



Epidemiology of COVID-19 in Ireland

Report prepared by HPSC on 01/10/2020 for National Public Health Emergency Team

Summary characteristics of confirmed COVID-19 cases notified in Ireland up to midnight 29/09/2020

	Number	Percent
Total number of confirmed cases	36,155	
National cumulative incidence of confirmed cases per 100,000 population	759.26	
Total number of cases hospitalised	3,617	10
Total number of cases admitted to ICU	473	1.31
Total number of deaths among confirmed cases	1,549	4.28
Case fatality ratio (CFR, %)	4.28	
National cumulative incidence of confirmed deaths per 100,000 population	32.53	
Total number of outbreaks/clusters	4,138	
Total number of cases associated with clusters	20,158	55.75
Total number of imported cases	602	1.67
Number of cases in healthcare workers	9,221	25.5
Males	16,249	44.94
Females	19,875	54.97
M:F ratio	0.82	
Median age (years)	44	
Mean age (years)	46	
Age range (years)	0 - 106	

Note: Data were extracted from Computerised Infectious Disease Reporting (CIDR) system at 09:15 on 01/10/2020 and are provisional and subject to ongoing review, validation and update. As a result, figures in this report may differ from previously published figures.

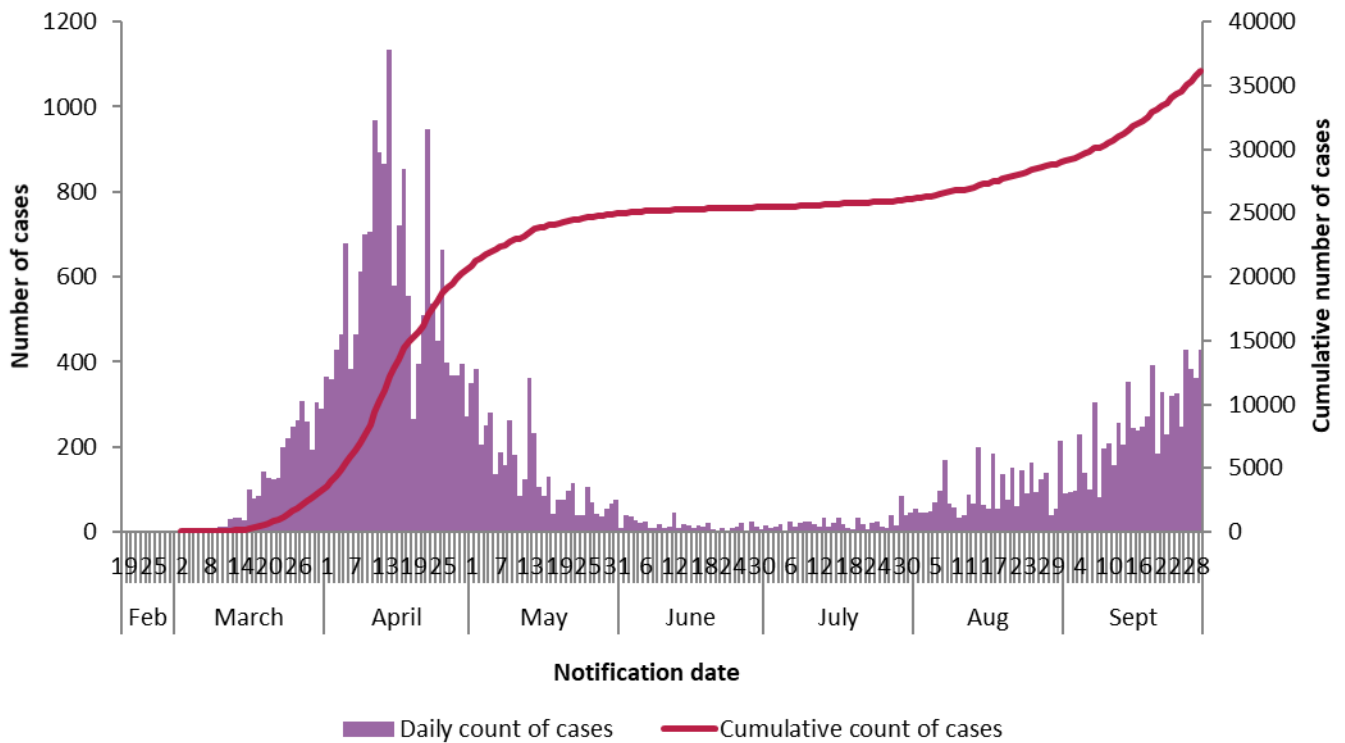


Figure 1a: Number* and cumulative number of confirmed COVID-19 cases notified in Ireland by notification date* to midnight 29/09/2020

*Between 05/04/2020 – 19/04/2020, the daily number of COVID-19 events notified in Ireland is inflated due to batch reporting of cases with specimen dates between from 19/03/2020 – 01/04/2020 in addition to real-time reporting of cases with contemporaneous specimen dates

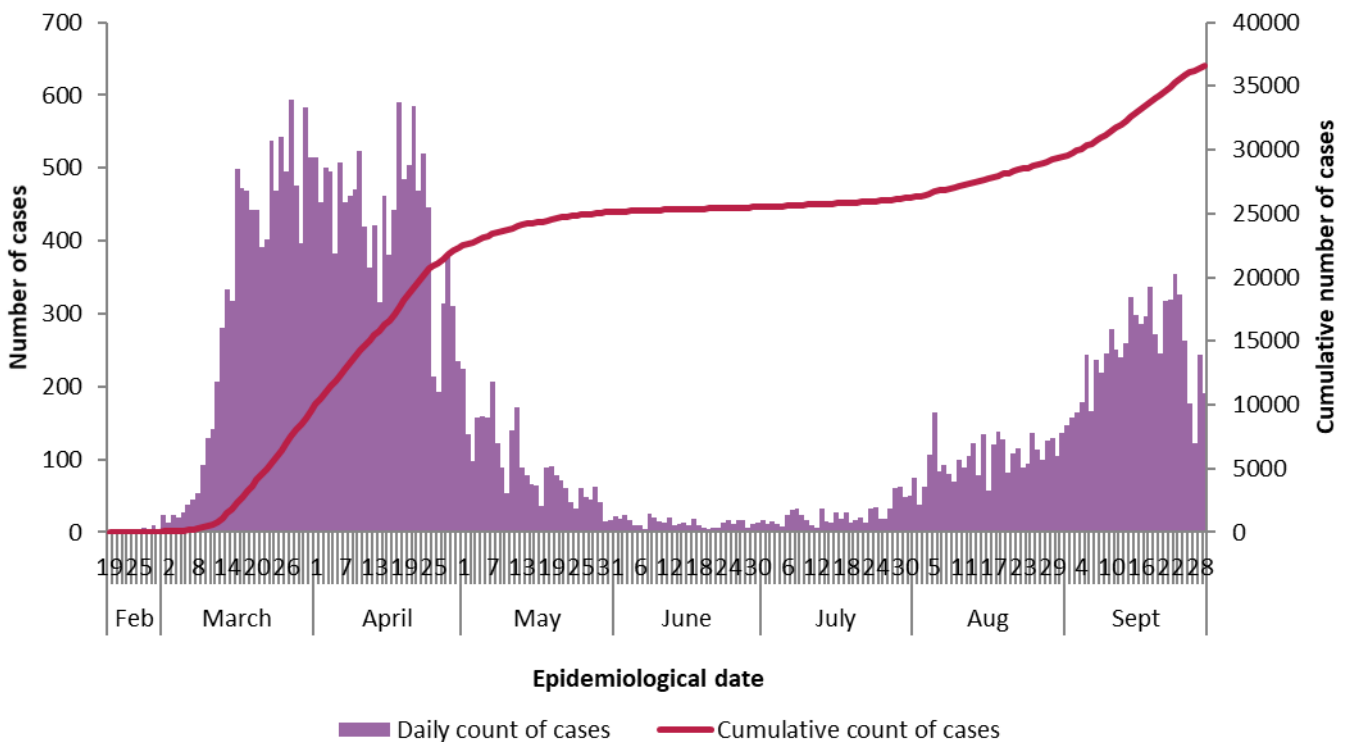


Figure 1b: Number and cumulative number of confirmed COVID-19 cases notified in Ireland by epidemiological date to midnight 29/09/2020**

**Epidemiological date is derived from epidemiological date, which is the earliest of onset date, date of diagnosis, laboratory specimen collection date, laboratory received date, laboratory reported date, event creation/notification date.

Figure 2: Cumulative 14 day incidence rate of confirmed COVID-19 cases per 100,000 population notified in Ireland by notification* and epidemiological date to midnight 29/09/2020**

* Between 05/04/2020 . 19/04/2020, the daily number of COVID-19 events notified in Ireland is inflated due to batch reporting of cases with specimen dates between from 19/03/2020 . 01/04/2020 in addition to real-time reporting of cases with contemporaneous specimen dates

**Epidemiological date is derived from epidemiological date, which is the earliest of onset date, date of diagnosis, laboratory specimen collection date, laboratory received date, laboratory reported date, event creation/notification date.

Table 1: Characteristics of confirmed COVID-19 cases notified in Ireland up to midnight on 29/09/2020

Characteristic		Number of cases	Percent
Total number of confirmed cases		36,155	100
Sex	Male:Female ratio	0.82	
	Male	16,249	44.94
	Female	19,875	54.97
	Unknown	31	0.09
Age	Median age (years)	44	
	Mean age (years)	46	
	Age range (years)	0 - 106	
	0-4 yrs	533	1.47
	5-14 yrs	1,164	3.22
	15-24 yrs	4,330	11.98
	25-34 yrs	6,355	17.58
	35-44 yrs	6,116	16.92
	45-54 yrs	6,030	16.68
	55-64 yrs	4,204	11.63
	65-74 yrs	2,349	6.5
	75-84 yrs	2,555	7.07
	85+ yrs	2,495	6.9
	Unknown	24	0.07

Figure 3: Age- and sex-specific incidence rates of confirmed cases of COVID-19 per 100,000 population notified in Ireland to midnight 29/09/2020

Figure 4: Cumulative incidence rates of confirmed cases of COVID-19 per 100,000 population notified in Ireland to midnight 29/09/2020

Table 2: Number of confirmed COVID-19 cases by county notified to midnight 29/09/2020

County Name	Number of cases	Percent
Carlow	286	0.79
Cavan	953	2.64
Clare	583	1.61
Cork	2,145	5.93
Donegal	949	2.62
Dublin	17,149	47.43
Galway	765	2.12
Kerry	391	1.08
Kildare	2,585	7.15
Kilkenny	459	1.27
Laois	453	1.25
Leitrim	116	0.32
Limerick	958	2.65
Longford	352	0.97
Louth	1,042	2.88
Mayo	648	1.79
Meath	1,062	2.94
Monaghan	672	1.86
Offaly	726	2.01
Roscommon	449	1.24
Sligo	180	0.5
Tipperary	788	2.18
Waterford	340	0.94
Westmeath	778	2.15
Wexford	399	1.1
Wicklow	927	2.56
Total	36,155	100

Table 3: Number of confirmed COVID-19 cases by WHO transmission classification notified to midnight 29/09/2020

Transmission classification*	Count of Events	%
Community transmission, incl. possible community transmission	10,349	28.62%
Local transmission, incl. possible local transmission	24,533	67.86%
Travel abroad, incl. possible travel abroad	834	2.31%
Unknown	439	1.21%
Total	36,155	100.00%

*See technical note 3 for definition of WHO transmission classification

Cases which were notified more than 2 weeks ago and have not yet been reported as imported or linked to an outbreak are classified as possible community transmission.

Table 4: Cumulative number of confirmed cases of COVID-19 notified in Ireland by age group and hospital, ICU and vital status as of midnight 29/09/2020

Age Group (years)	Number of cases (n)	Cases hospitalised (n)	Cases hospitalised (%)	Cases admitted to ICU (n)	Cases admitted to ICU (%)
0-4 yrs	533	31	0.86	1	0.21
5-14 yrs	1164	23	0.64	2	0.42
15-24 yrs	4330	95	2.63	5	1.06
25-34 yrs	6355	218	6.03	18	3.81
35-44 yrs	6116	295	8.16	42	8.88
45-54 yrs	6030	489	13.52	97	20.51
55-64 yrs	4204	541	14.96	135	28.54
65-74 yrs	2349	645	17.83	118	24.95
75-84 yrs	2555	785	21.7	49	10.36
85+ yrs	2495	494	13.66	6	1.27
Unknown	24	1	0.03	0	0
Total	36,155	3,617	100	473	100

Table 5: Number and proportion of confirmed cases of COVID-19 notified in Ireland by age-group, hospitalisation and ICU admission 29/09/2020

	0-4 yrs	5-14 yrs	15-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75-84 yrs	85+ yrs	Unknown
Number of cases (n)	533	1,164	4,330	6,355	6,116	6,030	4,204	2,349	2,555	2,495	24
Cases hospitalised (n)	31	23	95	218	295	489	541	645	785	494	1
Cases hospitalised (%)	5.82	1.98	2.19	3.43	4.82	8.11	12.87	27.46	30.72	19.8	4.17
Cases admitted to ICU (n)	1	2	5	18	42	97	135	118	49	6	0
Cases admitted to ICU (%)	0.19	0.17	0.12	0.28	0.69	1.61	3.21	5.02	1.92	0.24	0
Deaths (n)	0	0	1	6	12	28	72	232	530	668	0
Case fatality ratio (%)	0	0	0.02	0.09	0.2	0.46	1.71	9.88	20.74	26.77	0

Outbreaks of COVID-19

Table 6: Number of clusters/outbreaks COVID-19 by location and HSE area notified to midnight 29/09/2020

Outbreak Location	E	HPSC	M	MW	NE	NW	S	SE	W	Total
Private house	2,001		52	144	227	100	187	171	60	2,942
Other*	82	2	34	96	20	33	64	24	32	387
Nursing home	145		11	19	44	5	15	17	36	292
Residential institution	126		11	11	26	6	22	10	4	216
Workplace	49		12	17	23	14	11	13	10	149
Hospital	71		5	4	14	2	11	5	6	118
Comm. Hosp/Long-stay unit	5		4	2		4	6	5	5	31
Unknown	2						1			3
Total	2,481	2	129	293	354	164	317	245	153	4,138

*Other outbreak location includes community, extended family, hotel, public house, retail outlet, travel related and all other locations.

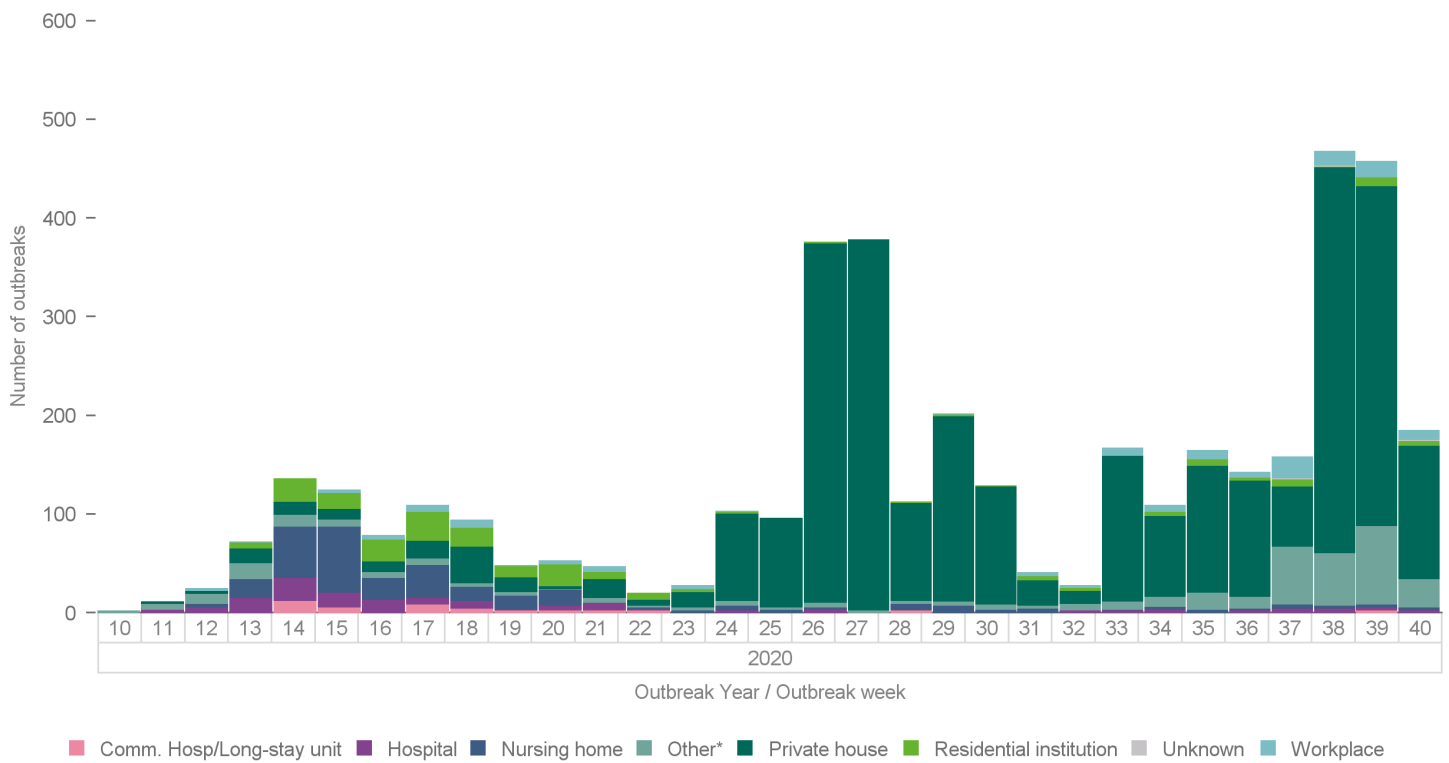


Figure 5: Trend in number of COVID-19 clusters by location and week notified to midnight 29/09/2020

*Other outbreak location includes community, extended family, hotel, public house, retail outlet, travel related and all other locations.

Table 7: Number of OPEN clusters/outbreaks of COVID-19 by location and HSE area notified to midnight 29/09/2020

Outbreak Location	E	M	MW	NE	NW	S	SE	W	Total
Comm. Hosp/Long-stay unit	1	1							2
Hospital	8	2	1			1			12
Nursing home	14	1	10	1		1			27
Other*	64	26	66	13	23	34	13	21	260
Private house	956	46	59	101	45	69	89	30	1,395
Residential institution	16	3	7	6	2	1			35
Unknown	2					1			3
Workplace	28	6	12	9	12	3	8	6	84
Total	1,089	85	155	130	82	110	110	57	1,818

Table 8: Number of CLOSED clusters/outbreaks of COVID-19 by location and HSE area notified to midnight 29/09/2020

Outbreak Location	E	HPSC	M	MW	NE	NW	S	SE	W	Total
Comm. Hosp/Long-stay unit	4		3	2		4	6	5	5	29
Hospital	63		3	3	14	2	10	5	6	106
Nursing home	131		10	9	43	5	14	17	36	265
Other*	18	2	8	30	7	10	30	11	11	127
Private house	1,045		6	85	126	55	118	82	30	1,547
Residential institution	110		8	4	20	4	21	10	4	181
Workplace	21		6	5	14	2	8	5	4	65
Total	1,392	2	44	138	224	82	207	135	96	2,320

*Other outbreak location includes community, extended family, hotel, public house, retail outlet, travel related and all other locations.

Table 9: Number and percentage of COVID-19 outbreaks/clusters in acute hospital settings and residential facilities* by HSE area notified in Ireland to midnight 29/09/2020

HSE area	Residential Facilities (RF)					Hospital			RFs and acute hospital settings	
	Comm. Hosp/Long-stay unit	Nursing home	Residential institution	Total (n)	Total (%)	Hospital	Total (n)	Total (%)	Total (n)	Total (%)
E	5	145	126	276	51.21	71	71	60.17	347	52.82
M	4	11	11	26	4.82	5	5	4.24	31	4.72
MW	2	19	11	32	5.94	4	4	3.39	36	5.48
NE		44	26	70	12.99	14	14	11.86	84	12.79
NW	4	5	6	15	2.78	2	2	1.69	17	2.59
S	6	15	22	43	7.98	11	11	9.32	54	8.22
SE	5	17	10	32	5.94	5	5	4.24	37	5.63
W	5	36	4	45	8.35	6	6	5.08	51	7.76
Total	31	292	216	539	100	118	118	100	657	100

*Residential facilities (RF) include nursing homes, community hospitals, long-stay units and residential institutions including mental health facilities, prisons and direct provision centres.

Table 10: Number of OPEN COVID-19 outbreaks in residential facilities* and the number of cases, hospitalised and deaths linked to those outbreaks by HSE area notified in Ireland to midnight on 29/09/2020

HSE area	Number of RF outbreaks	Total number ill	Cases linked RF outbreaks:		
			Number of cases	Number hospitalised	Total number who died
E	31	67	209	6	9
M	5	2	41	0	0
MW	17	135	183	29	21
NE	7	12	28	3	0
NW	2		8	0	0
S	2	26	26	1	0
Total	64	242	495	39	30

Table 11: Number of CLOSED COVID-19 outbreaks in residential facilities* and the number of cases, hospitalised and deaths linked to those outbreaks by HSE area notified in Ireland to midnight on 29/09/2020

HSE area	Number of RF outbreaks	Total number ill	Cases linked RF outbreaks:		
			Number of cases	Number hospitalised	Total number who died
E	245	4,400	4,718	269	705
M	21	187	362	23	35
MW	15	297	234	35	34
NE	63	726	1,176	105	180
NW	13	74	242	32	36
S	41	542	366	25	28
SE	32	491	221	19	31
W	45	800	360	36	49
Total	475	7,517	7,679	544	1,098

*Residential facilities (RF) include nursing homes, community hospitals, long-stay units and residential institutions including mental health facilities, prisons and direct provision centres.

Table 12: Number of OPEN COVID-19 outbreaks in nursing homes (NH) and the total number ill, number of cases, hospitalised and deaths linked to those outbreaks by HSE area notified in Ireland to midnight on 29/09/2020

HSE area	Number of NH outbreaks	Total Number ill	Cases linked to NH outbreaks:		
			Number of cases	Number hospitalised	Total number who died
E	14	29	163	4	9
M	1	2	2	0	0
MW	10	78	116	26	21
NE	1	2	2	0	0
S	1	22	22	1	0
Total	27	133	305	31	30

Table 13: Number of CLOSED COVID-19 outbreaks in nursing homes (NH) and the total number ill, number of cases, hospitalised and deaths linked to those outbreaks by HSE area notified in Ireland to midnight on 29/09/2020

HSE area	Number of NH outbreaks	Total Number ill	Cases linked to NH outbreaks:		
			Number of cases	Number hospitalised	Total number who died
E	131	3,412	3,733	201	636
M	10	102	230	18	22
MW	9	244	221	34	33
NE	43	632	1,089	98	178
NW	5	44	129	22	22
S	14	232	137	11	14
SE	17	265	157	16	27
W	36	617	281	25	43
Total	265	5,548	5,977	425	975

Table 14: Number of OPEN COVID-19 outbreaks in acute hospitals and the total number ill, number of cases, hospitalised and deaths linked to those outbreaks by HSE area notified in Ireland to midnight on 29/09/2020

HSE area	Number of hospital outbreaks	Total number ill	Cases linked to outbreaks in hospitals:		
			Number of cases	Number hospitalised	Total number who died
E	8	8	20	3	2
M	2		44	11	5
MW	1		2	1	0
S	1	8	8	6	0
Total	12	16	74	21	7

Table 15: Number of CLOSED COVID-19 outbreaks in acute hospitals and the total number ill, number of cases, hospitalised and deaths linked to those outbreaks by HSE area notified in Ireland to midnight on 29/09/2020

HSE area	Number of acute hospital outbreaks	Total number ill	Cases linked to outbreaks in hospitals:		
			Number of cases	Number hospitalised	Total number who died
E	63	534	269	98	33
M	3	100	187	55	14
MW	3	52	53	18	8
NE	14	132	141	35	10
NW	2	7	16	7	1
S	10	168	164	43	8
SE	5	205	209	55	21
W	6	46	115	43	13
Total	106	1,244	1,154	354	108

Deaths among COVID-19 cases

Table 16: Summary of deaths in all COVID-19 cases notified in Ireland up to midnight 29/09/2020

	Number	Percent
Total number of deaths	1,806	
Confirmed	1,549	85.77
Probable	99	5.48
Possible	158	8.75
Total number of cases hospitalised	769	42.58
Cases admitted to ICU	98	5.43
Cases not admitted to ICU	671	37.15
Total number of imported cases	6	0.33
Number of cases in healthcare workers	8	0.44
Number with underlying clinical conditions	1,711	94.74
Total number of male cases	894	49.5
M:F ratio	0.98	
Median age (years)	83	
Mean age (years)	81	
Age range (years)	17 - 105	

Table 17: Number of deaths in all COVID-19 cases by sex and age group notified in Ireland up to midnight 29/09/2020

Age group (years)	Female	Male	Total	Percent
15-24 yrs	<5	<5	1	0.06
25-34 yrs	<5	<5	6	0.33
35-44 yrs	6	7	13	0.72
45-54 yrs	11	19	30	1.66
55-64 yrs	26	51	77	4.26
65-74 yrs	97	160	257	14.23
75-84 yrs	280	334	614	34
85+ yrs	487	319	806	44.63
Unknown	<5	<5	2	0.11
Total	912	894	1,806	100
Percent	50.5	49.5		

Figure 6: Daily and 7 day moving average number of deaths among COVID-19 cases notified in Ireland by date of death and cumulative total to midnight 29/09/2020

Please note: a lag in time between reporting of deaths and data extraction is expected and as such most recent dates will not yet reflect all deaths on that date

Acknowledgements

Sincere thanks are extended to all those who are participating in the collection of data and reporting of data used in these reports. 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.

Report prepared by COVID-19 Epidemiology Team, HPSC

Technical Notes

1. Data Source

Data are based on statutory notifications and were extracted from Computerised Infectious Disease Reporting (CIDR) system at 09:15 on 01/10/2020. Data are provisional and subject to ongoing review, validation and update. As a result, figures in this report may differ from previously published figures.

2. Epidemiological date

Epidemiological date is derived from epidemiological date, which is the earliest of onset date, date of diagnosis, laboratory specimen collection date, laboratory received date, laboratory reported date, event creation/notification date.

3. Population data

Population data were taken from Census 2016. Data were aggregated into the following age groups for the analysis: 0-4 years, 5-14 years, 15-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65-74 years, 75-84 years and ≥ 85 years.

3. Transmission classification

Transmission classification is based on country of infection as well as enhanced exposure data (international travel; close contact of a case) recorded in CIDR. Transmission is classified as 'unknown' due to incomplete data on CIDR.

WHO definition of transmission classification is specified below:

- Community transmission is evidenced by the inability to relate confirmed cases through chains of transmission for a large number of cases, or by increasing positive tests through routine screening of sentinel samples.
- Local transmission indicates locations where the source of infection is within the reporting location.
- Imported cases only indicates locations where all cases have been acquired outside the location of reporting.
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4. HSE areas

The counties covered by each HSE area are as follows:

HSE East (E): Dublin, Kildare & Wicklow;
HSE Midlands (M): Laois, Longford, Offaly & Westmeath;
HSE Midwest (MW): Clare, Limerick & N. Tipperary;
HSE Northeast (NE): Cavan, Louth, Meath & Monaghan;
HSE Northwest (NW): Donegal, Leitrim & Sligo;
HSE South (S): Kerry & Cork;
HSE Southeast (SE): Carlow, Kilkenny, S. Tipperary, Waterford & Wexford;
HSE West (W): Galway, Mayo & Roscommon.

5. Outbreak location

Where an outbreak location is reported as a residential facility (RF) this includes nursing homes, community hospitals, long-stay units and residential institutions including mental health facilities, prisons and direct provision centres.

Other outbreak location includes community, extended family, hotel, public house, retail outlet, travel related and all other locations.

Appendix 1: Trends in confirmed COVID-19 cases notified in Ireland by HSE area

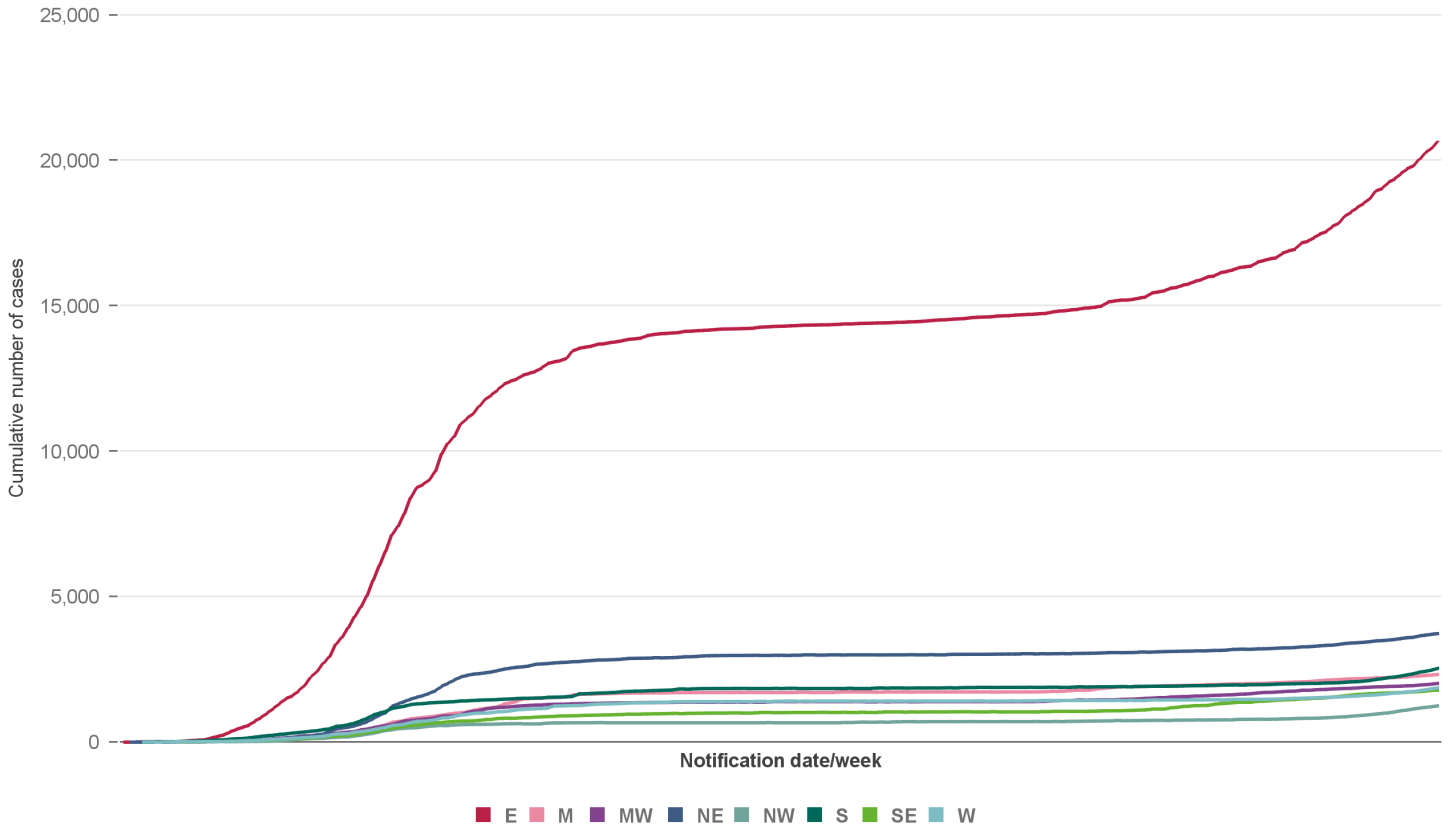


Figure A: Cumulative number of confirmed COVID-19 cases notified in Ireland by date/week of notification and HSE area to midnight 29/09/2020

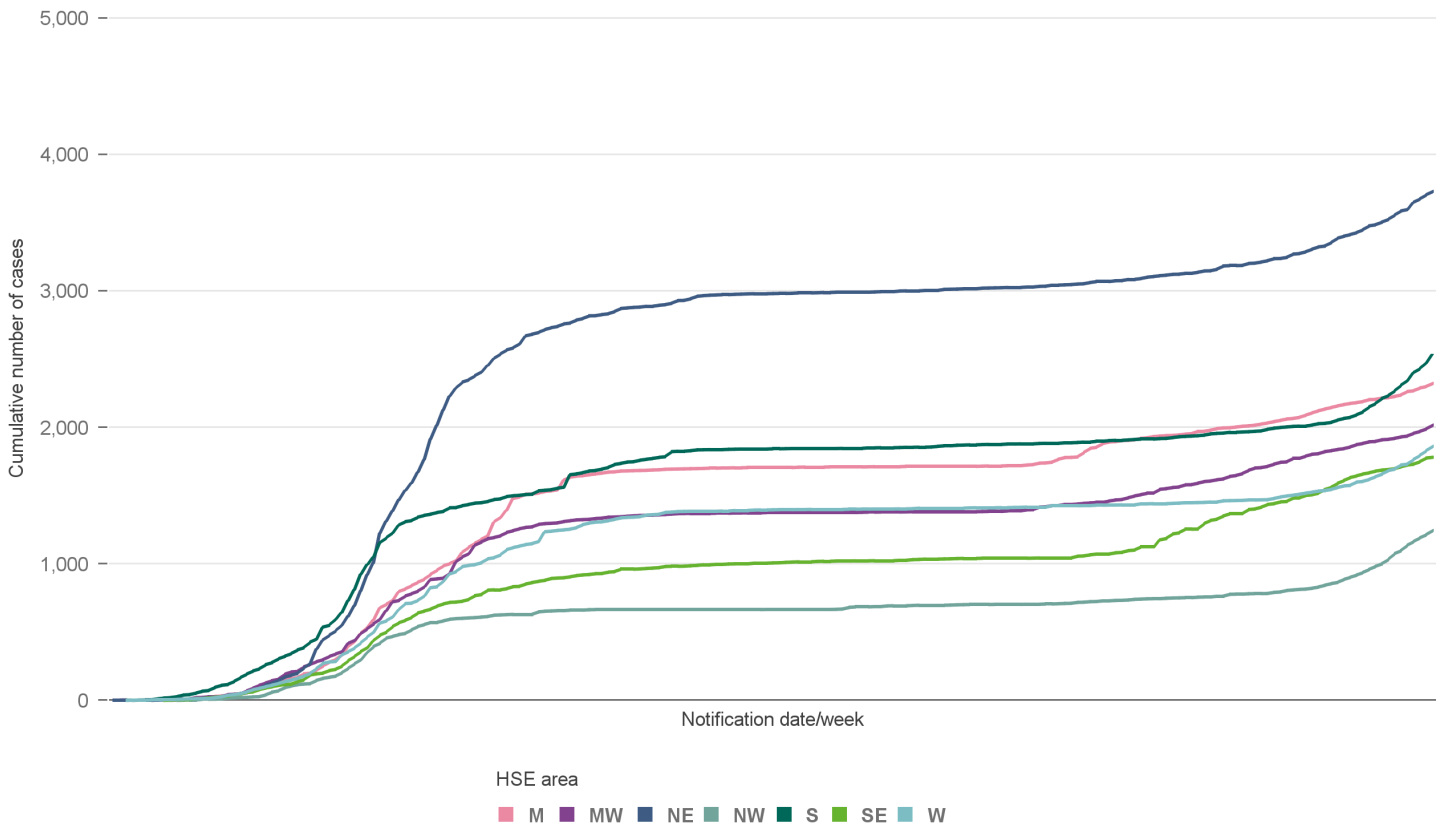


Figure B: Cumulative number of confirmed COVID-19 cases notified in Ireland by date/week of notification and HSE area (excluding HSE East) to midnight 29/09/2020

Appendix 1: Trends in confirmed COVID-19 cases notified in Ireland by HSE area

Table A: Cumulative number of confirmed COVID-19 cases notified in Ireland by week of notification and HSE area to midnight 29/09/2020

Week	E	M	MW	NE	NW	S	SE	W	Total
10	5		4	1		3		3	16
11	62	5	12	6	2	40	6	10	143
12	503	39	43	33	17	117	33	38	823
13	1,493	129	145	127	61	278	101	112	2,446
14	2,941	221	284	377	147	451	195	234	4,850
15	5,567	492	489	806	300	927	358	422	9,361
16	8,744	817	765	1,539	491	1,310	587	710	14,963
17	10,914	1,002	931	2,232	595	1,412	719	926	18,731
18	12,305	1,308	1,194	2,505	625	1,472	811	1,046	21,266
19	13,014	1,520	1,290	2,696	649	1,536	873	1,165	22,743
20	13,609	1,647	1,325	2,798	662	1,669	920	1,288	23,918
21	13,863	1,682	1,350	2,876	666	1,747	962	1,342	24,488
22	14,077	1,695	1,366	2,910	666	1,823	983	1,380	24,900
23	14,200	1,702	1,372	2,971	666	1,838	997	1,386	25,132
24	14,271	1,706	1,375	2,980	666	1,842	1,006	1,396	25,242
25	14,336	1,710	1,377	2,986	667	1,846	1,016	1,399	25,337
26	14,380	1,711	1,377	2,991	670	1,847	1,022	1,400	25,398
27	14,430	1,713	1,381	2,995	693	1,852	1,024	1,403	25,491
28	14,514	1,715	1,383	3,004	698	1,857	1,036	1,409	25,616
29	14,613	1,715	1,383	3,016	703	1,873	1,041	1,412	25,756
30	14,701	1,720	1,389	3,026	704	1,879	1,042	1,414	25,875
31	14,858	1,767	1,428	3,043	709	1,884	1,044	1,427	26,160
32	15,165	1,882	1,451	3,069	730	1,899	1,073	1,431	26,700
33	15,476	1,925	1,518	3,101	745	1,915	1,125	1,441	27,246
34	15,898	1,955	1,581	3,129	753	1,937	1,255	1,449	27,957
35	16,339	2,003	1,648	3,186	779	1,965	1,368	1,465	28,753
36	16,890	2,052	1,745	3,238	795	2,000	1,455	1,491	29,666
37	17,726	2,135	1,823	3,329	844	2,030	1,545	1,538	30,970
38	18,945	2,204	1,895	3,477	960	2,150	1,668	1,619	32,918
39	20,045	2,269	1,957	3,649	1,164	2,401	1,731	1,765	34,981
40	20,661	2,323	2,017	3,729	1,245	2,536	1,782	1,862	36,155

Appendix 2: Epidemiological weeks, 2020-2021

Table B: List of epidemiological weeks, start and end dates, 2020

Year	Week	Start date	End date
2020	1	29/12/2019	04/01/2020
2020	2	05/01/2020	11/01/2020
2020	3	12/01/2020	18/01/2020
2020	4	19/01/2020	25/01/2020
2020	5	26/01/2020	01/02/2020
2020	6	02/02/2020	08/02/2020
2020	7	09/02/2020	15/02/2020
2020	8	16/02/2020	22/02/2020
2020	9	23/02/2020	29/02/2020
2020	10	01/03/2020	07/03/2020
2020	11	08/03/2020	14/03/2020
2020	12	15/03/2020	21/03/2020
2020	13	22/03/2020	28/03/2020
2020	14	29/03/2020	04/04/2020
2020	15	05/04/2020	11/04/2020
2020	16	12/04/2020	18/04/2020
2020	17	19/04/2020	25/04/2020
2020	18	26/04/2020	02/05/2020
2020	19	03/05/2020	09/05/2020
2020	20	10/05/2020	16/05/2020
2020	21	17/05/2020	23/05/2020
2020	22	24/05/2020	30/05/2020
2020	23	31/05/2020	06/06/2020
2020	24	07/06/2020	13/06/2020
2020	25	14/06/2020	20/06/2020
2020	26	21/06/2020	27/06/2020
2020	27	28/06/2020	04/07/2020
2020	28	05/07/2020	11/07/2020
2020	29	12/07/2020	18/07/2020
2020	30	19/07/2020	25/07/2020
2020	31	26/07/2020	01/08/2020
2020	32	02/08/2020	08/08/2020
2020	33	09/08/2020	15/08/2020
2020	34	16/08/2020	22/08/2020
2020	35	23/08/2020	29/08/2020
2020	36	30/08/2020	05/09/2020
2020	37	06/09/2020	12/09/2020
2020	38	13/09/2020	19/09/2020

2020	39	20/09/2020	26/09/2020
2020	40	27/09/2020	03/10/2020
2020	41	04/10/2020	10/10/2020
2020	42	11/10/2020	17/10/2020
2020	43	18/10/2020	24/10/2020
2020	44	25/10/2020	31/10/2020
2020	45	01/11/2020	07/11/2020
2020	46	08/11/2020	14/11/2020
2020	47	15/11/2020	21/11/2020
2020	48	22/11/2020	28/11/2020
2020	49	29/11/2020	05/12/2020
2020	50	06/12/2020	12/12/2020
2020	51	13/12/2020	19/12/2020
2020	52	20/12/2020	26/12/2020
2020	53	27/12/2020	02/01/2021