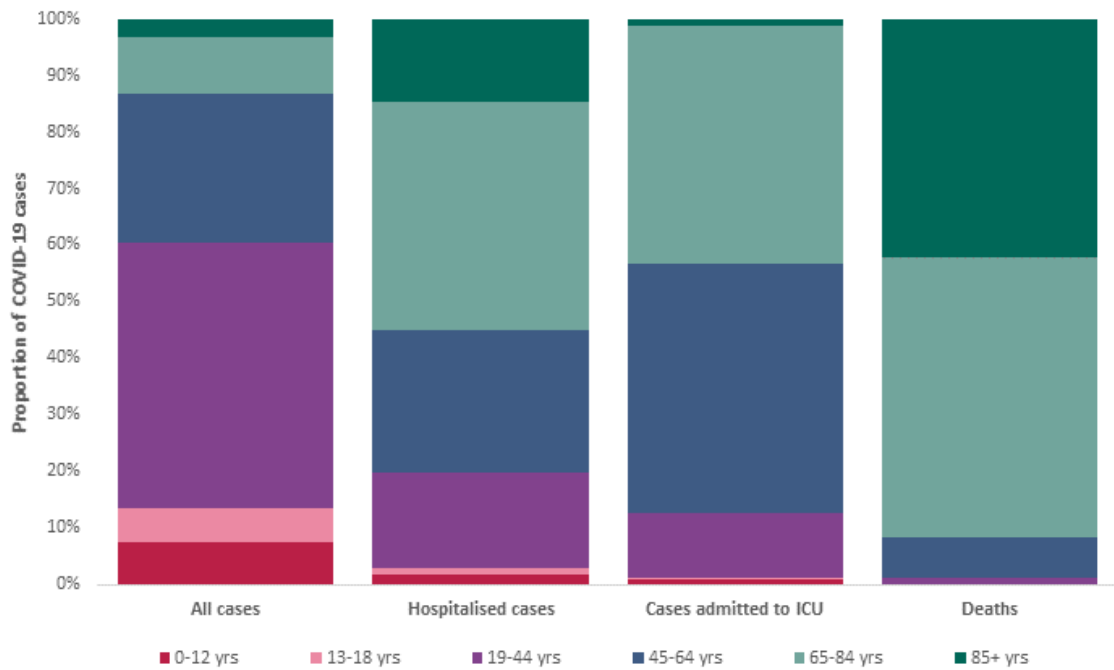
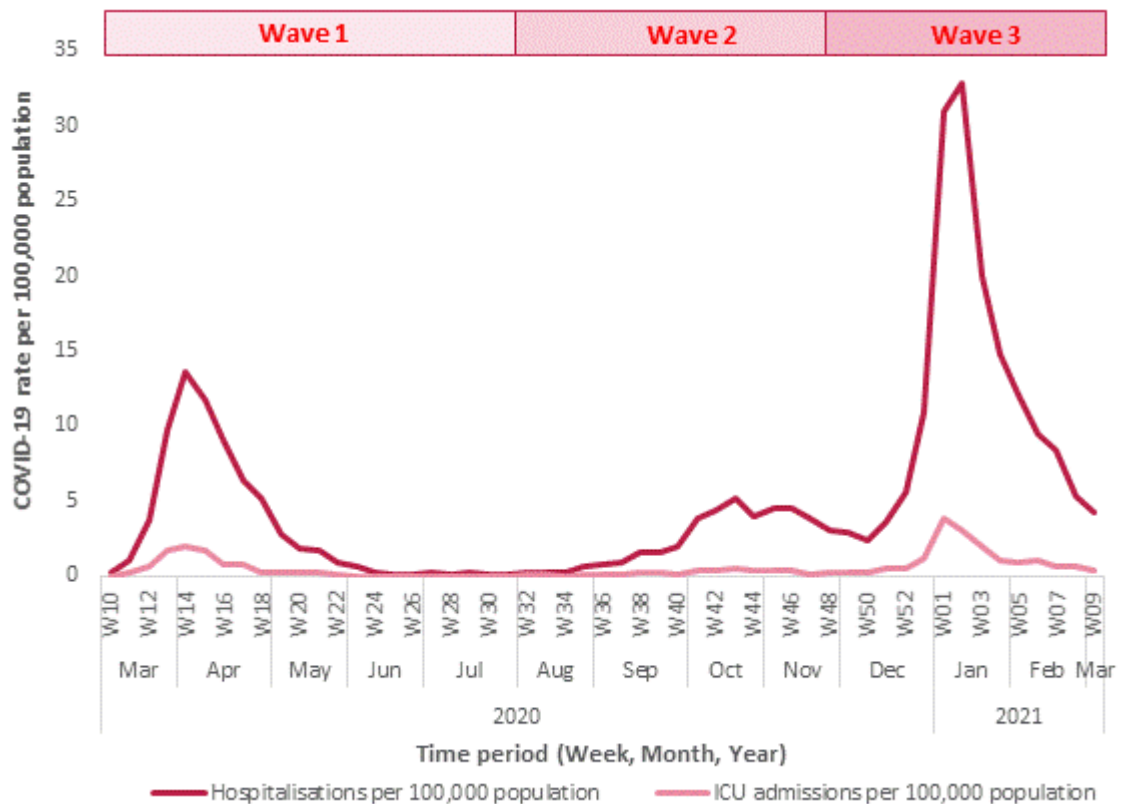


Figure 15. Age profile for all confirmed cases, hospitalised cases, cases admitted to ICU and deaths in Ireland, 2nd March 2020 – 6th March 2021



Figures 16. Rates of hospitalisations and admissions to ICU by week in Ireland, Week 10 2020 – Week 9 2021

Hospitalisations

- 13,082 (5.9%) cases were hospitalised with COVID-19: equivalent to 1 in 20 people with COVID-19 being hospitalised
- The proportion of cases that were hospitalised varied across the three waves of the pandemic with the highest proportion, 12.7%, occurring in Wave 1 compared with 4.1% and 5.2% in Wave 2 and Wave 3, respectively
- A breakdown of hospitalised cases by week of hospital admission is presented in [Figure 17](#)
- A breakdown of hospitalised cases by age group and week is presented in [Figure 18](#), with the majority of hospital admissions occurring in adults aged 45 years and over
- Older males aged 65 years and over were disproportionately affected ([Figure 5b](#))
- The length of stay (LOS) for all hospitalised cases is presented in [Figure 19](#). The average LOS in hospital was 17 days while the median LOS was 10 days; the range was 1-348 days ([Table 3](#)):
 - Among hospitalised cases who were discharged, the average LOS was 17 days while the median LOS was 9 days. This compares with 19 days and 15 days, respectively, for cases who died
- Among hospitalised cases with COVID-19, 19%, or 1 in 5 people, died. In Waves 1 and 3, 21% and 19% of people died, respectively; this contrasts with 14% of people who died during Wave 2, which corresponds to the summer period when younger age groups were mostly affected

Table 3. Length of stay for patients with COVID-19 who were hospitalised and admitted to ICU by outcome (discharged or died), 2nd March 2020 – 6th March 2021

	Hospitalisations			ICU admissions		
	Discharged	Died	ALL	Discharged	Died	ALL
Cases, n	2431	710	3141	932	458	1390
LOS in days:						
Average	17	19	17	14	15	14
Median	9	15	10	8	12	9
IQR	4-21	7-27	4-22	4-17	5-20	4-19
Range	1-348	1-282	1-348	1-111	1-135	1-135

LOS, length of stay (in hospital); IQR, inter-quartile range

The data above refers to cases where dates of admission and discharge or death were provided allowing the LOS to be calculated

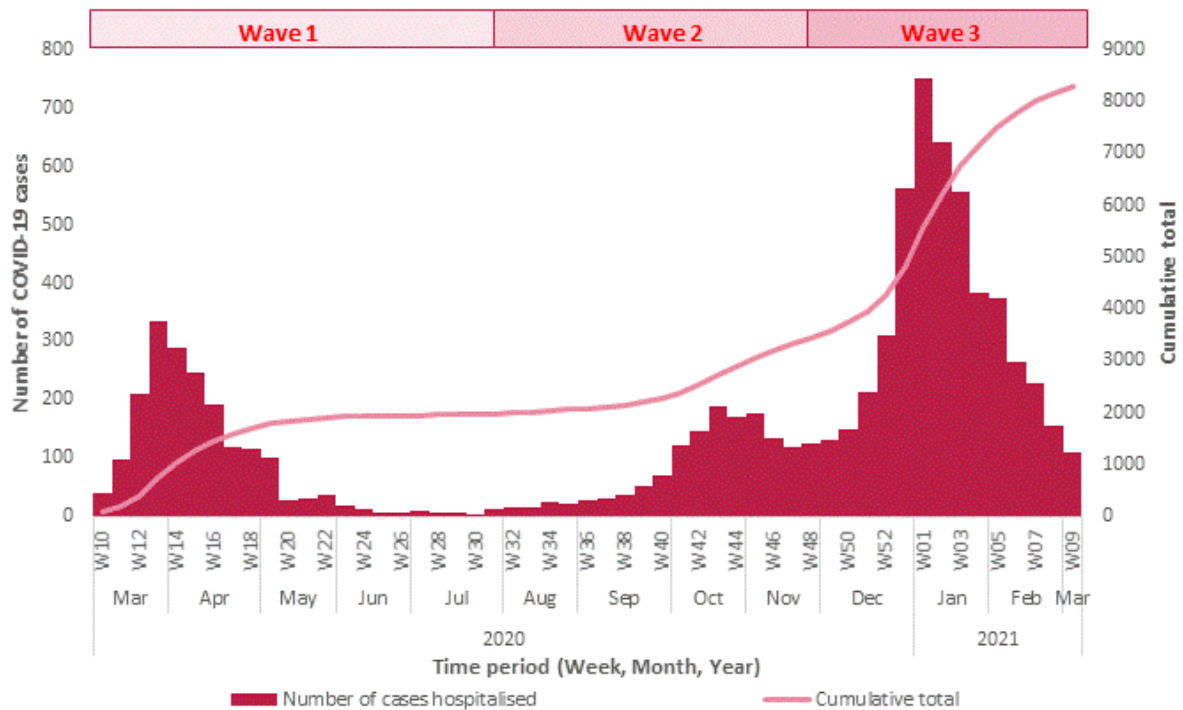


Figure 17. Number of confirmed cases of COVID-19 hospitalised at time of notification by hospital admission week* in Ireland, Week 10 2020 – Week 9 2021

*Date of hospitalisation was not available for 4,735 cases; 72 hospitalised cases of COVID-19 had dates of admission prior to March 2020, these patients are likely to have been admitted for other reasons and to have contracted COVID-19 in hospital; 48 cases were hospitalised after Week 9 2021

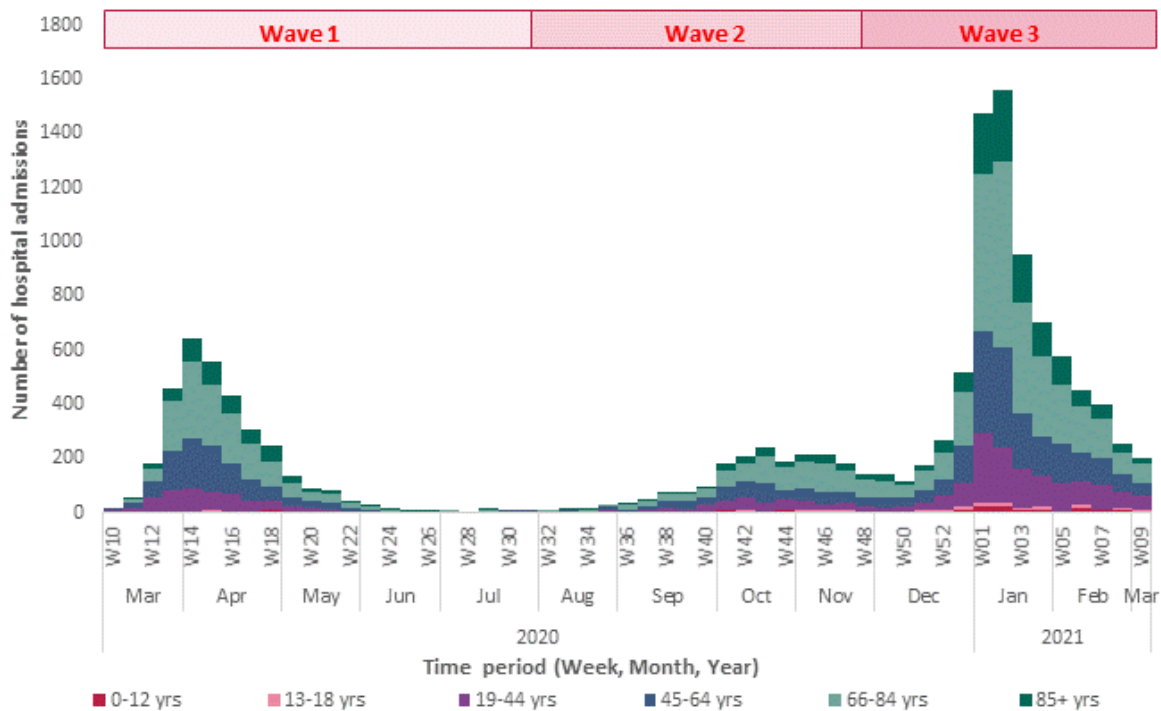


Figure 18. Number of confirmed cases of COVID-19 hospitalised by age group and week in Ireland, Week 10 2020 – Week 9 2021

ICU admissions

- 1,407 cases were admitted to ICU: equivalent to 1 in 10 people who were hospitalised with COVID-19 being admitted to ICU
- Among cases that were hospitalised, the proportion that required admission to ICU was slightly higher at 13.2% in Wave 1 compared to 10% in both Wave 2 and Wave 3
- A breakdown of cases admitted to ICU by week of ICU admission is presented in [Figure 20](#)
- A breakdown of ICU admissions by age group and week is presented in [Figure 21](#), with the majority of ICU admissions occurring in adults aged 45 years and older
- Older males aged 45 years and over were disproportionately affected ([Figure 5c](#))
- The LOS in ICU (ICU LOS) is presented in [Figure 22](#). The average ICU LOS was 14 days while the median LOS in ICU was 9 days; the range was 1-135 days:
 - Among cases admitted to ICU who were discharged, the average LOS was 14 days while the median LOS was 8 days. This compares with 15 days and 12 days, respectively, for patients who died
- Among people who were admitted to ICU with COVID-19, 32%, or 1 in 3 people, died. In Wave 1, 21% of people died; this contrasts with 34% and 38% of people who died during Waves 2 and 3, respectively
- 89.9% of people admitted to ICU were reported to have an underlying medical condition. See [Table 4](#) below for further details
- 10 ICU patients were pregnant, while 786 ICU patients also suffered an “other” co-morbidity

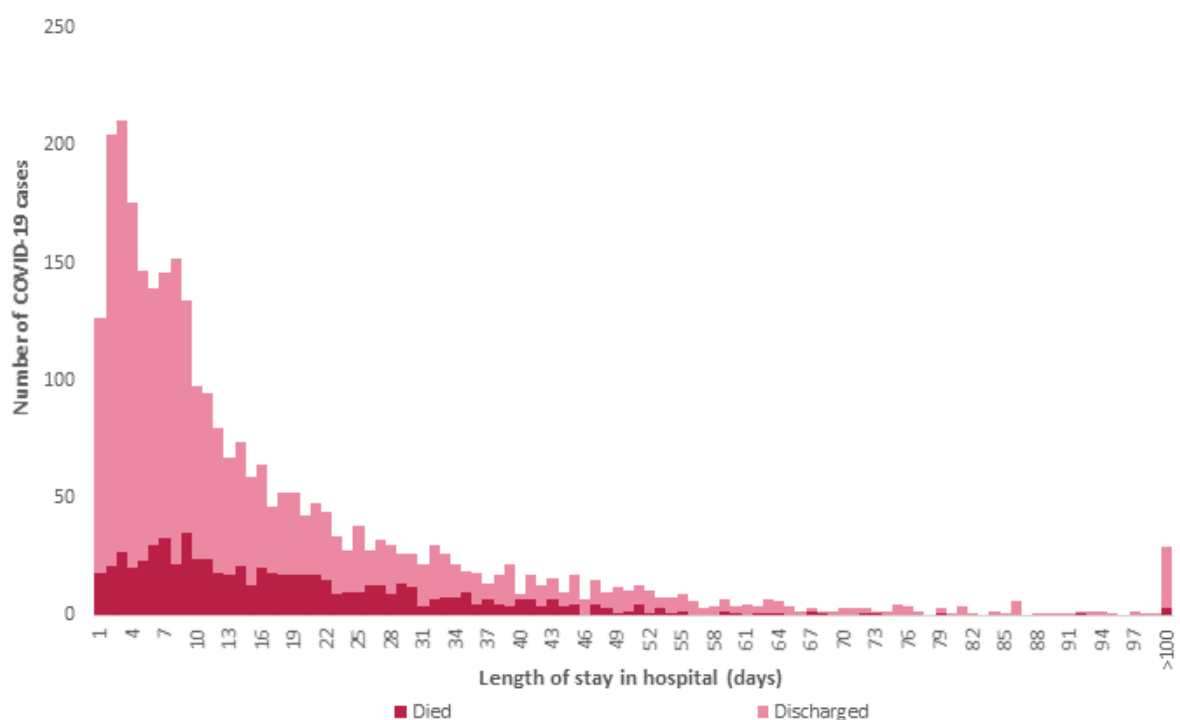


Figure 19. Outcome for COVID-19 hospitalised patients by length of stay (LOS; in days) in Ireland, Week 10 2020 – Week 9 2021

Table 4. Underlying clinical conditions in COVID-19 patients admitted to ICU in Year 1 of the pandemic

Confirmed ICU admissions	Number	% of all ICU admissions
Total confirmed ICU admissions	1408	
Confirmed ICU admissions in cases aged 65yrs or older	609	43%

Presence of underlying clinical conditions (UCC)	Number	% of all ICU admissions
One or more underlying conditions	1265	90%
No underlying conditions	143	10%

Underlying clinical conditions	Number	% of all ICU admissions with UCC
Hypertension	587	46%
Chronic heart disease	560	44%
Chronic respiratory disease	418	33%
COPD	205	16%
Bronchiectasis	15	1%
Interstitial lung disease	11	1%
Cystic fibrosis	2	0%
Diabetes	371	29%
type 1	43	3%
type 2	286	23%
Unspecified	42	3%
BMI >=40	196	15%
Asthma requiring medication	189	15%
Cancer/malignancy	186	15%
Chronic kidney disease	141	11%
Immunodeficiency including HIV	109	9%
Chronic neurological disease	83	7%
Chronic liver disease	51	4%
Alcohol-related disease	44	3%

*Patients with COVID-19 may have more than one underlying clinical condition

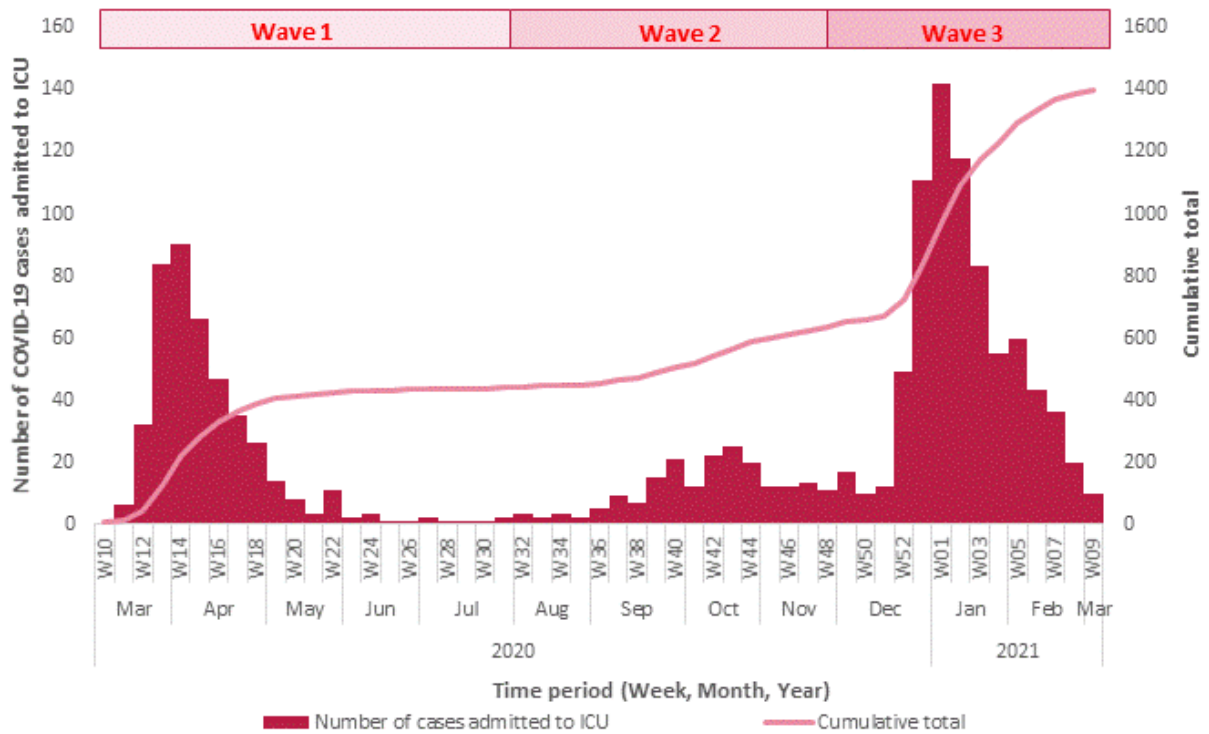


Figure 20. Number of confirmed cases of COVID-19 admitted to ICU by ICU admission week in Ireland, Week 10 2020 – Week 9 2021

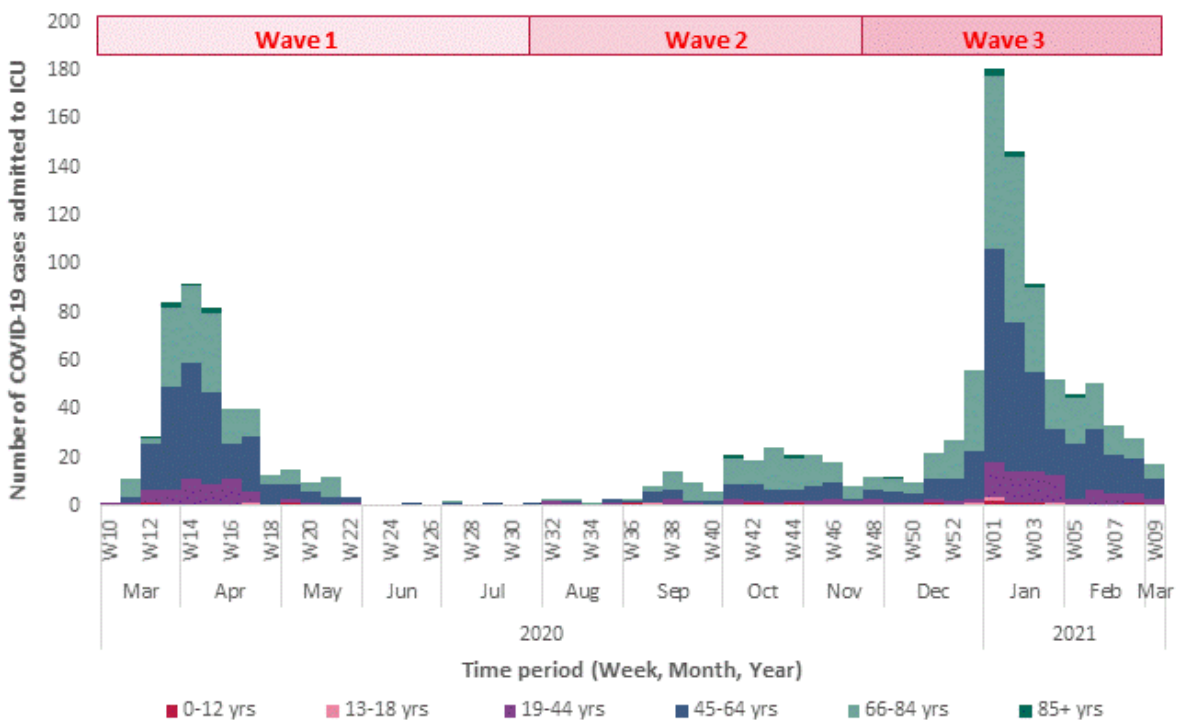


Figure 21. Number of confirmed cases of COVID-19 admitted to ICU by age group and week in Ireland, Week 10 2020 – Week 9 2021

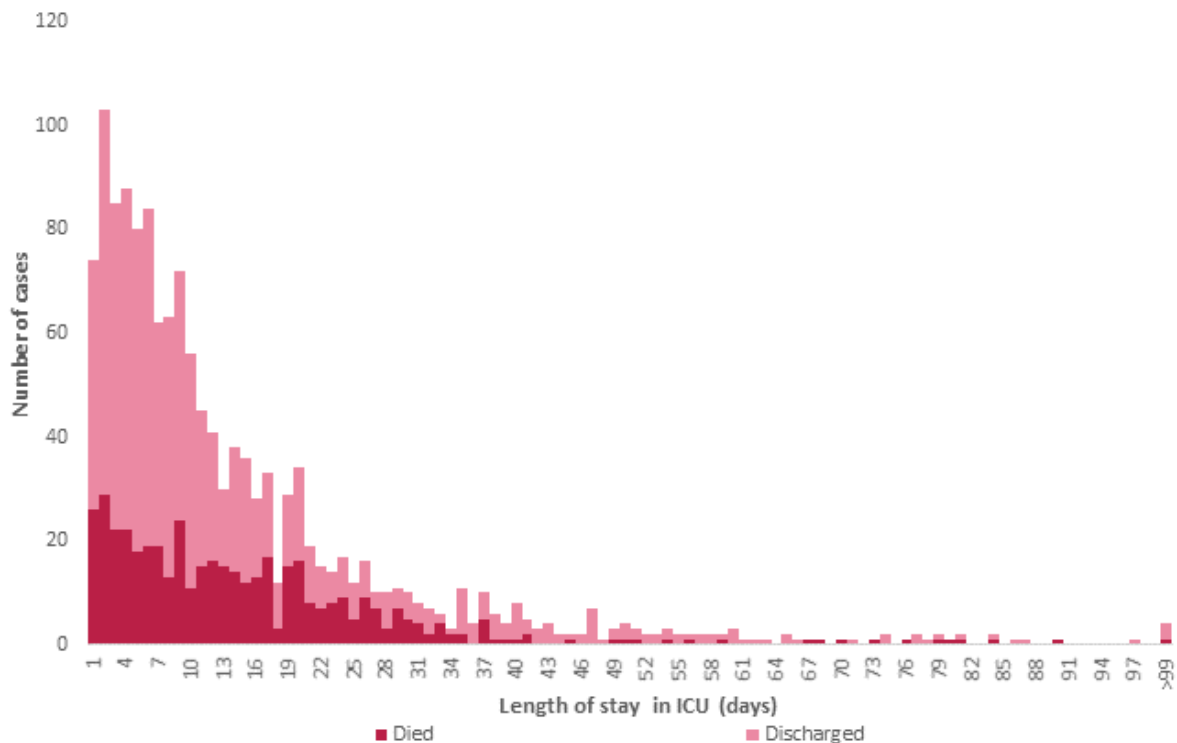


Figure 22. Outcome for COVID-19 patients in ICU by ICU length of stay (LOS; in days) in Ireland, Week 10 2020 – Week 9 2021

Deaths

- 4,859 deaths were reported across all COVID-19 case classifications (as of 9th August 2021), of which 4,600 were in confirmed COVID-19 cases ([Figure 23](#))
- The mortality rate among confirmed cases was 96.6 per 100,000 population: this corresponds to almost 1 in 1,000 people in Ireland dying with COVID-19
- See [Table 5](#) for a summary of deaths in confirmed COVID-19 cases in Ireland by wave of the pandemic
- The highest mortality rate was observed in Wave 1, with 5.9% of people who acquired COVID-19 dying compared with just 0.9% in Wave 2 and 1.8% in Wave 3: this most likely reflects the unique situation due to the evolving nature of the pandemic during Wave 1, with not all cases being detected due to the limited availability of testing and with the initial focus on nursing homes and healthcare settings
- For deaths among people who were hospitalised and admitted to ICU, see the earlier [Hospitalisations](#) and [ICU admissions](#) sections
- For deaths among HCWs, see [Healthcare workers](#) section
- 92.8% of people who died due to COVID-19 were reported to have an underlying medical condition. See [Table 6](#) below for further details

Location of deaths

- During the first year of the pandemic, 48% of all deaths occurred in hospitals (including the emergency department). During Waves 1 and 3, 47% and 48% of deaths, respectively,

occurred in hospitals compared with 56% in Wave 2. The increased proportion in Wave 2 is likely due to the lower number of deaths in NHs and other RCFs during this wave

- In the first year, 38% of all deaths occurred in NHs or other RCFs. During Wave 1, 47% of deaths occurred in NHs/RCFs compared with 28% and 35% in Waves 2 and 3, respectively

Table 5. Summary data of confirmed deaths (as of 09/08/2021) by wave in Ireland, Week 10 2020 – Week 9 2021

Time period	Total cases	Deaths								
		n	% of all cases	male	%male	Median age	IQR	Mean age	Age range	
									Min	Max
Wave1	26,149	1,530	5.9%	775	50.7%	83	76-89	81	17	105
Wave2	44,199	388	0.9%	225	58.0%	82	74-88	80	26	102
Wave3	152,794	2,682	1.8%	1,429	53.3%	83	75-88	80	0	105
ALL	223,142	4,600	2.1%	2,429	52.8%	83	75-88	81	0	105

IQR, Inter-quartile range

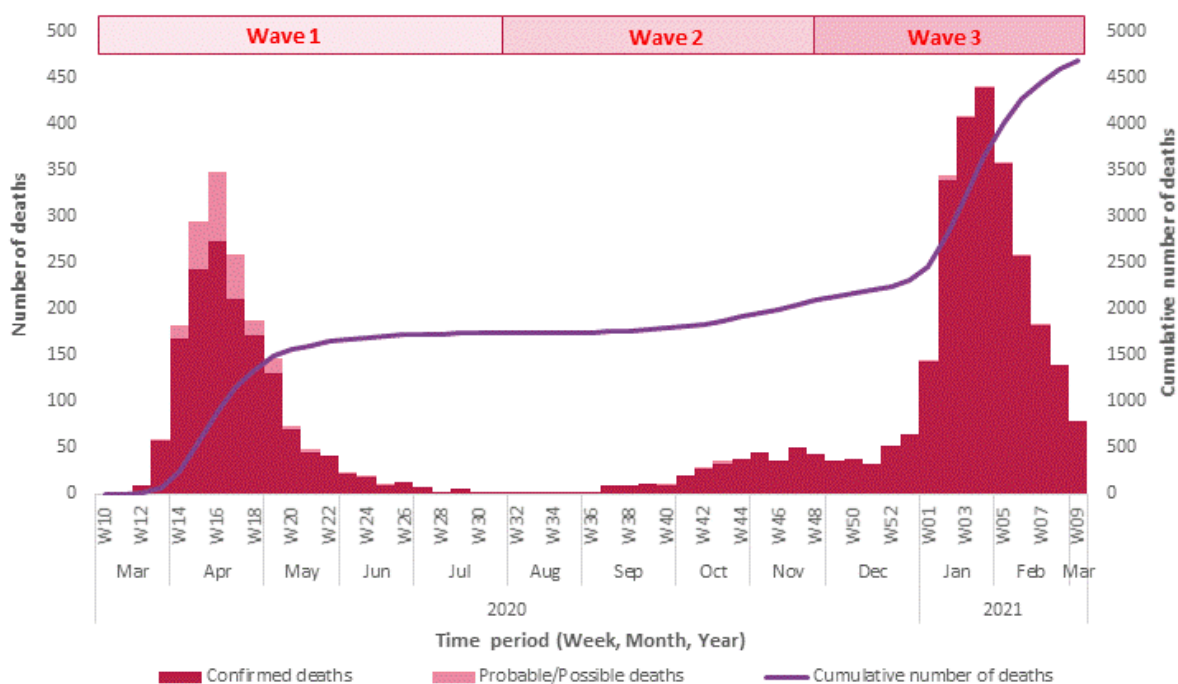


Figure 23. Number of deaths (as of 09/08/2021) in cases of COVID-19 by case classification and week (based on date of death*) in Ireland, Week 10 2020 – Week 9 2021

*Date of death was not reported for 14 cases who died, of which nine were confirmed cases; Other deaths for cases notified during Year 1 may have occurred during Year 2: these data are not shown. Also, some deaths that occurred during Year 1 may not have been reported at the time data was extracted from CIDR for preparation of this report

Table 6. Underlying clinical conditions in COVID-19 patients who died in Year 1 of the pandemic

Confirmed deaths	Number	% of all deaths
Total confirmed deaths	4600	
Confirmed deaths in cases aged 65yrs or older	4216	92%

Presence of underlying clinical conditions (UCC)	Number	% of all deaths
One or more underlying conditions	3808	83%
No underlying conditions	357	8%
Unknown	436	9%

Underlying clinical conditions	Number	% of all deaths with UCC
Chronic heart disease	1601	42%
Chronic neurological disease	1252	33%
Hypertension	1142	30%
Chronic respiratory disease	789	21%
Diabetes	765	20%
Cancer/malignancy	726	19%
Chronic kidney disease	527	14%
Immunodeficiency including HIV	123	3%
Asthma requiring medication	106	3%
Chronic liver disease	83	2%
BMI >=40	65	2%

*Patients with COVID-19 may have more than one underlying clinical condition

Age and sex profile of deaths

- The distribution of COVID-19 deaths by age group are shown by week in [Figure 24a](#), while the age-specific incidence rates for confirmed cases of COVID-19 are shown by week in [Figure 24b](#)
- The age- and sex-specific incidence rates for confirmed deaths of COVID-19 are shown, along with data for cases, by infection wave and for the entire first year of the pandemic in [Figure 4a-d](#)
- The median age of death during Year 1 was 83 years
- The highest mortality was seen in people aged 65 years and older. Across all three waves, people aged 65 years and older accounted for 92% of all deaths with little difference between the waves (91-93%). This contrasts with the distribution of COVID-19 cases, with this age group accounting for just 13% of all cases ([Figures 3a and 24a](#))
- The mortality rates were highest in older males aged 65-84 years and 85 years and older ([Figure 5d](#))



Figure 24. Numbers (24a) and rates (24b) of deaths in confirmed cases of COVID-19 by age group and week in Ireland, Week 10 2020 – Week 9 2021

Excess mortality

- HPSC undertake modelling on registered all-cause deaths data (reported from the General Register Office) using the standardised European EuroMOMO algorithm (see <http://www.euromomo.eu/>), in order to monitor excess mortality in Ireland
- An adjustment to correct for a delay in death registration is built into the EuroMOMO models, correcting registered deaths data for reporting delays. At present, deaths in Ireland can be registered up to 3 months following death, as per the Civil Registration Act, 2004. These data are provisional due to the time delay in deaths' registration in Ireland
- Excess deaths from all causes during the COVID-19 pandemic, from 2nd March 2020 up to 7th March 2021, in Ireland were estimated at **2,344**
- This excess all-cause mortality was observed over a seven-week period from late March-mid May 2020 and again during an eight-week period from early January-late February 2021 (Figure 25), with those aged 65 years and older most affected (Figure 26)
- No excess all-cause deaths were observed between mid-May 2020 and the end of December 2020
- Estimates of all-cause mortality vary depending on the period of time chosen to calculate the estimated excess all-cause deaths

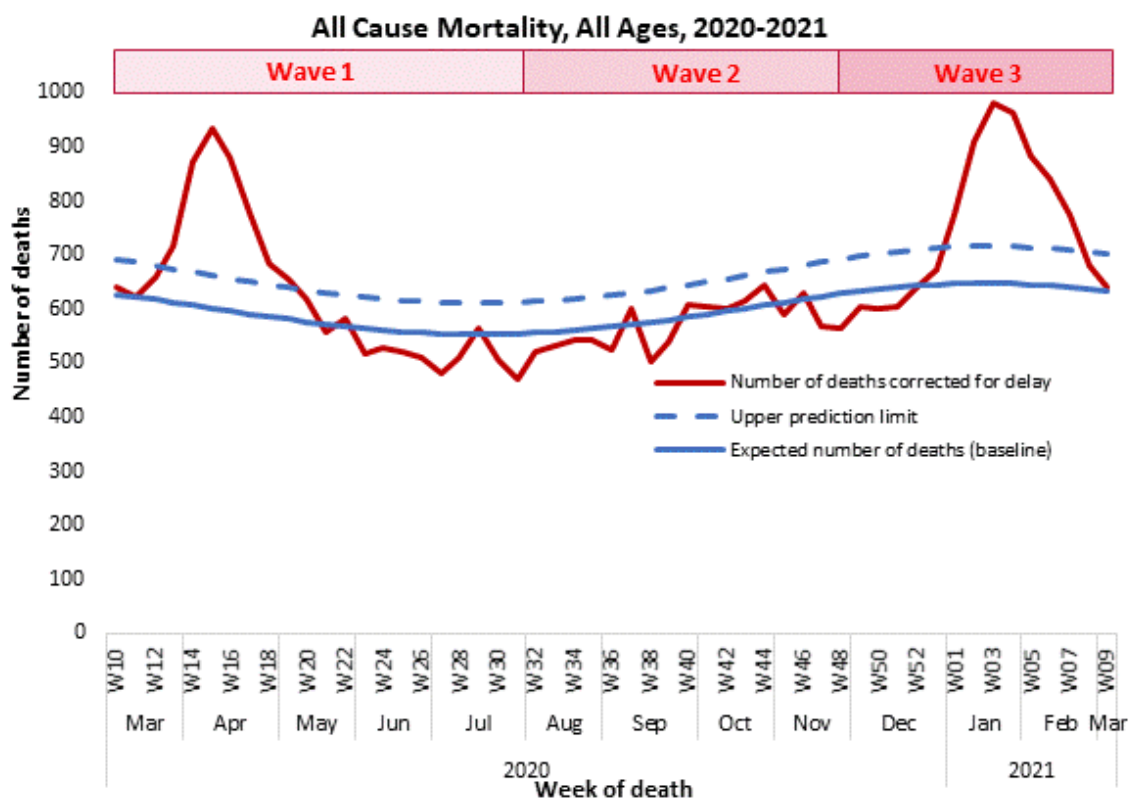


Figure 25. Number of registered all-cause deaths in **all ages** (corrected with a delay adjustment), expected number of deaths (modelled baseline) and upper prediction limit by week of death, March 2020-March 2021 in Ireland. Source: HPSC modelled excess mortality using the EuroMOMO algorithm

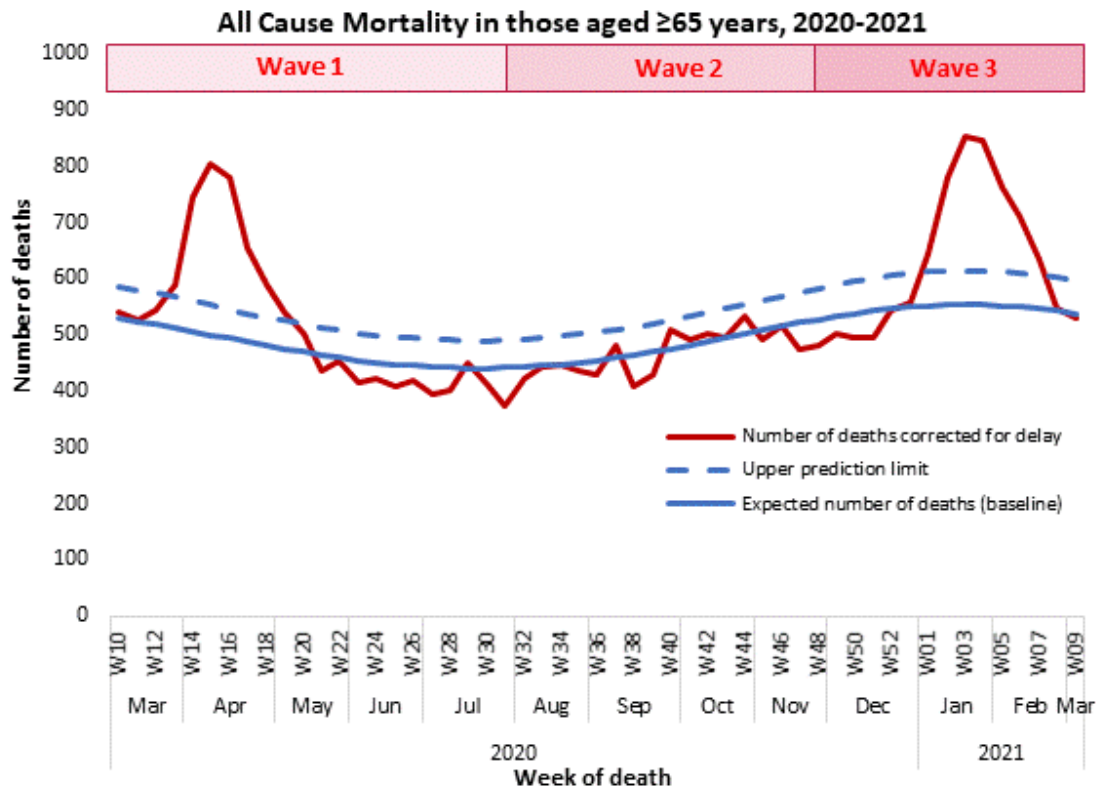


Figure 26. Number of registered all-cause deaths in those **aged ≥65 years** (corrected with a delay adjustment), expected number of deaths (modelled baseline) and upper prediction limit by week of death, March 2020-March 2021 in Ireland. Source: HPSC modelled excess mortality using the EuroMOMO algorithm

Healthcare workers

- 27,814 cases were reported in healthcare workers (HCWs): this corresponds to 1 in 8 (or 12.5%) of all COVID-19 cases diagnosed in Ireland
- There was a significant difference between Wave 1 (32.5%) and the subsequent waves (Wave 2, 7.7%; and Wave 3, 10.4%). This reflects the major impact of COVID-19 on hospitals and residential care facilities during the first wave; the focus on testing in healthcare facilities; as well as the increased understanding of the disease and enhanced infection prevention and control (IPC) measures including vaccination implemented
- The highest numbers of cases in HCWs were reported in January 2021 (peaking in Week 2) and April 2020 (peaking in Week 15) corresponding with the surge in cases after Christmas 2020 and start of the pandemic in Ireland, respectively
- Over half (53%) of HCWs affected were nurses and healthcare assistants (HCAs): this corresponds to over 1 in 2 of HCWs diagnosed with COVID-19
- The majority (76%) of HCWs affected were female (**Figure 27**), which is in part due to the female bias among healthcare professionals (according to the HSE, approx. 4 in 5 of all HCWs in Ireland are female, see [here](#)): this corresponds to 3 in 4 HCWs diagnosed with COVID-19 being female
- A breakdown of HCWs by occupational groupings is presented in **Figure 28**
- 18 deaths were reported among HCWs:
 - 15 of these were hospitalised
 - 11 were admitted to ICU
 - All had underlying medical conditions

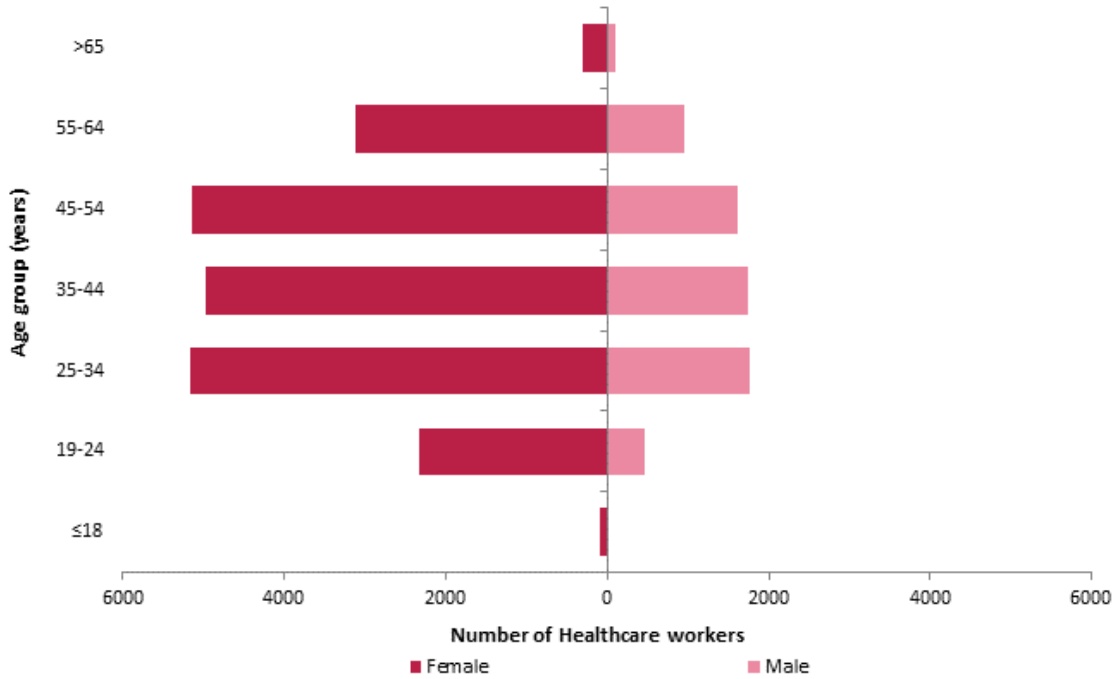


Figure 27. Age and sex distribution for cases of COVID-19 in healthcare workers (HCWs) in Ireland, Week 10 2020 – Week 9 2021

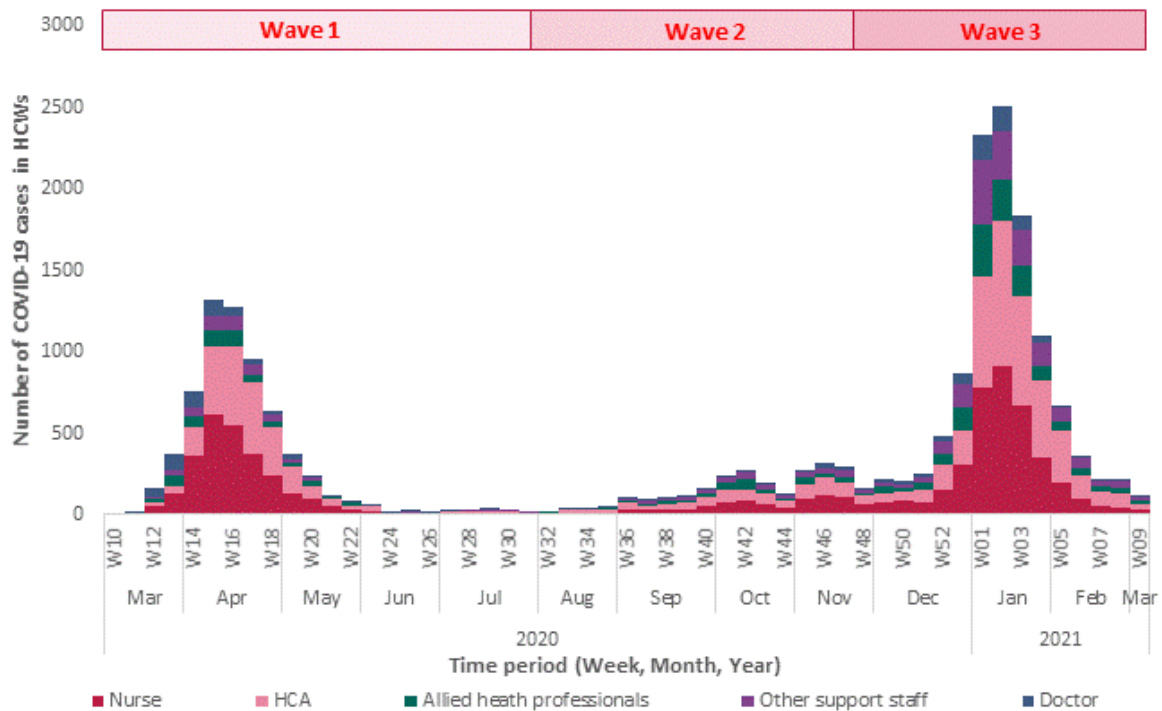


Figure 28. Occupational groupings for healthcare workers (HCW) cases in Ireland by week, Week 10 2020 – Week 9 2021

HCA, Healthcare assistants

Allied health professionals include social workers, pharmacists, physiotherapists, paramedics, occupational therapists, radiographers, speech and language therapists and dieticians; Other support staff include catering, cleaning and household, and maintenance staff and porters

Laboratory testing

- At the start of the pandemic, there was limited capacity for laboratory testing for COVID-19 in Ireland (Table 7 and Figure 29)
- As additional resources, including test kits and staff, became available greater numbers of tests could be carried out facilitating the introduction of mass screening programmes in healthcare settings in April 2020 and subsequently the rolling out of serial testing in a number of settings (e.g. nursing homes, meat processing plants and direct provision centres), and testing of asymptomatic contacts of confirmed cases from late June onwards (temporarily suspended at the peak of Wave 3)
- Only data on PCR tests are included in this analysis
- 3,624,289 tests were performed in the first complete year of the pandemic in Ireland, of which 229,360 were positive (6.3%)
- The number of positive tests is higher than the number of cases reported due to some cases being tested more than once
- The age breakdown by week of all tests performed is shown in Figure 30

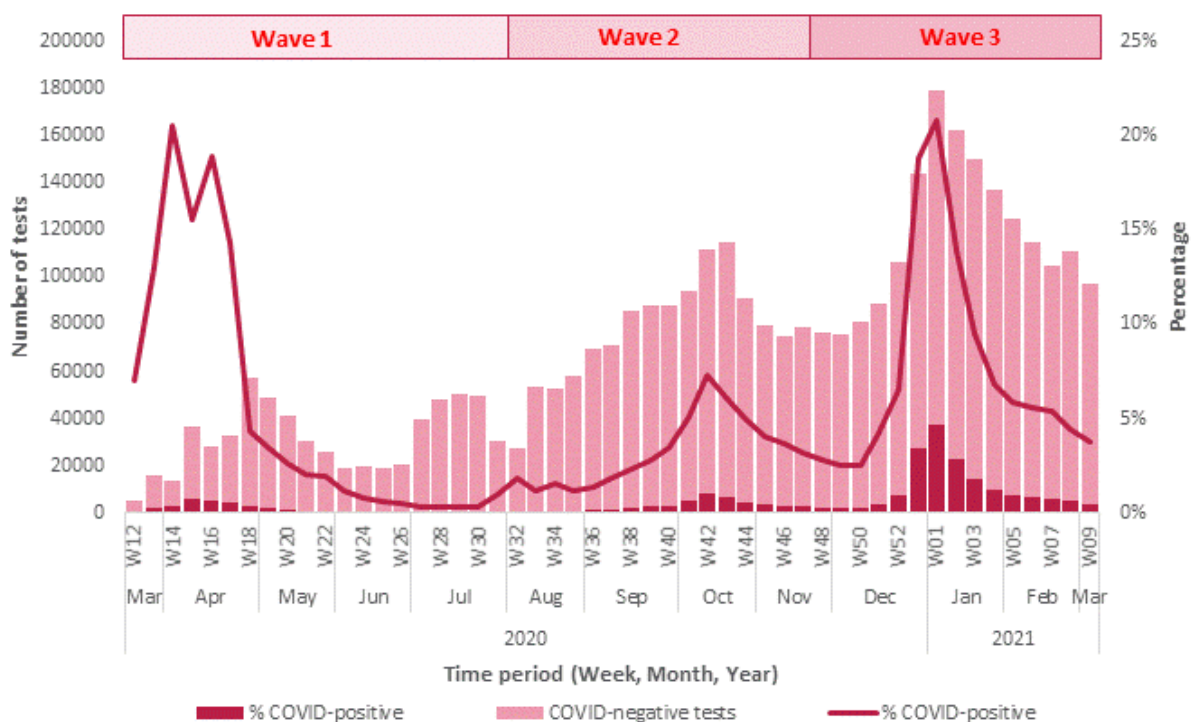


Figure 29. Number of COVID-19 PCR tests performed, along with number and percentage that were positive, in Ireland, Week 10 2020 – Week 9 2021

Table 7. Summary of COVID-19 testing data by Wave in Ireland, Week 2020 – Week 9 2021

	Wave 1	Wave 2	Wave 3	TOTAL
Total Tests	629,951	1,239,989	1,754,349	3,624,289
Average Tests/Day	4,598	11,071	16,708	10,238
Average daily tests per 100,000 population	97	232	351	215
Total Positive	28,772	45,325	155,263	229,360
% Test positive	4.6%	3.7%	8.9%	6.3%

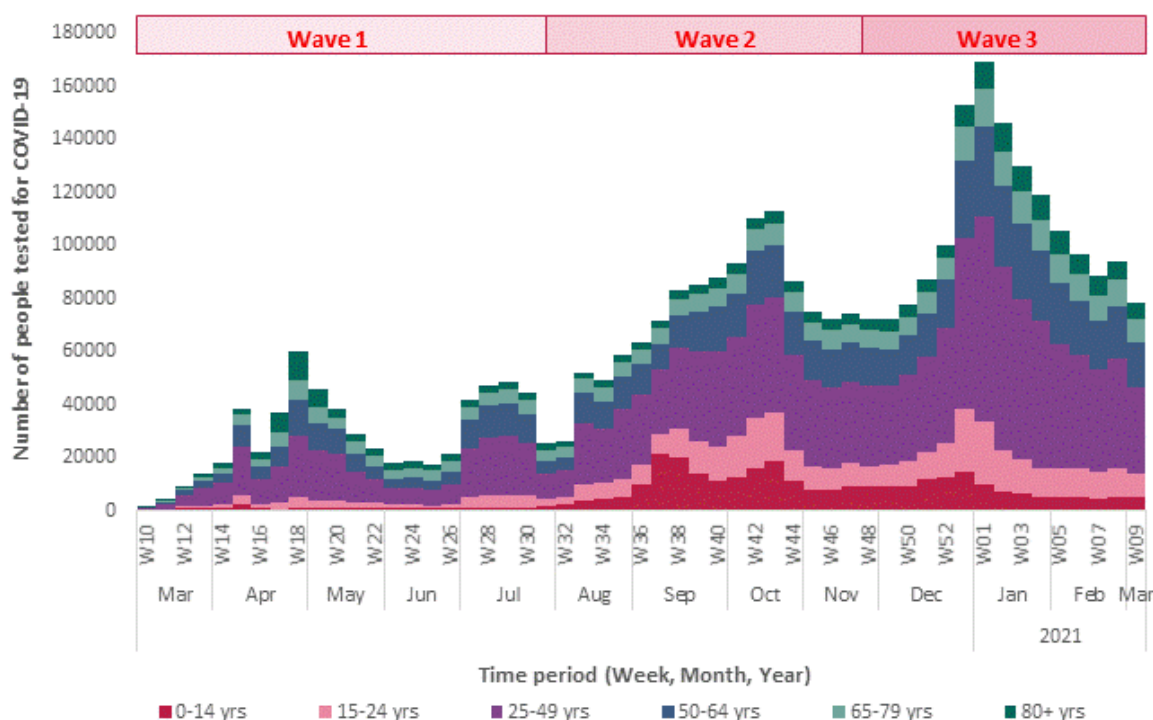


Figure 30. Number of laboratory tests performed by age group and week in Ireland, Week 10 2020 – Week 9 2021

Variants of Concern

- Viruses constantly change through mutation and a number of variants of the SARS-CoV-2 virus have been observed worldwide. Not all mutations have a significant impact on the spread of the virus, but some can provide the virus with selective advantages, such as increased transmissibility or the ability to evade immune responses. Such mutations in the virus are termed Variants of Concern (VOCs)
- COVID-19 samples from 5,355 patients (with matched events on CIDR) underwent whole genome sequencing (WGS) during year 1 of the pandemic, predominantly from Wave 3
- With the emergence of the Alpha variant in late 2020, there was a requirement to sequence more COVID-19 cases and WGS capacity increased substantially. The proportion of cases sequenced in Ireland increased across the 3 waves were:
 - Wave 1 – 0.2%
 - Wave 2 – 0.9%
 - Wave 3 – 3.2%

- The Alpha variant (B.1.1.7), first identified in Kent in the UK, emerged to become the predominant strain during Wave 3, accounting for 82% of samples sequenced; retrospective analysis revealed that there were earlier cases of the Alpha variant prior to Wave 3
- Two other VOCs were first identified in Ireland during Wave 3:
 - B.1.351 or Beta variant, first identified in South Africa – detected December 2020
 - P.1 or Gamma variant, first identified in Brazil – detected February 2021

Outbreaks

Please note: outbreaks in some settings may not have been captured and reported consistently, in particular during Wave 1, which would have led to some under-reporting of outbreaks.

- 4,180 outbreaks, including suspected outbreaks, were reported between Week 10 2020 to Week 9 2021 (01/03/2020 to 06/03/2021) of the COVID-19 pandemic in Ireland
- The key outbreak settings and locations include:
 - 1709 (40.9%) in healthcare settings
 - 375 (9.0%) were reported in hospitals
 - 627 (15.0%) were reported in nursing homes and community hospital/long-stay units
 - 556 (13.3%) were reported in residential institutions
 - 1080 (25.8%) in community settings, including within extended families, and in social and recreational settings
 - 661 (15.8%) in workplace and retail settings
 - 578 (13.8%) in educational settings, including
 - 318 (7.6%) in schools
 - 218 (5.2%) in childcare facilities
 - 169 (4.9%) in hospitality and recreational settings
 - 108 (2.6%) in travel or transport settings
- See [Table 8](#) for a breakdown by outbreak setting and wave of the pandemic
- With the closure of schools and other educational facilities, non-essential retail and hospitality, and restrictions on the gathering of people from more than one household for extended periods over the year, many outbreaks in these settings, and consequently onward transmission of the virus, were prevented
- A ban on non-essential overseas travel resulted in fewer travel-related outbreaks
- The profile of outbreaks has changed over the course of the pandemic ([Table 8 and Figure 31](#))
 - Healthcare and residential care settings comprised the majority of outbreaks (n=585, 78.4% in Wave 1, which is not unexpected given the limited availability of testing and the focus on these settings; 36 (4.8%) of outbreaks were travel-related
 - With the easing of some restrictions in summer 2020 and with expanded testing capacity and thus greater case ascertainment, Wave 2 was characterised by a decrease in outbreaks in healthcare and residential care settings (20.1%) with a corresponding increase in most other settings, including educational (21.0%) and workplace (13.6%) with schools and some workplaces re-opening during this wave. The international travel ban imposed during Wave 1 resulted in a decrease in travel-related outbreaks in Wave 2
 - Wave 3 was characterised by a resurgence in outbreaks in healthcare and residential care settings (41.9%). As a result of the surge in cases in late December, many restrictions were re-imposed, including school closures, consequently outbreaks in most other settings decreased with a few exceptions such as childcare facilities and workplaces. The increase in extended family outbreaks can be attributed to the Christmas holiday period
- See [Table 9](#) for a breakdown by outbreak setting and HSE area

- During the first year of the COVID-19 pandemic, targeted serial testing was undertaken in certain high-risk settings, including nursing homes and residential facilities with vulnerable populations, as well as in some workplaces, such as meat and poultry processing plants. As a consequence, this resulted in an increased detection of COVID-19 cases in these settings

Table 8. Number and proportion of outbreaks notified by location type and wave in Ireland, Week 10 2020 – Week 9 2021

Outbreak location	Wave 1		Wave 2		Wave 3		Total	
	N	%	N	%	N	%	N	%
Healthcare and residential care (n=1709; 40.9%)								
Nursing home / Community Hospital / Long-stay unit	298	39.9%	80	5.5%	249	12.5%	627	15.0%
Residential institution	177	23.7%	102	7.1%	277	13.9%	556	13.3%
Hospital	103	13.8%	75	5.2%	197	9.9%	375	9.0%
Other healthcare services	7	0.9%	33	2.3%	111	5.6%	151	3.6%
Community, including social and recreational (n=1080; 25.8%)								
Extended family	38	5.1%	154	10.7%	282	14.2%	474	11.3%
Community outbreak	15	2.0%	191	13.2%	80	4.0%	286	6.8%
Social gathering	1	0.1%	49	3.4%	29	1.5%	79	1.9%
Religious/Other ceremony	1	0.1%	19	1.3%	31	1.6%	51	1.2%
Sporting activity / fitness	0	0.0%	31	2.1%	1	0.1%	32	0.8%
Retail outlet / Personal grooming service	5	0.7%	54	3.7%	80	4.0%	139	3.3%
Transport	0	0.0%	10	0.7%	9	0.5%	19	0.5%
Educational (n=578; 13.8%)								
School*	0	0.0%	199	13.8%	119	6.0%	318	7.6%
Childcare Facility	0	0.0%	77	5.3%	141	7.1%	218	5.2%
University / College**	0	0.0%	27	1.9%	15	0.8%	42	1.0%
Workplace (n=532; 12.7%)								
Workplace	48	6.4%	196	13.6%	288	14.5%	532	12.7%
Hospitality (n=127; 3.0%)								
Restaurant / Café / Public house	7	0.9%	63	4.4%	39	2.0%	109	2.6%
Hotel / Guest Houses / B&Bs	2	0.3%	11	0.8%	5	0.3%	18	0.4%
Travel (n=89; 2.1%)								
Travel related	36	4.8%	26	1.8%	27	1.4%	89	2.1%
Other settings (n=65; 11.6%)								
Other settings	8	1.1%	45	3.1%	12	0.6%	65	1.6%
Total	746	100.0%	1,442	100.0%	1,992	100.0%	4,180	100.0%

*These outbreaks are outbreaks associated with school children and/or school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks

**These outbreaks are associated with a university/college location and do not include outbreaks among third level students that occurred at other locations

Please note: outbreaks in some settings may not have been reported consistently, in particular during Wave 1

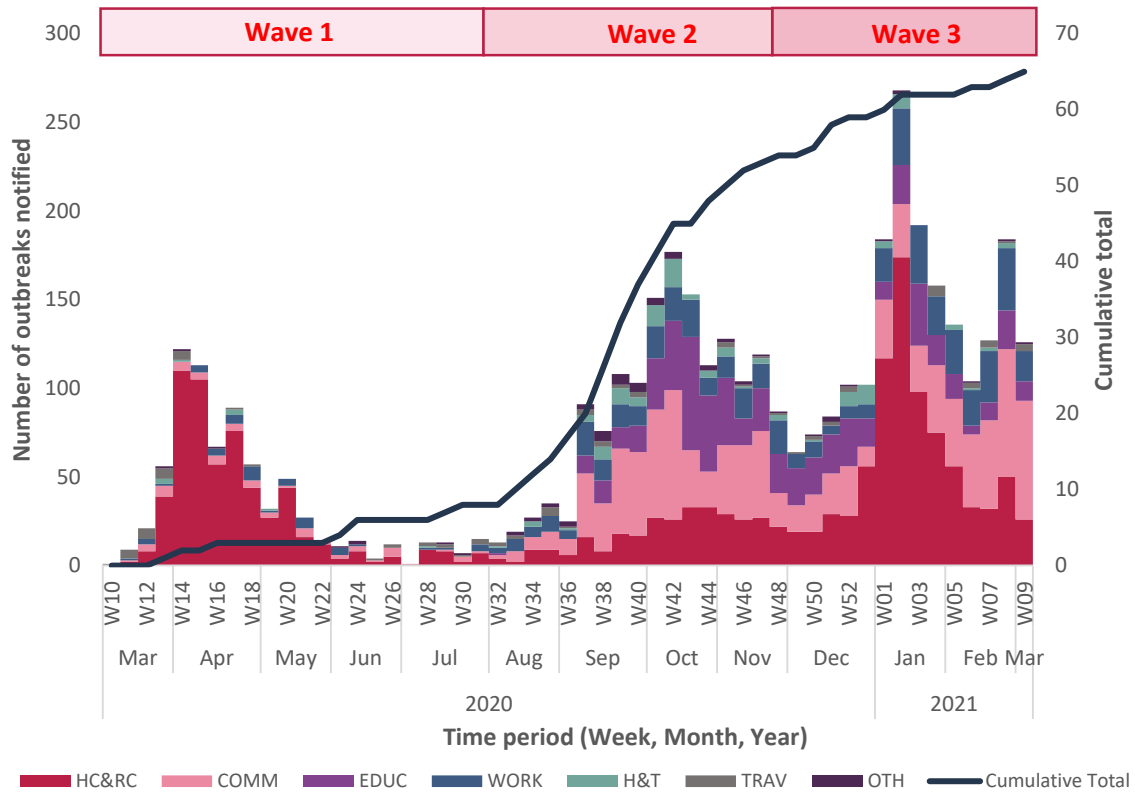


Figure 31. Number of COVID-19 outbreaks by settings (except private houses) notified by week in Ireland, Week 10 2020 – Week 9 2021

HC&RC, Healthcare and Residential care; EDUC, Educational; WORK, Workplace; COMM, Community; H&T, Hospitality and Tourism; TRAV, Travel; OTH, Other

Table 9. Number of COVID-19 outbreaks by outbreak location and HSE area notified in Ireland, Week 10 2020 – Week 9 2021

Outbreak location	HSE-E	HSE-M	HSE-MW	HSE-NE	HSE-NW	HSE-SE	HSE-S	HSE-W	HPSC	Total
Healthcare and residential care (n=1709; 40.9%)										
Nursing home / Community Hospital / Long-stay unit	247	34	43	72	28	56	64	83		627
Residential institution	246	40	28	81	22	50	62	27		556
Hospital	191	16	11	45	37	21	30	24		375
Other healthcare services	54	4	18	12	14	16	31	2		151
Community, including social and recreational (n=1080; 24.2%)										
Extended family	3	41	76	15	178	35	70	56		474
Community outbreak	21	12	35	15	8	10	96	89		286
Social gathering	5	2	14	7	20	11	12	8		79
Religious/Other ceremony	4	7	10		15	3	7	5		51
Sporting activity / fitness	12	1	3	2	5	1	2	6		32
Retail outlet / Personal grooming	56	5	6	12	18	17	16	9		139
Transport	3		2	1	4	3	5	1		19
Educational (n=578; 13.8%)										
School*	125	27	15	36	28	13	47	27		318
Childcare Facility	122	8	2	26	18	12	11	19		218
University / College**	27			1	2		9	3		42
Workplace (n=532; 12.7%)										
Workplace	169	35	38	101	48	69	45	27		532
Hospitality (n=127; 3.0%)										
Restaurant / Café / Public house	30	6	8	2	13	13	21	16		109
Hotel / Guest Houses / B&Bs	2	2	2		2	1	9			18
Travel (n=89; 2.1%)										
Travel related	11	6	11	7	6	4	24	17	3	89
Other settings (n=65; 11.6%)										
Other settings	0	2	17	1	33	2	10	0		65
Total	1,328	248	339	436	499	337	571	419	3	4,180

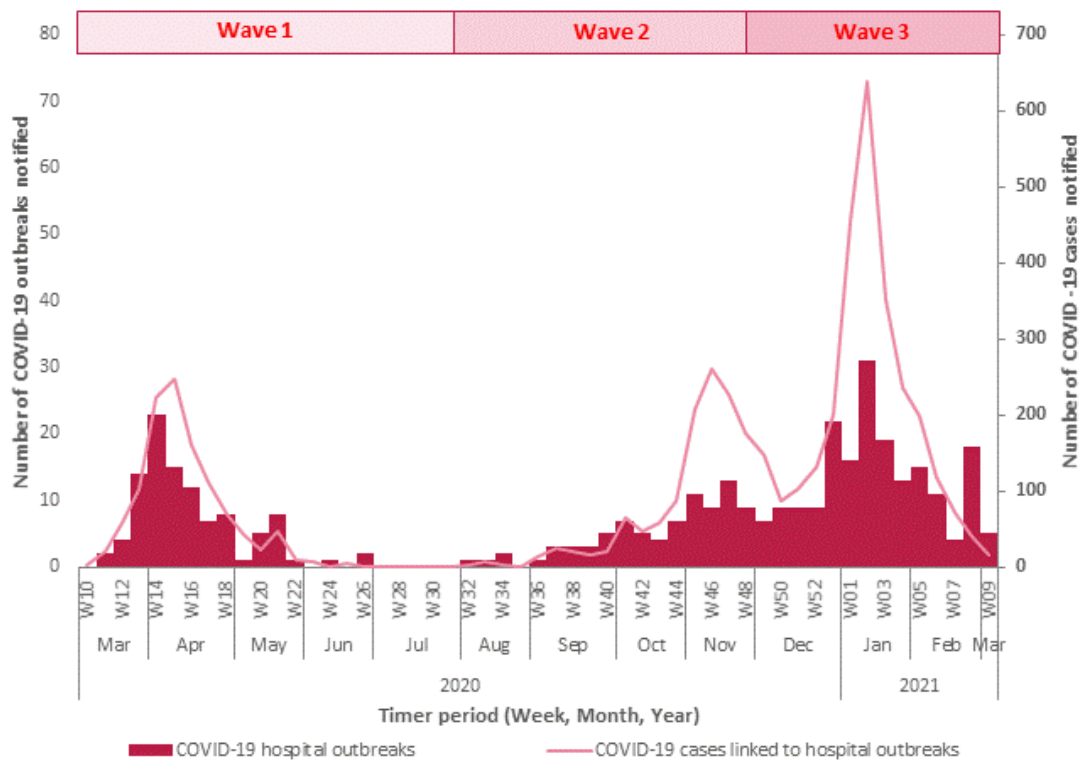
*These outbreaks are associated with school children and/or school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks

**These outbreaks are associated with a university/college location and do not include outbreaks among third level students that occurred at other locations

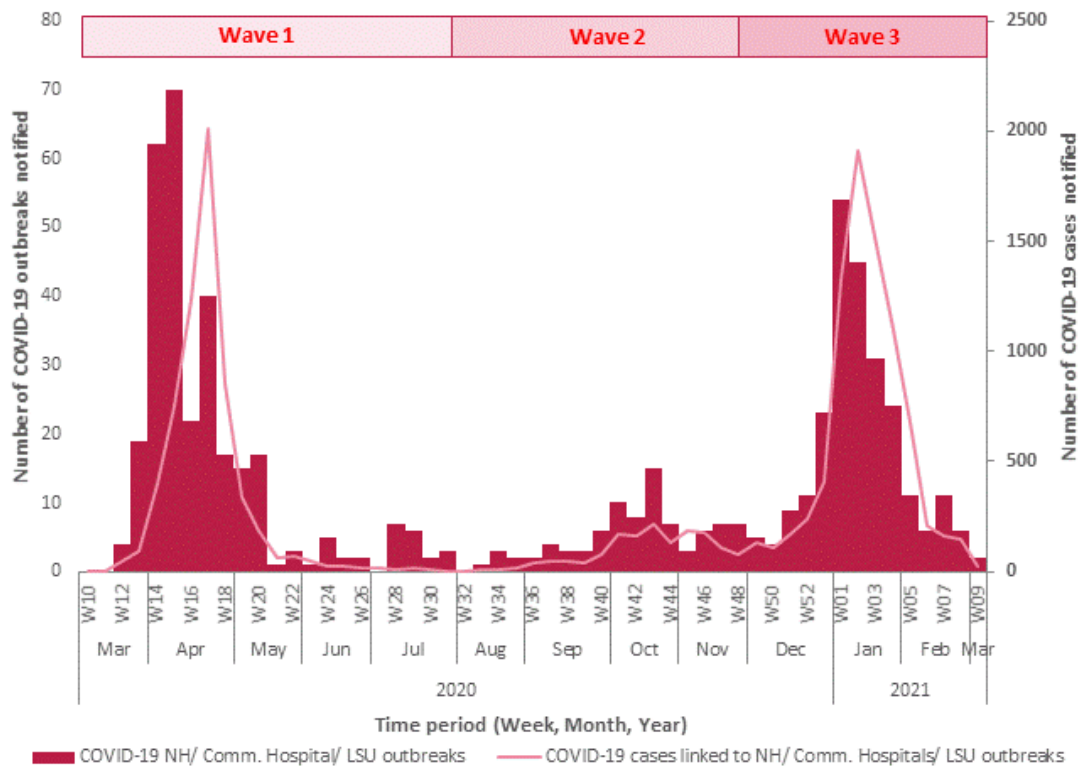
COVID-19 Outbreaks/Clusters in Hospitals and Residential Care Facilities and settings in Ireland

- A summary of outbreaks linked to acute hospitals, nursing homes, community hospital/long-stay units, and other residential institutions is shown in [Table 10](#) and [Figure 32a-c](#), as well as in the subsequent “Focus” sections

(32a) Timeline of COVID-19 outbreaks in **Acute hospitals** (N=375)



(32b) Timeline of COVID-19 outbreaks in **Nursing Homes and Community Hospitals/Long-stay units** (N=627)



(32c) Timeline of COVID-19 outbreaks in **Residential institutions** (N=556)

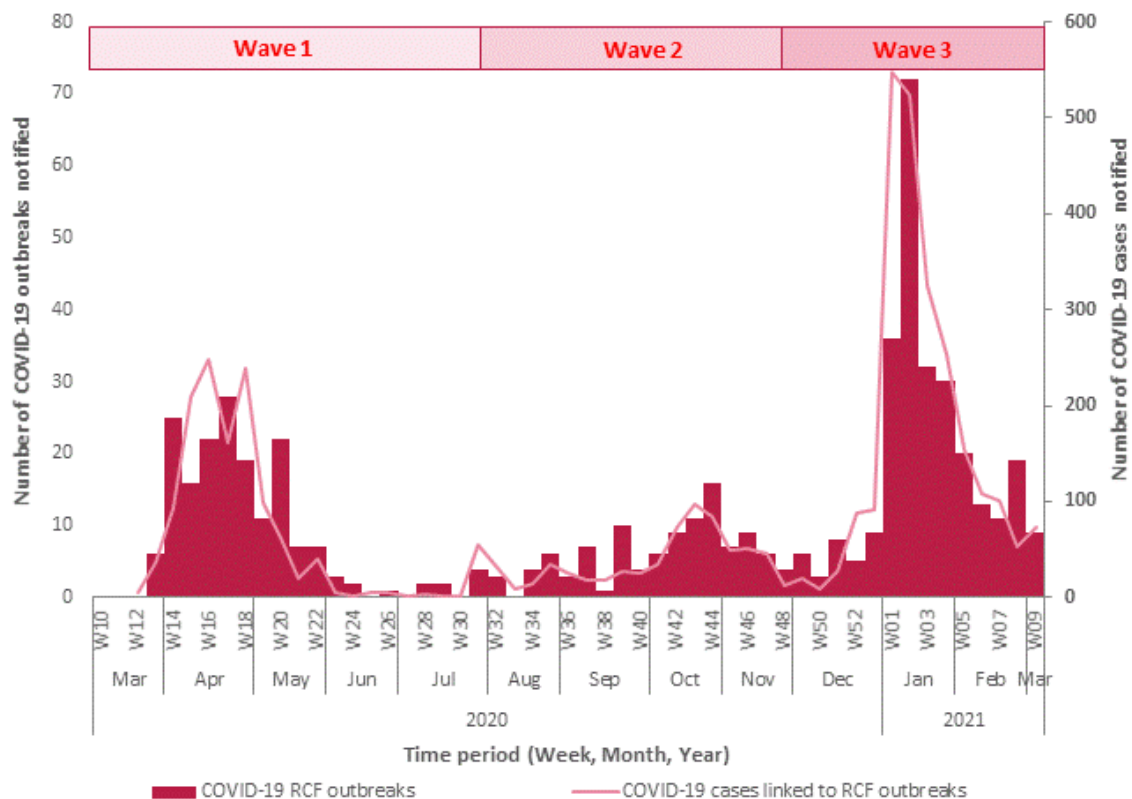


Figure 32. Timeline of COVID-19 outbreaks in (32a) Acute hospitals, (32b) Nursing Homes and Community Hospitals/Long-stay units (NH/ Comm. Hospitals/LSU) and (32c) Residential institutions (RCF) notified in Ireland by week of notification, Week 10 2020 – Week 9 2021

Table 10. Number of COVID-19 outbreaks and cases in nursing homes, community hospital/long-stay units, acute hospital and residential institutions notified in Ireland, from 02/03/2020 to midnight on 06/03/2021

Outbreak location	Number of outbreaks notified	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total hospitalised cases	Total ICU cases	Total deaths
Acute Hospitals	375	5,199	2,400	131	677
Nursing home / Community Hospital / Long-stay unit	627	15,841	1,107	25	1,988
<i>Residential institutions</i>					
Centre for disabilities	315	2,149	103	10	47
Centre for older people	27	352	28	5	24
Children's / TUSLA residential centre	29	86	3	1	0
Mental health facility	42	291	28	1	5
Direct provision centre	72	699	19	0	0
Homeless facility	29	176	9	4	5
Addiction service	8	80	2	0	0
Prison	14	158	4	1	0
Other	20	197	11	0	17
Total	1,558	25,228	3,714	178	2,763

Other, includes hospices, mental health day services, homes for young people, convents/religious orders, isolation facilities for COVID-19-pos vulnerable populations

Focus on Acute Hospitals

- 375 outbreaks in acute hospitals were notified up to the 6th March 2021
- 5,199 laboratory-confirmed cases were associated with outbreaks in acute hospitals (Table 11 and Figure 33):
 - 2,400 cases occurred in hospital inpatients (including 96 hospitalised HCWs) and 2,289 cases occurred in HCWs
 - Of those hospitalised, 131 were admitted to ICU, 13 of whom were HCWs
 - 677 cases died, 5 of whom were HCWs

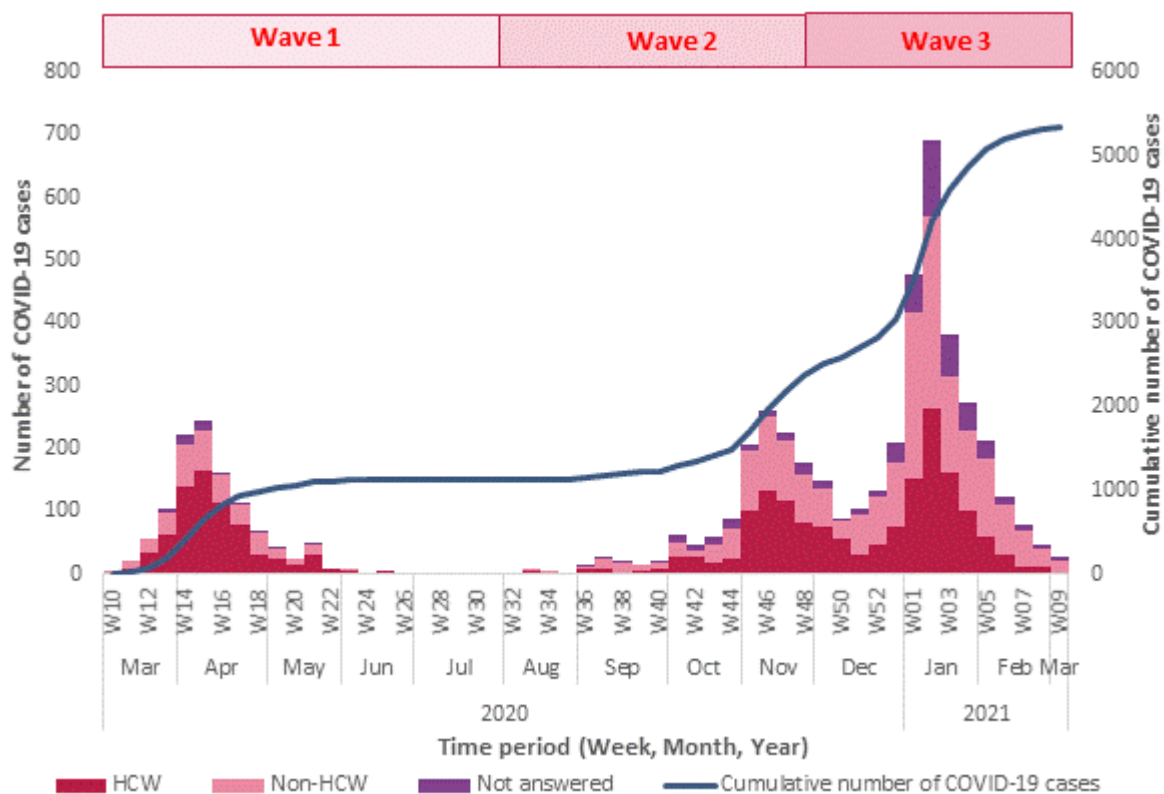


Figure 33. Cases of COVID-19 associated with outbreaks notified in acute hospitals by HCW status by week, Week 10 2020 – Week 9 2021 (N=5,199)

Table 11. Number of COVID-19 outbreaks and cases notified in acute hospitals by HSE Area, 02/03/2020 to midnight on 06/03/2021

HSE Area	Number of outbreaks	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total deaths	Total hospitalised cases	Total deaths among hospitalised cases
HSE-E	191	1,967	277	980	260
HSE-M	16	439	45	147	43
HSE-MW	11	355	57	198	56
HSE-NE	45	590	46	215	44
HSE-NW	37	562	63	245	60
HSE-SE	21	446	67	156	65
HSE-S	30	497	71	273	69
HSE-W	24	343	51	186	50
Total	375	5,199	677	2,400	647

Focus on Nursing Homes and Community Hospitals/Long stay units

- 627 outbreaks in nursing homes or community hospital/long-stay units were notified in the first 12 months of the pandemic
- 15,841 laboratory-confirmed cases were associated with outbreaks in nursing homes or community hospital/long-stay units (Table 12 and Figure 34):
 - 1,107 cases were hospitalised
 - 25 cases were admitted to ICU
 - 1,988 cases died
- 6,339 (40.0%) cases were in HCWs

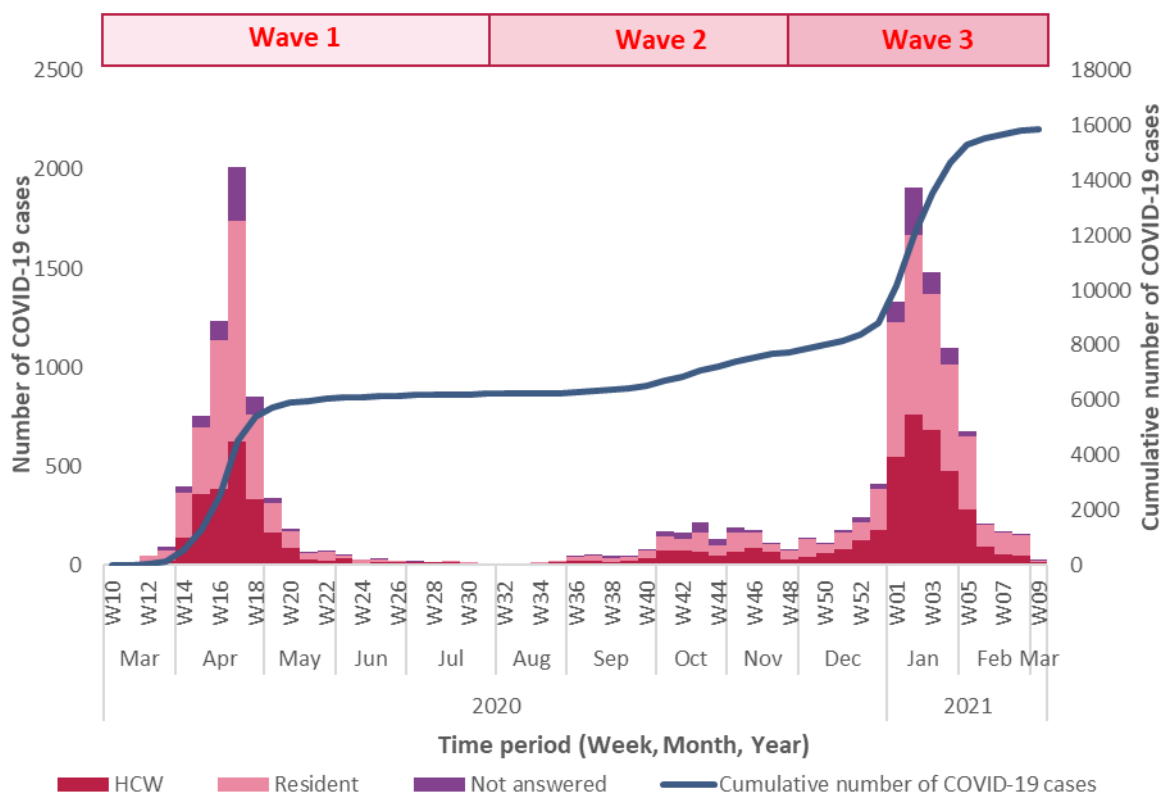


Figure 34. Cases of COVID-19 associated with outbreaks in nursing homes and community hospitals/ long-stay units by HCW status by week, Week 10 2020 – Week 9 2021 (N=15,841)

Table 12. Number of COVID-19 outbreaks and cases in nursing homes and community hospital/long-stay units by HSE Area, 02/03/2020 to midnight on 06/03/2021

HSE Area	Number of outbreaks	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total deaths	Total hospitalised cases	Total deaths among hospitalised cases
HSE-E	247	6,297	862	380	156
HSE-M	34	884	104	44	15
HSE-MW	43	1,290	182	111	41
HSE-NE	72	2,020	254	146	68
HSE-NW	28	614	58	69	16
HSE-SE	56	1,192	140	133	39
HSE-S	64	1,865	228	138	41
HSE-W	83	1,679	160	86	30
Total	627	15,841	1,988	1,107	406

Focus on Residential Institutions

- 433 outbreaks were notified in the following types of residential institutions:
 - centres for disabilities
 - centres for older people
 - children’s/TUSLA residential centres
 - mental health facilities
 - other facilities (including hospices, mental health day services, homes for young people, convents/religious orders, isolation facilities for COVID-19-pos vulnerable populations)
- There were 3,075 laboratory confirmed cases linked with outbreaks in these residential institutions (Table 13):
 - 173 cases were hospitalised
 - 17 were admitted to ICU
 - 93 cases died
- 1,424 (46.4%) cases were in HCWs (Figure 35)
- The majority of residential institution outbreaks were notified in centres for disabilities, with 315 outbreaks (72.4%) and 2,149 linked cases (70.1%) notified (Figure 36)

See Focus on Vulnerable Populations section for the following settings: homeless services, addiction services, Direct Provision Centres and prisons

Table 13. Number of COVID-19 outbreaks and cases in residential institutions* by HSE Area, 02/03/2020 to midnight on 06/03/2021

HSE Area	Number of outbreaks	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total deaths	Total hospitalised cases	Total deaths among hospitalised cases
HSE-E	200	1,495	57	88	14
HSE-M	27	128	0	2	0
HSE-MW	16	117	2	2	1
HSE-NE	63	335	4	21	3
HSE-NW	20	110	3	9	2
HSE-SE	45	380	10	17	7
HSE-S	44	402	16	25	7
HSE-W	18	108	1	9	0
Total	433	3,075	93	173	34

*Includes the following residential settings: centres for disabilities, centres for older people, children’s/TUSLA residential centres and mental health facilities, other facilities (including hospices, mental health day services, homes for young people, convents/religious orders, isolation facilities for COVID-19-pos vulnerable populations)

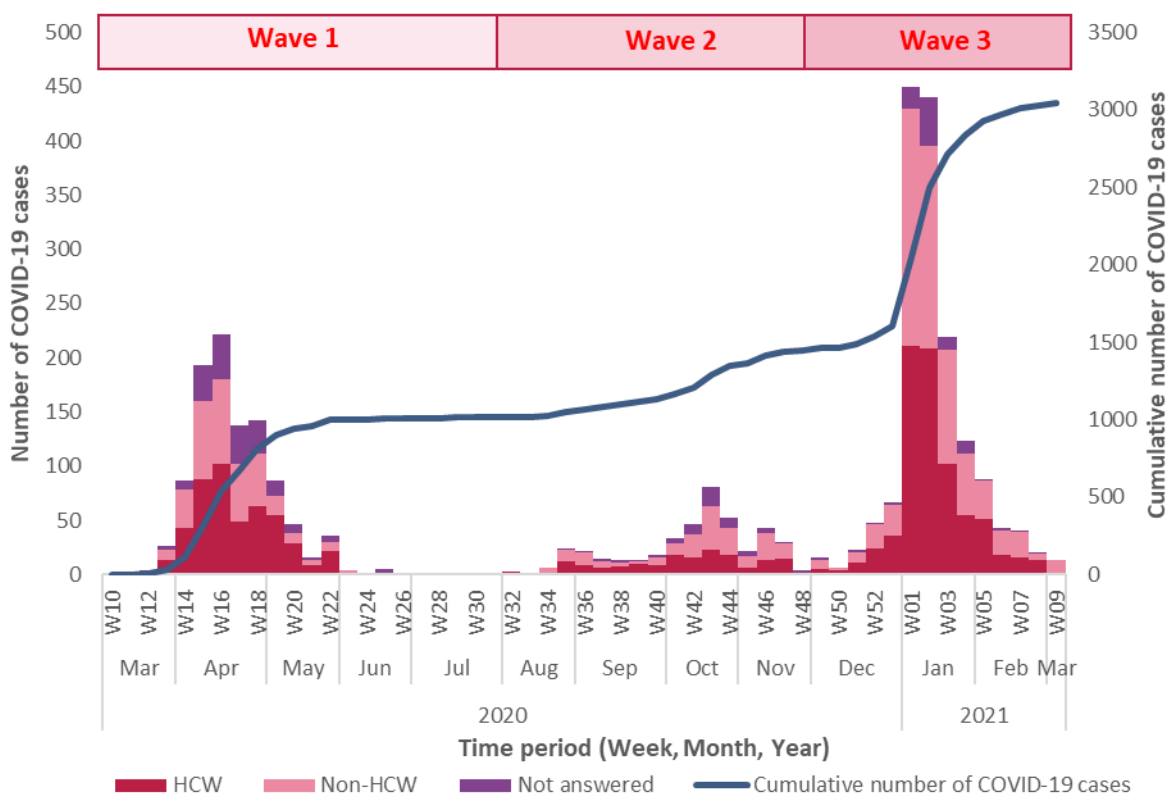


Figure 35. Cases of COVID-19 associated with outbreaks in residential institutions by HCW status by week, Week 10 2020 – Week 9 2021 (N=3,075)

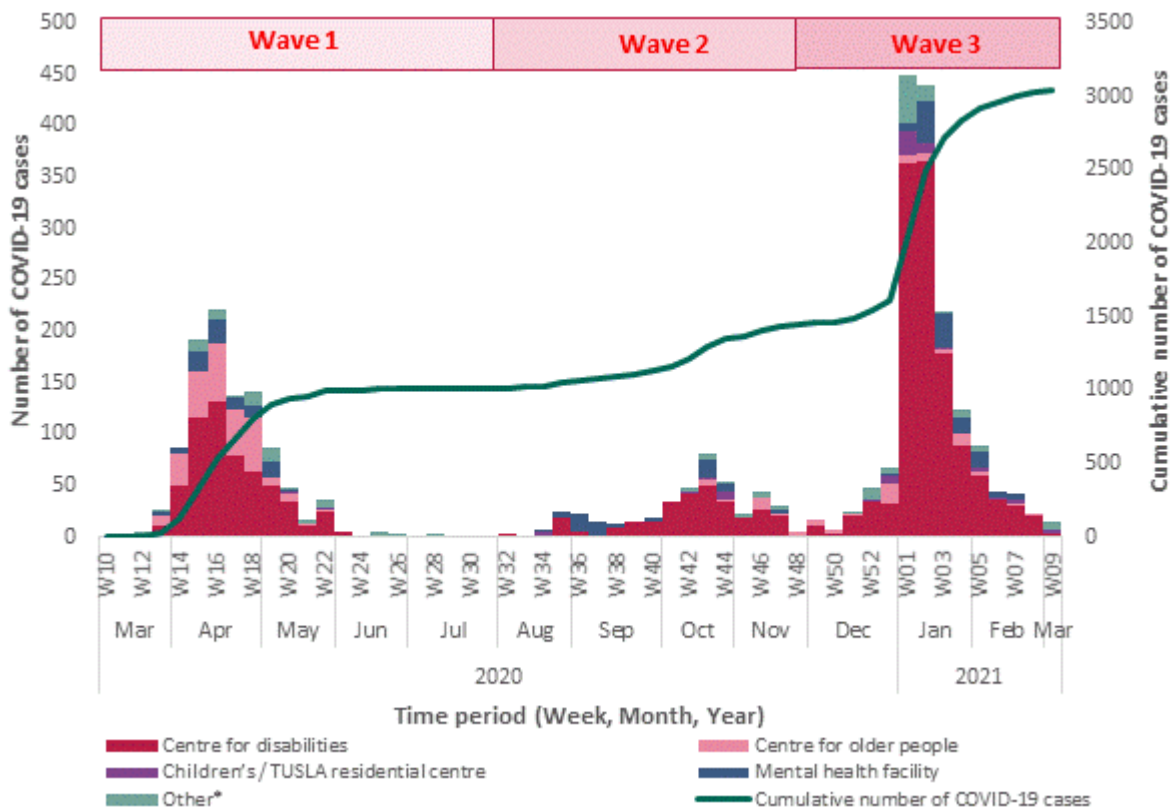


Figure 36. Cases of COVID-19 associated with outbreaks in residential institutions by institution type, Week 10 2020 – Week 9 2021 (N=3,075)

*Other, includes hospices, mental health day services, homes for young people, convents/religious orders, isolation facilities for COVID-19-pos vulnerable populations)

Healthcare Workers in Acute Hospitals, Nursing Homes, Community Hospitals/Long stay units and Residential Institutions

- 40% of all cases associated with outbreaks in healthcare settings were reported in HCWs (Table 14)
- HCWs comprised 44.4% of cases associated with outbreaks in hospitals compared with 39.5% in nursing home/comm. hospitals/long-stay units and 35.4% in all residential institutions
- For more information on HCWs affected by COVID-19 see earlier section in this report

Table 14. Healthcare worker (HCW) status among cases associated with outbreaks in hospitals and residential care facilities

Location	Total cases	HCW	%HCW
Hospital	5,199	2,289	44.0%
NHs and Comm. Hospital/LSFs	15,841	6,339	40.0%
Residential Institution	4,188	1,484	35.4%
Total	25,288	10,112	40.0%

NH, Nursing home; LSF, Long-stay facilities

Focus on Vulnerable Populations

- Outbreaks notified up to 06/03/2021 in the following vulnerable populations/settings (Table 15 and Figure 37) are included in this section:
 - Irish Travellers
 - Direct Provision Centres
 - Facilities for the homeless
 - Prisoner and prison staff
 - Roma community
 - Addiction services

See Focus on Residential institutions section for the following settings: Centres for disabilities, Centre for older people, Children's/TUSLA residential centres and mental health facilities

Table 15. Number of COVID-19 outbreaks and cases in Vulnerable Populations, 02/03/2020 to midnight on 06/03/2021

Vulnerable populations	Number of outbreaks notified	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total hospitalised cases	Total ICU cases	Total number of deaths
Irish Travellers**	263	3,862	172	22	9
Direct provision centres	72	699	19	0	0
Homeless^	28	170	8	4	5
Roma community**	17	222	27	8	5
Prisons	14	158	4	1	0
People with addictions	11	91	2	0	0
Total	405	5,202	232	35	19

** Includes private houses for these settings only

^ Homeless includes some facilities that provide long term supported accommodation

Note: Many of these settings include cases among staff

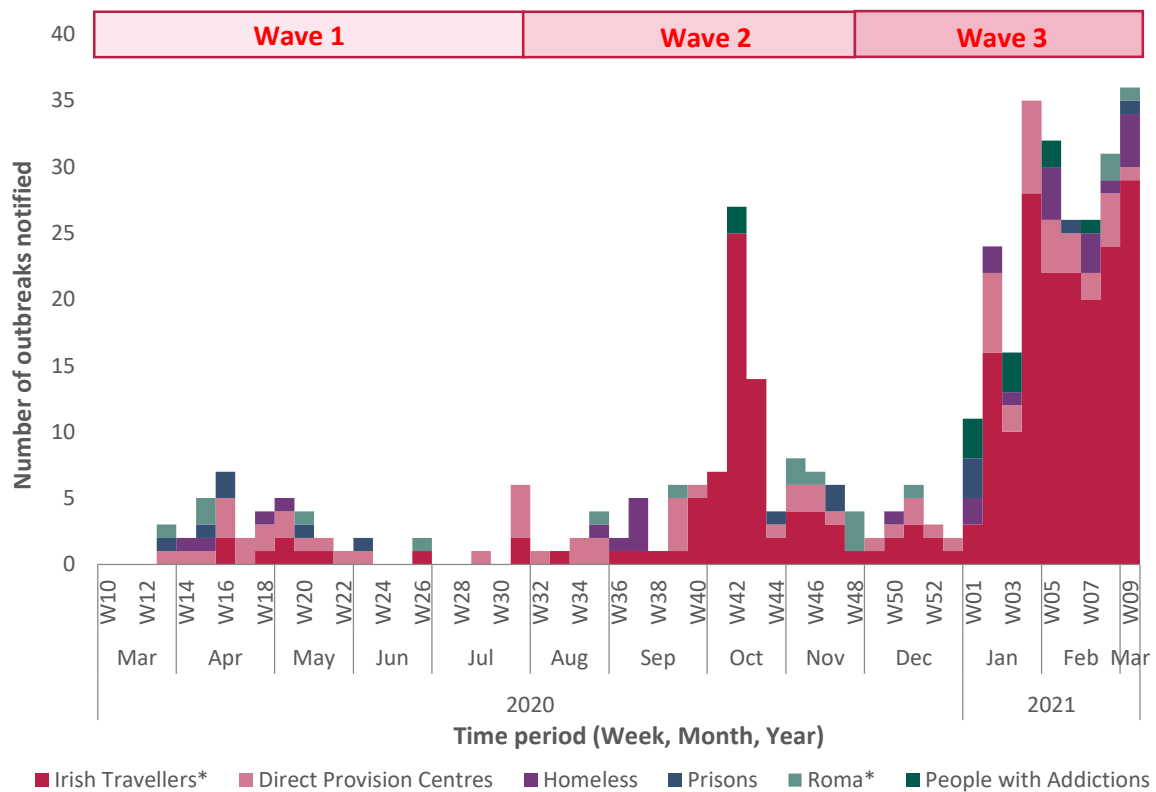


Figure 37. Epi-curve of vulnerable group outbreaks* of COVID-19 notified in Ireland by week of notification, Week 10 2020 – Week 9 2021 (N=405)

*includes private houses for Irish travellers and Roma

Please note that the number of outbreaks in vulnerable groups is probably under-estimated, especially during Wave 1 as ethnicity data were not consistently collected until mid-June 2020

COVID-19 Outbreaks in Workplaces

- 532 COVID-19 outbreaks in workplaces were notified in the first 12 months of the pandemic
- Of these, 150 outbreaks were notified in businesses associated with the production or processing of food and beverages, of which 92 were in meat/poultry/fish plants in all HSE areas (Table 16 and Figure 38). Please note that serial testing was undertaken in some facilities resulting in an increased detection of cases in these settings
- Workplace outbreaks reported in this section exclude the following: hospitals, residential facilities, hotels, public houses, retail outlets, educational facilities and other healthcare settings. These are reported under their respective headings
- Workplace outbreaks are defined as outbreaks in workplace settings that have no clients or customers, or access by members of the public, i.e. present no risk other than to the workforce

Table 16. Number of COVID-19 outbreaks and cases in Workplaces in Ireland, 02/03/2020 to midnight on 06/03/2021

Workplace outbreaks	Number of outbreaks notified	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total hospitalised cases	Total ICU cases	Total deaths
Meat/poultry P&P	92	2,860	46	13	0
Commercial	92	558	7	3	1
Construction industry**	77	351	6	1	0
Other manufacturing	67	467	11	2	0
Other food/beverage P&P	58	486	10	4	1
Office-based	58	238	5	1	0
Defence/Justice/Emergency services	57	302	2	0	0
Other Workplace^	31	145	9	3	0
Total	532	5,407	96	27	2

P&P, Production and Processing

**Cases linked to some construction site outbreaks may reside in Northern Ireland and consequently will be notified in that jurisdiction

^Other workplace includes businesses that do not fit in existing workplace categories or the exclusions outlined above

Serial testing in meat & poultry plants resulted in increased case detection in these facilities

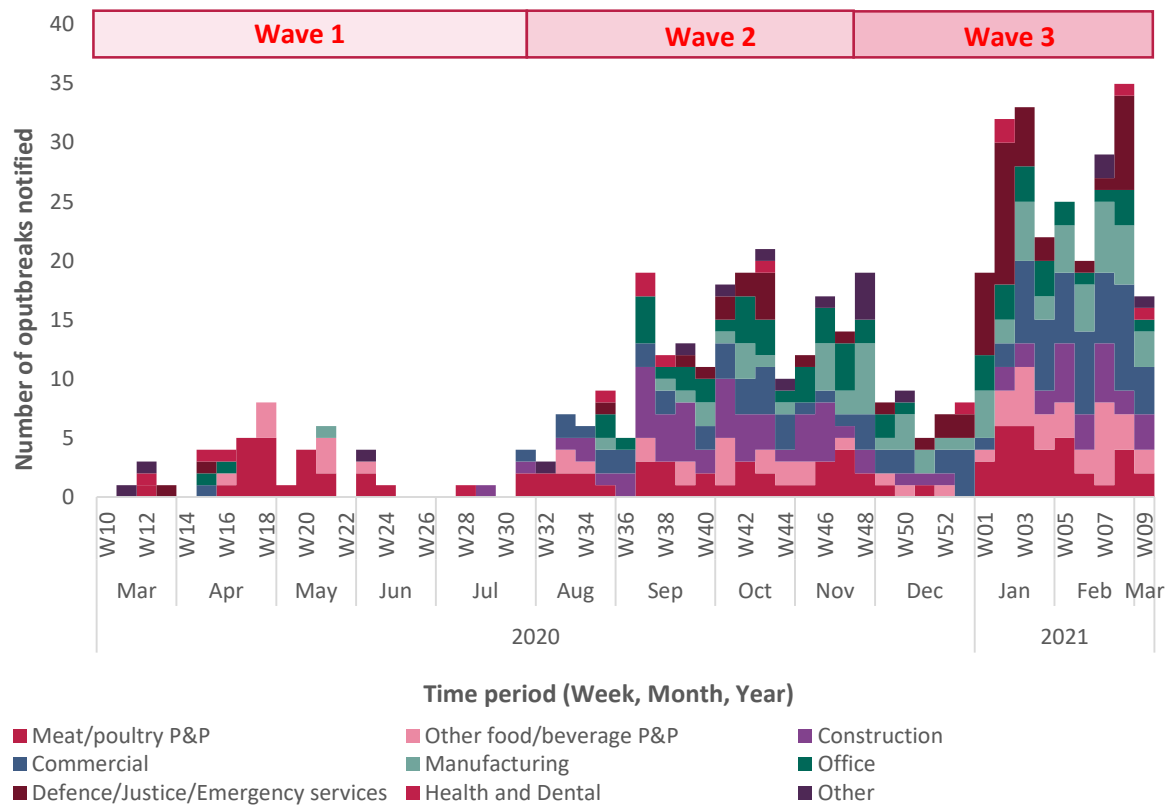


Figure 38. Epi-curve of workplace outbreaks of COVID-19 notified in Ireland by week of notification, Week 10 2020 – Week 9 2021 (N=532)

P&P, Production and Processing

COVID-19 Outbreaks associated with educational settings (schools, universities/colleges and childcare facilities; including staff)

- In total, 356 COVID-19 outbreaks associated with primary and secondary schools, universities/colleges/third level students and childcare facilities were notified from 01/03/2020 up to midnight on 06/03/2021 (Table 17 and Figure 39)
- All educational settings were closed up until 29th June 2020, when childcare facilities were re-opened

Table 17. Number of COVID-19 outbreaks and cases in educational settings (including staff) in Ireland, 02/03/2020 to midnight on 06/03/2021

Outbreak location	Number of outbreaks notified	Laboratory confirmed cases linked to outbreaks			
		Total cases	Total hospitalised cases	Total ICU cases	Total number of deaths
School*	318	1,509	13	0	0
University / college / third level students^	172	1,833	18	0	0
Childcare facility	218	1,206	8	1	0
Total	708	4,548	39	1	0

*These outbreaks are outbreaks associated with school children and/or school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks

^These outbreaks include outbreaks among third level students that occurred in other locations and may not be directly linked to a university or college

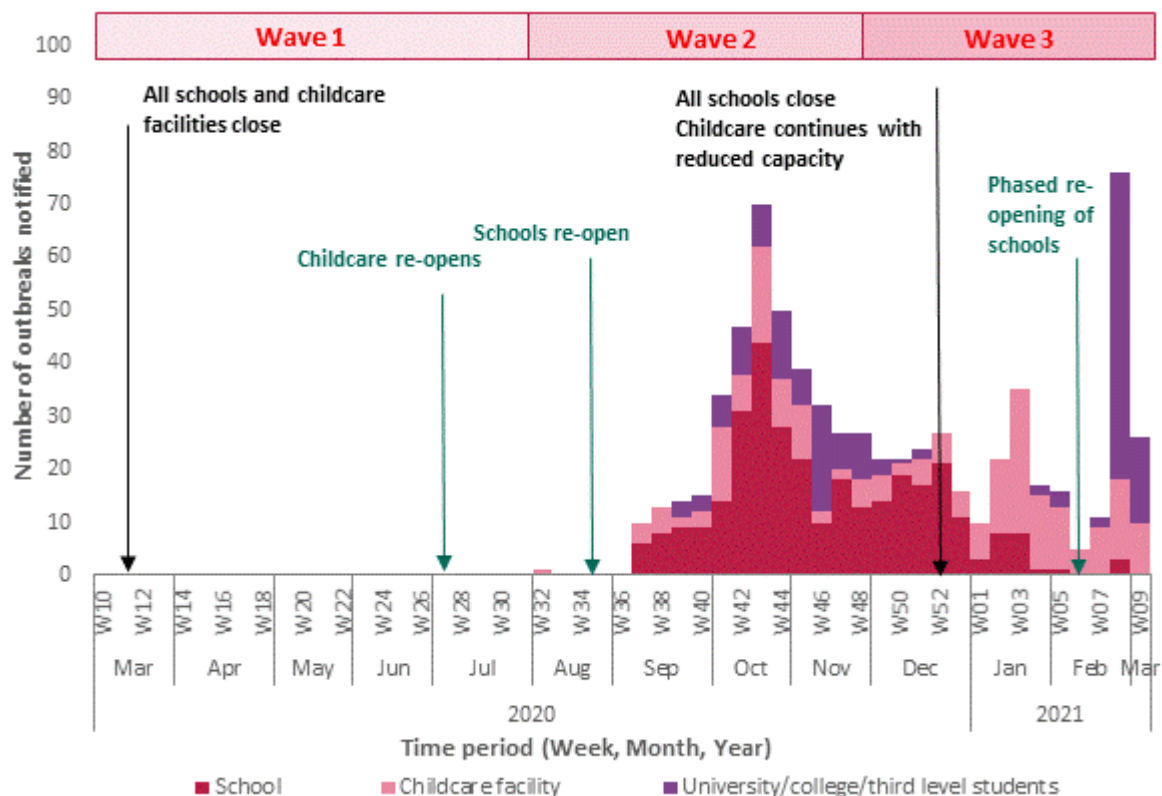


Figure 39. Epi-curve of educational outbreaks of COVID-19 notified in Ireland by week of notification, Week 10 2020 – Week 9 2021 (N=708)

Conclusion

The COVID-19 pandemic was declared by the World Health Organization (WHO) in March 2020 and spread rapidly across the world in the following weeks. In Ireland, 5% of the population had notified infection in the first year of the pandemic across three distinct waves of infection, resulting in almost 5,000 deaths. Public health restrictions of varying severity were in place for most of the first year of the pandemic. Persons aged 85 years and older and young adults (19-24 years) had the highest incidence of COVID-19 during that year, with those aged 85 and older dominating wave 1 and a higher incidence in those aged 19-24 years in wave 2. This may have reflected increased social mixing in this age-group during Wave 2. Both of these age-groups had a high incidence in Wave 3 (Alpha wave). The burden of COVID-19 infection was the same for both men and women. However, men, especially older men, experienced more severe illness than women with higher incidences of hospitalisation, ICU admission and death. Initially the COVID-19 pandemic affected the East and North-East of the country more (68.5% of wave 1 cases) but by waves 2 and 3, COVID-19 cases were more evenly distributed across the country.

In the first wave of the pandemic, international evidence suggested that certain ethnic groups were disproportionately affected by COVID-19^(1,2). As a result of this, the collection of ethnicity data on all COVID-19 cases in Ireland commenced in June 2020. Among all ethnic groups, the highest incidence of COVID-19 was in Irish Travellers. Case numbers in this ethnic minority were especially high in Wave 3, possibly reflecting the considerable travel links between Ireland and the UK in this group, especially at Christmas and the co-incident spread of the more transmissible Alpha variant from the UK at the end of 2020. Approximately 260 outbreaks occurred among Irish Travellers in the first year of the pandemic with almost 4,000 associated cases, occurring mainly in waves 2 and 3.

While the initial COVID-19 cases were travel-related, overall the majority of cases (57%) in the first year of the pandemic acquired their illness from a close contact. Healthcare-acquired infection was another important transmission route, especially in wave 1 where almost half of all cases acquired their infection from this source, reflecting the impact of COVID-19 on healthcare settings early in the pandemic and also the early concentration of testing in healthcare settings. For similar reasons, almost a third of all COVID-19 cases in Wave 1 occurred in healthcare workers (HCWs). As an understanding of the disease evolved along with enhanced infection prevention and control measures including vaccination, the proportion of COVID-19 cases in HCWs declined substantially.

COVID-19 infection results in a spectrum of disease from asymptomatic infection to severe disease requiring hospitalisation and sometimes resulting in death. In the first year of the pandemic, approximately 6% of COVID-19 cases required hospitalisation, with 10% of these requiring ICU care. The proportion of cases requiring hospitalisation varied considerably with age with more than 30% of 75-84-year-old cases being hospitalised compared with <1% of 5-12 year-olds. The highest proportion of ICU admissions occurred in the 65-74-year-olds, with 90% of all ICU admissions suffering from at least one underlying medical condition.

Significant COVID-19-related mortality occurred in year 1 of the pandemic, especially among the older population with 92% of deaths occurring in those aged 65 years old and older. The case fatality rate of COVID-19 declined in waves 2 and 3 from a wave 1 peak of 6%. Nursing home residents were particularly affected in Wave 1, with almost half of all COVID-19 deaths occurring in those facilities. This declined to 35% in Wave 3, as the impact of the COVID-19 vaccination programme began to become apparent. All-cause excess mortality was observed in waves 1 and 3, likely due largely to the considerable mortality in nursing homes.

Testing capacity for SARS-CoV2 was limited at the start of the pandemic, consequently testing was restricted to symptomatic cases often with epidemiological links to confirmed COVID-19 cases. This was reflected in the high positivity rates of approximately 20% at the start of Wave 1. Testing became more widespread as laboratory testing capacity expanded, incorporating serial and mass testing programmes and testing of asymptomatic close contacts. Testing volumes and positivity rates peaked in week 1, 2021 at the peak of wave 3, when approximately 180,000 SARS-CoV2 tests were carried out and a positivity rate of over 20% was recorded.

Mutation of viruses is not uncommon and COVID-19 is no exception. During waves 1 and 2 of the pandemic, very limited whole genome sequencing (WGS) was undertaken in Ireland. With the emergence of the more transmissible Alpha variant of concern (VOC) in the UK, WGS capacity was expanded in Ireland including offshore assistance from the European Centre for Disease Prevention and Control (ECDC). Alpha rapidly became the dominant variant in both the UK and Ireland, fuelling Wave 3 of the pandemic in Ireland. Two other VOCs emerged during wave 3, Beta and Gamma VOCs, both were identified in small numbers in Ireland but were unable to compete with Alpha.

Excluding outbreaks in private households, almost 4,200 COVID-19 outbreaks were reported on Ireland's Computerised Infectious Diseases Reporting (CIDR) system, 40% of these occurred in healthcare settings. Almost 80% of outbreaks in wave 1 were in healthcare settings, reducing to 20% of all outbreaks in wave 2 with the opening up of society. In wave 3, there was again a resurgence in the proportion of outbreaks in healthcare settings to over 40% of all outbreaks.

Nursing homes and community hospitals were particularly affected by the pandemic. In year 1, over 600 outbreaks occurred in these facilities with almost 16,000 associated cases, 40% of whom were healthcare workers. Meat production and processing plants were also heavily impacted by COVID-19. **Transmission between these aforementioned settings and with the wider community was well recognised. In August 2020, the high COVID-19 incidence in counties Kildare, Laois and Offaly, due in part to these large outbreaks resulted in a regional lockdown.**

When schools reopened in September 2020, outbreaks in these settings began to appear. School-aged children had largely escaped the pandemic up to this time, with very low COVID-19 case numbers reported in these age-groups. However, by mid-October 2020 over 40 outbreaks were reported in one week. Schools did not reopen after the Christmas holidays due to high case numbers driven by Alpha VOC and a phased approach to reopening commenced in late February 2021.

The COVID-19 pandemic was unprecedented and a wide range of public health measures e.g. mask wearing, hand hygiene, social distancing and vaccination were required to control the pandemic. The pandemic impacted on the whole population, though some groups/settings were impacted more than others, including healthcare settings especially nursing homes, healthcare workers, workplaces such as meat production and processing plants, schools and some vulnerable groups. By the end of the first year of the pandemic, wave 3 was declining, the COVID-19 vaccine programme was well established and hope was on the horizon.

References

1. Tai DBG, Shah A, Doubeni CA, et al. The Disproportionate Impact of COVID-19 on Racial and Ethnic Minorities in the United States. *Clin Infect Dis.* 2021 Feb 16; 72(4): 703-706. doi: 10.1093/cid/ciaa815.
2. Mathur R, Rentsch CT, Morton C, et al. Ethnic differences in SARS-CoV-2 infection and COVID-19-related hospitalisation, intensive care unit admission, and death in 17 million adults in England: an observational cohort study using the OpenSAFELY platform. *Lancet.* 2021. May 06; 397(10286):1711-1724. DOI: [https://doi.org/10.1016/S0140-6736\(21\)00634-6](https://doi.org/10.1016/S0140-6736(21)00634-6)

Further information

COVID-19 in Ireland surveillance reports on HPSC website:

<https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casesinireland/>

HPSC's Epidemiology of COVID-19 in Ireland Data Hub:

<https://epi-covid-19-hpscireland.hub.arcgis.com/>

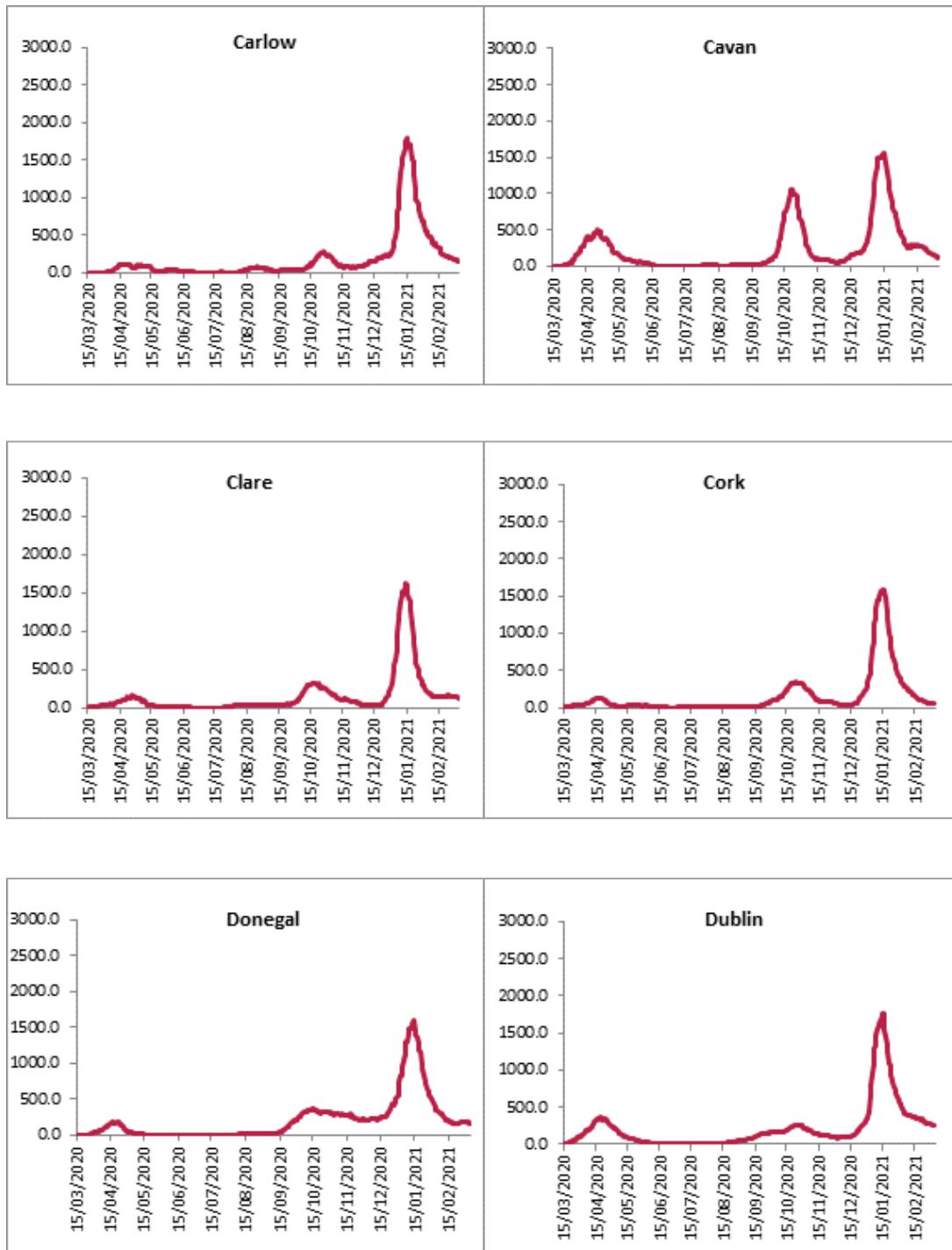
Ireland's COVID-19 Data Hub:

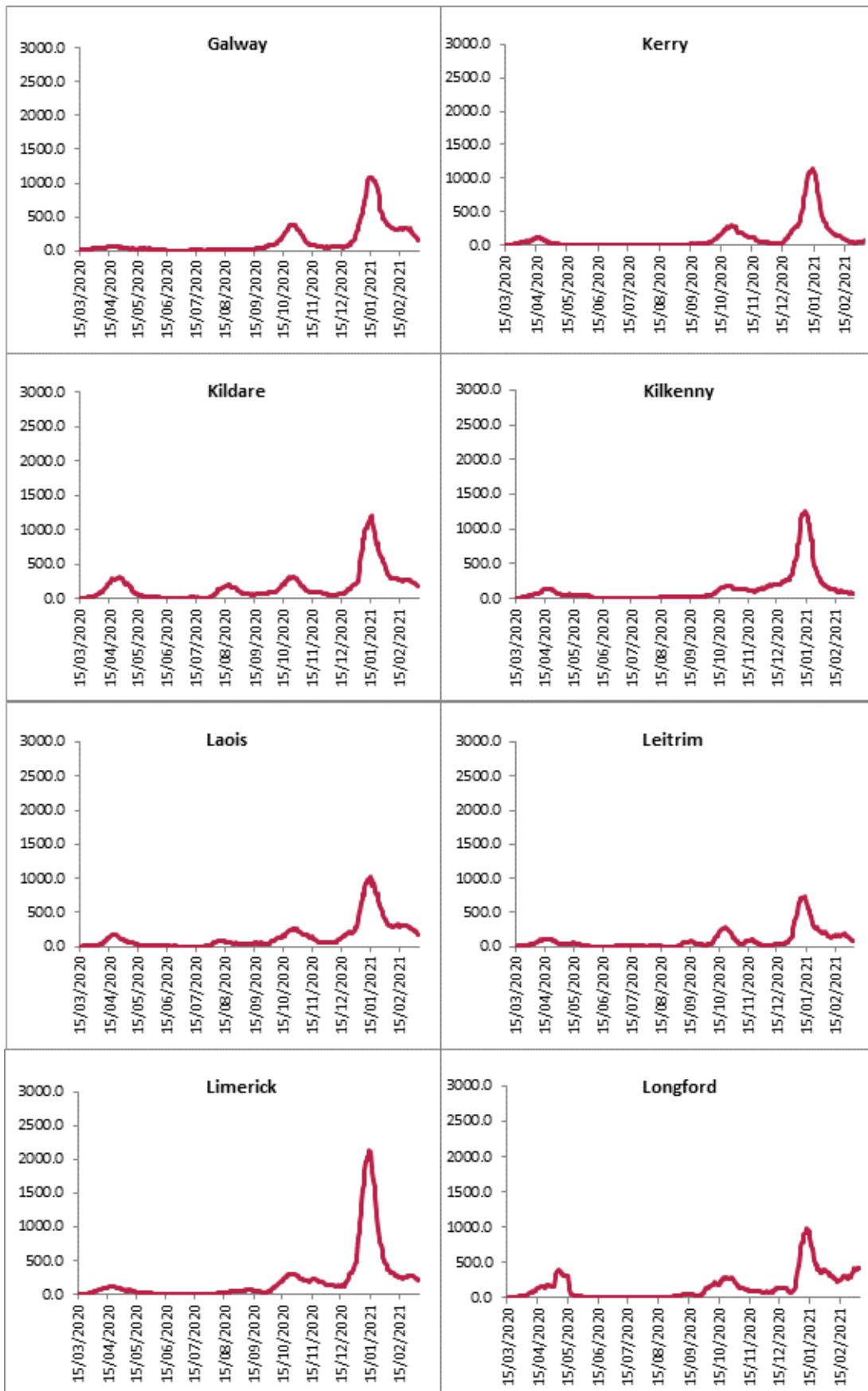
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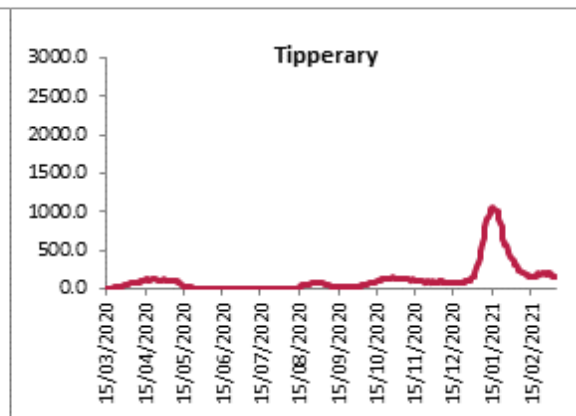
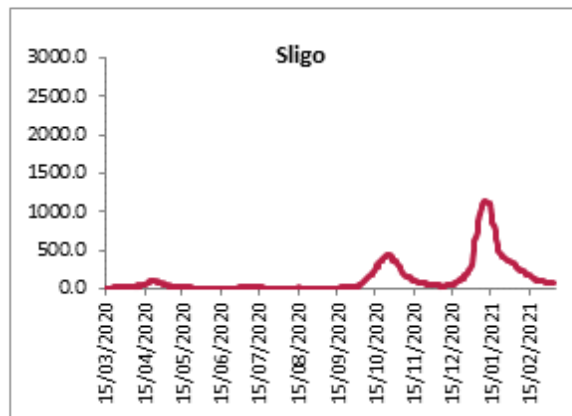
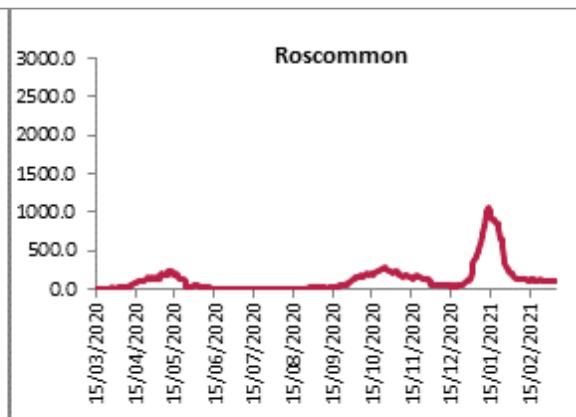
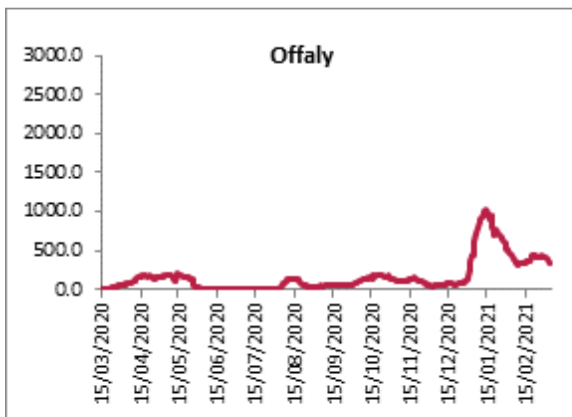
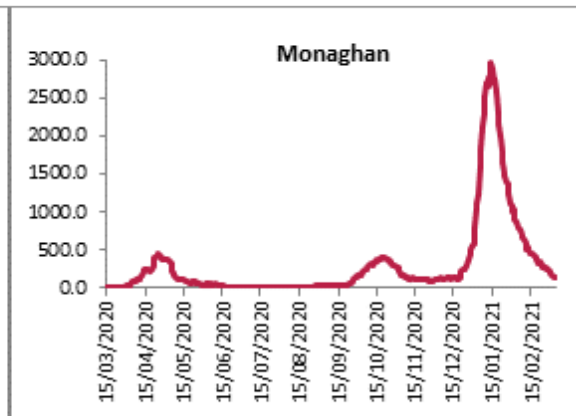
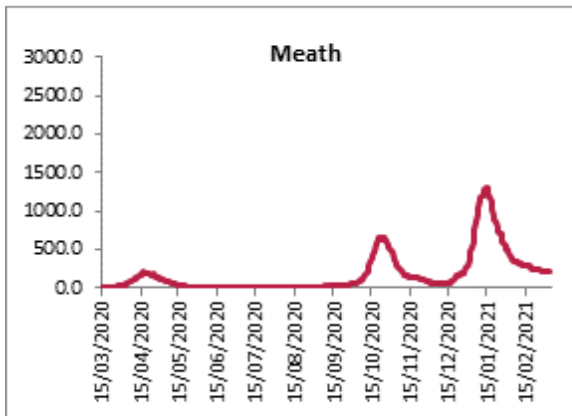
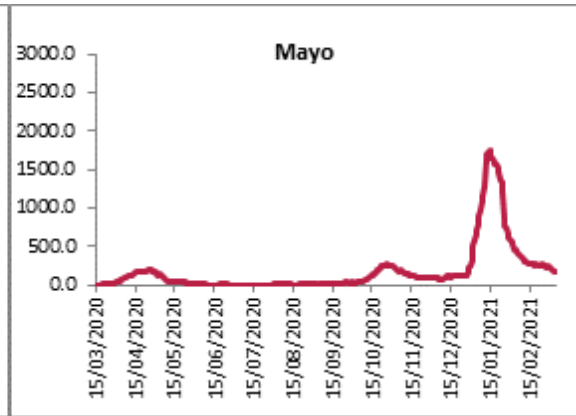
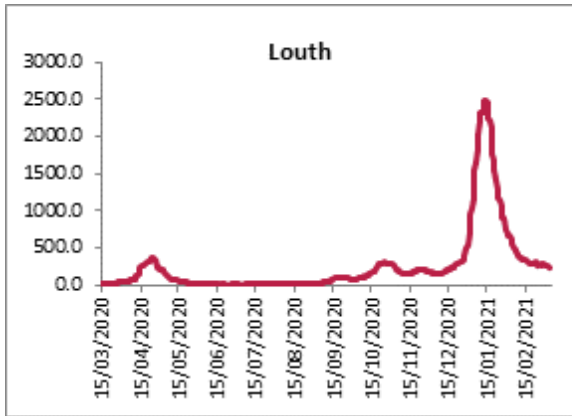
Acknowledgements

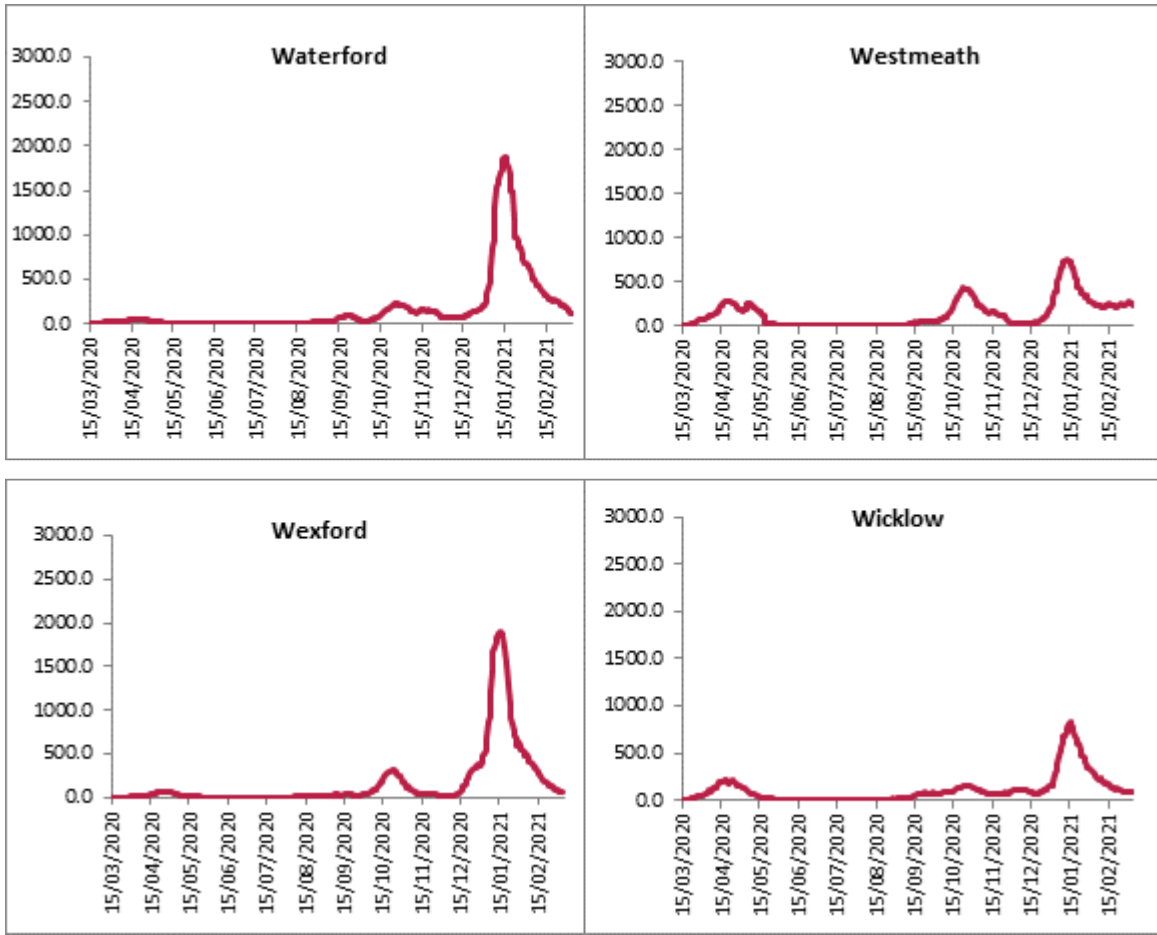
Sincere thanks are extended to all those who participated in the collection of data used in this report. This includes the HSE COVID-19 Contact Management Programme (CMP), staff in ICU units, notifying clinicians, laboratory staff, public health doctors, nurses, surveillance scientists, microbiologists and administrative staff.

Appendix A. Rolling 14-day cumulative incidence rates of confirmed cases of COVID-19 per 100,000 population, by event date (notification date) and county in Ireland, 2nd March 2020 – 6th March 2021



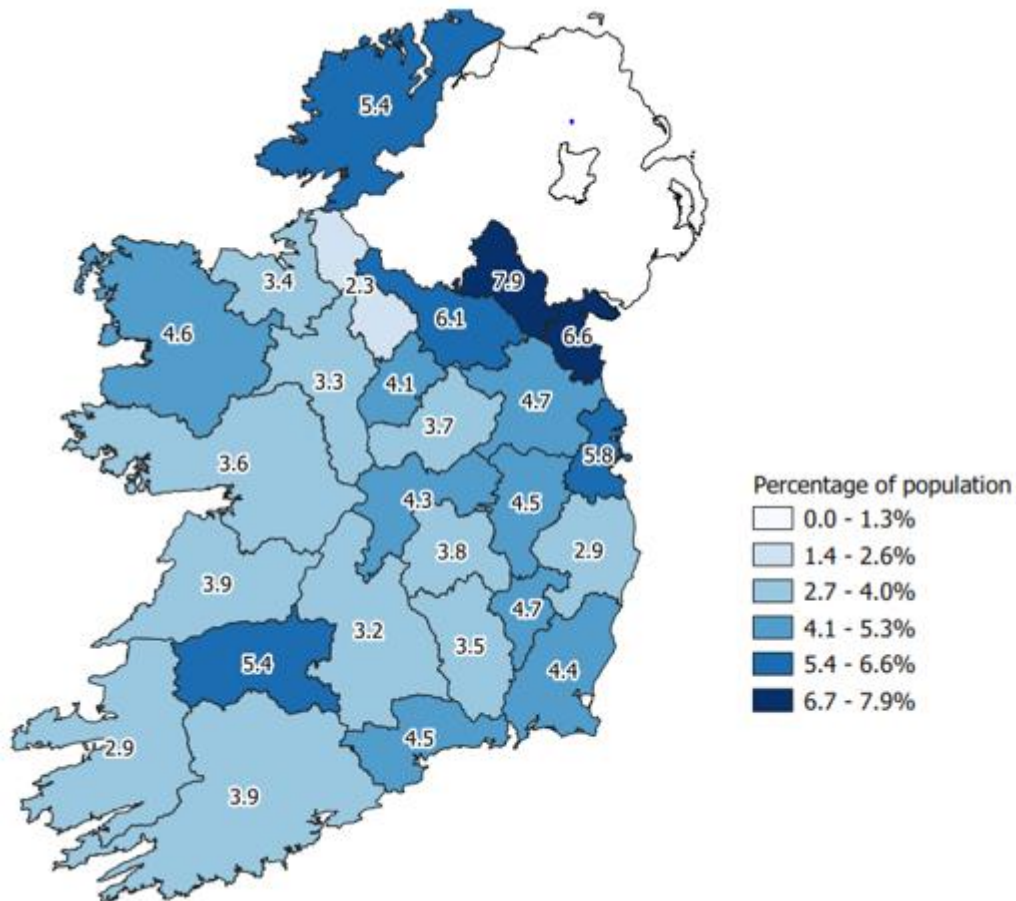






Appendix B. Percentage of the population by county diagnosed with COVID-19 during the first year of the pandemic

The map below is the same as in [Figure 6](#) with percentages instead of rates (percentages are exactly comparable to rates as rates are cases per 100,000 population)



Appendix C. Summary data of COVID-19 cases by HSE Area in Ireland, Week 10 2020 – Week 9 2021

By case numbers

HSE Area	Wave1	Wave2	Wave3	Total
HSE-E	14,865	17,028	59,716	91,609
HSE-M	1,754	2,513	7,276	11,543
HSE-MW	1,426	3,461	12,705	17,592
HSE-NE	3,041	5,728	18,374	27,143
HSE-NW	710	3,050	7,728	11,488
HSE-SE	1,041	3,274	16,239	20,554
HSE-S	1,883	5,660	18,104	25,647
HSE-W	1,429	3,485	12,652	17,566
Total	26,149	44,199	152,794	223,142

By incidence rate (per 100,000 population)

HSE Area	Wave1	Wave2	Wave3	Total
HSE-E	868	994	3,487	5,350
HSE-M	600	860	2,489	3,949
HSE-MW	370	899	3,300	4,569
HSE-NE	661	1,244	3,992	5,897
HSE-NW	275	1,182	2,996	4,454
HSE-SE	151	474	2,352	2,976
HSE-S	369	1,109	3,547	5,026
HSE-W	315	769	2,792	3,877
Total	549	928	3,209	4,686

Appendix D. Confirmed cases of COVID-19 in Ireland by sex and age group and by week

Wave	Year- Week num	Start date	End date	Confirmed Cases	Severity			Sex					Age groups							
					Hospitalisations	ICU admissions	Deaths	Females	Males	UNK	F:M ratio	%Female	0-12	13-18	19-44	45-64	66-84	85+	UNK	
Wave 1	2020-W10	01/03/2020	07/03/2020	16	11	1	1	7	9	0	0.78	44%	1	2	8	5	0	0	0	
	2020-W11	08/03/2020	14/03/2020	127	52	11	9	47	80	0	0.59	37%	1	1	51	52	19	3	0	
	2020-W12	15/03/2020	21/03/2020	680	180	29	27	312	368	0	0.85	46%	13	10	327	214	86	30	0	
	2020-W13	22/03/2020	28/03/2020	1,623	460	84	130	840	783	0	1.07	52%	16	20	669	548	301	66	3	
	2020-W14	29/03/2020	04/04/2020	2,403	645	92	219	1,417	986	0	1.44	59%	14	10	897	770	500	209	3	
	2020-W15	05/04/2020	11/04/2020	4,511	559	82	262	2,529	1,982	0	1.28	56%	48	44	1932	1600	627	259	1	
	2020-W16	12/04/2020	18/04/2020	5,598	432	40	343	3,257	2,341	0	1.39	58%	103	83	2215	1872	823	500	2	
	2020-W17	19/04/2020	25/04/2020	3,767	305	40	282	2,409	1,358	0	1.77	64%	34	41	1216	932	830	714	0	
	2020-W18	26/04/2020	02/05/2020	2,533	246	13	119	1,446	1,086	1	1.33	57%	43	41	1037	677	409	325	1	
	2020-W19	03/05/2020	09/05/2020	1,477	135	15	54	807	669	1	1.21	55%	41	28	698	419	196	93	2	
	2020-W20	10/05/2020	16/05/2020	1,175	87	10	31	633	541	1	1.17	54%	22	9	665	313	107	59	0	
	2020-W21	17/05/2020	23/05/2020	571	83	12	20	317	254	0	1.25	56%	32	31	264	140	70	34	0	
	2020-W22	24/05/2020	30/05/2020	411	44	4	12	226	185	0	1.22	55%	20	12	160	124	61	34	0	
	2020-W23	31/05/2020	06/06/2020	232	29	0	6	132	100	0	1.32	57%	18	6	93	72	29	14	0	
	2020-W24	07/06/2020	13/06/2020	110	11	0	6	60	50	0	1.20	55%	8	7	45	25	15	10	0	
	2020-W25	14/06/2020	20/06/2020	95	6	1	3	52	43	0	1.21	55%	6	1	43	25	10	10	0	
	2020-W26	21/06/2020	27/06/2020	61	7	0	3	32	29	0	1.10	52%	2	2	33	14	5	5	0	
	2020-W27	28/06/2020	04/07/2020	93	9	2	0	48	45	0	1.07	52%	8	2	47	23	10	3	0	
	2020-W28	05/07/2020	11/07/2020	126	3	0	1	77	49	0	1.57	61%	10	4	88	16	7	1	0	
	2020-W29	12/07/2020	18/07/2020	139	10	1	1	74	65	0	1.14	53%	5	2	76	33	19	3	1	
	2020-W30	19/07/2020	25/07/2020	118	6	0	0	55	63	0	0.87	47%	7	4	66	31	8	2	0	
	2020-W31	26/07/2020	01/08/2020	283	7	1	0	130	153	0	0.85	46%	41	22	147	55	15	3	0	
	Wave 2	2020-W32	02/08/2020	08/08/2020	540	11	3	1	201	339	0	0.59	37%	42	32	323	123	19	1	0
		2020-W33	09/08/2020	15/08/2020	546	14	3	0	269	277	0	0.97	49%	61	35	285	125	34	6	0
		2020-W34	16/08/2020	22/08/2020	711	12	1	2	386	325	0	1.19	54%	72	59	394	153	30	3	0
		2020-W35	23/08/2020	29/08/2020	796	30	3	6	371	425	0	0.87	47%	70	64	427	175	53	5	2
		2020-W36	30/08/2020	05/09/2020	912	37	3	8	466	446	0	1.04	51%	102	55	469	188	73	24	1
		2020-W37	06/09/2020	12/09/2020	1,303	44	8	12	664	639	0	1.04	51%	161	88	649	280	103	22	0
		2020-W38	13/09/2020	19/09/2020	1,946	78	14	13	984	962	0	1.02	51%	196	175	904	475	177	19	0

Appendix D (continued). Confirmed cases of COVID-19 in Ireland by gender and age group and by week

Wave	Year-Week num	Start date	End date	Confirmed Cases	Severity			Sex					Age groups						
					Hospitalisations	ICU admissions	Deaths	Females	Males	UNK	F:M ratio	%Female	0-12	13-18	19-44	45-64	66-84	85+	UNK
Wave 2	2020-W39	20/09/2020	26/09/2020	2,059	74	10	11	1,019	1,040	0	0.98	49%	174	140	1108	447	165	25	0
	2020-W40	27/09/2020	03/10/2020	3,030	95	6	22	1,523	1,507	0	1.01	50%	211	215	1612	743	214	35	0
	2020-W41	04/10/2020	10/10/2020	4,457	184	21	41	2,210	2,247	0	0.98	50%	350	399	2267	1024	333	82	2
	2020-W42	11/10/2020	17/10/2020	7,407	207	19	35	3,700	3,706	1	1.00	50%	646	711	3796	1680	489	83	2
	2020-W43	18/10/2020	24/10/2020	7,070	244	24	53	3,565	3,505	0	1.02	50%	825	663	3207	1704	550	119	2
	2020-W44	25/10/2020	31/10/2020	4,837	191	21	33	2,529	2,305	3	1.10	52%	627	464	2039	1195	419	93	0
	2020-W45	01/11/2020	07/11/2020	3,422	215	21	55	1,775	1,646	1	1.08	52%	415	273	1514	795	335	88	2
	2020-W46	08/11/2020	14/11/2020	2,583	213	18	49	1,310	1,273	0	1.03	51%	299	219	1109	605	262	89	0
	2020-W47	15/11/2020	21/11/2020	2,580	181	8	44	1,379	1,200	1	1.15	53%	330	268	1139	562	212	68	1
Wave 3	2020-W48	22/11/2020	28/11/2020	1,797	145	12	30	890	907	0	0.98	50%	240	152	773	403	178	50	1
	2020-W49	29/11/2020	05/12/2020	2,026	141	12	38	1,035	991	0	1.04	51%	304	160	824	458	203	77	0
	2020-W50	06/12/2020	12/12/2020	1,962	114	10	24	1,037	925	0	1.12	53%	282	152	826	497	159	46	0
	2020-W51	13/12/2020	19/12/2020	3,367	174	22	54	1,665	1,702	0	0.98	49%	399	242	1517	854	287	68	0
	2020-W52	20/12/2020	26/12/2020	6,596	265	27	81	3,352	3,243	1	1.03	51%	651	412	3245	1631	534	123	0
	2020-W53	27/12/2020	02/01/2021	15,721	518	56	141	8,030	7,687	4	1.04	51%	1079	928	8188	4018	1259	248	1
	2021-W01	03/01/2021	09/01/2021	45,616	1,473	181	475	23,952	21,661	3	1.11	53%	2528	2823	22974	12714	3821	755	1
	2021-W02	10/01/2021	16/01/2021	25,112	1,560	147	646	13,567	11,539	6	1.18	54%	1307	1398	11205	7371	2872	951	8
	2021-W03	17/01/2021	23/01/2021	14,806	952	92	440	7,903	6,894	9	1.15	53%	824	732	6728	4202	1664	654	2
	2021-W04	24/01/2021	30/01/2021	8,921	702	52	270	4,758	4,156	7	1.14	53%	629	502	3850	2348	1088	504	0
	2021-W05	31/01/2021	06/02/2021	7,143	577	46	186	3,715	3,424	4	1.08	52%	589	462	3156	1843	750	342	1
	2021-W06	07/02/2021	13/02/2021	6,026	451	51	96	3,067	2,951	8	1.04	51%	794	502	2694	1359	529	147	1
2021-W07	14/02/2021	20/02/2021	5,525	398	33	76	2,721	2,798	6	0.97	49%	740	383	2667	1135	467	133	0	
2021-W08	21/02/2021	27/02/2021	4,547	255	28	38	2,308	2,236	3	1.03	51%	662	325	2113	1012	331	103	1	
2021-W09	28/02/2021	06/03/2021	3,629	200	17	24	1,774	1,850	5	0.96	49%	579	276	1660	798	269	47	0	
	TOTAL			223,142	13,082	1,407	4,533	117,032	106,045	65	1.10	52%	16681	13691	104439	58877	22026	7387	41

Appendix E. Confirmed cases of COVID-19 in Ireland by severity, most likely transmission source (MLTS) and healthcare worker (HCW) status, including testing data, by week

Wave	Year- Week num	Confirmed Cases	MLTS						HCW status		Testing		
			Close contact	Community	HCA-Patient	HCA-Staff	Travel	UNK	HCWs	%HCWs	Total Tests	Test-pos	%Pos
Wave 1	2020-W10	16	2	1	0	1	12	0	3	18.8%	NA	NA	NA
	2020-W11	127	16	2	5	9	67	28	23	18.1%	NA	NA	NA
	2020-W12	680	70	42	23	47	105	393	205	30.1%	4,957	349	7.0%
	2020-W13	1,623	152	227	67	125	110	942	448	27.6%	16,061	2,099	13.1%
	2020-W14	2,403	179	286	196	414	50	1,278	949	39.5%	13,846	2,845	20.5%
	2020-W15	4,511	380	537	289	720	70	2,515	1,617	35.8%	36,856	5,748	15.6%
	2020-W16	5,598	767	677	671	1,080	86	2,317	1,627	29.1%	28,259	5,353	18.9%
	2020-W17	3,767	419	215	900	768	7	1,458	1,254	33.3%	32,347	4,634	14.3%
	2020-W18	2,533	644	189	439	643	3	615	825	32.6%	57,105	2,477	4.3%
	2020-W19	1,477	494	161	164	344	2	312	503	34.1%	48,794	1,696	3.5%
	2020-W20	1,175	399	131	92	255	5	293	485	41.3%	40,886	1,077	2.6%
	2020-W21	571	247	76	61	117	2	68	149	26.1%	30,438	607	2.0%
	2020-W22	411	162	45	67	89		48	106	25.8%	25,553	488	1.9%
	2020-W23	232	92	42	24	55	1	18	72	31.0%	18,865	223	1.2%
	2020-W24	110	37	24	16	18	5	10	23	20.9%	19,463	149	0.8%
	2020-W25	95	26	15	15	23	8	8	27	28.4%	18,649	113	0.6%
	2020-W26	61	10	20	7	9	7	8	18	29.5%	20,269	91	0.4%
	2020-W27	93	8	34	7	14	25	5	25	26.9%	39,635	112	0.3%
	2020-W28	126	24	26	1	28	39	8	39	31.0%	47,972	154	0.3%
	2020-W29	139	35	50	5	21	17	11	44	31.7%	50,152	128	0.3%
	2020-W30	118	52	33	5	13	11	4	31	26.3%	49,659	145	0.3%
2020-W31	283	181	56	5	7	29	5	20	7.1%	30,185	284	0.9%	
Wave 2	2020-W32	540	454	58	2	2	11	13	16	3.0%	27,593	493	1.8%
	2020-W33	546	327	151	3	11	20	34	45	8.2%	53,157	605	1.1%
	2020-W34	711	445	165	11	17	41	32	58	8.2%	52,756	807	1.5%
	2020-W35	796	470	174	19	33	61	39	74	9.3%	57,677	696	1.2%
	2020-W36	912	502	226	41	43	59	41	131	14.4%	69,763	974	1.4%
	2020-W37	1,303	704	395	27	38	65	74	118	9.1%	71,161	1,321	1.9%
	2020-W38	1,946	1,196	529	33	33	43	112	140	7.2%	85,936	1,968	2.3%

Appendix E (Continued). Confirmed cases of COVID-19 in Ireland by severity, most likely transmission source (MLTS) and healthcare worker (HCW) status, including testing data, by week

Wave	Year- Week num	Confirmed Cases	MLTS						HCW status		Testing		
			Close contact	Community	HCA-Patient	HCA-Staff	Travel	UNK	HCWs	%HCWs	Total Tests	Test-pos	%Pos
Wave 2	2020-W39	2,059	1,259	587	35	36	44	98	148	7.2%	87,865	2,466	2.8%
	2020-W40	3,030	1,912	799	59	43	49	168	217	7.2%	87,899	3,012	3.4%
	2020-W41	4,457	2,735	1,154	118	104	25	321	347	7.8%	94,388	4,783	5.1%
	2020-W42	7,407	4,287	1,751	91	91	31	1,156	417	5.6%	111,914	8,158	7.3%
	2020-W43	7,070	3,062	1,086	142	101	18	2,661	326	4.6%	115,070	6,955	6.0%
	2020-W44	4,837	2,476	770	89	83	32	1,387	235	4.9%	91,350	4,610	5.0%
	2020-W45	3,422	1,956	719	207	179	46	315	366	10.7%	79,575	3,229	4.1%
	2020-W46	2,583	1,397	557	204	231	51	143	380	14.7%	74,764	2,737	3.7%
	2020-W47	2,580	1,468	505	144	206	49	208	371	14.4%	79,121	2,511	3.2%
Wave 3	2020-W48	1,797	1,028	352	111	114	24	168	206	11.5%	76,381	2,127	2.8%
	2020-W49	2,026	1,129	397	157	160	41	142	279	13.8%	75,549	1,867	2.5%
	2020-W50	1,962	1,080	403	80	142	60	197	265	13.5%	81,134	2,032	2.5%
	2020-W51	3,367	1,789	826	170	140	59	383	325	9.7%	88,929	3,729	4.2%
	2020-W52	6,596	3,198	1,659	153	263	129	1,194	596	9.0%	106,525	6,995	6.6%
	2020-W53	15,721	5,944	3,796	283	319	108	5,271	1,196	7.6%	143,789	27,088	18.8%
	2021-W01	45,616	13,813	8,232	982	849	150	21,590	3,566	7.8%	179,235	37,291	20.8%
	2021-W02	25,112	10,549	5,558	1,528	1,662	160	5,655	3,394	13.5%	162,437	22,623	13.9%
	2021-W03	14,806	6,164	3,096	1,132	1,346	141	2,927	2,433	16.4%	150,175	14,304	9.5%
	2021-W04	8,921	3,835	1,938	855	865	66	1,362	1,443	16.2%	136,906	9,350	6.8%
	2021-W05	7,143	3,756	1,507	617	518	57	688	886	12.4%	125,184	7,329	5.9%
	2021-W06	6,026	3,800	1,095	309	256	53	513	506	8.4%	114,873	6,357	5.5%
2021-W07	5,525	3,582	1,082	258	140	58	405	352	6.4%	105,065	5,616	5.3%	
2021-W08	4,547	2,960	928	175	111	56	317	303	6.7%	111,035	4,875	4.4%	
2021-W09	3,629	2,348	828	64	47	70	272	182	5.0%	97,132	3,680	3.8%	
TOTAL		223,142	94,021	44,212	11,158	12,983	2,538	58,230	27,814	12.5%	3,624,289	229,360	5.5%

Appendix F. Confirmed cases of COVID-19 in Ireland by county and week

Wave	Year- Week num	County																					Total					
		Carlow	Cavan	Clare	Cork	Donegal	Dublin	Galway	Kerry	Kildare	Kilkenny	Laois	Leitrim	Limerick	Longford	Louth	Mayo	Meath	Monaghan	Offaly	Roscommon	Sligo		Tipperary	Waterford	Westmeath	Wexford	Wicklow
Wave 1	2020-W10	0	0	4	3	0	2	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	16
	2020-W11	2	0	1	33	2	51	6	4	3	1	0	0	5	1	2	0	3	0	0	1	0	2	3	4	0	3	127
	2020-W12	0	4	4	69	6	404	22	8	21	14	6	1	13	2	11	6	10	2	10	0	8	17	6	15	4	17	680
	2020-W13	2	20	25	113	28	896	43	48	45	22	8	6	46	9	28	21	36	10	24	10	10	45	22	49	8	49	1,623
	2020-W14	8	93	27	145	69	1,267	32	27	111	40	14	8	71	11	25	82	93	39	30	8	9	63	15	36	9	71	2,403
	2020-W15	26	108	49	365	124	2,262	83	111	233	59	62	19	102	30	126	81	153	42	72	25	11	78	25	103	30	132	4,511
	2020-W16	37	175	73	315	141	2,605	97	68	407	71	77	17	135	36	242	142	222	93	62	50	33	103	37	146	46	168	5,598
	2020-W17	13	202	61	82	66	1,758	41	20	298	28	33	9	45	37	194	130	113	184	39	45	29	66	23	75	61	115	3,767
	2020-W18	36	79	84	51	15	1,153	39	9	172	25	32	6	75	86	53	40	88	53	93	40	9	105	4	95	25	66	2,533
	2020-W19	12	72	19	57	6	616	27	7	68	24	14	8	38	55	48	21	44	27	39	71	10	44	4	104	17	25	1,477
	2020-W20	6	37	12	129	3	541	38	4	35	20	4	5	17	11	15	28	20	30	98	57	5	11	4	14	12	19	1,175
	2020-W21	3	32	8	77	2	222	26	1	24	32	4	2	17	3	15	14	10	21	18	14	0	3	4	10	1	8	571
	2020-W22	13	16	1	76	0	183	20	0	29	5	2	0	12	3	7	3	3	8	1	15	0	4	1	6	1	2	411
	2020-W23	4	19	0	15	0	109	2	0	7	5	3	0	4	2	10	0	9	23	0	5	0	2	2	1	3	7	232
	2020-W24	4	2	1	4	0	59	4	0	11	5	1	0	1	0	2	2	1	4	3	4	0	1	0	0	0	1	110
	2020-W25	3	3	0	2	0	54	0	2	9	6	1	0	2	0	2	1	1	0	1	2	1	0	1	2	0	2	95
	2020-W26	0	1	0	1	0	35	0	0	6	2	0	0	0	1	1	0	1	2	0	1	3	1	2	0	1	3	61
	2020-W27	0	2	0	5	2	32	1	0	18	1	0	4	4	0	1	1	1	0	0	1	17	0	1	2	0	0	93
	2020-W28	1	2	0	4	2	59	5	1	17	0	0	0	2	0	5	1	1	1	0	0	3	1	7	2	3	9	126
	2020-W29	2	2	0	11	4	85	2	5	11	0	0	1	0	0	4	1	5	1	0	0	0	0	1	0	2	2	139
2020-W30	1	0	3	5	0	74	1	1	11	0	2	0	1	1	1	1	8	1	1	0	1	1	0	1	0	3	118	
2020-W31	0	8	20	5	5	86	6	0	70	1	37	0	17	0	2	7	5	1	6	0	0	1	0	4	1	1	283	
2020-W32	6	5	12	14	16	64	2	1	239	2	34	1	10	0	5	1	15	1	80	1	4	2	0	1	20	4	540	
2020-W33	20	0	28	13	12	132	7	3	171	12	17	0	36	1	7	1	19	6	25	2	3	18	2	0	3	8	546	
2020-W34	18	1	12	19	8	257	2	3	159	21	15	0	41	4	9	2	15	3	9	4	0	71	13	1	18	6	711	
2020-W35	18	9	20	24	25	355	6	4	71	6	18	0	43	4	9	1	21	18	16	9	1	61	8	5	29	15	796	
2020-W36	7	8	16	23	10	452	19	12	77	17	13	5	74	8	15	4	21	8	20	3	1	33	22	7	15	22	912	

Appendix F (Continued). Confirmed cases of COVID-19 in Ireland by county and week

Wave	Year- Week num	County																					Total					
		Carlow	Cavan	Clare	Cork	Donegal	Dublin	Galway	Kerry	Kildare	Kilkenny	Laois	Leitrim	Limerick	Longford	Louth	Mayo	Meath	Monaghan	Offaly	Roscommon	Sligo		Tipperary	Waterford	Westmeath	Wexford	Wicklow
Wave 2	2020-W37	4	4	22	21	32	743	28	9	52	12	19	16	53	16	53	10	26	8	24	9	1	9	41	24	26	41	1,303
	2020-W38	16	13	25	101	101	1,078	45	19	81	12	19	5	39	4	79	23	40	16	25	13	10	18	59	19	26	60	1,946
	2020-W39	7	23	32	236	193	969	95	15	89	17	9	4	25	12	56	14	52	41	18	36	7	15	17	26	13	38	2,059
	2020-W40	18	45	87	332	228	1,207	134	50	122	29	52	6	102	43	42	26	78	68	41	68	29	51	22	30	48	72	3,030
	2020-W41	15	213	221	524	321	1,119	258	110	193	44	58	26	208	47	98	68	262	126	65	51	75	59	52	74	118	52	4,457
	2020-W42	66	409	159	965	226	1,874	444	207	352	101	90	48	279	52	145	129	644	104	77	92	115	115	98	203	289	124	7,407
	2020-W43	78	334	150	904	284	1,541	516	224	328	72	117	32	289	57	222	192	614	125	61	86	166	98	138	175	178	89	7,070
	2020-W44	49	119	122	744	227	1,376	252	101	205	55	73	5	225	34	154	124	287	44	44	50	68	109	100	106	79	85	4,837
	2020-W45	34	36	70	329	242	1,079	123	137	108	84	79	8	194	23	72	102	184	43	40	53	52	85	72	75	45	53	3,422
	2020-W46	16	43	43	162	195	782	99	51	94	45	38	17	193	20	123	49	103	34	65	54	21	77	107	76	29	47	2,583
2020-W47	26	32	64	265	172	806	65	38	93	51	18	6	205	17	143	57	144	32	27	56	26	69	68	29	27	44	2,580	
2020-W48	18	15	17	133	177	588	52	31	47	83	24	1	118	17	97	48	47	19	18	15	14	72	48	12	11	75	1,797	
2020-W49	41	31	23	73	179	686	80	18	61	86	22	4	155	18	107	57	49	60	27	16	10	71	25	12	18	97	2,026	
2020-W50	47	52	15	70	171	568	74	12	67	111	59	4	99	40	120	86	67	24	24	13	22	62	54	14	36	51	1,962	
2020-W51	63	81	17	211	246	1,102	60	147	123	84	89	4	194	19	186	66	145	53	27	14	39	43	69	25	215	45	3,367	
2020-W52	62	68	124	672	432	2,243	255	218	253	184	73	18	443	14	215	104	206	124	36	43	86	115	115	71	306	116	6,596	
2020-W53	138	386	471	1,532	881	3,723	711	443	367	303	282	92	1,195	139	1,000	641	724	527	242	202	326	315	271	220	421	169	15,721	
Wave 3	2021-W01	617	744	1,177	5,724	1,358	16,127	1,172	1,126	1,794	845	458	136	2,386	232	1,844	874	1,498	1,024	432	269	413	980	1,511	401	1,764	710	45,616
	2021-W02	381	342	560	2,863	847	7,560	1,626	415	886	312	364	48	1,251	73	1,046	1,267	892	620	315	325	139	656	665	216	996	447	25,112
	2021-W03	243	265	230	1,482	468	5,011	650	231	684	152	202	44	605	87	582	458	621	405	243	95	142	392	459	150	589	316	14,806
	2021-W04	150	108	130	824	295	3,093	440	121	329	84	124	24	336	74	366	291	360	255	168	44	91	235	332	104	361	182	8,921
	2021-W05	107	89	90	652	204	2,445	423	105	340	72	136	27	274	52	238	203	319	213	106	40	74	117	241	108	314	154	7,143
	2021-W06	91	117	75	326	112	2,495	388	53	280	59	130	19	225	49	202	160	267	102	159	37	37	133	148	106	160	96	6,026
	2021-W07	51	86	96	202	128	2,115	465	19	322	48	125	31	271	71	174	178	217	101	173	31	30	175	159	89	96	72	5,525
	2021-W08	57	47	82	156	171	1,769	252	54	233	33	96	19	272	79	170	122	216	48	141	36	27	131	85	124	58	69	4,547
	2021-W09	33	37	66	150	85	1,572	140	41	164	30	53	7	142	90	136	91	213	32	130	38	21	100	45	91	52	70	3,629
TOTAL	2,670	4,639	4,648	21,313	8,521	77,484	9,381	4,334	9,990	3,427	3,206	743	10,589	1,684	8,510	6,031	9,193	4,826	3,375	2,154	2,199	5,035	5,208	3,263	6,584	4,135	223,142	

