



Epidemiology of COVID-19 cases (aged 15 years and older) admitted to intensive care units in Ireland.

Report prepared by HPSC on 04/03/2024

The following report provides data on notifications to the Computerised Infectious Disease Reporting System (CIDR) at the HPSC, of cases with laboratory confirmed SARS-CoV-2 who have been admitted to ICU because of COVID-19 between week 40 2023 and week 9 2024 (01/10/2023 to 02/03/2024). Please note this report only includes cases reported to HPSC who are in ICU primarily for the treatment of COVID-19 and does not include cases in ICU for other clinical conditions, who have an incidental finding of COVID-19.

Key Points

- Between week 40 2023 and week 9 2024, there were 40 admissions to ICU due to COVID-19 in Ireland.
- Of those admitted, 53% (n=21) were discharged alive, 37% (n=15) died and 10% (n=<5) are still in ICU.
- The mean age at time of admission to ICU was 71 years and the median age was 74 years (IQR: 67-79 years; range: 15-89 years).
- Of those admitted, 93% (n=37) were reported to have an underlying medical condition.
- In cases where vaccination data were available (60%, n=24), 42% (n=10) of cases had not received a dose of COVID-19 vaccine within the six months prior to their admission to ICU.

Data are provisional and subject to ongoing review, validation, and update. As a result, figures in this report may differ from previously published figures.

COVID-19 ICU annual reports and reports on COVID-19 ICU admissions by wave can be found [here](#)

1.0 Summary of cases of COVID-19 admitted to ICU

Table 1: Summary of cases of COVID-19 admitted to ICU in Ireland (week 40 2023 to week 9 2024)

		Number of cases	Percentage
Total number of cases admitted to ICU		40	100
Current status or outcome	Number currently in ICU	<5	10.0
	Discharged alive	21	52.5
	Died	15	37.5
Route of admission	Ward	23	57.5
	Emergency Department	17	42.5
	Other hospital - ICU	<5	0.0
	Other hospital - non ICU	<5	0.0
Sex and age	Male:female ratio	1.9:1	-
	Median age (years)	74	-
	Age range (years)	15 - 89	-
	15-24	<5	2.5
	25-34	<5	2.5
	35-44	<5	0.0
	45-54	<5	2.5
	55-64	5	12.5
	65-74	15	37.5
	75-84	13	32.5
85+	<5	10.0	
Underlying medical conditions	Those with underlying medical conditions (%)	37	92.5
Illness severity (at time of admission) ¹	Acute Respiratory Distress Syndrome (ARDS)	19	47.5
	Require invasive mechanical ventilation	10	25.0
	Require non-invasive mechanical ventilation only	22	55.0
	Did not require ventilation/ventilation not reported	8	20.0
	Require renal replacement therapy	<5	7.5
Clinical complications reported during ICU stay (at time of discharge in those who have been discharged) ²	Primary viral pneumonia	34	91.9
	Secondary bacterial pneumonia	9	24.3
	Acute respiratory distress syndrome (ARDS)	15	40.5
	Acute kidney injury	9	24.3
	Sepsis	11	29.7
	Multi-organ failure	8	21.6

Type of ventilation reported during ICU stay (at time of discharge in those who have been discharged) ³	Biphasic intermittent positive airway pressure (BiPAP)	9	24.3
	Continuous positive airway pressure (CPAP)	27	73.0
	Conventional mechanical ventilation	19	51.4
	High frequency oscillatory ventilation (HFOV)	<5	0.0
	ECMO	<5	0.0
Length of stay for those discharged alive ⁴	Median (days)	7	-
	Range (days)	1 - 14	-
Length of stay for those who have died	Median (days)	15.5	-
	Range (days)	3 - 48	-

¹For illness severity and clinical complications, more than one option can be selected so percentages will add to over 100%

²For clinical complications, the denominator is those who have been discharged from ICU, including people who have been discharged to another ICU

³For type of ventilation, more than one option can be selected so percentages will add to over 100%

⁴Length of stay for those discharged alive refers to duration of stay after final discharge from ICU. Length of stay reflects the cumulative duration of stay, where applicable, for patients with more than one ICU admission

2.0 Admissions to ICU

2.1 Date of admission to ICU

A graph of COVID-19 cases by week of admission to ICU from week 40 2023 to week 9 2024 is shown in figure 1.

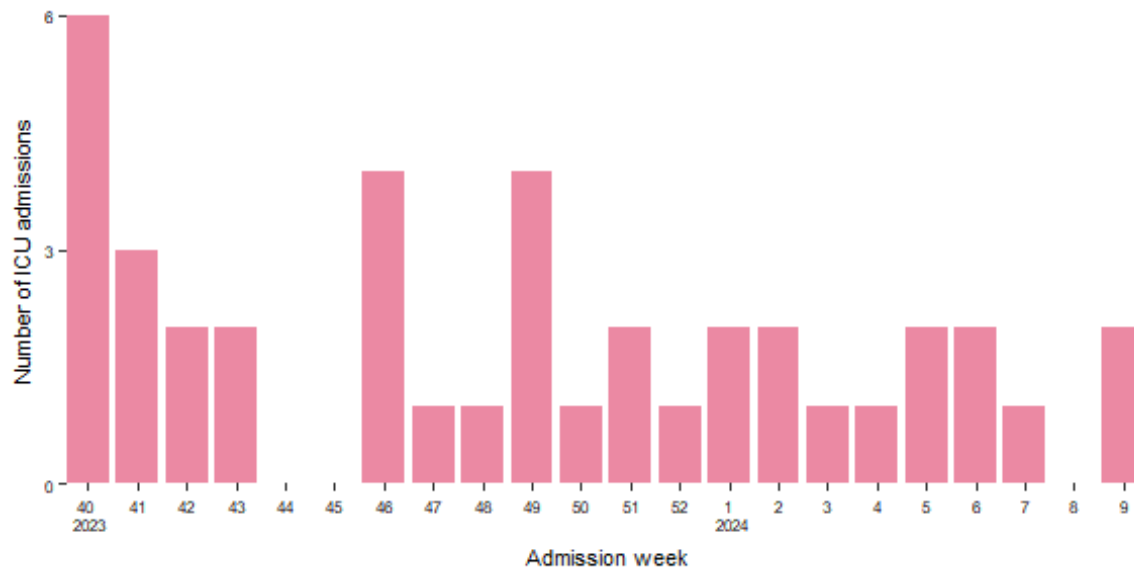


Figure 1: Cases of COVID-19 admitted to ICU by week of admission in Ireland (week 40 2023 to week 9 2024)

See technical notes for more information on dates for which week numbers correspond. Please note that most recent weeks may not yet reflect all admissions. For cases with multiple ICU admissions, the date of first admission to ICU is presented

2.2 Age and sex distribution of cases of COVID-19 admitted to ICU

Of the admissions to ICU since week 40 2023, 65% were male and 35% were female, giving a male: female ratio of 1.9:1. The mean age at time of admission to ICU was 71 years and the median age was 74 years (IQR: 67-79 years; range: 15-89 years).

Table 2 describes the sex and age distribution of cases of COVID-19 admitted to ICU. Figure 2 shows a graph of cases of COVID-19 admitted to ICU by week of ICU admission, stratified by age group.

Table 2: Cases of COVID-19 admitted to ICU by sex and age group, Ireland (week 40 2023 to week 9 2024)

Age group (yrs)	Female		Male		Total		Rate per 100,000 population
	(n)	(%)	(n)	(%)	(n)	(%)	
15-24	<5	0.0	<5	3.8	<5	2.5	0.2
25-34	<5	7.1	<5	0.0	<5	2.5	0.2
35-44	<5	0.0	<5	0.0	<5	0.0	0.0
45-54	<5	7.1	<5	0.0	<5	2.5	0.2
55-64	<5	7.1	<5	15.4	5	12.5	1.0
65-74	6	42.9	9	34.6	15	37.5	4.0
75-84	<5	28.6	9	34.6	13	32.5	6.6
85+	<5	7.1	<5	11.5	<5	10.0	5.9
Total	14	100.0	26	100.0	40	100.0	1.1

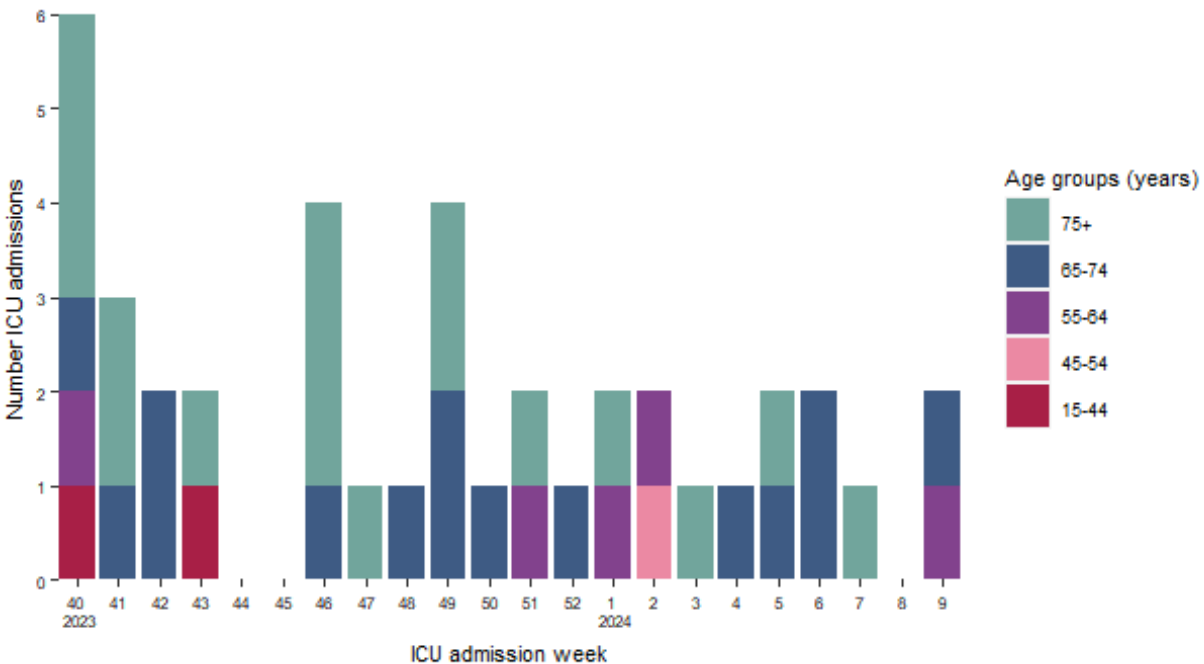


Figure 2: Cases of COVID-19 admitted to ICU by week of admission in Ireland, stratified by age group (week 40 2023 to week 9 2024)

See technical notes for more information on dates for which week numbers correspond.

2.3 Underlying medical conditions at time of admission to ICU

Table 3: Underlying medical conditions in cases of COVID-19 at time of first admission to ICU, Ireland (week 40 2023 to week 9 2024)

Underlying medical conditions	Number	Total admissions
One or more underlying clinical conditions	37	92.5
No underlying medical conditions	3	7.5
	Number	Those with underlying illness ¹
Chronic heart disease	17	45.9
Hypertension	21	56.8
Chronic kidney disease	11	29.7
Chronic liver disease	<5	0.0
Chronic neurological disease	5	13.5
Cancer malignancy	7	18.9
Immunodeficiency including HIV	14	37.8
Immunodeficiency due to HIV	<5	0.0
Immunodeficiency due to solid organ transplant	<5	5.4
Immunodeficiency due to therapy	13	35.1
Chronic respiratory disease	14	37.8
Chronic obstructive pulmonary disease	9	24.3
Bronchiectasis	<5	2.7
Cystic fibrosis	<5	0.0
Interstitial lung fibrosis	<5	8.1
Asthma (requiring medication)	<5	2.7
Severe asthma	<5	0.0
Mild to moderate asthma	<5	0.0
Pregnant	<5	0.0
<= 6 weeks post-partum	<5	0.0
Obesity (BMI >= 40)	<5	5.4
Diabetes	9	24.3
Type 1	<5	5.4
Type 2	7	18.9
Gestational diabetes	<5	0.0
Type unspecified	<5	0.0
Haemoglobinopathy	<5	0.0
Alcohol related disease	<5	5.4

¹More than one option can be selected for underlying condition so percentages will add to greater than 100%

2.4 Vaccination Status

In cases where vaccination data were available (60%, n=24), all cases had received at least one dose of a COVID-19 vaccine, although 41.7% (n=10) of cases had not received a dose of COVID-19 vaccine within the six months prior to their admission to ICU. The mean number of days between the most recent COVID-19 vaccine and admission to ICU was 337 days and the median number was 148 days.

2.5 Pregnancy

There were no pregnant women or women \leq six weeks post-partum, admitted to ICU due to COVID-19 between week 40 2023 and week 9 2024.

3.0 Outcome for cases of COVID-19 admitted to ICU

Of the 40 cases admitted to ICU since 01/10/2023, 21 were discharged alive (52% of total patients admitted to ICU), 15 died (38% of total patients admitted to ICU) and 4 are still in ICU (10% of total patients admitted to ICU) – including one patient transferred to another ICU. All of those who died were reported as having died in ICU. See technical notes for more information on analysis of deaths data.

Table 4 describes the profile of patients with COVID-19 who have either been discharged alive from ICU or died in/post admission to ICU.

Figure 3 describes the percentage of cases who have died by age group, sex and presence of underlying medical conditions.

Table 4: Profile of cases of confirmed COVID-19 who were discharged alive from or died in/post admission to ICU in Ireland (week 40 2023 to week 9 2024)

		Discharged alive		Died		Total
		Number of cases	Percentage	Number of cases	Percentage	
Age group (years)	15-44	<5	100.0	<5	0.0	<5
	45-54	<5	0.0	<5	0.0	<5
	55-64	<5	75.0	<5	25.0	<5
	65-74	8	57.1	6	42.9	14
	75+	8	50.0	8	50.0	16
Sex	Male	11	45.8	13	54.2	24
	Female	10	83.3	<5	16.7	12
Underlying conditions	Yes	19	57.6	14	42.4	33
	No	<5	66.7	<5	33.3	<5

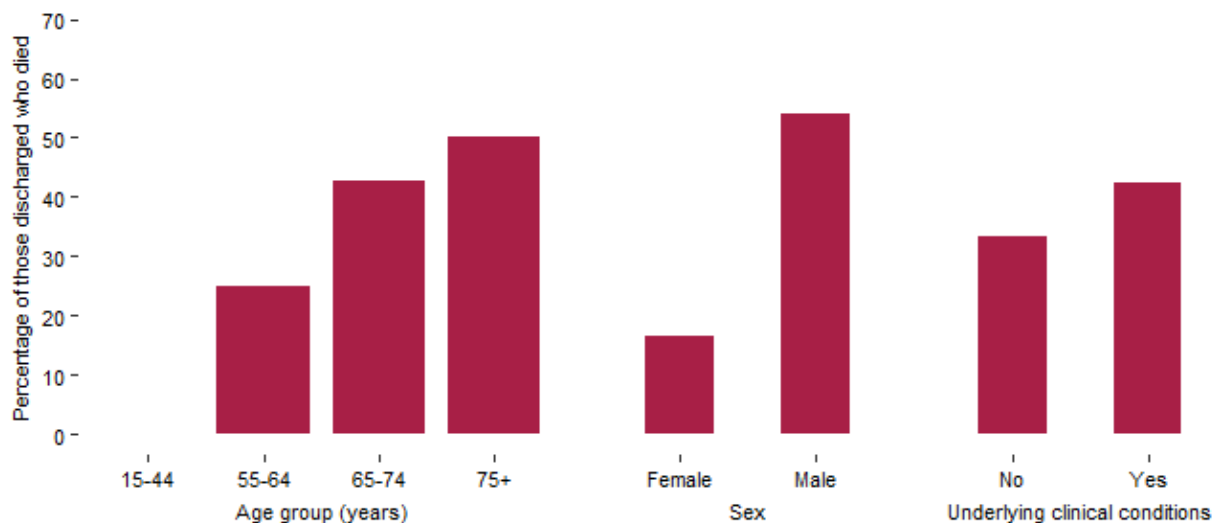


Figure 3: Profile of cases of confirmed COVID-19 who died in/post admission to ICU in Ireland (week 40 2023 to week 9 2024)

3.1 Clinical complications among those discharged from ICU

Discharge information has been received for 37 patients: 21 were discharged alive; 15 died and one patient was discharged to another ICU.

Table 5 describes the clinical complications reported for cases of COVID-19 at the time of discharge from ICU (includes information reported upon discharge, for those discharged to another ICU).

Table 5: Clinical complications and outcome of cases of COVID-19 at time of discharge from ICU, Ireland (week 40 2023 to week 9 2024)

	Number	
Total number of cases discharged from ICU¹	37	92.5
Complications/illness during ICU stay²	Number	Of those discharged
Primary viral pneumonia	34	91.9
Secondary bacterial pneumonia	9	24.3
Acute respiratory distress syndrome (ARDS)	15	40.5
Pressor dependence during ICU stay	19	51.4
Myocarditis	<5	0.0
Encephalitis	<5	0.0
Sepsis	11	29.7
Multi-organ failure	8	21.6
Anti-coagulation for thrombotic event	<5	8.1
Treatment acute kidney injuries (AKI)		
Acute kidney injury	9	24.3
Received CRRT/IHD	7	18.9
Use of ventilation or intervention during ICU stay		
Yes	32	86.5
No	5	13.5
Type of ventilations		
Biphasic intermittent positive airway pressure (BiPAP)	9	24.3
Continuous positive airway pressure (CPAP)	27	73.0
Conventional (including lung protective) mechanical ventilation	19	51.4
High frequency oscillatory ventilation (HFOV)	<5	0.0
Required ECMO	<5	0.0

¹For the analysis in this table, please note that the number discharged includes people who have been discharged to another ICU, and therefore may also be included in the "number currently in ICU" as per Table 1.

²More than one option can be selected for clinical complications so percentages will add to greater than 100%

4.0 Admission activity by location

Table 6 describes the distribution of cases of COVID-19 admitted to ICU in Ireland by HSE Health Region of residence.

Table 6: Area of residence of cases of COVID-19 admitted to ICU, Ireland (week 40 2023 to week 9 2024)

HSE Health Region ¹	Number of cases	Percentage	Rate per 100,000 population ²
HSE Dublin and North East	14	35.0	1.4
HSE Dublin and Midlands	6	15.0	0.7
HSE Dublin and South East	7	17.5	1.0
HSE South West	5	12.5	0.5
HSE Mid West	<5	10.0	1.0
HSE West and North West	<5	10.0	0.6
Total	40	100.0	0.8

¹See technical notes for counties associated with each HSE Health Region.

²Rate per population is calculated using Census 2016 data.

Further reports

Further reports on COVID-19 surveillance can be found [here](#)

Technical notes

1. Data in this report are confidential and provisional, and may change following further data validation and review. Some of the variables in the tables have missing or unknown data and ongoing validation work will improve the accuracy and completeness of the data.
2. Case definitions for COVID-19 are [available](#)
3. Deaths included in this report can be during or after ICU stay. If a person was discharged alive from ICU and is reported to have subsequently died, they will be included as died for the analysis in this report.
4. Due to the relatively low proportion of patients that have completed their critical care, all outcomes should be interpreted with caution.
5. Please note that patients whose outcome data have not been received are assumed to remain in ICU.
6. Length of stay
 - Refers to duration of stay for patients after final discharge from ICU for those discharged alive from ICU (and excludes those transferred to another ICU).
 - Reflects the cumulative duration of stay, where applicable, for patients with more than one ICU admission
7. HSE Health Regions: The counties/LHOs (Local Health Offices) covered by each HSE Health Region are as follows:
 - HSE Dublin and North East: Dublin North Central, North West Dublin, North Dublin, Meath, Louth, Cavan/Monaghan
 - HSE Dublin and Midlands: Dublin South City, Dublin South West, Dublin West, Kildare/West Wicklow, Laois/ Offaly Longford/Westmeath
 - HSE Dublin and South East: Dublin (South East), Dun Laoghaire, Wicklow, Wexford, Carlow/Kilkenny, Waterford, South Tipperary
 - HSE South West: West Cork, Cork South Lee, Cork North Lee, North Cork, Kerry
 - HSE Mid-West: Limerick, Clare, North Tipperary/East Limerick
 - HSE West and North West: Galway, Roscommon, Mayo, Sligo/Leitrim ¹, Donegal
8. Information on the epidemiological weeks can be found [here](#)

Acknowledgements

The Intensive Care Society of Ireland (ICSI) and the HSE Critical Care Programme support the provision of data by hospitals on all critical care patients with COVID-19 to HPSC. The HPSC processes and reports on this information on behalf of the regional Directors of Public Health/Medical Officers of Health. Sincere thanks are extended to all those who are participating in the collection of these data. This includes staff in ICU units, the HSE COVID-19 Contact Management Programme (CMP), notifying clinicians, laboratory staff, public health doctors, nurses, surveillance scientists, microbiologists and administrative staff. Sincere thanks are also extended to the staff at the National Office of Clinical Audit for the daily provision of data on ICU admissions and discharges.