



## Summary of SARS-CoV-2 virus variants in Ireland. Week 1 2025 (week ending 04/01/2025)

Prepared by HPSC on 06/01/2025  
Please note: Data are provisional

### Latest information on SARS-CoV-2 variants in Ireland

Since December 2023, JN.1 sublineages have dominated circulating SARS-CoV-2 variants worldwide. To date, a number of JN.1 sublineages have arisen with various combinations of mutations that offer a competitive advantage such as the spike mutations F456L and R346T. The KP.3 variant, which is a WHO and ECDC Variant of Interest (VOI), and its sublineages are currently dominant globally and in Ireland. Since week 35 2024, the XEC variant (KS.1.1 and KP.3.3 recombinant, also a WHO and ECDC VOI) has steadily risen in prevalence in Ireland and globally.<sup>1,2</sup> There is no evidence to date of an increase in clinical severity or reduction in vaccine effectiveness against severe disease among currently circulating variants<sup>3</sup>

- There have been 5,023 COVID-19 cases confirmed as infected with the JN.1 lineage and sublineages since week 40 2023 in Ireland.
- JN.1 and its sublineages now predominate sequenced cases in Ireland and between weeks 45 and 49 2024 accounted for 52.7% of sequences.
- KP.3 and its sublineages accounted for 41.9% of sequences between weeks 45 to 49 2024. This compares to 66.2% between weeks 40 to 44 2024.
- The XEC lineage accounted for 46.7% of sequences between weeks 45 to 49 2024. This compares to 23.7% between weeks 40 to 44 2024.

This report summarises all reported SARS-CoV-2 WGS data in Ireland. It focusses on data from 2024 and more recent weeks. Results since week 40 2023, and for the most recent five weeks, are shown in Figures 1a and 1b, 2a and 2b, 3a and 3b, Tables 1a and 1b and Table 2.

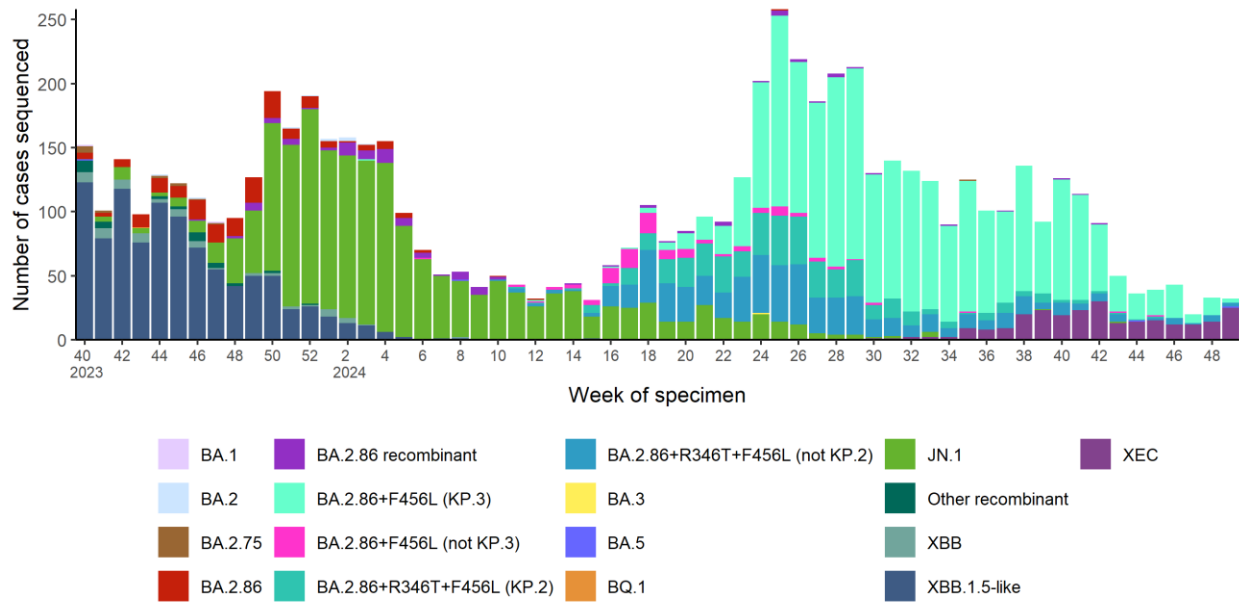
*Note: There is typically a lag time of 1-3 weeks between a case being notified, selected for sequencing and sequencing being completed. Therefore the % of cases notified in this time period who are ultimately sequenced will be higher than reported here.*

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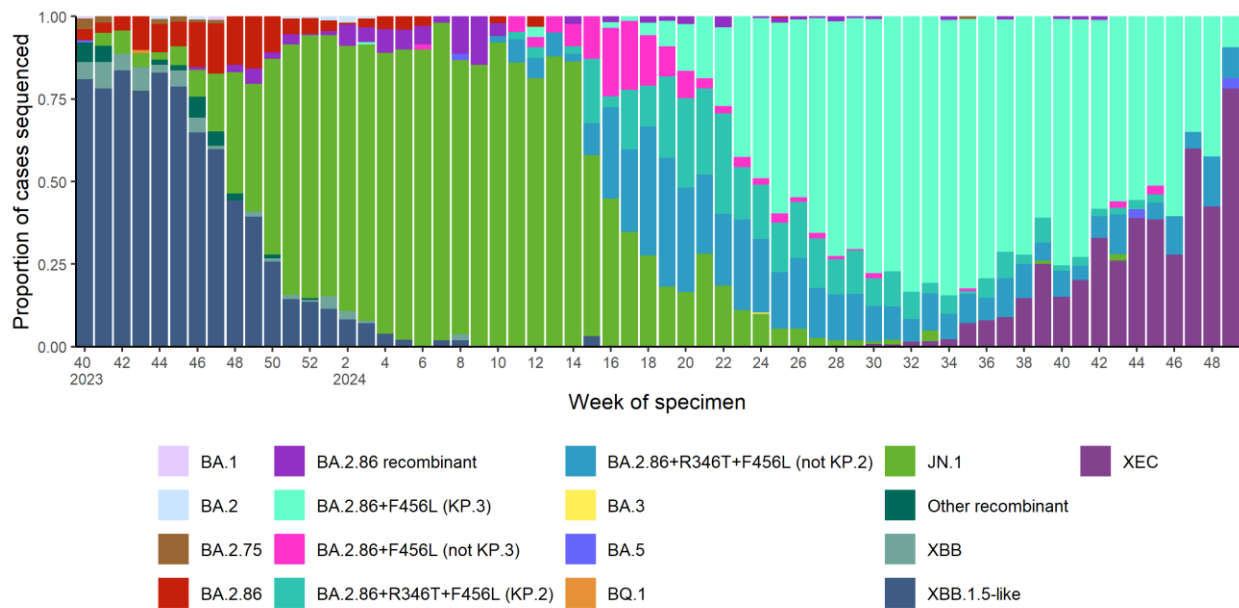
<sup>1</sup> [European Respiratory Virus Surveillance Summary](#)

<sup>2</sup> [WHO COVID-19 epidemiological update](#)

<sup>3</sup> [ECDC, Communicable disease threats report, 26 October – 1 November 2024, week 44](#)

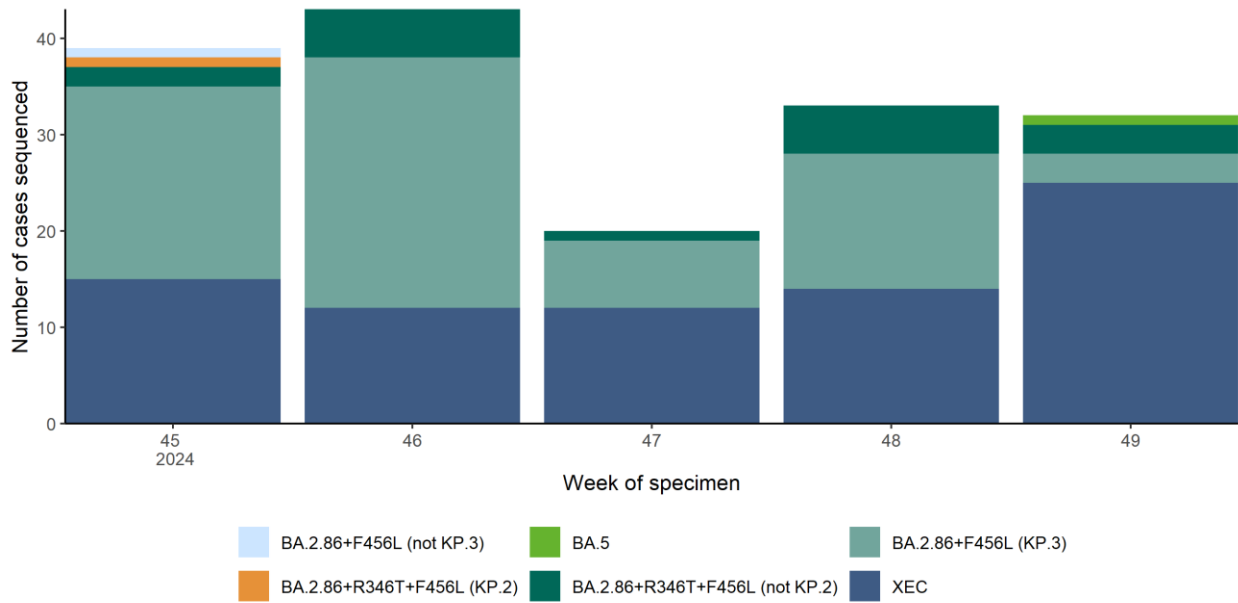


**Figure 1a:** SARS-CoV-2 whole genome sequencing results, specimen collection dates from week 40 2023 to week 49 2024, Ireland.<sup>4</sup>

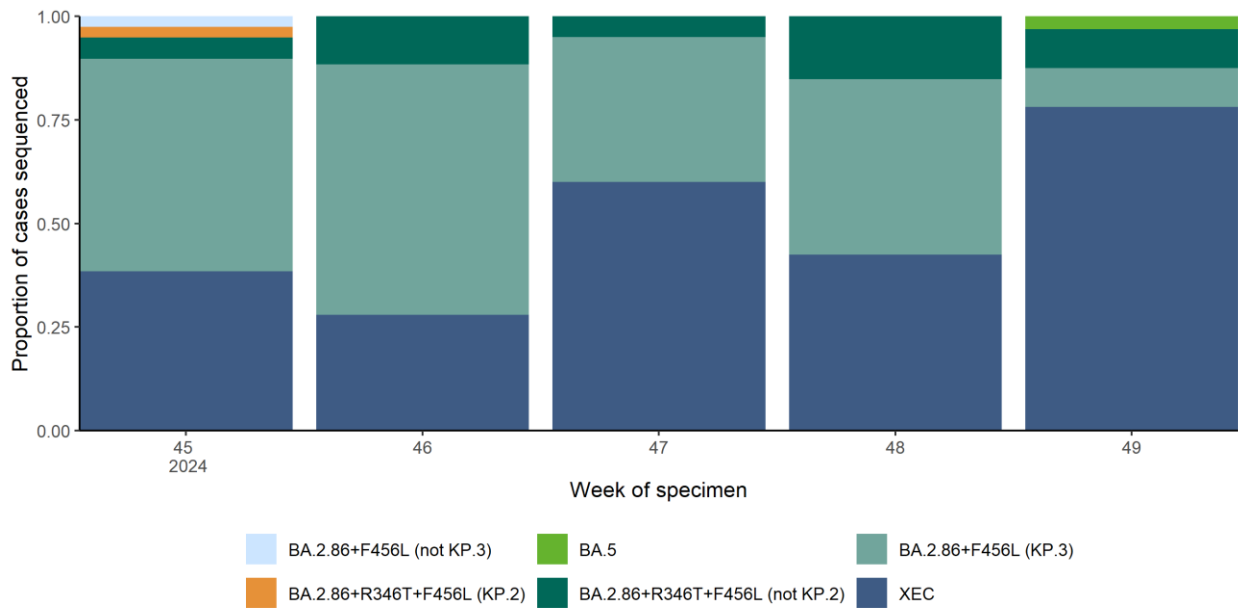


**Figure 1b:** Proportion of sequenced SARS-CoV-2 specimens by variant, specimen collection dates from week 40 2023 to week 49 2024, Ireland.

<sup>4</sup> 'XBB.1.5-like' is a grouping of lineages that share sets of spike protein mutations.



**Figure 2a:** SARS-CoV-2 whole genome sequencing results by week specimen collected from week 45 2024 to week 49 2024, Ireland.



**Figure 2b:** SARS-CoV-2 whole genome sequencing results by proportion by week specimen collected from week 45 2024 to week 49 2024, Ireland.



**Table 1a:** Number of variants by week, from week 45 2024 to week 49 2024, Ireland.

Variant	45	46	47	48	49	Total
XEC	15	12	12	14	25	78
BA.2.86+F456L (KP.3)	20	26	7	14	3	70
BA.2.86+R346T+F456L (not KP.2)	2	5	1	5	3	16
BA.2.86+F456L (not KP.3)	1	0	0	0	0	1
BA.2.86+R346T+F456L (KP.2)	1	0	0	0	0	1
BA.5	0	0	0	0	1	1
Total	39	43	20	33	32	167

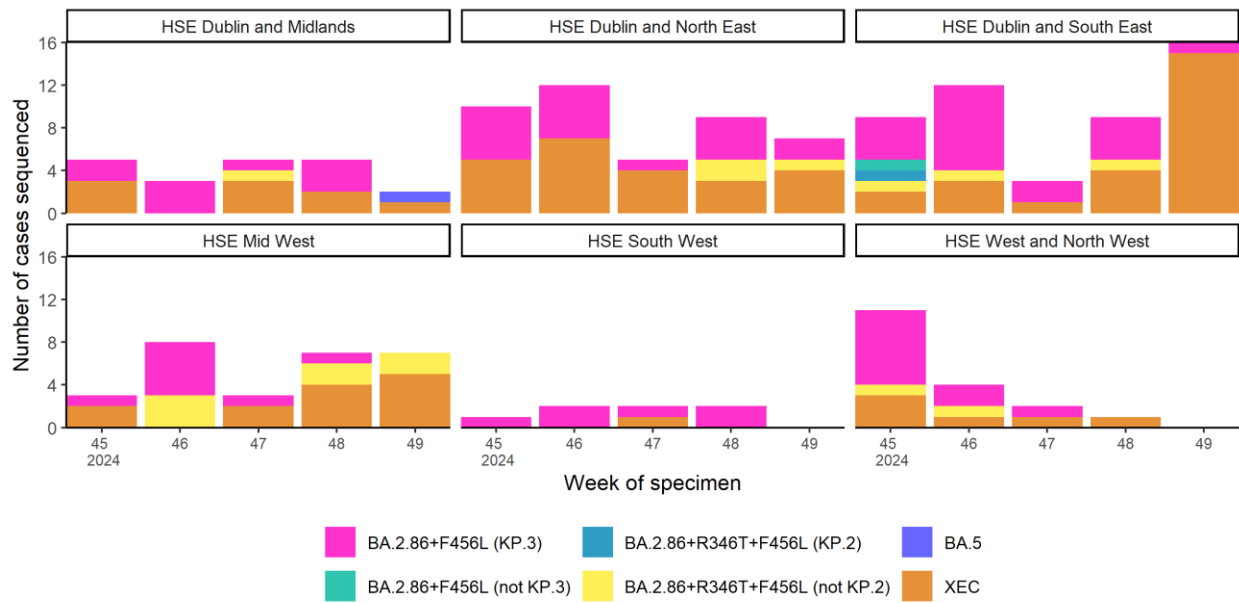
**Table 1b:** Percentage of variants by week, from week 45 2024 to week 49 2024, Ireland.

Variant	45	46	47	48	49	Total
XEC	38.5%	27.9%	60.0%	42.4%	78.1%	46.7%
BA.2.86+F456L (KP.3)	51.3%	60.5%	35.0%	42.4%	9.4%	41.9%
BA.2.86+R346T+F456L (not KP.2)	5.1%	11.6%	5.0%	15.2%	9.4%	9.6%
BA.2.86+F456L (not KP.3)	2.6%	0.0%	0.0%	0.0%	0.0%	0.6%
BA.2.86+R346T+F456L (KP.2)	2.6%	0.0%	0.0%	0.0%	0.0%	0.6%
BA.5	0.0%	0.0%	0.0%	0.0%	3.1%	0.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

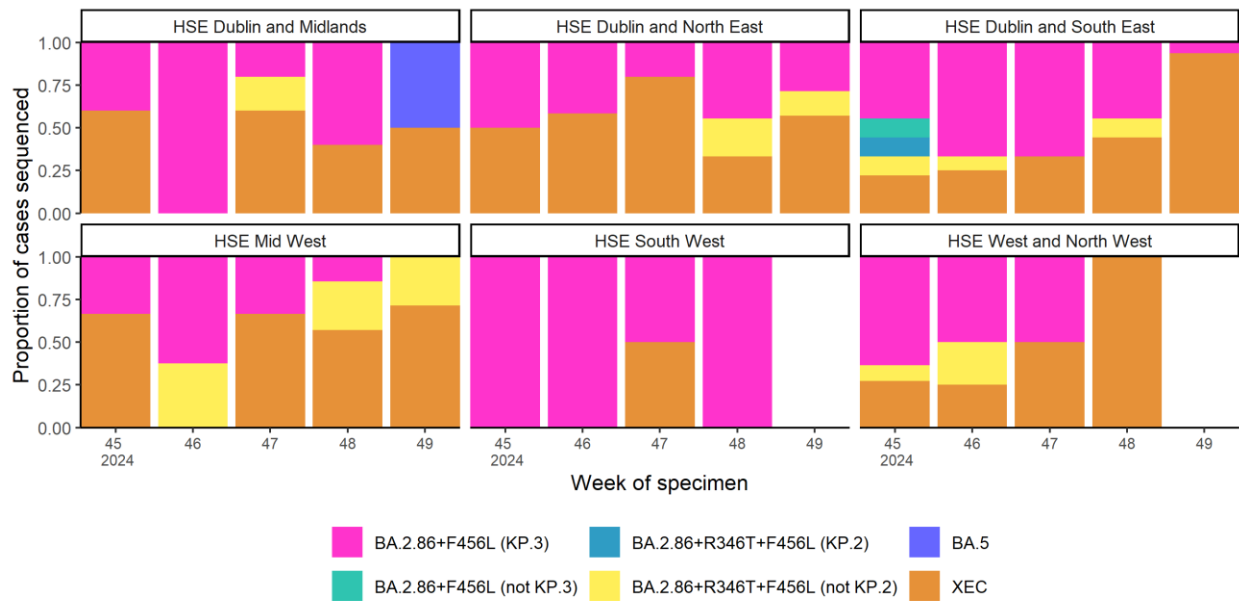


**Table 2:** Pango lineage designations of sequenced COVID-19 case specimens in the last five week period (weeks 45 to 49 2024) and percentage difference in prevalence compared to the previous five week period (weeks 40 to 44 2024), Ireland. \*red indicates  $\geq 5\%$  increase; green indicates  $\geq 5\%$  decrease

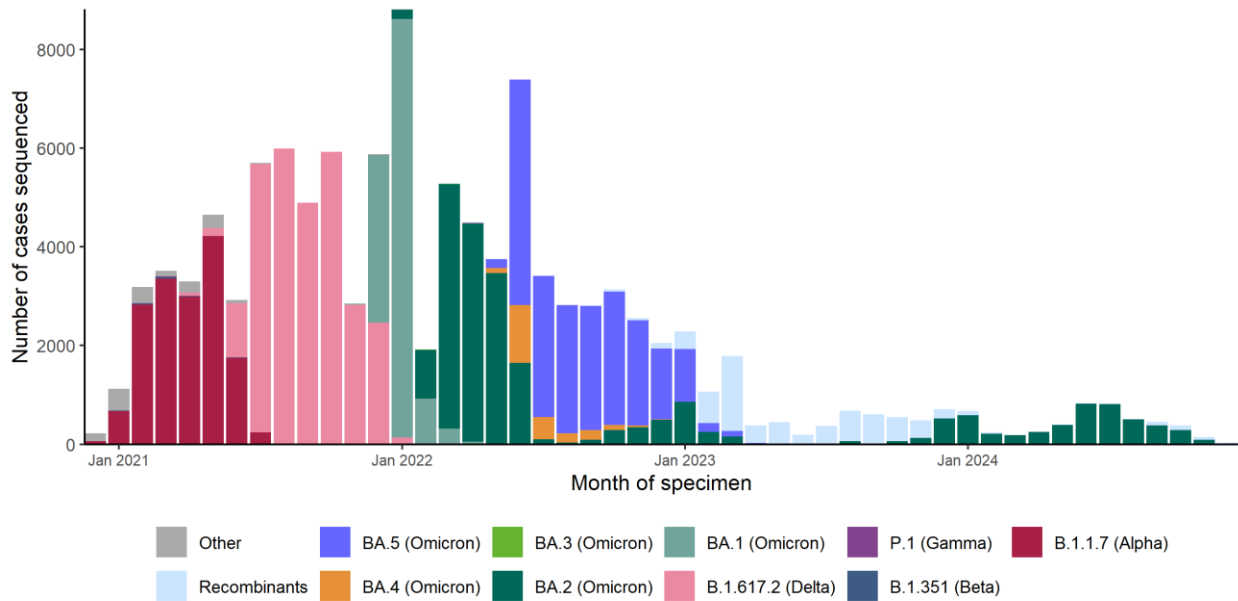
Pangolin lineage	Number of cases weeks 45 to 49 2024	% weeks 45 to 49 2024	Number of cases weeks 40 to 44 2024	% weeks 40 to 44 2024	% difference between weeks 45 to 49 and 40 to 44 2024
XEC	49	29.3	96	23.0	6.3
KP.3.1.1	47	28.1	151	36.2	-8.1
XEC.2	18	10.8	3	0.7	10.1
XEC.6	11	6.6	0	0.0	6.6
MC.1	6	3.6	32	7.7	-4.1
<5 cases	36		135		
Total	167		417		



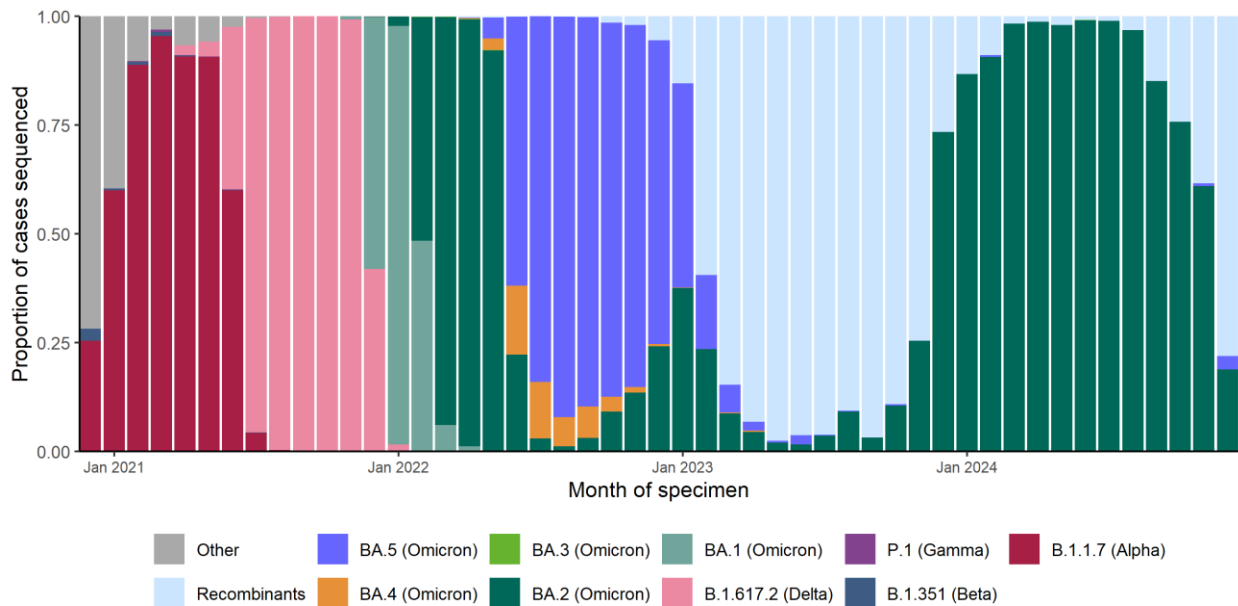
**Figure 3a:** SARS-CoV-2 whole genome sequencing results by Health Region by week specimen collected from week 45 2024 to week 49 2024, Ireland.



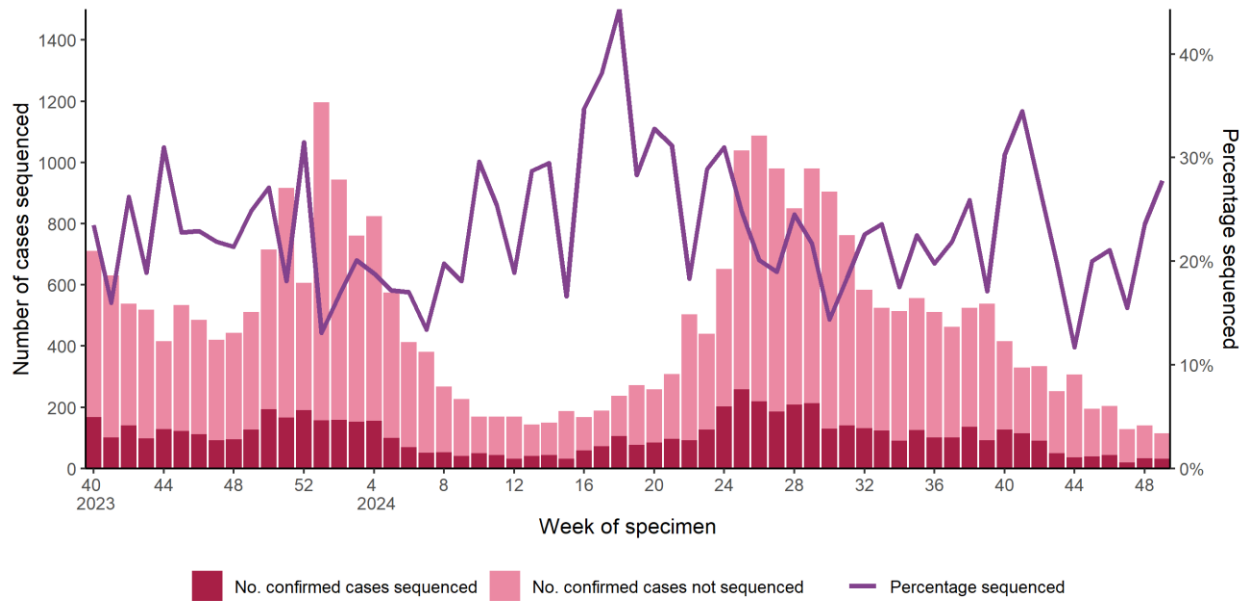
**Figure 3b:** SARS-CoV-2 whole genome sequencing results by proportion by Health Region by week specimen collected from week 45 2024 to week 49 2024, Ireland.



**Figure 4a:** SARS-CoV-2 whole genome sequencing results, specimen collection dates from December 2020 to December 2024, Ireland.



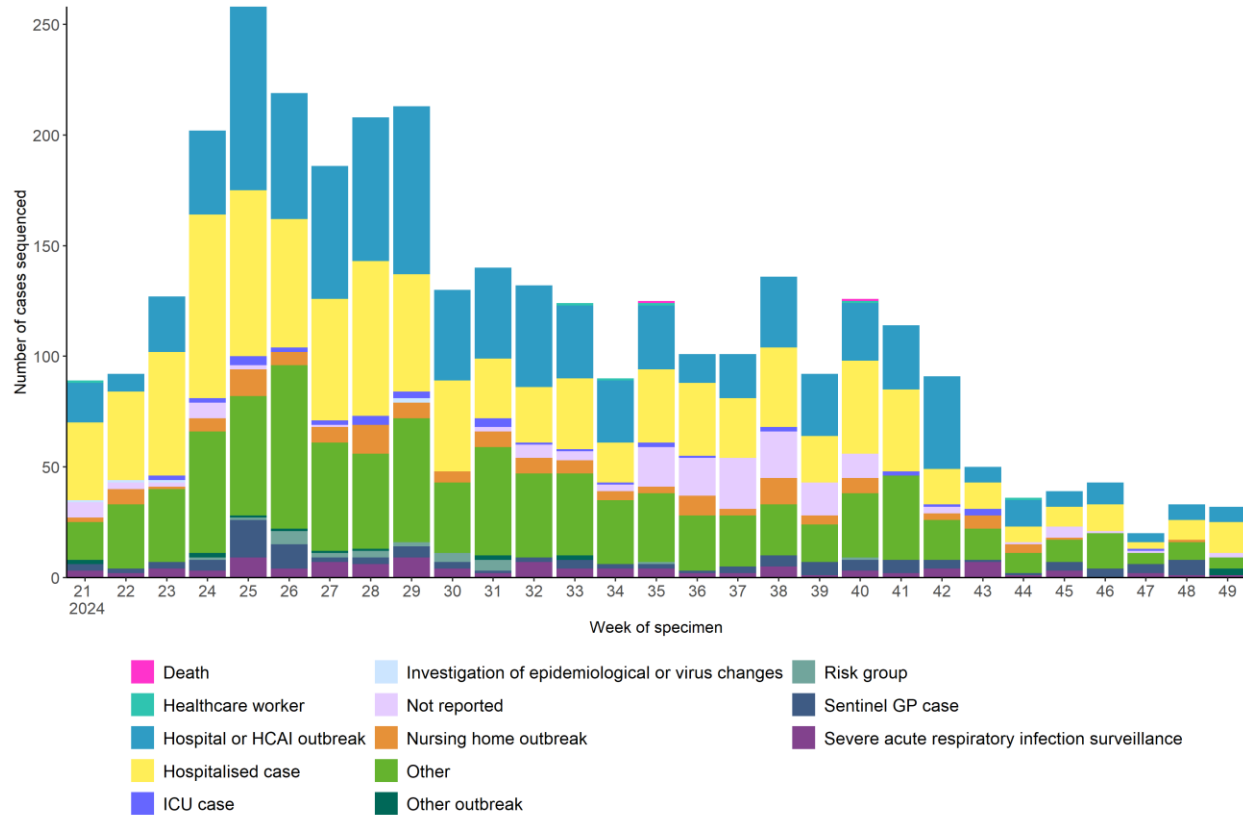
**Figure 4b:** Proportion of sequenced SARS-CoV-2 specimens, by variant of concern or interest, specimen collection dates, December 2020 to December 2024, Ireland.



**Figure 5:** Number of confirmed cases of COVID-19 notified, by number sequenced/not sequenced, and percentage sequenced, week 40 2023 to week 49 2024, Ireland.



## Reasons for sequencing



**Figure 6:** Reason for COVID-19 sequencing results provided from week 21 2024 to week 49 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).

As the SARS-CoV-2 testing policy in Ireland has changed from one of mass SARS-CoV-2 PCR population-based testing to more targeted testing, the National SARS-CoV-2 Whole Genome Sequencing Surveillance Programme has consequently revised the national SARS-CoV-2 sequencing sampling framework. The [revised SARS-CoV-2 sequencing sampling framework](#) will therefore focus on cases with severe disease (hospitalisation, ICU admission) and deaths, outbreaks in health and care settings, sentinel surveillance programmes in the community and acute hospitals and targeted sequencing based on public health risk assessment/clinical requests and virological changes e.g. new variant of concern. As per [ECDC](#) and [WHO](#) recommendations, the Programme will focus on quality sequencing, rather than quantity and will also work towards improving the representativeness of samples selected.

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 07/12/2024). The WGS results included in this report reflect all data available as of 04/01/2025. Epidemiological data on these cases were extracted from CIDR on 04/01/2025. 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.

For more details on the Programme visit the website [here](#).

### WHO and ECDC variant working definitions

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 week 49 2024, Ireland.

Variant	Number of cases sequenced	% cases sequenced
BA.1 (Omicron)	13,194	11.7%
BA.2 (Omicron)	15,936	14.1%
BA.2.75 (Omicron)	2,480	2.2%
BA.2.86 (Omicron)	172	0.2%
JN.1 (Omicron)	5,024	4.4%
BA.3 (Omicron)	12	0.0%
BA.4 (Omicron)	2,279	2.0%
BA.5 (Omicron)	15,698	13.9%
BQ.1 (Omicron)	4,690	4.1%
XBB.1.5-like (Omicron)	4,071	3.6%
XBB.1.5-like+F456L (Omicron)	1,428	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	14.3%
B.1.617.2 (Delta)	28,989	25.6%
B.1.351 (Beta)	77	0.1%
P.1 (Gamma)	33	0.0%
Other	1,639	1.4%
Total	113,100	100.0%