Summary of SARS-CoV-2 virus variants in Ireland. Week 15 2024 (week ending 13/04/2024)

Prepared by HPSC on 16/04/2024
Please note: Data are provisional

Latest information on SARS-CoV-2 variants in Ireland

From February 2023, XBB (and other recombinant) SARS-CoV-2 variants dominated circulating SARS-CoV-2 variants worldwide but have since been replaced by BA.2 sublineage variants. Since November 2023, the BA.2.86 sublineage JN.1 has rapidly increased globally and has replaced XBB.1.5-like lineages.

A new variant with an unusually high number of mutations, BA.2.86, was detected in Israel first on August 13th 2023 and eventually spread globally though at relatively low prevalence. A sublineage of BA.2.86, JN.1, has since emerged rapidly and has become the predominant variant globally. It was made a Variant of Interest by the WHO on December 19th 2023 due to this rapid rise. The updated WHO risk evaluation published February 9th 2024 indicates that it possesses some antigenic advantage allowing it to evade previous immunity. However, while there are likely to be increases in case numbers, there is no indication of impact of vaccine effectiveness or increased disease severity as compared to other circulating variants.

- There have been 1,433 COVID-19 cases confirmed as infected with the JN.1 lineage and sublineages to date in Ireland.
- Of these cases, 497 (34.7%) were associated with outbreaks in hospital or healthcare settings.
- JN.1 and its sublineages now predominate sequenced cases in Ireland and between week 8 and week 12 2024 accounted for 91.0% of sequences.
- There have been 5,754 COVID-19 cases confirmed as infected with 'XBB.1.5-like' lineages to date in Ireland.

To date, 109,225 SARS-CoV-2 positive specimens have been sequenced in Ireland since late 2020 (Appendix Table 1, Figure 1a and 1b). This report summarises all reported SARS-CoV-2 WGS data in Ireland since the start of the pandemic and also focuses on WGS data from 2023 and more recent weeks. Omicron sequencing results since week 14 2023, and for the most recent five weeks, are shown in Figures 3a and 3b, 4a and 4b, Tables 1a and 1b and Table 2.

Note: There is typically a lag time of 1-3 weeks between a case being notified, selected for sequencing and sequencing being completed. Therefore the % of cases notified in this time period who are ultimately sequenced will be higher than reported here.

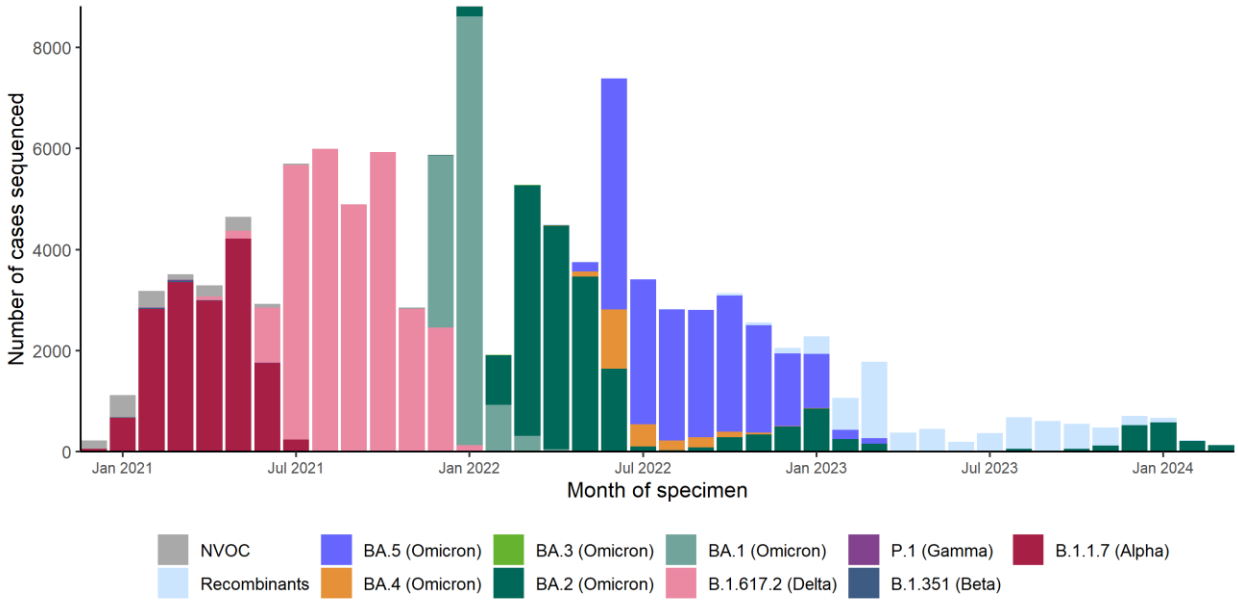

Figure 1a: SARS-CoV-2 whole genome sequencing results, specimen collection dates from December 2020 to March 2024, Ireland.

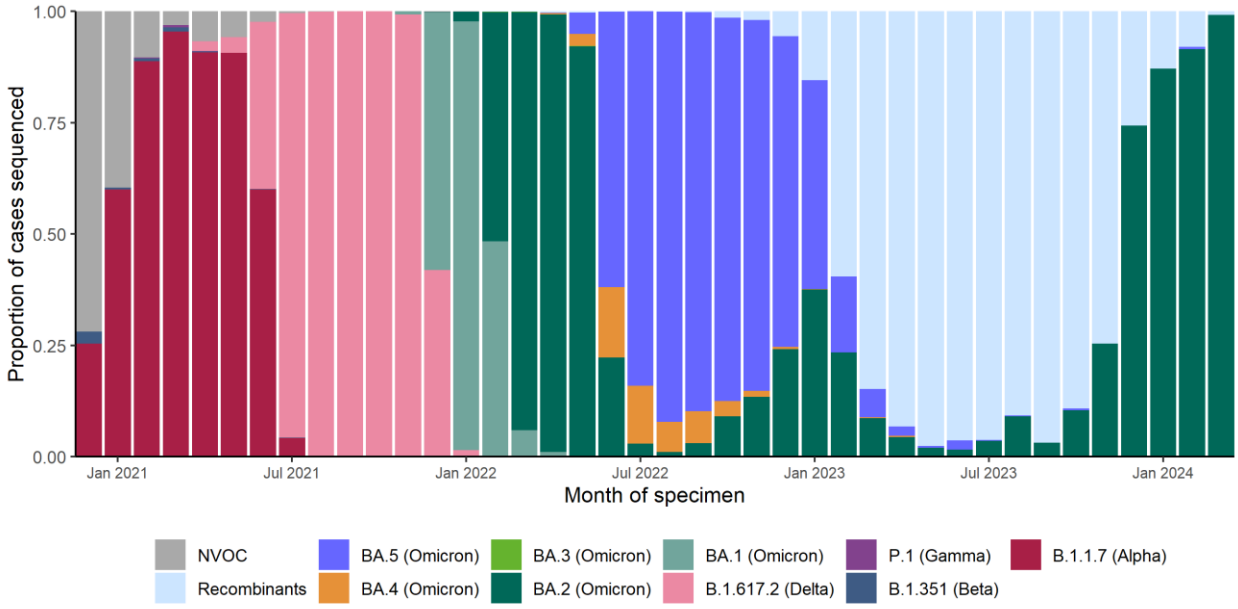

Figure 1b: Proportion of sequenced SARS-CoV-2 specimens, by variant of concern or interest, specimen collection dates, December 2020 to March 2024, Ireland.

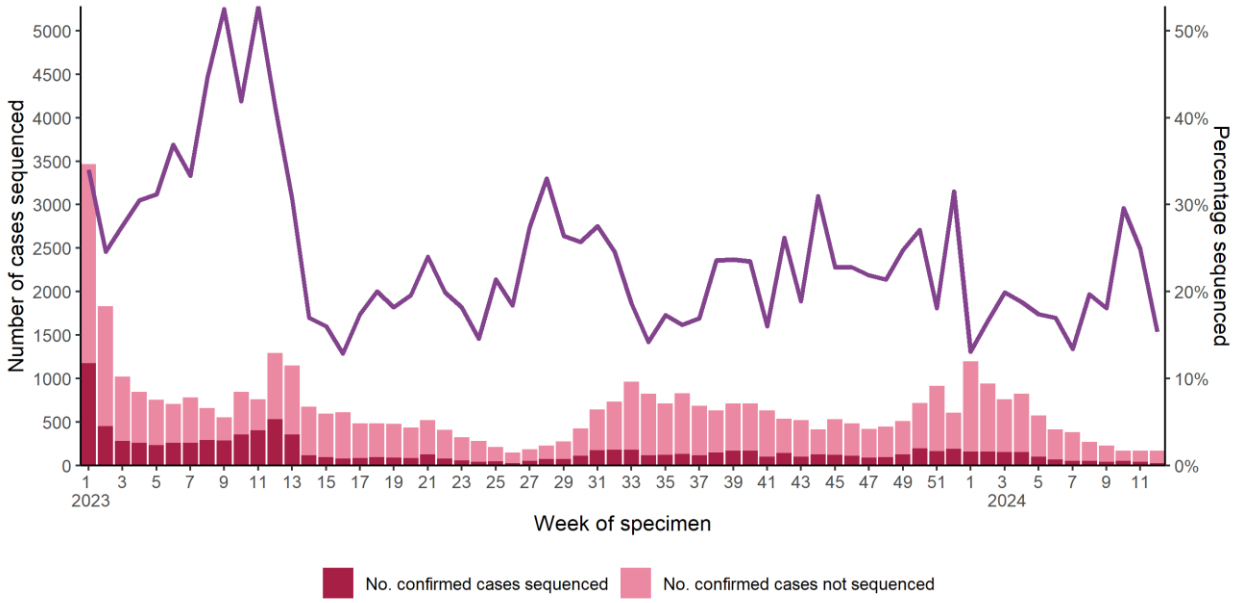

Figure 2: Number of confirmed cases of COVID-19 notified, by number sequenced/not sequenced, and percentage sequenced, week 1 2023 to week 12 2024, Ireland.

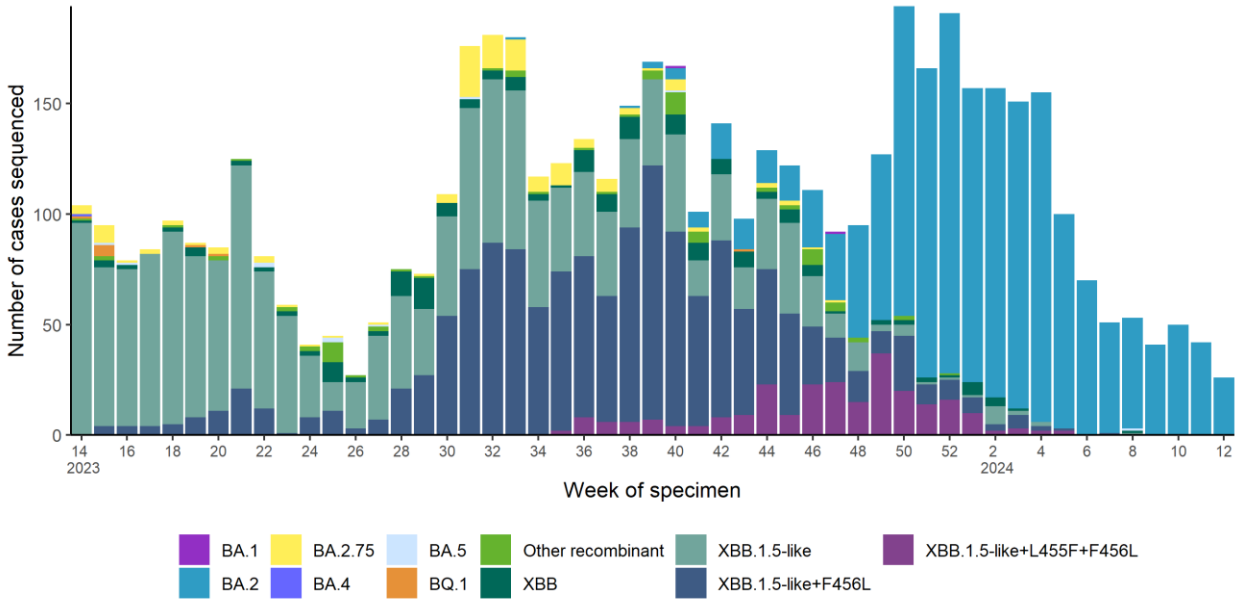

Figure 3a: SARS-CoV-2 whole genome sequencing results, specimen collection dates from week 14 2023 to week 12 2024, Ireland.[1]

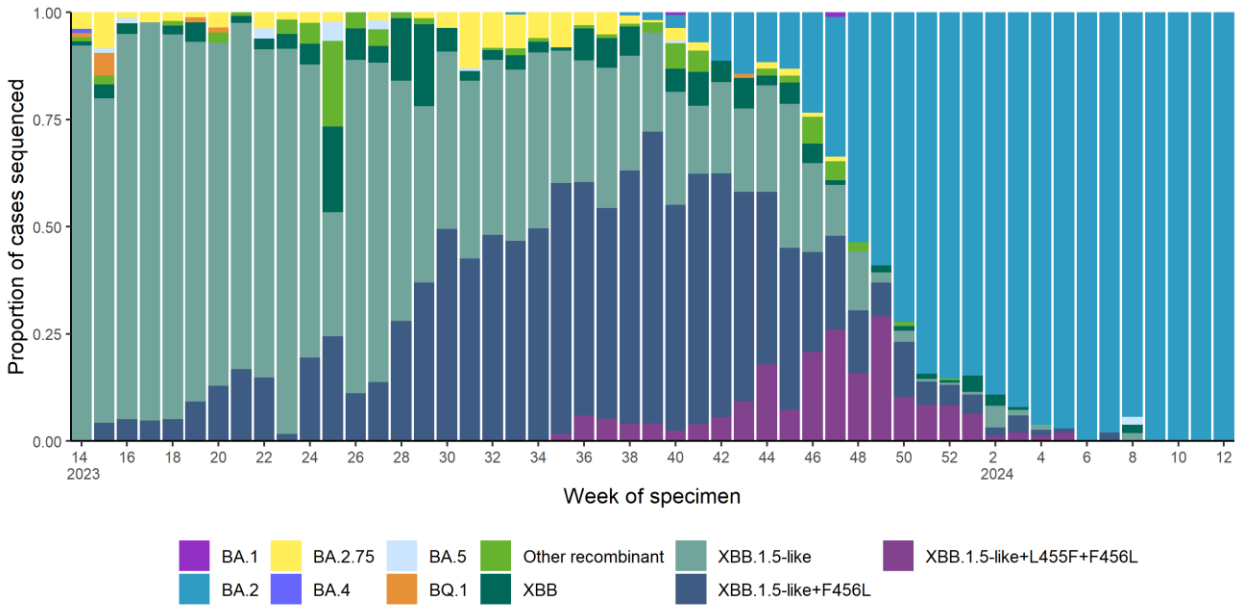

Figure 3b: Proportion of sequenced SARS-CoV-2 specimens by variant, specimen collection dates from week 14 2023 to week 12 2024, Ireland.

[1] As described by the ECDC, 'XBB.1.5-like', 'XBB.1.5-like + F456L' and 'XBB.1.5-like + L455F + F456L' refer to groupings of lineages that share sets of spike protein mutations. As of March 25 2024, and due to low levels of circulation, these groupings have been re-merged into a single designation 'XBB.1.5-like'. However, for the purposes of illustration for Figures 3a and 3b they remain un-merged.

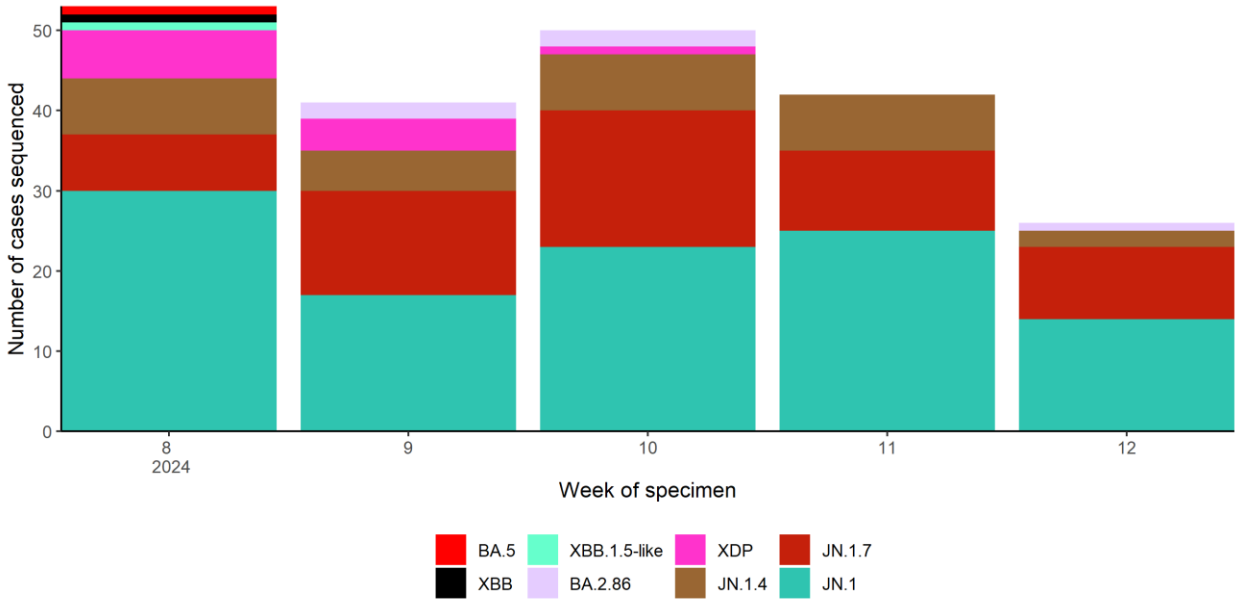

Figure 4a: SARS-CoV-2 whole genome sequencing results by week specimen collected from week 8 2024 to week 12 2024, Ireland.[2]

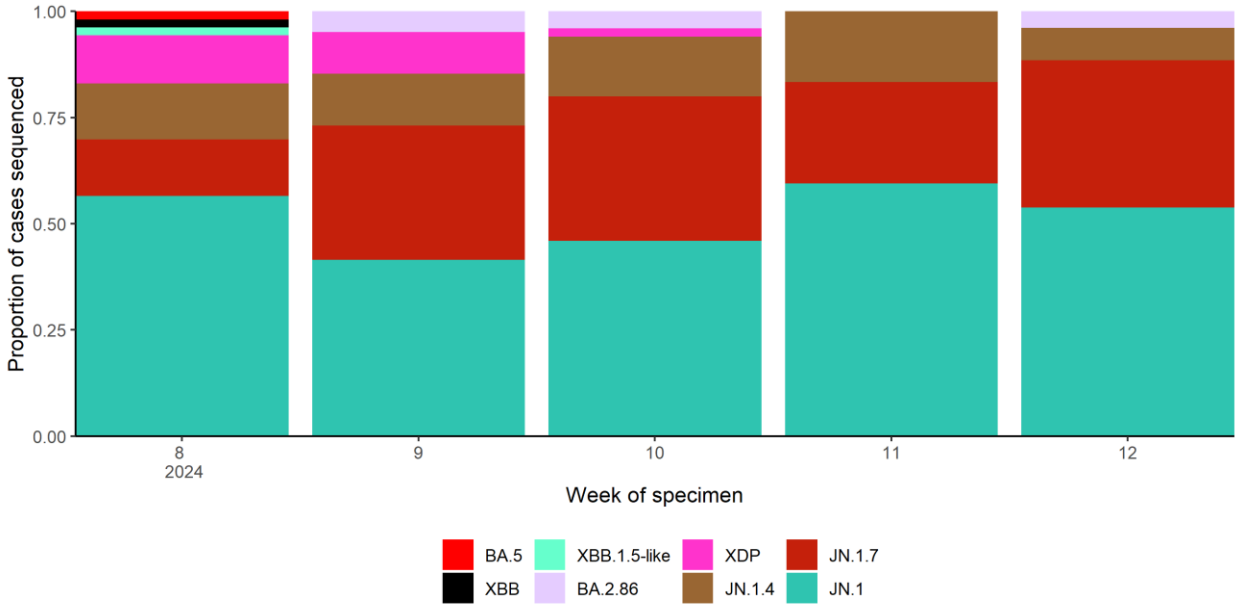

Figure 4b: SARS-CoV-2 whole genome sequencing results by proportion by week specimen collected from week 8 2024 to week 12 2024, Ireland.

[2] As of March 25 2024 due to low levels of circulation, previous groupings 'XBB.1.5-like', 'XBB.1.5-like + F456L' and 'XBB.1.5-like + L455F + F456L' have been re-merged into a single designation 'XBB.1.5-like'.

Table 1a: Pango lineage designations of COVID-19 cases from week 8 2024 to week 12 2024 by week, Ireland.

Pangolin lineage	8	9	10	11	12	Total
JN.1	30	17	23	25	14	109
JN.1.7	7	13	17	10	9	56
JN.1.4	7	5	7	7	2	28
XDP	6	4	1	0	0	11
BA.2.86	0	2	2	0	1	5
BA.5	1	0	0	0	0	1
XBB	1	0	0	0	0	1
XBB.1.5-like	1	0	0	0	0	1
Total	53	41	50	42	26	212

Table 1b: Pango lineage designations of COVID-19 cases from week 8 2024 to week 12 2024 by week, Ireland.

Pangolin lineage	8	9	10	11	12	Total
JN.1	56.6%	41.5%	46.0%	59.5%	53.8%	51.4%
JN.1.7	13.2%	31.7%	34.0%	23.8%	34.6%	26.4%
JN.1.4	13.2%	12.2%	14.0%	16.7%	7.7%	13.2%
XDP	11.3%	9.8%	2.0%	0.0%	0.0%	5.2%
BA.2.86	0.0%	4.9%	4.0%	0.0%	3.8%	2.4%
BA.5	1.9%	0.0%	0.0%	0.0%	0.0%	0.5%
XBB	1.9%	0.0%	0.0%	0.0%	0.0%	0.5%
XBB.1.5-like	1.9%	0.0%	0.0%	0.0%	0.0%	0.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2: Pango lineage designations of COVID-19 cases in the last five week period (weeks 8 to week 12 2024) and percentage difference in prevalence compared to the previous five week period (weeks 3 to 7 2024), Ireland.

Pangolin lineage	Number of cases last 5 weeks	% last 5 weeks	Number of cases previous 5 weeks	% previous 5 weeks	% difference*
JN.1	75	35.4	204	38.7	-3.3
JN.1.7	56	26.4	76	14.4	12.0
JN.1.4	19	9.0	92	17.5	-8.5
XDP	11	5.2	12	2.3	2.9
JN.1.4.3	8	3.8	1	0.2	3.6
JN.1.9.1	7	3.3	2	0.4	2.9
KP.1.1	6	2.8	0	0.0	2.8
<5 cases	30		140		
Total	212		527		

*red indicates >=5% increase; green indicates >=5% decrease

Reasons for sequencing

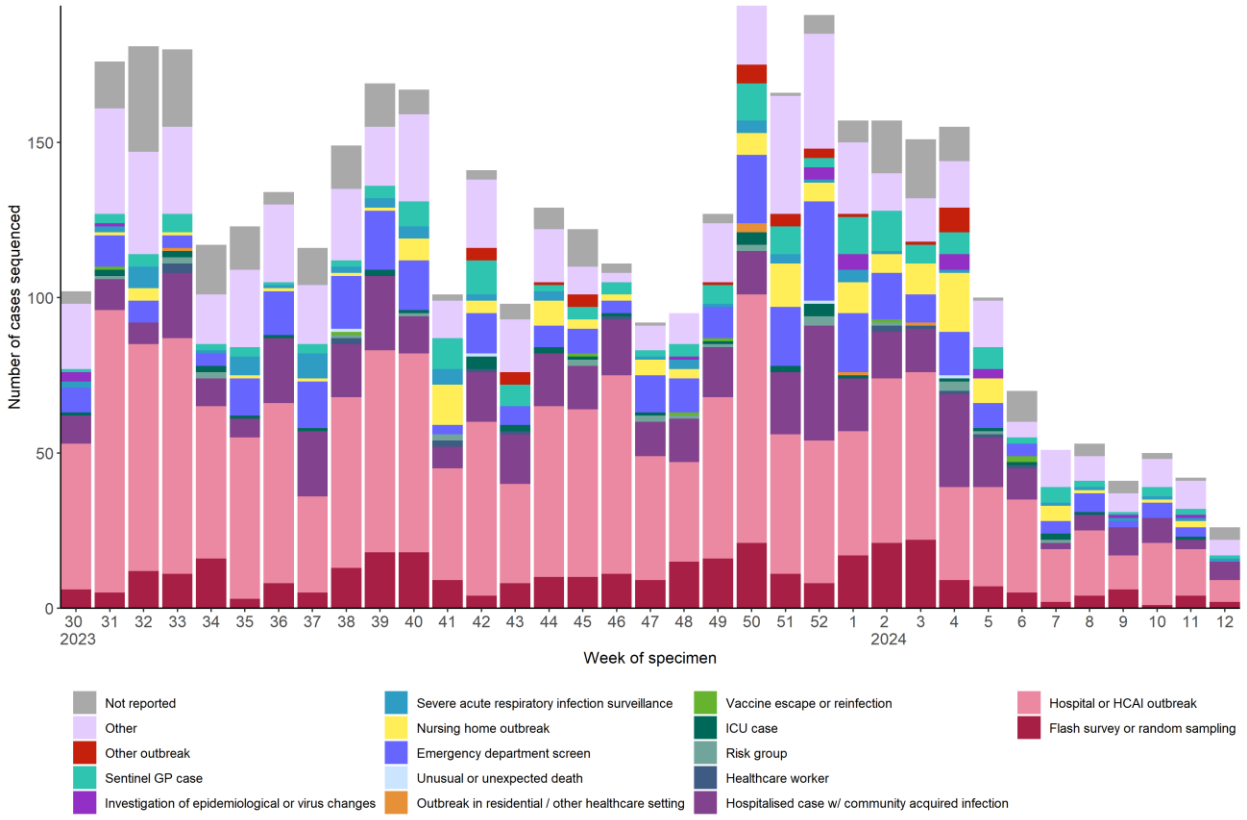

Figure 5: Reason for COVID-19 sequencing results provided from week 30 2023 to week 12 2024, Ireland.

Acknowledgements

Sincere thanks are extended to all those who participate in the collection and reporting of COVID-19 and SARS-CoV-2 sequencing data. This includes the National Virus Reference Laboratory staff, Enfer Laboratories, Beaumont Hospital, St James's Hospital, CHI Crumlin Hospital, St Vincent's University Hospital, Cork University Hospital, University Hospital Limerick, Galway University Hospital, Eurofins/Biomnis, Office of the Chief Information Officer, HSE Integrated Information Services (IIS), HSE Health Intelligence, Strategic Planning & Transformation Unit, notifying clinicians, public health doctors, nurses, surveillance scientists, contact tracers, microbiologists, laboratory staff, staff in ICU units and administration staff.

Appendix

Description of SARS-CoV-2 whole genome sequencing in Ireland

All medical practitioners, including the clinical directors of diagnostic laboratories, are required to notify the Medical Officer of Health (MOH) of any confirmed, probable or possible cases of COVID-19 that they identify. Laboratory, clinical and epidemiological data, on notified COVID-19 cases, are recorded on the Health Protection Surveillance Centre's (HPSC) Computerised Infectious Disease Reporting System (CIDR).

The National Virus Reference Laboratory (NVRL) undertakes whole genome sequencing (WGS) on a proportion of confirmed COVID-19 cases. Galway University Hospital, St James's Hospital, University Hospital Limerick, St Vincent's University Hospital, Cork University Hospital, Beaumont Hospital, CHI Crumlin Hospital and Enfer Laboratories have also undertaken sequencing on some confirmed cases of COVID-19. The COVID-19 WGS programme steering committee developed a framework for sequencing to ensure that WGS results included a representative sample of notified COVID-19 cases in the community and in hospitals/ICU. This framework also specified that smaller numbers of specimens from particular categories of cases be targeted for sequencing in order to detect new variants or variants associated with increased disease severity (travel related cases, cases associated with outbreaks in healthcare or other settings and cases with unusual clinical presentations, anti-viral resistance or chronic infection). Due to closure of community test centres on 30/03/2023, there is now a smaller volume of tests being performed as clinically appropriate, largely via GP sentinel sites, SARI surveillance and hospitalised cases, ICU cases and in special settings, e.g. outbreaks in health and care settings. Fully representative community flash surveys are no longer occurring. The framework for sequencing is currently under review.

HPSC link WGS results received from laboratories to epidemiological data on COVID-19 cases reported on the CIDR system. This report summarises WGS results and epidemiological data for COVID-19 cases that have been sequenced in Ireland since week 51 2020 (specimen dates between 13/12/2020 and 23/03/2024). The WGS results included in this report reflect all data available as of 14/04/2024. Epidemiological data on these cases were extracted from CIDR on 14/04/2024. CIDR is a dynamic system and case details may be updated at any time. Therefore, the data described here may differ from previously reported data and data reported for the same time period in the future.

WHO and ECDC variant working defintions

The World Health Organization (WHO) working definitions for 'SARS-CoV-2 variants of concern' (VOC), 'SARS-CoV-2 variants of interest' (VOI) and 'SARS-CoV-2 variants under monitoring' (VUM) are available here. The WHO list of VOCs, VOIs and VUMs is available here. The ECDC working definitions of list of VOCs, VOIs and VUMs are available here. The European Centre for Disease Prevention and Control (ECDC) list of VOCs, VOIs and VUMs is available here.

Table A1: Sequencing results for COVID-19 cases sampled week 51 2020 to 12 2024, Ireland.

Variant	Number of cases sequenced	% cases sequenced
BA.1 (Omicron)	13,195	12.1%
BA.2 (Omicron)	15,936	14.6%
BA.2.75 (Omicron)	2,479	2.3%
BA.2.86 (Omicron)	186	0.2%
JN.1 (Omicron)	1,433	1.3%
BA.3 (Omicron)	11	0.0%
BA.4 (Omicron)	2,279	2.1%
BA.5 (Omicron)	15,696	14.4%
BQ.1 (Omicron)	4,690	4.3%
XBB.1.5-like (Omicron)	4,075	3.7%
XBB.1.5-like+F456L (Omicron)	1,425	1.3%
XBB.1.5-like+L455F+F456L (Omicron)	254	0.2%
XBB (Omicron)	420	0.4%
Other recombinant	199	0.2%
B.1.1.529 (Omicron)	19	0.0%
B.1.1.7 (Alpha)	16,130	14.8%
B.1.617.2 (Delta)	28,990	26.5%
B.1.351 (Beta)	77	0.1%
P.1 (Gamma)	33	0.0%
NVOC	1,639	1.5%
Total	109,225	100.0%