



UK Health
Security
Agency

SARS-CoV-2 variant data update, England

Version 17

12 November 2021

This briefing provides an update on previous data located in technical and variant data update [briefings and updates](#) up to 29 October 2021.

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Part 1. Surveillance overview

Variants under surveillance Table 1 and Table 2 show the current VOC, VUI, and variants in monitoring detected and not detected in the UK as of 8 November 2021.

Table 1. SARS-CoV-2 variants of public health interest: variants detected in the UK

WHO nomenclature	Lineage	Designation	Status
Alpha	B.1.1.7	VOC-20DEC-01	VOC
Beta	B.1.351	VOC-20DEC-02	VOC
Gamma	P.1	VOC-21JAN-02	VOC
Delta	B.1.617.2, AY.1, AY.2, AY.3, AY.33, AY.34	VOC-21APR-02	VOC
Delta	AY.4.2†	VUI-21OCT-01	VUI
	B.1.525	VUI-21FEB-03	VUI
	B.1.617.1	VUI-21APR-01	VUI
Mu	B.1.621	VUI-21JUL-01	VUI
	C.36.3††		Monitoring
	B.1.427/B.1.429		Monitoring
	B.1.620		Monitoring
	R.1		Monitoring
	C.1.2		Monitoring
	B.1.640		Monitoring
	Delta + E484K Phylogenetic Cluster		Monitoring

† AY.4.2 is a sub-lineage within Delta that has been assigned as a distinct VUI.

†† Previously VUI-21MAY-02, de-escalated on 20 October 2021.

Table 2. SARS-CoV-2 variants of public health interest: variants present in GISAID but not detected in the UK

WHO nomenclature	Lineage	Designation	Status
	P.3	VUI-21MAR-02	VUI
	B.1.617.3	VUI-21APR-03	VUI
	AV.1	VUI-21MAY-01	VUI
	P.2	VUI-21JAN-01	VUI

WHO nomenclature	Lineage	Designation	Status
	B.1.1.318	VUI-21FEB-04	VUI
Lambda	C.37*		Monitoring
	A.27		Monitoring
	B.1.526		Monitoring
	B.1.1.7 with Q677H		Monitoring
	B.1 with 214insQAS		Monitoring
	AT.1		Monitoring
	B.1.629		Monitoring
	B.1.619		Monitoring
	B.1.630, B.1.631/B.1.628		Monitoring
	P.1.8		Monitoring
	P.5		Monitoring
	<u>B.1.1.7 + B.1.617.2</u>		Monitoring
	C.37 (S:L5F, G75V, D614G, L452Q, E484K, P499R, N501T, H655Y, P681R, T859N)		Monitoring

* Previously VUI-21JUN-01, de-escalated on 20 October 2021.
Provisionally extinct variants are excluded from this table.

VOCs and VUIs are monitored weekly for observations within the last 12 weeks. If variants have not been detected in the UK within this period, they are moved to international status with continued monitoring. If a VOC or VUI has not been observed in the UK or international datasets within the preceding 12 weeks, it is designated as provisionally extinct, but monitoring remains in place.

^ Zeta and Theta were de-escalated by WHO and are no longer WHO variants under monitoring. Kappa, Iota, Eta and Epsilon were de-escalated by WHO and are now WHO variants under monitoring.

Part 2. Data on individual variants

Alpha

This variant was designated VUI 202012/01 (B.1.1.7) on detection and on review re-designated as VOC-20DEC-01 (202012/01, B.1.1.7) on 18 December 2020. This was named Alpha by WHO on 31 May 2021.

International epidemiology

GISAID includes data on sequences available internationally. As of 08 November 2021, 856,730 sequences of Alpha are listed from 181 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 3. Number of confirmed and provisional Alpha cases, by region of residence as of 8 November 2021

Region	Confirmed case number	Provisional case number	Total case number	Case proportion
East Midlands	16,222	488	16,710	7.4%
East of England	19,761	181	19,942	8.8%
London	40,527	776	41,303	18.2%
North East	14,761	113	14,874	6.6%
North West	42,032	1,745	43,777	19.3%
South East	24,056	123	24,179	10.7%
South West	8,198	52	8,250	3.6%
West Midlands	18,358	1,301	19,659	8.7%
Yorkshire and Humber	35,976	886	36,862	16.2%
Unknown region	1,268	20	1,288	0.6%
Total	221,159	5,685	226,844	-

Figure 1. Confirmed and provisional Alpha cases by specimen date and region of residence as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)

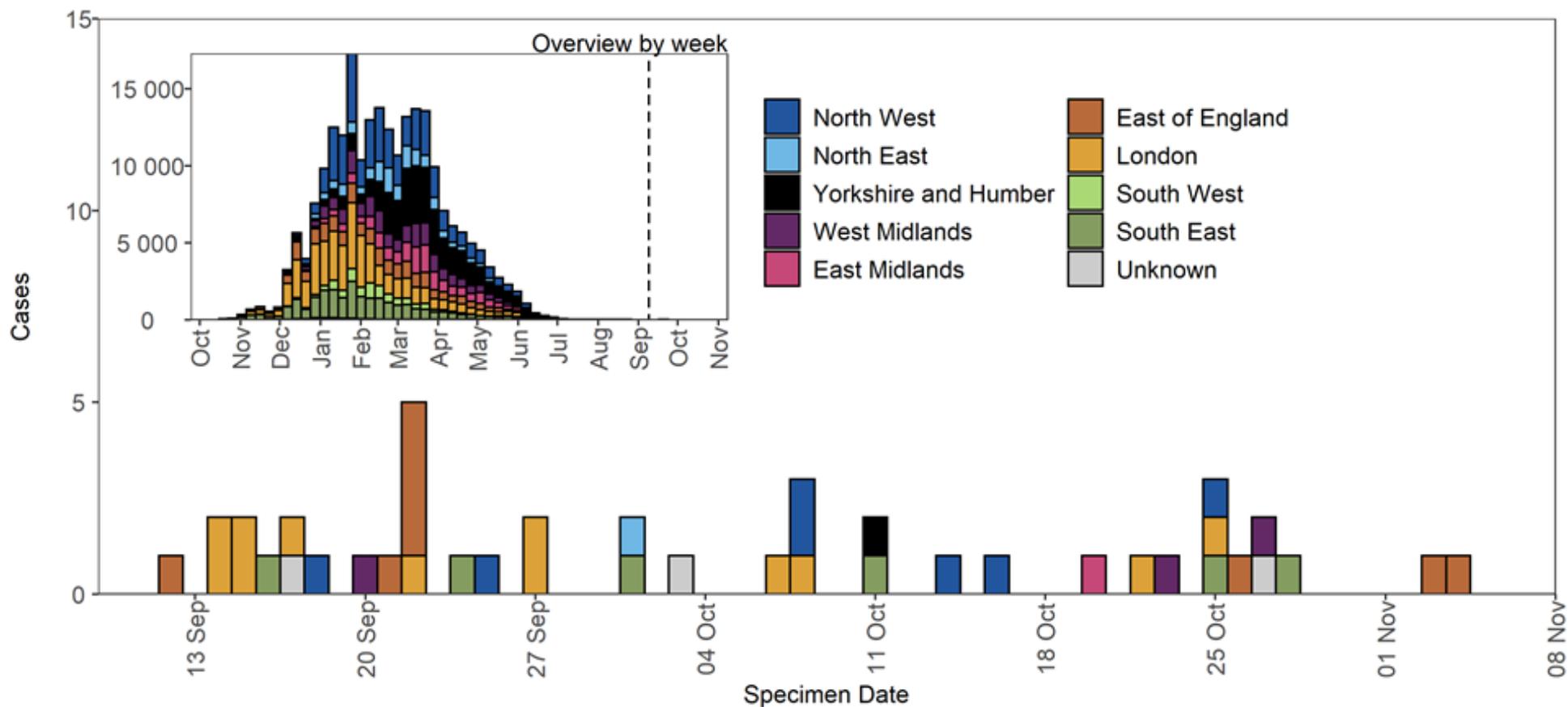


Figure 2. Confirmed and provisional Alpha cases by specimen date and detection method as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)

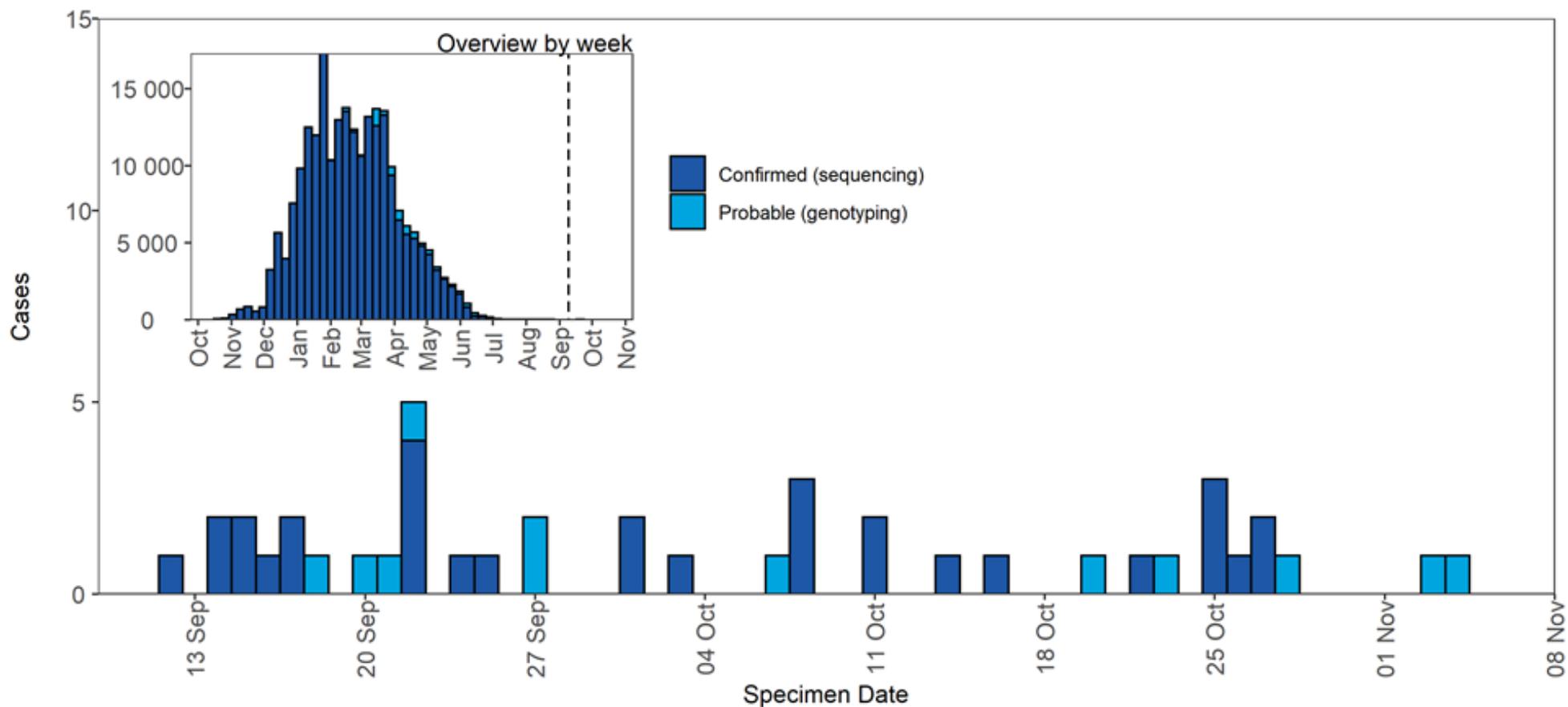
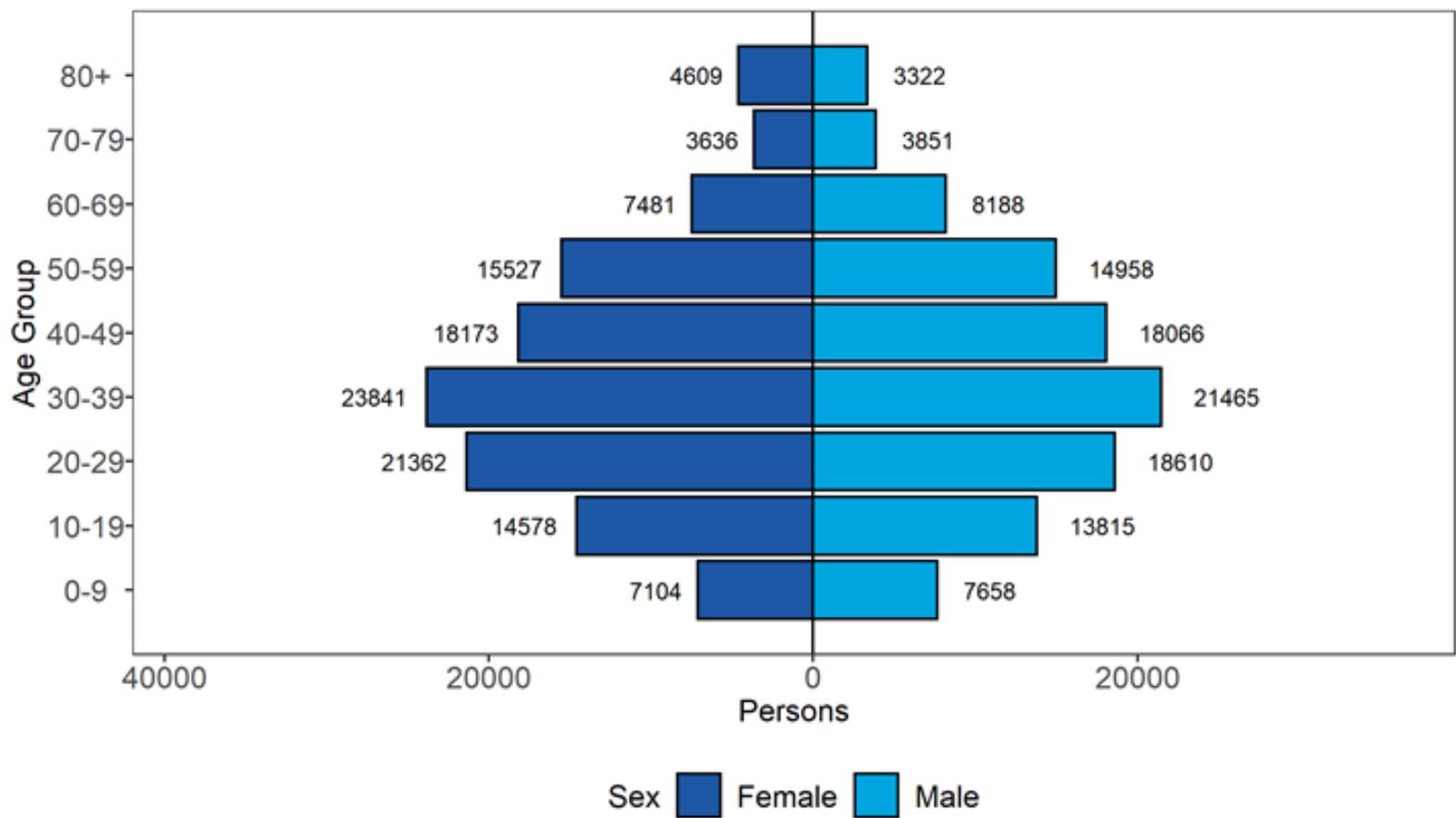


Figure 3. Age-sex pyramid of Alpha cases as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)



600 cases excluded where sex or age not reported

Beta

B.1.351 was initially detected in South Africa. This variant was designated variant under investigation on detection and on review re-designated as VOC-20DEC-02 (B.1.351) on 24 December 2020. It was named Beta by WHO on 31 May 2021.

International epidemiology

GISAID includes data on sequences available internationally. As of 8 November 2021, 33,819 sequences of Beta are listed from 113 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 4. Number of confirmed and provisional Beta cases, by region of residence as of 8 November 2021

Region	Confirmed case number	Provisional case number	Total case number	Case proportion
East Midlands	49	3	52	5.3%
East of England	82	2	84	8.5%
London	430	25	455	46.0%
North East	19	6	25	2.5%
North West	81	9	90	9.1%
South East	118	4	122	12.3%
South West	31	1	32	3.2%
West Midlands	66	1	67	6.8%
Yorkshire and Humber	32	6	38	3.8%
Unknown region	21	4	25	2.5%
Total	929	61	990	-

Figure 4. Confirmed and provisional Beta cases by specimen date and region of residence as of 8 November 2021

Larger plot includes last 60 days only. (Find accessible data used in this graph in [underlying data](#).)

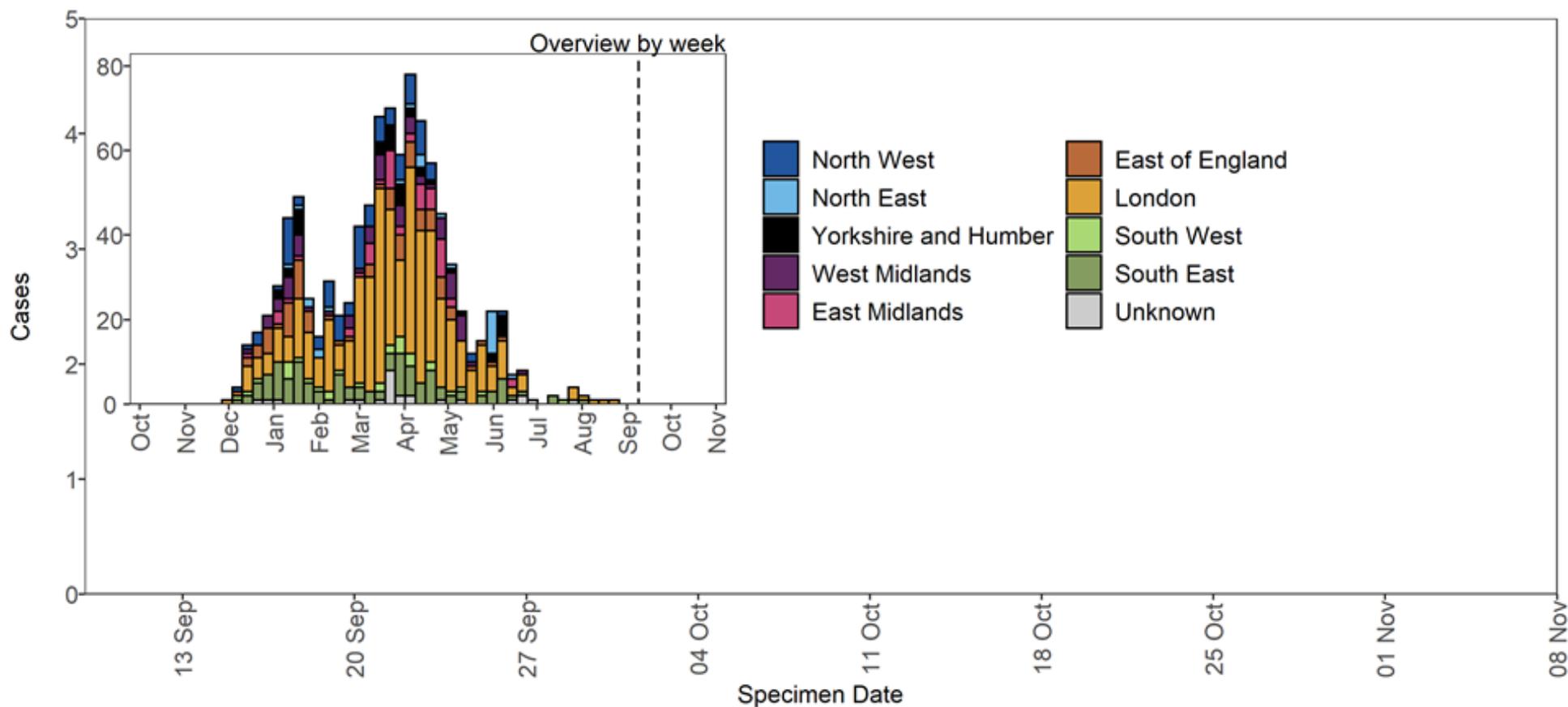


Figure 5. Confirmed and provisional Beta cases by specimen date and detection method as of 8 November 2021

Larger plot includes last 60 days only. (Find accessible data used in this graph in [underlying data](#).)

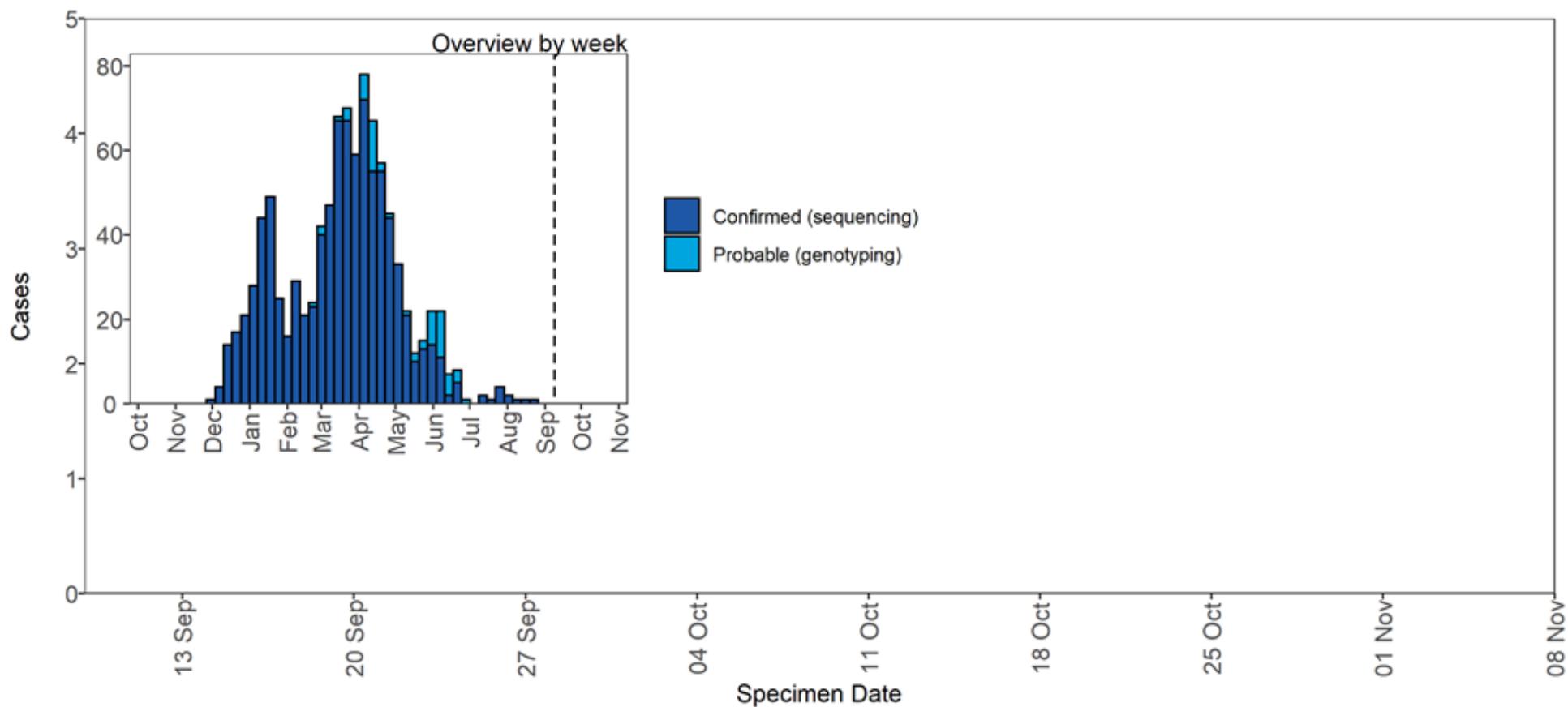
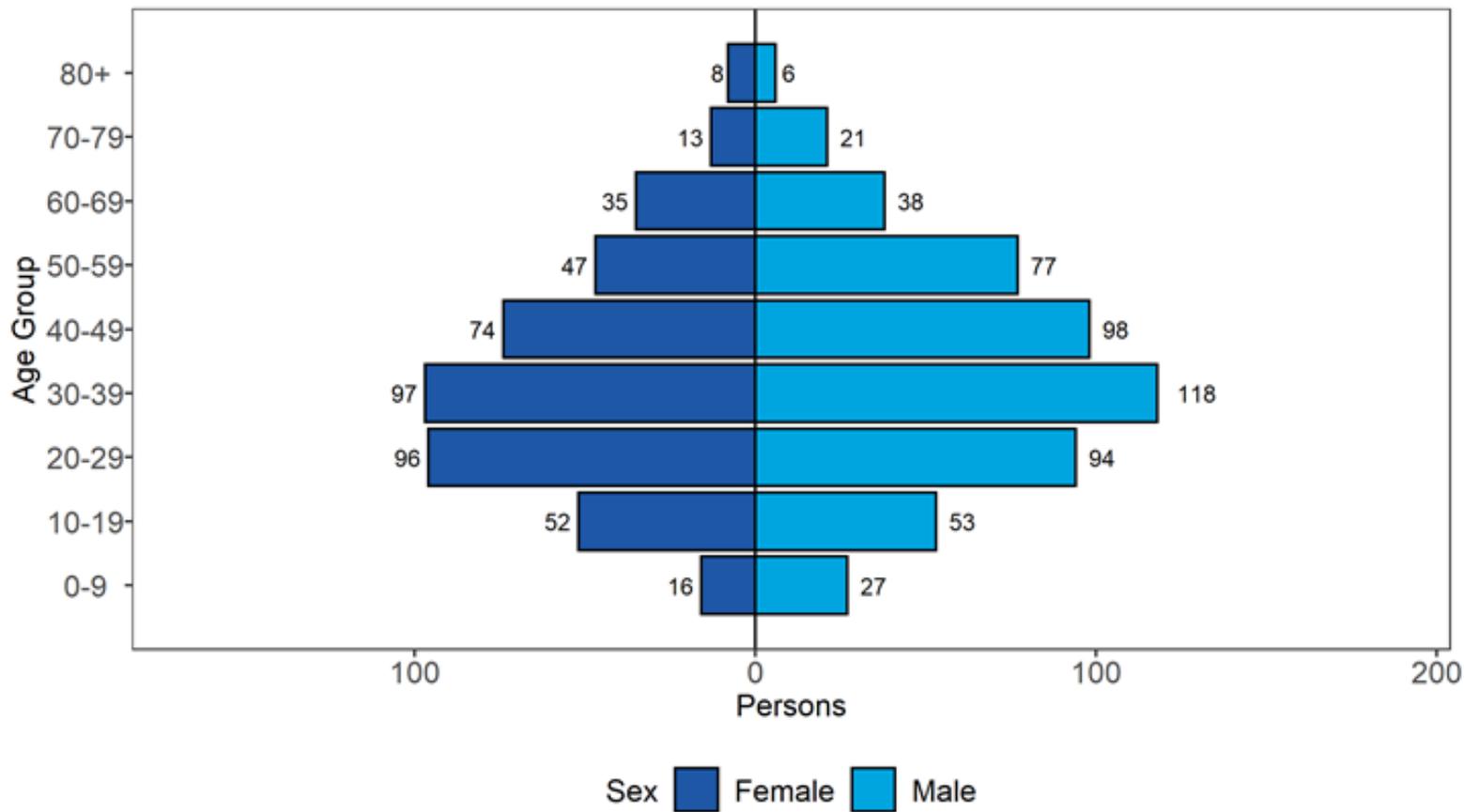


Figure 6. Age-sex pyramid of Beta cases as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)



20 cases excluded where sex or age not reported

Gamma

First identified in Japan amongst travellers from Brazil. The P.1 lineage is a descendant of B.1.1.28. This variant was designated variant under investigation on detection and on review re-designated as VOC-21JAN-02 (P.1) on 13 January 2021. This was named Gamma by WHO on 31 May 2021.

International epidemiology

GISAID includes data on sequences available internationally. As of 8 November 2021, 104,446 sequences of Gamma are listed from 82 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 5. Number of confirmed and provisional Gamma cases, by region of residence as of 8 November 2021

Region	Confirmed case number	Provisional case number	Total case number	Case proportion
East Midlands	7	2	9	3.2%
East of England	13	4	17	6.1%
London	122	28	150	53.8%
North East	1	4	5	1.8%
North West	9	1	10	3.6%
South East	29	8	37	13.3%
South West	11	8	19	6.8%
West Midlands	8	5	13	4.7%
Yorkshire and Humber	2	8	10	3.6%
Unknown region	9	0	9	3.2%
Total	211	68	279	-

Figure 7. Confirmed and provisional Gamma cases by specimen date and region of residence as of 8 November 2021

Larger plot includes last 60 days only. (Find accessible data used in this graph in [underlying data](#).)

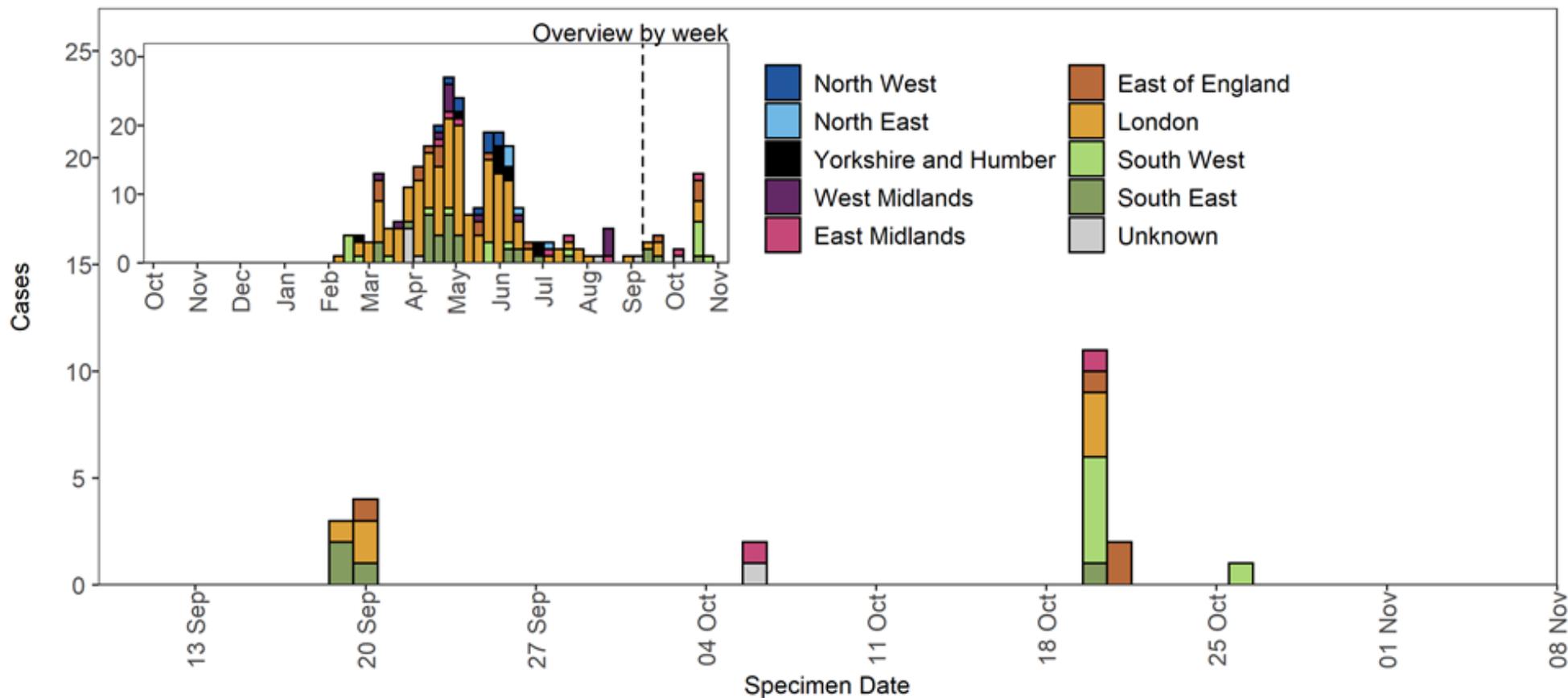


Figure 8. Confirmed and provisional Gamma cases by specimen date and detection method as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)

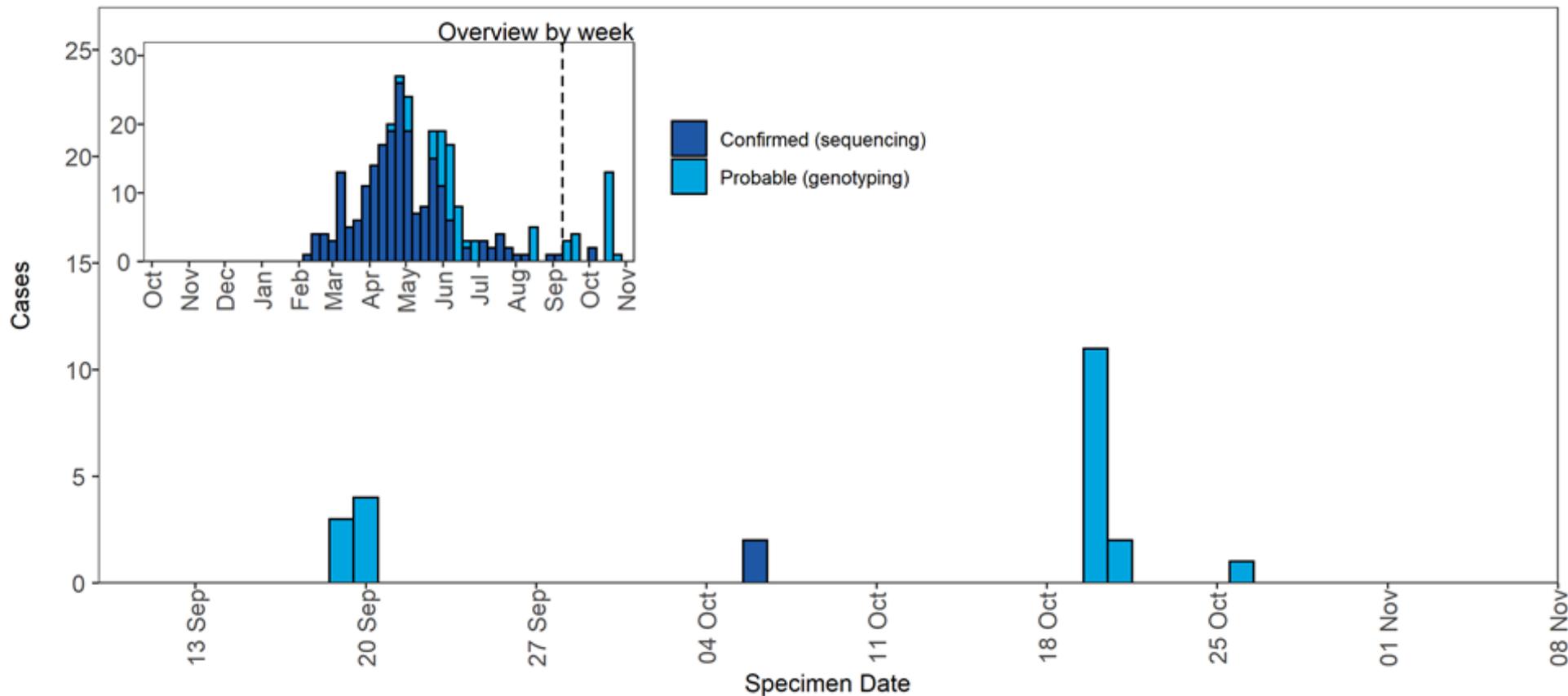
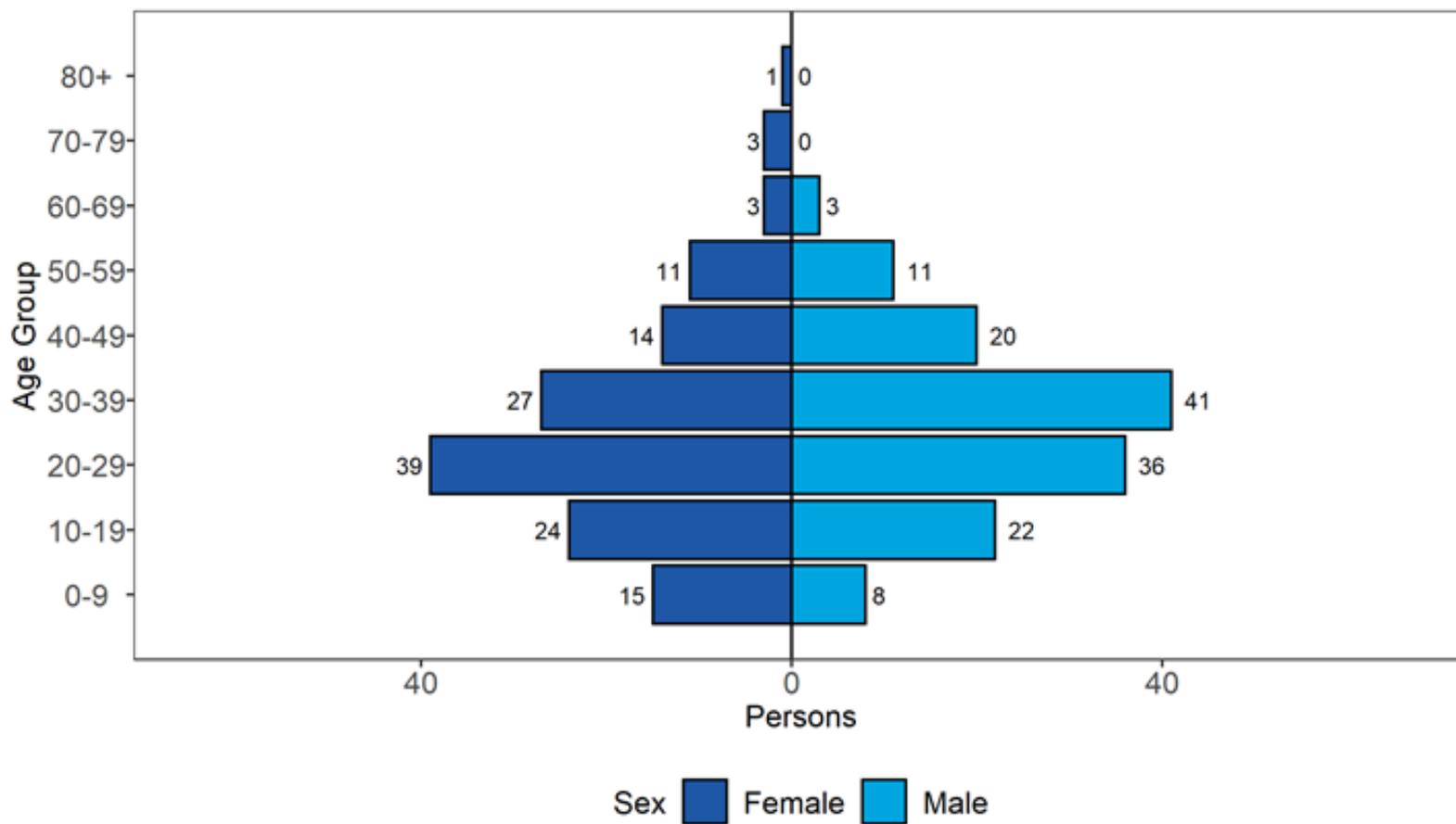


Figure 9. Age-sex pyramid of Gamma cases as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)



1 cases excluded where sex or age not reported

VUI-21FEB-03 (B.1.525)

B.1.525 was identified as a geographically dispersed cluster in UK on 2 February 2021. This variant was designated VUI-21FEB-03 (B.1.525) on 12 February 2021. The earliest sample date for VUI-21FEB-03 (B.1.525) in England was 15 December 2020. This was named Eta by WHO on 31 May 2021. As of this week, the variant B.1.525 (VUI-21FEB-03) has been de-escalated by the WHO from a variant of interest to a variant under monitoring. As such this lineage is no longer associated with the WHO label 'Eta'. Genotyping data is not collected for this variant.

GISAID includes data on sequences available internationally. As of 8 November 2021, 7,511 sequences of Eta are listed from 83 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 6. Number of confirmed and provisional VUI-21FEB-03 (B.1.525) cases, by region of residence as of 8 November 2021

Region	Total case number	Case proportion
East Midlands	12	2.6%
East of England	30	6.5%
London	166	35.9%
North East	5	1.1%
North West	80	17.3%
South East	82	17.7%
South West	18	3.9%
West Midlands	36	7.8%
Yorkshire and Humber	20	4.3%
Unknown region	13	2.8%
Total	462	-

Figure 10. Confirmed and provisional VUI-21FEB-03 (B.1.525) cases by specimen date and region of residence as of 8 November 2021 Larger plot includes last 60 days only. (Find accessible data used in this graph in [underlying data](#).)

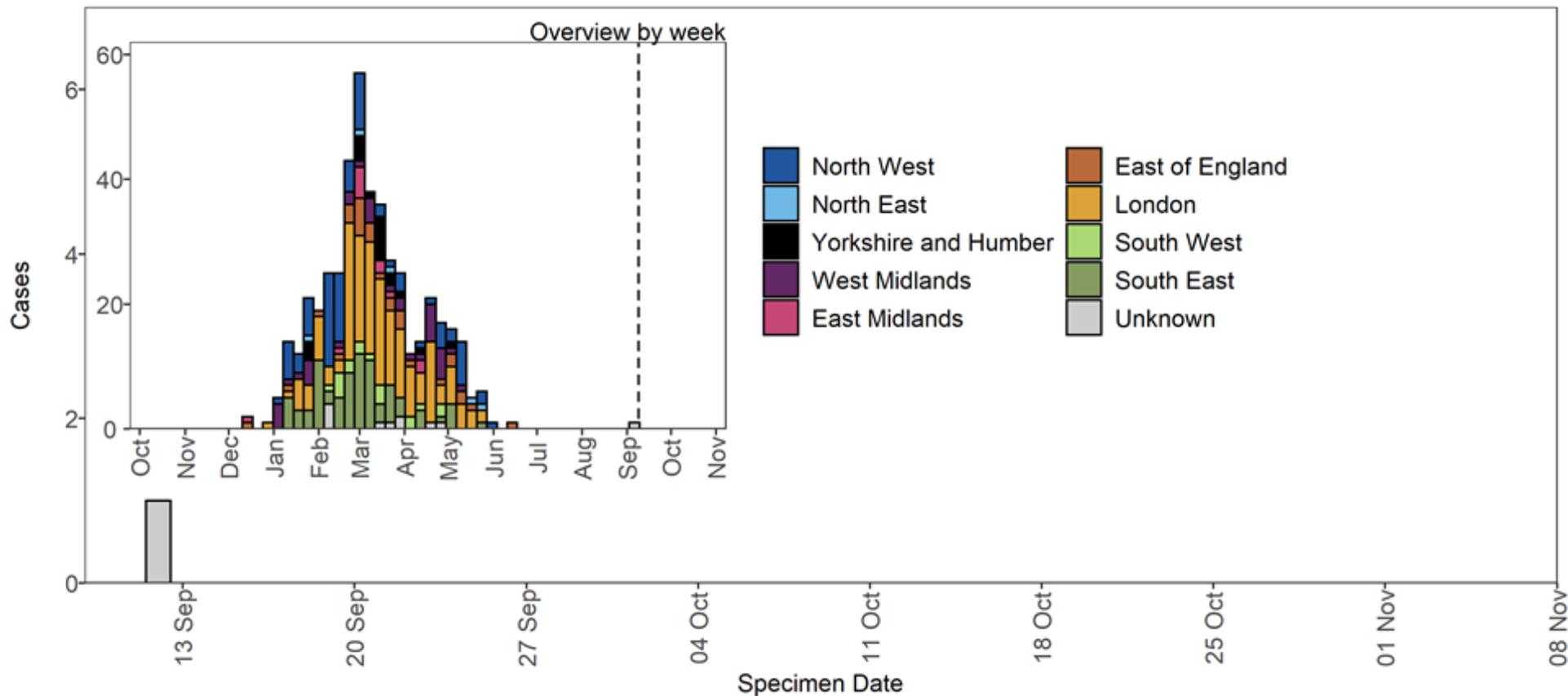
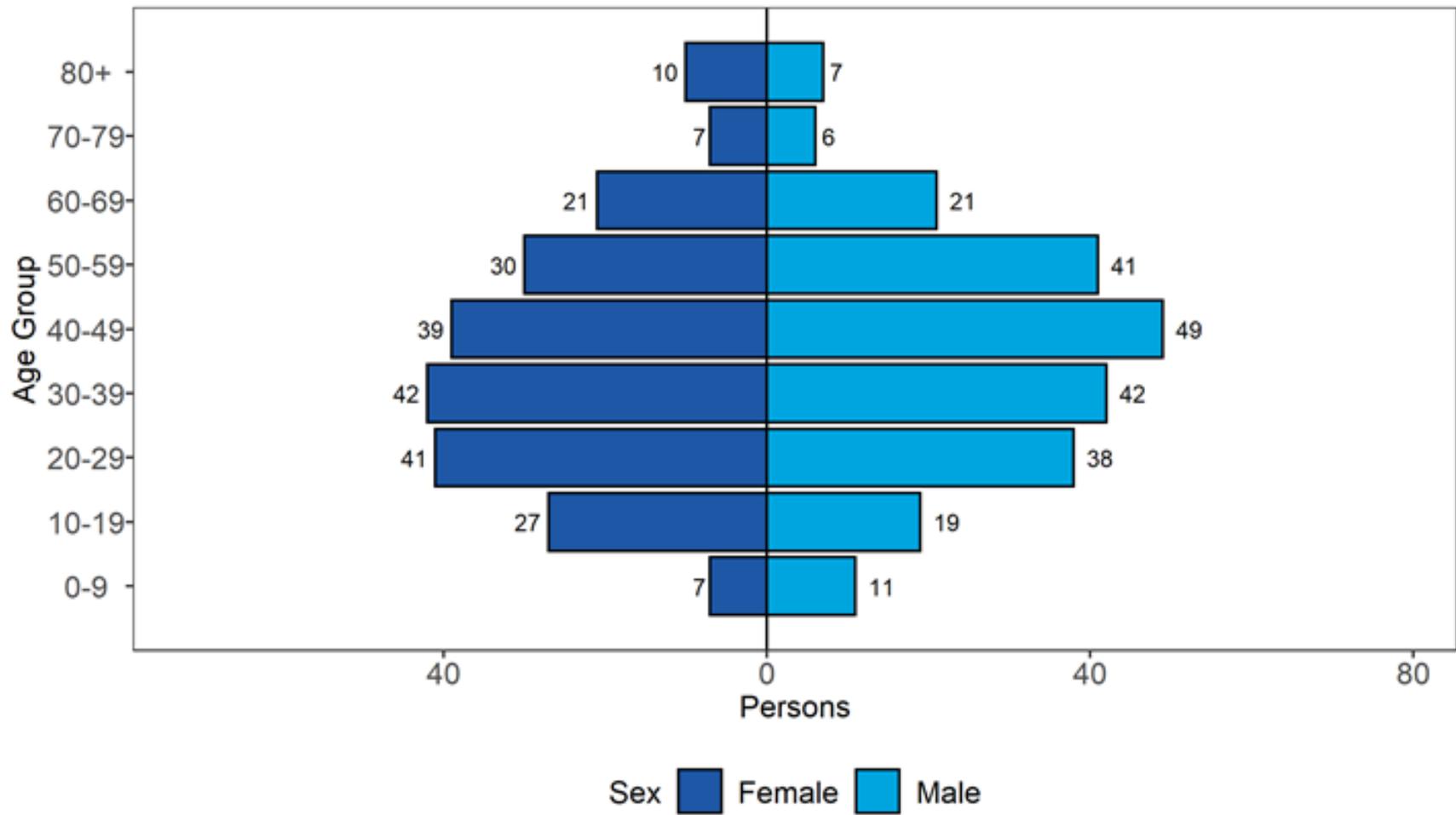


Figure 11. Age-sex pyramid of VUI-21FEB-03 (B.1.525) cases as of 8 November 2021 (Find accessible data used in this graph in [underlying data.](#))



4 cases excluded where sex or age not reported

VUI-21FEB-04 (B.1.1.318)

B.1.1.318 was identified in England in mid-February 2021 through routine horizon scanning for the development of new clusters of genomes containing E484K. This analysis identified an initial cluster of 6 cases containing E484K and other spike mutations, designated VUI-21FEB-04 (B.1.1.318) on 23 February 2021.

International epidemiology

GISAID includes data on sequences available internationally. As of 8 November 2021, 366 sequences of VUI-21FEB-04 are listed from 30 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 7. Number of confirmed and provisional VUI-21FEB-04 (B.1.1.318) cases, by region of residence as of 8 November 2021

Region	Total case number	Case proportion
East Midlands	12	3.8%
East of England	38	12.1%
London	118	37.5%
North East	2	0.6%
North West	51	16.2%
South East	54	17.1%
South West	3	1.0%
West Midlands	15	4.8%
Yorkshire and Humber	13	4.1%
Unknown region	9	2.9%
Total	315	-

Figure 12. Confirmed and provisional VUI-21FEB-04 cases by specimen date and region of residence as of 8 November 2021

Larger plot includes last 60 days only. (Find accessible data used in this graph in [underlying data](#).)

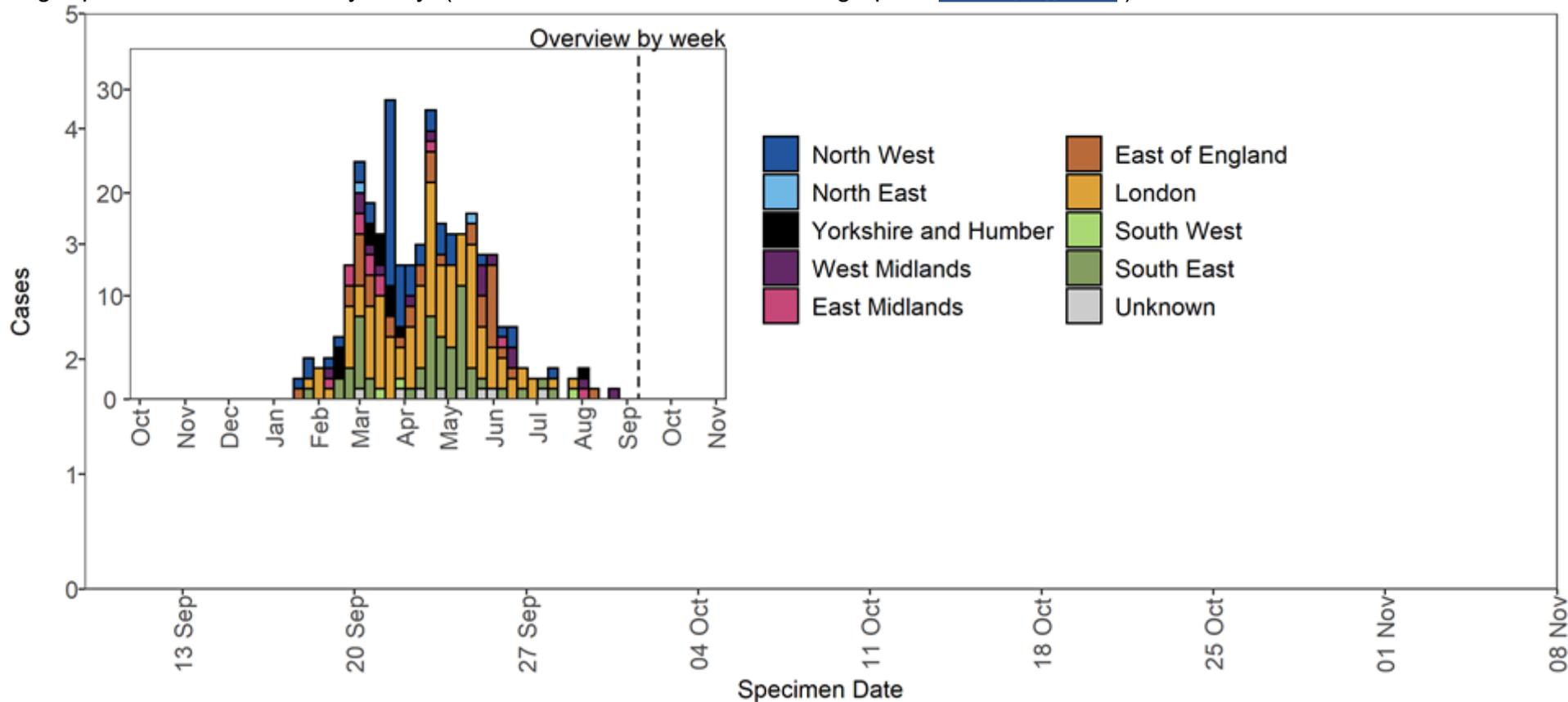
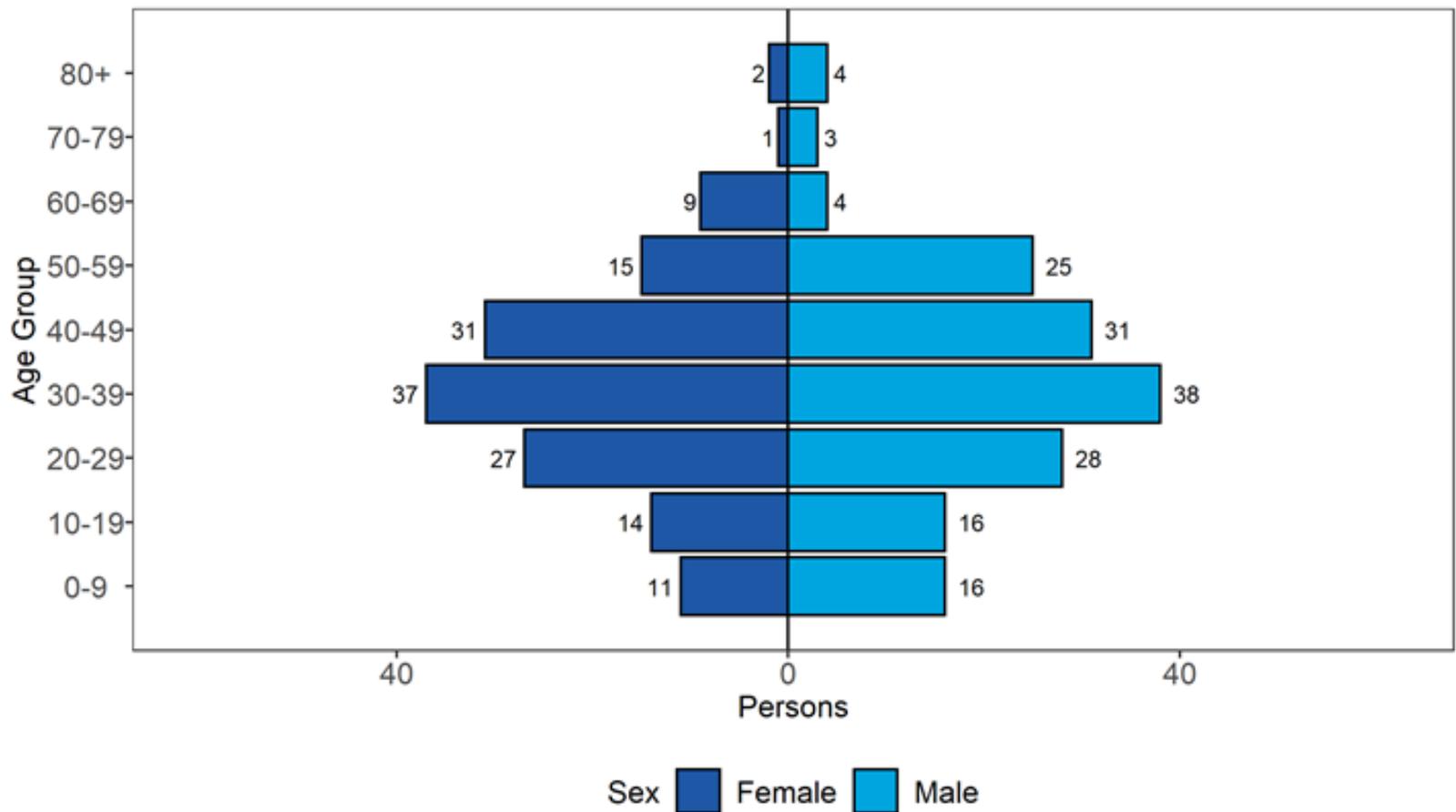


Figure 13. Age-sex pyramid of VUI-21FEB-04 cases as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)



3 cases excluded where sex or age not reported

VUI-21MAY-02 (C.36.3)

C.36.3 was designated a variant under investigation on 24 May 2021 (VUI-21MAY-02) based on its mutation profile and increased importation from a widening international area.

International epidemiology

GISAID includes data on sequences available internationally. As of 8 November 2021, 1,877 sequences of C.36.3 are listed from 55 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 8. Number of confirmed and provisional VUI-21MAY-02 (C.36.3) cases, by region of residence as of 8 November 2021

Region	Total case number	Case proportion
East Midlands	10	6.8%
East of England	23	15.5%
London	43	29.1%
North East	1	0.7%
North West	14	9.5%
South East	13	8.8%
South West	5	3.4%
West Midlands	10	6.8%
Yorkshire and Humber	26	17.6%
Unknown region	3	2.0%
Total	148	-

Figure 14. Number of confirmed and provisional VUI-21MAY-02 (C.36.3) cases, by region of residence as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)

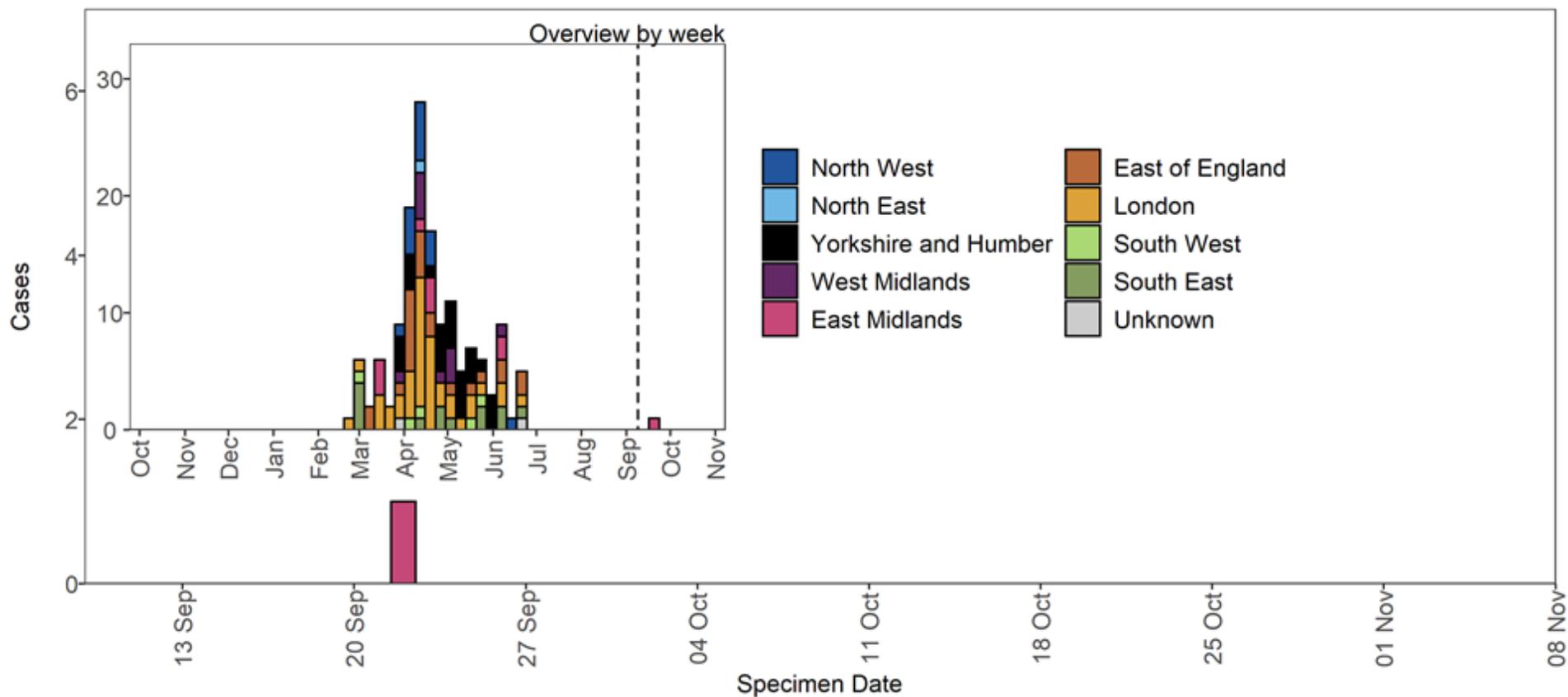
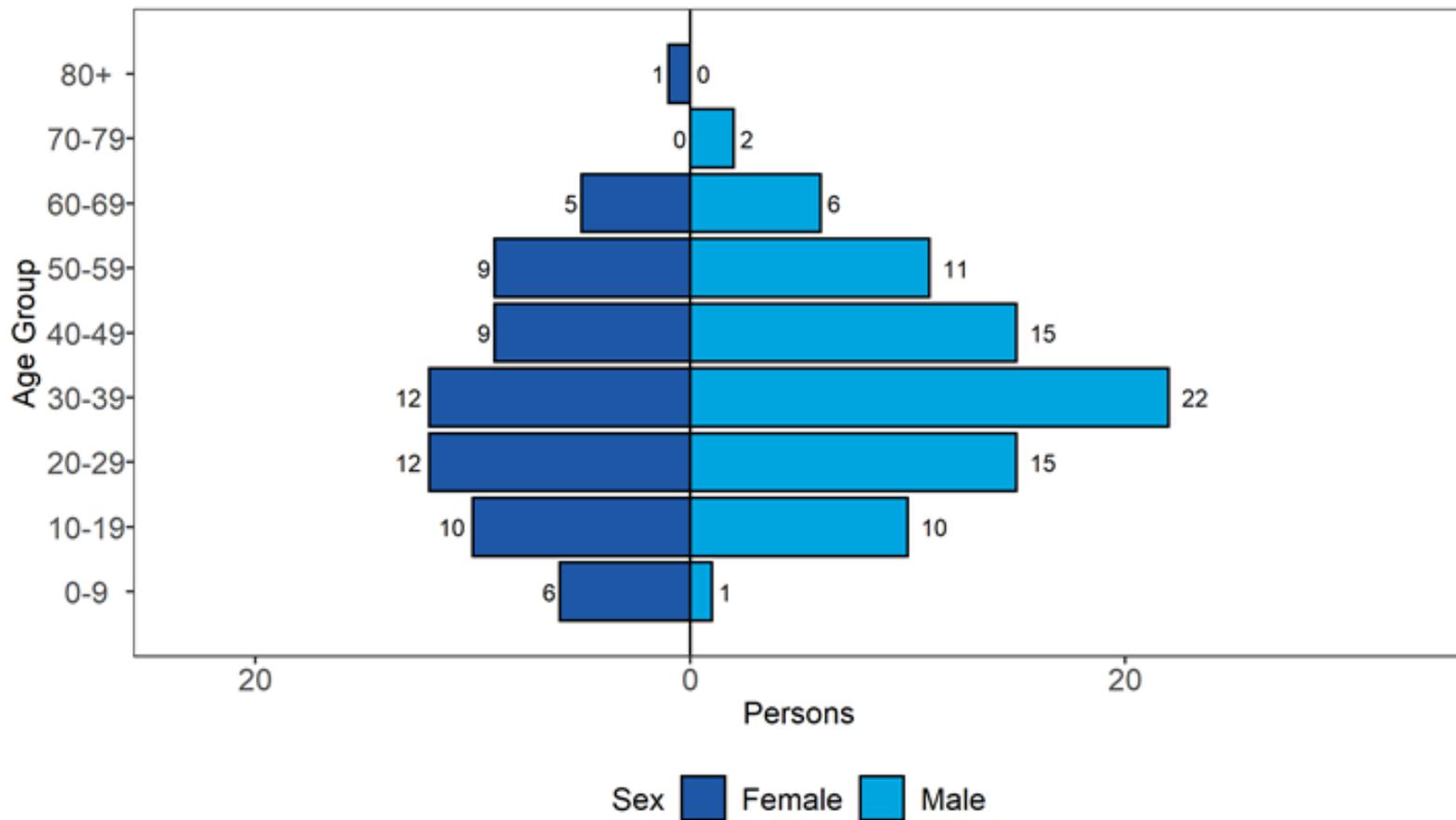


Figure 15. Age-sex pyramid of VUI-21MAY-02 cases as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)



2 cases excluded where sex or age not reported

Mu (B.1.621)

VUI-21JUL-01 was identified through international variant horizon scanning and was made a signal in monitoring by PHE on 7 June 2021 (lineage B.1.621 at the time). On 21 July 2021, PHE designated lineage B.1.621 as a new variant under investigation, VUI-21JUL-01, based on apparent spread into multiple countries, importation to the UK and mutations of concern. B.1.621 was designated as Mu by WHO on the 30 August 2021.

International epidemiology

GISAID includes data on sequences available internationally. As of 8 November 2021, 12,471 sequences of Mu are listed from 53 countries or territories on GISAID, excluding the UK.

Epidemiology

Table 9. Number of confirmed and provisional Mu cases, by region of residence as of 8 November 2021

Region	Total case number	Case proportion
East Midlands	3	5.9%
East of England	7	13.7%
London	24	47.1%
North East	0	0.0%
North West	4	7.8%
South East	6	11.8%
South West	1	2.0%
West Midlands	1	2.0%
Yorkshire and Humber	1	2.0%
Unknown region	4	7.8%
Total	51	-

Figure 16. Confirmed and provisional Mu cases by specimen date and region of residence as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)

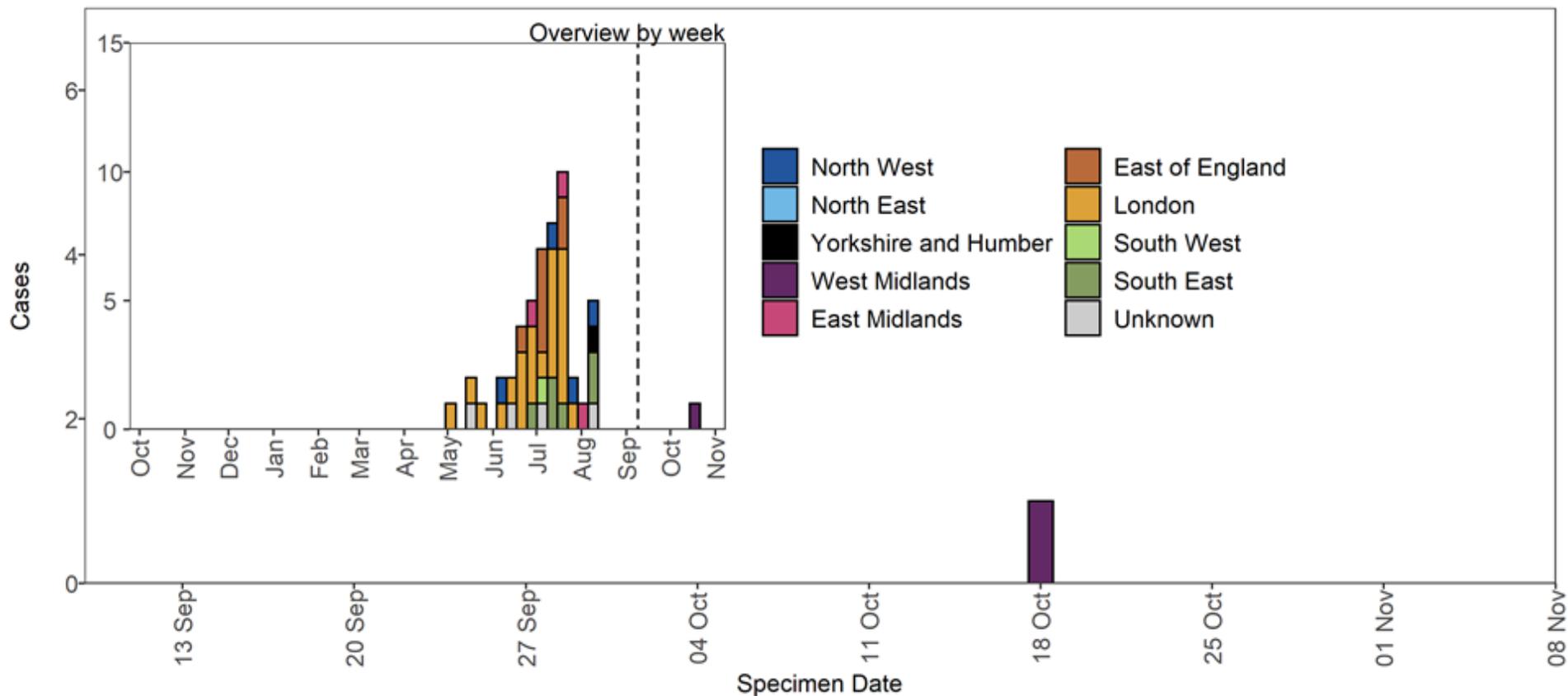
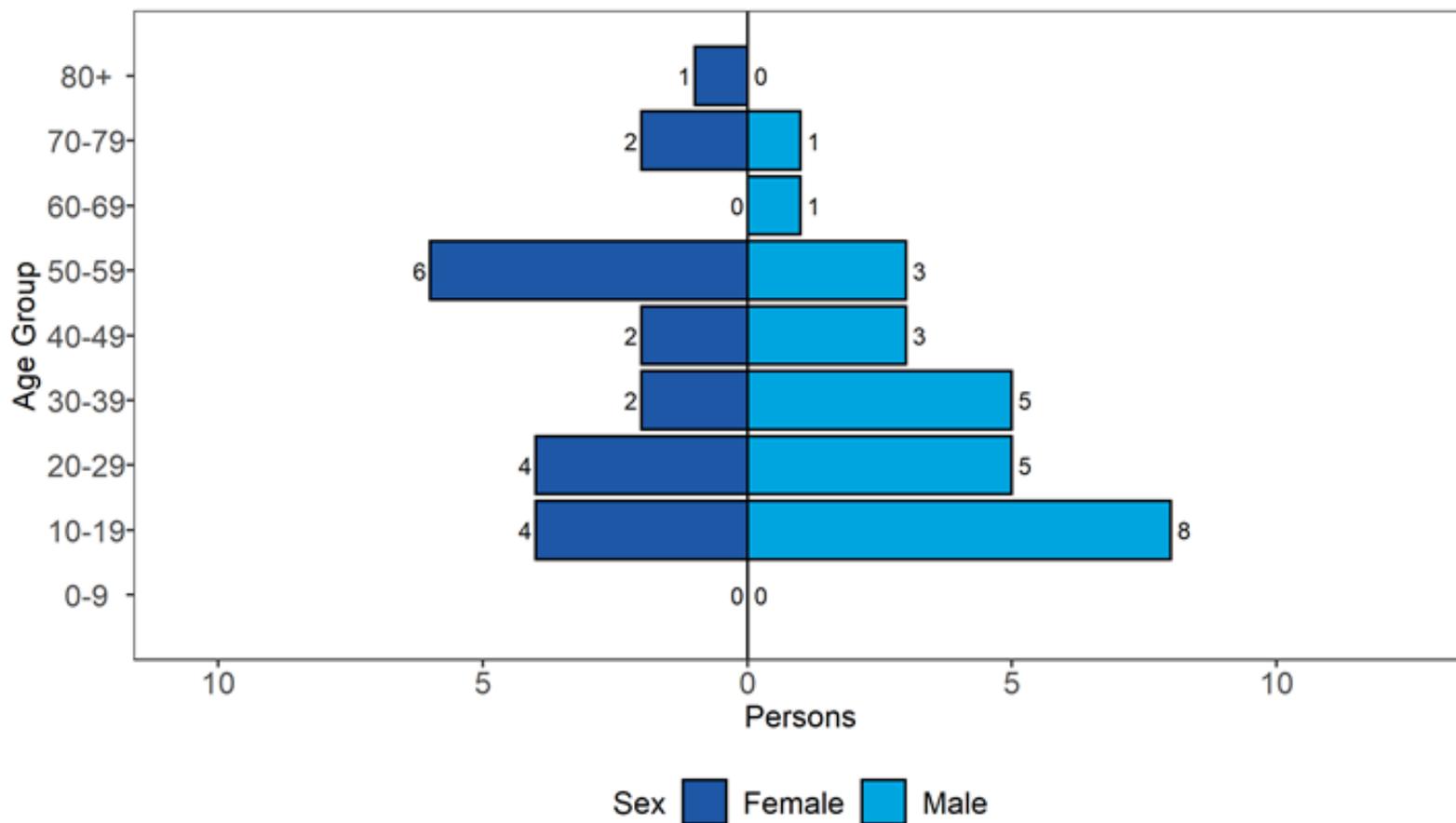


Figure 17. Age-sex pyramid of Mu cases as of 8 November 2021

(Find accessible data used in this graph in [underlying data](#).)



4 cases excluded where sex or age not reported

Sources and acknowledgments

Data sources

Data used in this investigation is derived from the COG-UK data set, the UKHSA Second Generation Surveillance System (SGSS), NHS Test and Trace, the Secondary Uses Service (SUS) data set and Emergency Care Data Set (ECDS). Data on international cases are derived from reports in GISAID.

Repository of human and machine-readable genomic case definitions

A repository containing the up-to-date genomic definitions for all VOC and VUI as curated by Public Health England was created 5 March 2021. The repository can be accessed on GitHub. They are provided to facilitate standardised VOC and VUI calling across sequencing sites and bioinformatics pipelines and are the same definitions used internally at Public Health England. Definition files are provided in YAML format so are compatible with a range of computational platforms. The repository will be regularly updated. The genomic and biological profiles of VOC and VUI are also detailed on first description in prior technical briefings.

Variant Technical Group

Authors of this report

UKHSA Genomics Cell
UKHSA Outbreak Surveillance Team
UKHSA Epidemiology Cell
UKHSA Contact Tracing Cell Data Team
UKHSA International Cell

Variant Technical Group membership

The UKHSA Variant Technical Group includes representation from the following organisations: UKHSA, DHSC, BEIS, Public Health Wales, Public Health Scotland, Public Health Agency Northern Ireland, Imperial College London, London School of Hygiene and Tropical Medicine, University of Birmingham, University of Cambridge, University of Edinburgh, University of Liverpool, the Wellcome Sanger Institute.

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About the UK Health Security Agency

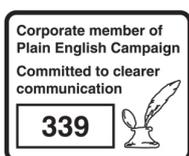
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