SUPPLEMENTAL METHODS

Assay Design

The primers and probes for Reaction 1 have been previously reported (1). The primers and probes used for Reaction 2 are summarized in Table 1. The wt69-70 probe anneals to the same amplicon as the del69-70 probe. Primers and dual-labeled BHQ-quenched hydrolysis probes were ordered from ELIM Biopharmaceuticals (Hayward, CA, USA) or the Stanford Protein and Nucleic Acid Facility (Stanford, CA, USA), rehydrated to 100μM in Tris-EDTA buffer, and combined to create bulk primer/probe mix. We used synthetic whole-genome RNA fragments as a wild-type control (Twist Bioscience, San Francisco, CA, USA) diluted to 10^4 copies/μL in Tris-EDTA buffer (10 mM Tris, 1 mM EDTA). For the positive control, we pooled six individual ssDNA mutant oligonucleotides (del69-70, K417N, T478K, L452R, E484K, N501Y) (Elim Biopharmaceuticals, Hayward, CA, USA) in equimolar ratios diluted to 10^4 copies/μL each in Tris-EDTA buffer (10 mM Tris, 1 mM EDTA) (Supplemental Table 1).

For both Reaction 1 and Reaction 2, primer/probe mix (1 μL) was combined with a one-step RT-qPCR system (12.5 μL master mix + 0.5 μL *Taq* polymerase, SuperScript™ III Platinum™ One-Step qRT-PCR Kit, Invitrogen, Carlsbad), nuclease-free water (6.0 μL), and template (5.0 μL) in a 25 μL reaction. All experiments were conducted on a BioRad CFX96 real-time PCR instrument in 96-well plates (BioRad, Hercules, CA, USA). One mutant control (pooled ssDNA mutant oligonucleotides) and one wild-type control (Twist whole-genome synthetic RNA) were included in each RT-qPCR plate. Cycling conditions for Reaction 1 were: 52°C for 15:00, 94°C for 2:00, and then 45 cycles of 94°C for 00:15, 57.0°C for 00:40, and 68°C for 00:20. Annealing temperature was optimized with a temperature gradient. Cycling conditions for Reaction 2 were identical, except for the annealing temperature, which was set at 58.0°C.

Fluorescence was collected in all channels (1, T478K-FAM; 2, del60-70-HEX; 3, wt69-70-Cy3.5 (ROX); 4, K417N-CY5; 5, no probe). Fixed fluorescence thresholds of 500 relative fluorescence units ([RFU], T478K-FAM), 500 RFU (del60-70-HEX), 50 RFU (wt69-70-Cy3.5), and 300 RFU (K417N-Cy5) were used to determine the threshold cycle (C_t). Assay interpretation is described in detail in Table 2.

Sample Storage and Nucleic Acid Extraction

Samples positive for SARS-CoV-2 were stored at -80°C for up to 1 week prior to re-extraction for genotyping RT-qPCR. Total nucleic acids were extracted from 300 µL viral transport media, universal transport media, or phosphate-buffered saline, and eluted into 60 µL elution buffer on an automated platform into a 96-well plate (PerkinElmer Janus G3 Reformatter, Chemagic 360 nucleic acid extractor, and Chemagic Viral DNA/RNA 300 Kit). Eluate plates were stored for up to 6 months at 4°C between setup of genotyping RT-qPCR Reaction 1 and Reaction 2.

Clinical Specimen NAAT Platforms

Prior to genotyping RT-qPCR, initial respiratory SARS-CoV-2 NAAT was conducted on a variety of platforms (Table 1) (2-4). These included: 1) a previously-described laboratory-developed reverse transcription quantitative polymerase chain reaction (RT-qPCR) targeting the envelope gene (*E* gene) on the Rotor-Gene Q (Qiagen, Germantown, MD) (2-4); 2) PerkinElmer RT-qPCR assay targeting open reading frame 1ab (ORF1ab) and nucleocapsid gene ([*N* gene] PerkinElmer, San Jose, CA); 3) Panther Fusion SARS-CoV-2 (Hologic, Marlborough, MA) RT-qPCR targeting ORF1ab; 4) Aptima SARS-CoV2 (Panther System, Hologic) transcription mediated amplification targeting ORF1ab; 5) GeneXpert Xpress SARS-CoV-2 (Cepheid, Sunnyvale, CA) RT-qPCR targeting the *E* and *N* genes; 6) cobas Liat SARS-CoV-2 & Influenza A/B (Roche, Indianapolis, IN), RT-qPCR targeting ORF1ab and *N* gene; 7) e-Plex SARS-CoV-2 (Genmark, Carlsbad, CA), RT-PCR targeting the *N* gene. All specimens testing positive for SARS-CoV-2 by NAAT with RT-qPCR $C_t \leq 30$ or transcription-mediated amplification relative light units (RLU) ≥ 1,100 during this period were subject to multiplex allele-specific genotyping RT-qPCR. A subset of included specimens tested by rapid NAATs (Cepheid GeneXpert, Roche Liat, Genmark Eplex) did not have C_t values available and were included irrespective of viral load. All assays were conducted according to manufacturer and emergency authorization instructions.

Analytical Performance

To determine the lower limit of detection (LLOD), the pool of six mutant ssDNA oligonucleotides described above was diluted to 100 copies/µL template, 10 copies/µL, 5 copies/µL, and 1 copies/µL in Tris-EDTA buffer in replicates of 20. Any amplification crossing the fluorescence threshold was regarded as detection. The 95% LLOD was determined by fitting these data to a probit regression curve. The respective 95% LLODs for the del69-70, K417N, and T478K targets were 14.8 (95% CI 10.5-27.2), 16.4 (11.3-44.3), and 2.1 (2.1-8.1) copies/µL template respectively (Supplemental Table 2). We observed no non-specific wt69-70 (Cy3.5) amplification even at high (10^6 copies/µL) mutant ssDNA copy number; similarly, we observed no non-specific del69-70, K417N, and T478K non-specific amplification at high concentration (10^6 copies/µL) of the wild-type TWIST synthetic RNA. Precision was not assessed for this qualitative assay.

SUPPLEMENTAL REFERENCES

1. Wang H, Miller JA, Verghese M, Sibai M, Solis D, Mfuh KO, Jiang B, Iwai N, Mar M, Huang C, Yamamoto F, Sahoo MK, Zehnder J, Pinsky BA. 2021. Multiplex SARS-CoV-2 Genotyping Reverse Transcriptase PCR for Population-Level Variant Screening and Epidemiologic Surveillance. J Clin Microbiol 59:e0085921.
2. Corman VM, Landt O, Kaiser M, Molenkamp R, Meijer A, Chu DK, Bleicker T, Brunink S, Schneider J, Schmidt ML, Mulders DG, Haagmans BL, van der Veer B, van den Brink S, Wijsman L, Goderski G, Romette JL, Ellis J, Zambon M, Peiris M, Goossens H, Reusken C, Koopmans MP, Drosten C. 2020. Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR. Euro Surveill 25.
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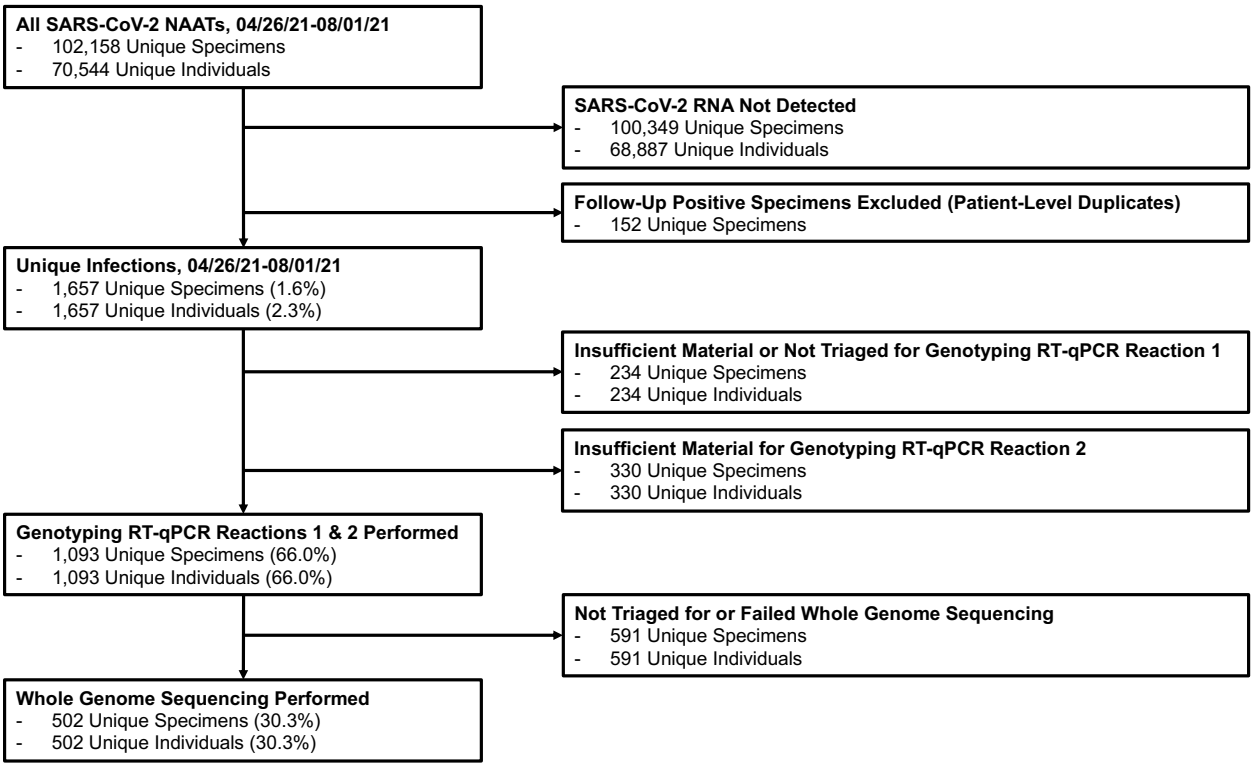
4. Hogan CA, Sahoo MK, Pinsky BA. 2020. Sample Pooling as a Strategy to Detect Community Transmission of SARS-CoV-2. JAMA 323:1967-1969.

Supplemental Figure 1. In silico analysis primer/probes, per GISAID Nextclade sequences downloaded December 5, 2021. Green shading indicates >95% of sequences from that variant designation have perfect homology to a primer/probe sequence expected to be detected in this variant. Red shading indicates <95% of sequences are homologous to a probe sequence expected to be detected in this variant, and probe dropout or diminished efficiency of binding is expected to occur. Yellow shading indicates >5% of sequences have unexpected probe homology to the mutation of interest.

Primer/Probe	Alpha	Beta	Delta	Gamma	Omicron	Lambda	Mu	Non-VOC/VOI
L452R_FWD	100% (n=164/164)	100% (n=35/35)	99.7% (n=2082/2089)	98.8% (n=81/82)	100% (n=14/14)	100% (n=22/22)	100% (n=22/22)	99.7% (n=950/953)
L452R_REV	99.4% (n=163/164)	100% (n=35/35)	99.1% (n=2069/2087)	100% (n=82/82)	0% (n=0/14)	100% (n=22/22)	100% (n=22/22)	99.6% (n=941/945)
L452R_mt_HEX	0% (n=0/163)	0% (n=0/35)	99.3% (n=2073/2088)	0% (n=0/81)	0% (n=0/14)	0% (n=0/22)	0% (n=0/22)	9.2% (n=87/945)
E484K_FWD_V2	98.2% (n=160/163)	100% (n=35/35)	99.7% (n=2081/2088)	97.5% (n=79/81)	100% (n=17/17)	100% (n=22/22)	100% (n=22/22)	99.3% (n=943/950)
E484K_REV_V2	100% (n=163/163)	100% (n=35/35)	99.7% (n=2024/2030)	98.8% (n=81/82)	100% (n=19/19)	100% (n=24/24)	95.5% (n=21/22)	99.9% (n=943/944)
E484K_mt_CY5	1.8% (n=3/165)	97.2% (n=35/36)	0.1% (n=2/2089)	98.8% (n=79/80)	0% (n=0/18)	0% (n=0/24)	100% (n=21/21)	6.9% (n=65/948)
N501Y_mt_FAM	100% (n=161/161)	94.4% (n=34/36)	0% (n=0/2043)	100% (n=81/81)	0% (n=0/18)	0% (n=0/24)	100% (n=21/21)	1.4% (n=13/946)
N501Y_WT_CY3.5	0% (n=0/161)	5.6% (n=2/36)	99.7% (n=2037/2043)	0% (n=0/81)	0% (n=0/18)	100% (n=24/24)	0% (n=0/21)	97.4% (n=921/946)
del69.70_FWD_V2	100% (n=169/169)	97.4% (n=38/39)	99.5% (n=1714/1722)	100% (n=81/81)	100% (n=19/19)	100% (n=24/24)	100% (n=22/22)	99.8% (n=968/970)
del69.70_REV_V2	99.4% (n=170/171)	100% (n=39/39)	99.3% (n=1862/1876)	100% (n=81/81)	100% (n=19/19)	100% (n=24/24)	100% (n=22/22)	96.8% (n=945/976)
del69.70_mt_HEX	99.4% (n=166/167)	0% (n=0/39)	0.2% (n=4/1747)	1.2% (n=1/81)	0% (n=0/17)	0% (n=0/24)	0% (n=0/22)	1.8% (n=17/970)
wt69.70_wt_Cy3.5	0.6% (n=1/167)	100% (n=39/39)	97% (n=1704/1757)	98.8% (n=80/81)	0% (n=0/17)	95.8% (n=23/24)	100% (n=22/22)	95.2% (n=923/970)
K417N_FWD_V2	99.4% (n=169/170)	100% (n=39/39)	99.6% (n=2109/2118)	97.6% (n=81/83)	100% (n=14/14)	100% (n=22/22)	100% (n=22/22)	99.6% (n=989/993)
K417N_REV_V2	100% (n=172/172)	100% (n=38/38)	99.5% (n=2109/2120)	100% (n=83/83)	100% (n=18/18)	95.8% (n=23/24)	100% (n=22/22)	99.9% (n=980/981)
K417N_mt_CY5_V4	0% (n=0/170)	97.4% (n=38/39)	0% (n=1/2120)	0% (n=0/82)	100% (n=14/14)	0% (n=0/22)	0% (n=0/22)	0.2% (n=2/986)
T478K_FWD	97.6% (n=162/166)	100% (n=36/36)	99.6% (n=2081/2090)	97.5% (n=79/81)	100% (n=18/18)	0% (n=0/24)	100% (n=22/22)	99.5% (n=944/949)
T478K_REV	100% (n=164/164)	100% (n=35/35)	99.7% (n=2081/2088)	98.8% (n=81/82)	100% (n=14/14)	100% (n=22/22)	100% (n=22/22)	99.7% (n=951/954)
T478K_mt_FAM	0% (n=0/164)	0% (n=0/36)	97.9% (n=2049/2092)	0% (n=0/82)	0% (n=0/18)	0% (n=0/24)	0% (n=0/22)	7.7% (n=73/949)

Supplemental Figure 2. Flow chart of specimens sent for nucleic acid amplification tests (NAAT) during the initial study period and number of specimens ultimately genotyped by the two-reaction multiplex RT-qPCR and sequenced.



Supplemental Table 1. Sequences of Mutant Oligonucleotide Controls

Name[a]	Position and base change[b]	Length (bp)	Sequence (5' → 3')
ssDNA_L452R_MT	22917 T>G	79	CTCTCTCAAAAGGTTTGAGATTAGACTTCCTAAACAATCTATACCGGTAATTATAATTACCACCAACCTTAGAATCAAG
ssDNA_del69-70_MT	del21765-70	113	ACATTCAACTCAGGACTTGTTCTTACCTTTCTTTTCCAATGTTACTTGGTTCCATGCTATCTCTGGGACCAATGGTACTAAGAGGTTTGATAACCCTGTCCTACCATTTAATG
ssDNA_K417N_MT	22813G>T	101	CATTTGTAATTAGAGGTGATGAAGTCAGACAAATCGCTCCAGGGCAAACTGGAAATATTGCTGATTATAATTATAAATTACCAGATGATTTTACAGGCTGC
ssDNA_T478K_MT	22995 C>A	117	ATTGTAAAGGAAAGTAACAATTAAAACCTTCAACACCATTACAAGGTTTGCTACCGGCCTGATAGATTTCAGTTGAAATATCTCTCTCAAAAGGTTTGAGATTAGACTTCCTAAACA
ssDNA_E484K_MT	23012G>A	133	CTGAAATCTATCAGGCCGGTAGCACACCTTGTAATGGTGTTAAAGGTTTTAATTGTTACTTTCCTTTACAATCATATGGTTTCCAACCCACTTATGGTGTTGGTTACCAACCATACAGAGTAGTAGTACTTTC
ssDNA_N501Y_MT	23063A>T	134	GTTTTAATTGTTACTTTCCTTTACAATCATATGGTTTCCAACCCACTTATGGTGTTGGTTACCAACCATACAGAGTAGTAGTACTTTCTTTTGAACTTCTACATGCACCAGCAACTGTTTGTGGACCTAAAAAG

MT, mutant; bp, base pairs

[a] Individual ssDNA oligonucleotides were pooled in equimolar ratios diluted to 10^4 copies/µL each in Tris-EDTA buffer to create the mutant control.

[b] Position and sequence based on Genbank NC_045512

Supplemental Table 2. Lower Limit of Detection for Reaction 2 mutation targets

Concentration (copies/µL template)	Number of Detected Replicates		
	del69-70-mt (HEX)	**K417N-mt (CY5)**	**T478K-mt (FAM)**
1.0	5/20	6/20	10/20
5.0	12/20	13/20	20/20
10.0	16/20	15/20	20/20
100.0	20/20	20/20	20/20
95% LLOD (95% CI)	**14.8 (10.5-27.2)**	**16.4 (11.3-44.3)**	**2.1 (2.1-8.1)**

Supplemental Table 3. GISAID Accession Numbers for Sequenced Study Samples (n=547)

Predicted Variant Type by Genotyping RT-qPCR	Variant Type by Whole Genome Sequencing	PANGO Lineage[a]	GISAID Accession
Alpha	Alpha	B.1.1.7	EPI_ISL_3050185
Alpha	Alpha	B.1.1.7	EPI_ISL_3050188
Alpha	Alpha	B.1.1.7	EPI_ISL_3050190
Alpha	Alpha	B.1.1.7	EPI_ISL_3050194
Alpha	Alpha	B.1.1.7	EPI_ISL_3050198
Alpha	Alpha	B.1.1.7	EPI_ISL_3050205
Alpha	Alpha	B.1.1.7	EPI_ISL_3050207
Alpha	Alpha	B.1.1.7	EPI_ISL_4072053
Alpha	Alpha	B.1.1.7	EPI_ISL_4072055
Alpha	Alpha	B.1.1.7	EPI_ISL_4072056
Alpha	Alpha	B.1.1.7	EPI_ISL_4072057
Alpha	Alpha	B.1.1.7	EPI_ISL_4072058
Alpha	Alpha	B.1.1.7	EPI_ISL_4072059
Alpha	Alpha	B.1.1.7	EPI_ISL_4072060
Alpha	Alpha	B.1.1.7	EPI_ISL_4072061
Alpha	Alpha	B.1.1.7	EPI_ISL_4072062
Alpha	Alpha	B.1.1.7	EPI_ISL_4072063
Alpha	Alpha	B.1.1.7	EPI_ISL_4072064
Alpha	Alpha	B.1.1.7	EPI_ISL_4072065
Alpha	Alpha	B.1.1.7	EPI_ISL_4072068
Alpha	Alpha	B.1.1.7	EPI_ISL_4072069
Alpha	Alpha	B.1.1.7	EPI_ISL_4496848
Alpha	Alpha	B.1.1.7	EPI_ISL_4496849
Alpha	Alpha	B.1.1.7	EPI_ISL_4496850
Alpha	Alpha	B.1.1.7	EPI_ISL_4496851
Alpha	Alpha	B.1.1.7	EPI_ISL_4496857
Alpha	Alpha	B.1.1.7	EPI_ISL_4496858
Alpha	Alpha	B.1.1.7	EPI_ISL_4496860
Alpha	Alpha	B.1.1.7	EPI_ISL_4496861
Alpha	Alpha	B.1.1.7	EPI_ISL_4496865
Alpha	Alpha	B.1.1.7	EPI_ISL_4496867
Alpha	Alpha	B.1.1.7	EPI_ISL_4496868
Alpha	Alpha	B.1.1.7	EPI_ISL_4496905
Alpha	Alpha	B.1.1.7	EPI_ISL_4496906
Alpha	Alpha	B.1.1.7	EPI_ISL_4496907
Alpha	Alpha	B.1.1.7	EPI_ISL_4496908
Alpha	Alpha	B.1.1.7	EPI_ISL_4496909
Alpha	Alpha	Q.3	EPI_ISL_3050181
Alpha	Alpha	Q.3	EPI_ISL_3050189
Alpha	Alpha	Q.3	EPI_ISL_4072066
Alpha	Alpha	Q.3	EPI_ISL_4072067
Alpha	Alpha	Q.3	EPI_ISL_4072071
Alpha	Alpha	Q.3	EPI_ISL_4072072
Beta	Beta	B.1.351	EPI_ISL_4496869
Beta	Beta	B.1.351	EPI_ISL_4496898
Beta	Not a VOC	B.1.621	EPI_ISL_3236162
Delta	Delta	AY.1	EPI_ISL_2987140
Delta	Delta	AY.1	EPI_ISL_2987141
Delta	Delta	AY.1	EPI_ISL_2987142
Delta	Delta	AY.1	EPI_ISL_3050224
Delta	Delta	AY.1	EPI_ISL_3236110
Delta	Delta	AY.1	EPI_ISL_3236112

Delta	Delta	AY.1	EPI_ISL_3236124
Delta	Delta	AY.1	EPI_ISL_3236131
Delta	Delta	AY.1	EPI_ISL_3236146
Delta	Delta	AY.1	EPI_ISL_3236161
Delta	Delta	AY.1	EPI_ISL_3236167
Delta	Delta	AY.1	EPI_ISL_3390756
Delta	Delta	AY.1	EPI_ISL_3916305
Delta	Delta	AY.1	EPI_ISL_3916308
Delta	Delta	AY.1	EPI_ISL_3916328
Delta	Delta	AY.1	EPI_ISL_3916330
Delta	Delta	AY.1	EPI_ISL_3916341
Delta	Delta	AY.1	EPI_ISL_3916368
Delta	Delta	AY.1	EPI_ISL_3916373
Delta	Delta	AY.1	EPI_ISL_3916390
Delta	Delta	AY.100	EPI_ISL_3390725
Delta	Delta	AY.100	EPI_ISL_3538733
Delta	Delta	AY.100	EPI_ISL_3916354
Delta	Delta	AY.103	EPI_ISL_3050256
Delta	Delta	AY.103	EPI_ISL_3236104
Delta	Delta	AY.103	EPI_ISL_3236145
Delta	Delta	AY.103	EPI_ISL_3390747
Delta	Delta	AY.103	EPI_ISL_3538732
Delta	Delta	AY.103	EPI_ISL_3538737
Delta	Delta	AY.103	EPI_ISL_3538762
Delta	Delta	AY.103	EPI_ISL_3538764
Delta	Delta	AY.103	EPI_ISL_3538768
Delta	Delta	AY.103	EPI_ISL_3722174
Delta	Delta	AY.103	EPI_ISL_3722189
Delta	Delta	AY.103	EPI_ISL_3722193
Delta	Delta	AY.103	EPI_ISL_3722208
Delta	Delta	AY.103	EPI_ISL_3916283
Delta	Delta	AY.103	EPI_ISL_3916287
Delta	Delta	AY.103	EPI_ISL_3916294
Delta	Delta	AY.103	EPI_ISL_3916312
Delta	Delta	AY.103	EPI_ISL_3916320
Delta	Delta	AY.103	EPI_ISL_3916339
Delta	Delta	AY.103	EPI_ISL_3916345
Delta	Delta	AY.103	EPI_ISL_3916349
Delta	Delta	AY.103	EPI_ISL_3916351
Delta	Delta	AY.103	EPI_ISL_3916362
Delta	Delta	AY.103	EPI_ISL_3916366
Delta	Delta	AY.103	EPI_ISL_3916367
Delta	Delta	AY.103	EPI_ISL_3916391
Delta	Delta	AY.110	EPI_ISL_3050183
Delta	Delta	AY.110	EPI_ISL_3236144
Delta	Delta	AY.110	EPI_ISL_3236164
Delta	Delta	AY.110	EPI_ISL_3236165
Delta	Delta	AY.110	EPI_ISL_3236171
Delta	Delta	AY.110	EPI_ISL_3390748
Delta	Delta	AY.110	EPI_ISL_3538729
Delta	Delta	AY.110	EPI_ISL_4072017
Delta	Delta	AY.110	EPI_ISL_4496828
Delta	Delta	AY.114	EPI_ISL_3722179
Delta	Delta	AY.116.1	EPI_ISL_3236127
Delta	Delta	AY.116.1	EPI_ISL_3538748
Delta	Delta	AY.118	EPI_ISL_3050199

Delta	Delta	AY.118	EPI_ISL_3050208
Delta	Delta	AY.118	EPI_ISL_3236107
Delta	Delta	AY.118	EPI_ISL_3236169
Delta	Delta	AY.118	EPI_ISL_3916369
Delta	Delta	AY.119	EPI_ISL_3236172
Delta	Delta	AY.119	EPI_ISL_3722212
Delta	Delta	AY.119	EPI_ISL_3916299
Delta	Delta	AY.119	EPI_ISL_4072028
Delta	Delta	AY.120.1	EPI_ISL_3916300
Delta	Delta	AY.121	EPI_ISL_3236111
Delta	Delta	AY.121	EPI_ISL_3236115
Delta	Delta	AY.121	EPI_ISL_3538735
Delta	Delta	AY.122	EPI_ISL_3236149
Delta	Delta	AY.122	EPI_ISL_3236181
Delta	Delta	AY.122	EPI_ISL_3916311
Delta	Delta	AY.122	EPI_ISL_4496829
Delta	Delta	AY.122	EPI_ISL_4496830
Delta	Delta	AY.126	EPI_ISL_3050182
Delta	Delta	AY.126	EPI_ISL_3236175
Delta	Delta	AY.13	EPI_ISL_3050253
Delta	Delta	AY.13	EPI_ISL_3236106
Delta	Delta	AY.13	EPI_ISL_3236109
Delta	Delta	AY.13	EPI_ISL_3236113
Delta	Delta	AY.13	EPI_ISL_3236114
Delta	Delta	AY.13	EPI_ISL_3236130
Delta	Delta	AY.13	EPI_ISL_3236141
Delta	Delta	AY.13	EPI_ISL_3236156
Delta	Delta	AY.13	EPI_ISL_3236158
Delta	Delta	AY.13	EPI_ISL_3236160
Delta	Delta	AY.13	EPI_ISL_3236179
Delta	Delta	AY.13	EPI_ISL_3236180
Delta	Delta	AY.13	EPI_ISL_3236183
Delta	Delta	AY.13	EPI_ISL_3236185
Delta	Delta	AY.13	EPI_ISL_3390740
Delta	Delta	AY.13	EPI_ISL_3390743
Delta	Delta	AY.13	EPI_ISL_3390744
Delta	Delta	AY.13	EPI_ISL_3538753
Delta	Delta	AY.13	EPI_ISL_3538754
Delta	Delta	AY.13	EPI_ISL_3538756
Delta	Delta	AY.13	EPI_ISL_3722199
Delta	Delta	AY.13	EPI_ISL_3916270
Delta	Delta	AY.13	EPI_ISL_3916319
Delta	Delta	AY.13	EPI_ISL_3916353
Delta	Delta	AY.13	EPI_ISL_3916386
Delta	Delta	AY.13	EPI_ISL_4072014
Delta	Delta	AY.13	EPI_ISL_4072016
Delta	Delta	AY.13	EPI_ISL_4072024
Delta	Delta	AY.13	EPI_ISL_4072025
Delta	Delta	AY.13	EPI_ISL_4072026
Delta	Delta	AY.13	EPI_ISL_4496853
Delta	Delta	AY.13	EPI_ISL_4496885
Delta	Delta	AY.14	EPI_ISL_3050184
Delta	Delta	AY.14	EPI_ISL_3050195
Delta	Delta	AY.14	EPI_ISL_3050196
Delta	Delta	AY.14	EPI_ISL_3050201
Delta	Delta	AY.14	EPI_ISL_3050202

Delta	Delta	AY.14	EPI_ISL_3050211
Delta	Delta	AY.14	EPI_ISL_3236105
Delta	Delta	AY.14	EPI_ISL_3236108
Delta	Delta	AY.14	EPI_ISL_3236117
Delta	Delta	AY.14	EPI_ISL_3236119
Delta	Delta	AY.14	EPI_ISL_3236121
Delta	Delta	AY.14	EPI_ISL_3236123
Delta	Delta	AY.14	EPI_ISL_3236125
Delta	Delta	AY.14	EPI_ISL_3236134
Delta	Delta	AY.14	EPI_ISL_3236135
Delta	Delta	AY.14	EPI_ISL_3236138
Delta	Delta	AY.14	EPI_ISL_3236148
Delta	Delta	AY.14	EPI_ISL_3236174
Delta	Delta	AY.14	EPI_ISL_3236177
Delta	Delta	AY.14	EPI_ISL_3390726
Delta	Delta	AY.14	EPI_ISL_3390732
Delta	Delta	AY.14	EPI_ISL_3390734
Delta	Delta	AY.14	EPI_ISL_3390737
Delta	Delta	AY.14	EPI_ISL_3390753
Delta	Delta	AY.14	EPI_ISL_3538738
Delta	Delta	AY.14	EPI_ISL_3538739
Delta	Delta	AY.14	EPI_ISL_3538741
Delta	Delta	AY.14	EPI_ISL_3538744
Delta	Delta	AY.14	EPI_ISL_3538750
Delta	Delta	AY.14	EPI_ISL_3538751
Delta	Delta	AY.14	EPI_ISL_3538757
Delta	Delta	AY.14	EPI_ISL_3538760
Delta	Delta	AY.14	EPI_ISL_3538766
Delta	Delta	AY.14	EPI_ISL_3722184
Delta	Delta	AY.14	EPI_ISL_3722185
Delta	Delta	AY.14	EPI_ISL_3722186
Delta	Delta	AY.14	EPI_ISL_3722187
Delta	Delta	AY.14	EPI_ISL_3722194
Delta	Delta	AY.14	EPI_ISL_3722196
Delta	Delta	AY.14	EPI_ISL_3722197
Delta	Delta	AY.14	EPI_ISL_3722200
Delta	Delta	AY.14	EPI_ISL_3916275
Delta	Delta	AY.14	EPI_ISL_3916296
Delta	Delta	AY.14	EPI_ISL_3916298
Delta	Delta	AY.14	EPI_ISL_3916309
Delta	Delta	AY.14	EPI_ISL_3916322
Delta	Delta	AY.14	EPI_ISL_3916323
Delta	Delta	AY.14	EPI_ISL_3916327
Delta	Delta	AY.14	EPI_ISL_3916336
Delta	Delta	AY.14	EPI_ISL_3916350
Delta	Delta	AY.14	EPI_ISL_3916357
Delta	Delta	AY.14	EPI_ISL_3916365
Delta	Delta	AY.14	EPI_ISL_3916370
Delta	Delta	AY.14	EPI_ISL_3916371
Delta	Delta	AY.14	EPI_ISL_3916372
Delta	Delta	AY.14	EPI_ISL_3916377
Delta	Delta	AY.14	EPI_ISL_3916383
Delta	Delta	AY.14	EPI_ISL_3916385
Delta	Delta	AY.14	EPI_ISL_4072027
Delta	Delta	AY.19	EPI_ISL_3916364
Delta	Delta	AY.2	EPI_ISL_3050234

Delta	Delta	AY.2	EPI_ISL_3050247
Delta	Delta	AY.2	EPI_ISL_3236142
Delta	Delta	AY.2	EPI_ISL_3236159
Delta	Delta	AY.2	EPI_ISL_3390749
Delta	Delta	AY.20	EPI_ISL_3236129
Delta	Delta	AY.20	EPI_ISL_3538740
Delta	Delta	AY.20	EPI_ISL_3916290
Delta	Delta	AY.20	EPI_ISL_3916335
Delta	Delta	AY.20	EPI_ISL_3916375
Delta	Delta	AY.23	EPI_ISL_3390755
Delta	Delta	AY.25	EPI_ISL_3050252
Delta	Delta	AY.25	EPI_ISL_3236184
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Delta	Delta	AY.25	EPI_ISL_3538736
Delta	Delta	AY.25	EPI_ISL_3722205
Delta	Delta	AY.25	EPI_ISL_3916276
Delta	Delta	AY.25	EPI_ISL_3916352
Delta	Delta	AY.25.1	EPI_ISL_3236133
Delta	Delta	AY.25.1	EPI_ISL_3236137
Delta	Delta	AY.25.1	EPI_ISL_3390730
Delta	Delta	AY.25.1	EPI_ISL_3390745
Delta	Delta	AY.25.1	EPI_ISL_3390746
Delta	Delta	AY.25.1	EPI_ISL_3390750
Delta	Delta	AY.25.1	EPI_ISL_3390751
Delta	Delta	AY.25.1	EPI_ISL_3390752
Delta	Delta	AY.25.1	EPI_ISL_3538730
Delta	Delta	AY.25.1	EPI_ISL_3538765
Delta	Delta	AY.25.1	EPI_ISL_3722206
Delta	Delta	AY.25.1	EPI_ISL_3916269
Delta	Delta	AY.25.1	EPI_ISL_3916272
Delta	Delta	AY.25.1	EPI_ISL_3916278
Delta	Delta	AY.25.1	EPI_ISL_3916304
Delta	Delta	AY.25.1	EPI_ISL_3916310
Delta	Delta	AY.25.1	EPI_ISL_3916314
Delta	Delta	AY.25.1	EPI_ISL_3916324
Delta	Delta	AY.25.1	EPI_ISL_3916325
Delta	Delta	AY.25.1	EPI_ISL_3916333
Delta	Delta	AY.25.1	EPI_ISL_3916334
Delta	Delta	AY.25.1	EPI_ISL_3916338
Delta	Delta	AY.25.1	EPI_ISL_3916347
Delta	Delta	AY.25.1	EPI_ISL_3916358
Delta	Delta	AY.25.1	EPI_ISL_3916389
Delta	Delta	AY.26	EPI_ISL_3050193
Delta	Delta	AY.26	EPI_ISL_3050246
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Delta	Delta	AY.26	EPI_ISL_3390735
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Delta	Delta	AY.26	EPI_ISL_3722201
Delta	Delta	AY.26	EPI_ISL_3722209
Delta	Delta	AY.26	EPI_ISL_3722210
Delta	Delta	AY.26	EPI_ISL_3916297
Delta	Delta	AY.26	EPI_ISL_3916301

Delta	Delta	AY.26	EPI_ISL_4072040
Delta	Delta	AY.3	EPI_ISL_3538763
Delta	Delta	AY.3	EPI_ISL_3722190
Delta	Delta	AY.3	EPI_ISL_3916280
Delta	Delta	AY.3	EPI_ISL_3916302
Delta	Delta	AY.3	EPI_ISL_3916376
Delta	Delta	AY.35	EPI_ISL_3236173
Delta	Delta	AY.35	EPI_ISL_3236176
Delta	Delta	AY.4	EPI_ISL_3916286
Delta	Delta	AY.43	EPI_ISL_3916342
Delta	Delta	AY.43	EPI_ISL_3916388
Delta	Delta	AY.44	EPI_ISL_3050200
Delta	Delta	AY.44	EPI_ISL_3236102
Delta	Delta	AY.44	EPI_ISL_3236103
Delta	Delta	AY.44	EPI_ISL_3236116
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Delta	Delta	AY.44	EPI_ISL_3236120
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Delta	Delta	AY.44	EPI_ISL_3236153
Delta	Delta	AY.44	EPI_ISL_3236154
Delta	Delta	AY.44	EPI_ISL_3236155
Delta	Delta	AY.44	EPI_ISL_3236166
Delta	Delta	AY.44	EPI_ISL_3390728
Delta	Delta	AY.44	EPI_ISL_3390729
Delta	Delta	AY.44	EPI_ISL_3390736
Delta	Delta	AY.44	EPI_ISL_3390739
Delta	Delta	AY.44	EPI_ISL_3390741
Delta	Delta	AY.44	EPI_ISL_3390742
Delta	Delta	AY.44	EPI_ISL_3538728
Delta	Delta	AY.44	EPI_ISL_3538731
Delta	Delta	AY.44	EPI_ISL_3538734
Delta	Delta	AY.44	EPI_ISL_3538743
Delta	Delta	AY.44	EPI_ISL_3538745
Delta	Delta	AY.44	EPI_ISL_3538747
Delta	Delta	AY.44	EPI_ISL_3538749
Delta	Delta	AY.44	EPI_ISL_3538755
Delta	Delta	AY.44	EPI_ISL_3538758
Delta	Delta	AY.44	EPI_ISL_3538759
Delta	Delta	AY.44	EPI_ISL_3538761
Delta	Delta	AY.44	EPI_ISL_3538767
Delta	Delta	AY.44	EPI_ISL_3722175
Delta	Delta	AY.44	EPI_ISL_3722177
Delta	Delta	AY.44	EPI_ISL_3722180
Delta	Delta	AY.44	EPI_ISL_3722181
Delta	Delta	AY.44	EPI_ISL_3722183
Delta	Delta	AY.44	EPI_ISL_3722188
Delta	Delta	AY.44	EPI_ISL_3722191
Delta	Delta	AY.44	EPI_ISL_3722195
Delta	Delta	AY.44	EPI_ISL_3722202
Delta	Delta	AY.44	EPI_ISL_3722203
Delta	Delta	AY.44	EPI_ISL_3722204
Delta	Delta	AY.44	EPI_ISL_3722211
Delta	Delta	AY.44	EPI_ISL_3722214
Delta	Delta	AY.44	EPI_ISL_3916264
Delta	Delta	AY.44	EPI_ISL_3916266
Delta	Delta	AY.44	EPI_ISL_3916267

Delta	Delta	AY.44	EPI_ISL_3916268
Delta	Delta	AY.44	EPI_ISL_3916271
Delta	Delta	AY.44	EPI_ISL_3916273
Delta	Delta	AY.44	EPI_ISL_3916274
Delta	Delta	AY.44	EPI_ISL_3916279
Delta	Delta	AY.44	EPI_ISL_3916282
Delta	Delta	AY.44	EPI_ISL_3916285
Delta	Delta	AY.44	EPI_ISL_3916288
Delta	Delta	AY.44	EPI_ISL_3916289
Delta	Delta	AY.44	EPI_ISL_3916291
Delta	Delta	AY.44	EPI_ISL_3916295
Delta	Delta	AY.44	EPI_ISL_3916313
Delta	Delta	AY.44	EPI_ISL_3916317
Delta	Delta	AY.44	EPI_ISL_3916318
Delta	Delta	AY.44	EPI_ISL_3916321
Delta	Delta	AY.44	EPI_ISL_3916329
Delta	Delta	AY.44	EPI_ISL_3916331
Delta	Delta	AY.44	EPI_ISL_3916332
Delta	Delta	AY.44	EPI_ISL_3916337
Delta	Delta	AY.44	EPI_ISL_3916343
Delta	Delta	AY.44	EPI_ISL_3916344
Delta	Delta	AY.44	EPI_ISL_3916346
Delta	Delta	AY.44	EPI_ISL_3916359
Delta	Delta	AY.44	EPI_ISL_3916361
Delta	Delta	AY.44	EPI_ISL_3916363
Delta	Delta	AY.44	EPI_ISL_3916374
Delta	Delta	AY.44	EPI_ISL_3916379
Delta	Delta	AY.44	EPI_ISL_3916381
Delta	Delta	AY.44	EPI_ISL_3916384
Delta	Delta	AY.44	EPI_ISL_3916387
Delta	Delta	AY.44	EPI_ISL_4072015
Delta	Delta	AY.44	EPI_ISL_4072018
Delta	Delta	AY.46.2	EPI_ISL_3916303
Delta	Delta	AY.47	EPI_ISL_3390724
Delta	Delta	AY.47	EPI_ISL_3722213
Delta	Delta	AY.47	EPI_ISL_3916265
Delta	Delta	AY.47	EPI_ISL_3916356
Delta	Delta	AY.47	EPI_ISL_3916360
Delta	Delta	AY.47	EPI_ISL_3916378
Delta	Delta	AY.47	EPI_ISL_3916380
Delta	Delta	AY.47	EPI_ISL_3916382
Delta	Delta	AY.48	EPI_ISL_3916306
Delta	Delta	AY.52	EPI_ISL_3236163
Delta	Delta	AY.54	EPI_ISL_3390733
Delta	Delta	AY.54	EPI_ISL_3722178
Delta	Delta	AY.54	EPI_ISL_3722207
Delta	Delta	AY.59	EPI_ISL_4496847
Delta	Delta	AY.62	EPI_ISL_3236152
Delta	Delta	AY.67	EPI_ISL_3538752
Delta	Delta	AY.67	EPI_ISL_3916292
Delta	Delta	AY.67	EPI_ISL_3916293
Delta	Delta	AY.74	EPI_ISL_3916281
Delta	Delta	AY.75	EPI_ISL_3050203
Delta	Delta	AY.75	EPI_ISL_3236150
Delta	Delta	AY.75	EPI_ISL_3236151
Delta	Delta	AY.75	EPI_ISL_3236168

Delta	Delta	AY.75	EPI_ISL_3236170
Delta	Delta	AY.75	EPI_ISL_3236182
Delta	Delta	AY.75	EPI_ISL_3390738
Delta	Delta	AY.75	EPI_ISL_3538742
Delta	Delta	AY.75	EPI_ISL_3916284
Delta	Delta	AY.75	EPI_ISL_4072019
Delta	Delta	AY.98.1	EPI_ISL_3916392
Delta	Delta	B.1.617.2	EPI_ISL_2457061
Delta	Delta	B.1.617.2	EPI_ISL_3050180
Delta	Delta	B.1.617.2	EPI_ISL_3050191
Delta	Delta	B.1.617.2	EPI_ISL_3050204
Delta	Delta	B.1.617.2	EPI_ISL_3236139
Delta	Delta	B.1.617.2	EPI_ISL_3236143
Delta	Delta	B.1.617.2	EPI_ISL_3722173
Delta	Delta	B.1.617.2	EPI_ISL_3722176
Delta	Delta	B.1.617.2	EPI_ISL_3916277
Delta	Delta	B.1.617.2	EPI_ISL_3916307
Delta	Delta	B.1.617.2	EPI_ISL_3916326
Delta	Delta	B.1.617.2	EPI_ISL_3916355
Delta	Delta	B.1.617.2	EPI_ISL_4072013
Delta	Delta	B.1.617.2	EPI_ISL_4072020
Delta	Delta	B.1.617.2	EPI_ISL_4072021
Delta	Delta	B.1.617.2	EPI_ISL_4072022
Delta	Delta	B.1.617.2	EPI_ISL_4072023
Delta	Delta	B.1.617.2	EPI_ISL_4496821
Delta	Delta	B.1.617.2	EPI_ISL_4496831
Delta	Delta	B.1.617.2	EPI_ISL_4496832
Delta	Delta	B.1.617.2	EPI_ISL_4496833
Delta	Delta	B.1.617.2	EPI_ISL_4496846
Delta	Delta	B.1.617.2	EPI_ISL_4496855
Delta	Delta	B.1.617.2	EPI_ISL_4496874
Delta	Delta	B.1.617.2	EPI_ISL_4496880
Delta	Delta	B.1.617.2	EPI_ISL_4496888
Delta	Delta	B.1.617.2	EPI_ISL_4496890
Delta	Delta	B.1.617.2	EPI_ISL_4496891
Delta	Delta	B.1.617.2	EPI_ISL_4496892
Gamma	Not a VOC	B.1.621	EPI_ISL_3236157
Gamma	Not a VOC	B.1.621	EPI_ISL_4496900
Gamma	Not a VOC	BB.2	EPI_ISL_3390723
Gamma	Not a VOC	BB.2	EPI_ISL_3390757
Gamma	Gamma	P.1	EPI_ISL_3050186
Gamma	Gamma	P.1	EPI_ISL_3050210
Gamma	Gamma	P.1	EPI_ISL_3538746
Gamma	Gamma	P.1	EPI_ISL_3916315
Gamma	Gamma	P.1	EPI_ISL_4072051
Gamma	Gamma	P.1	EPI_ISL_4072052
Gamma	Gamma	P.1	EPI_ISL_4072073
Gamma	Gamma	P.1	EPI_ISL_4496811
Gamma	Gamma	P.1	EPI_ISL_4496812
Gamma	Gamma	P.1	EPI_ISL_4496813
Gamma	Gamma	P.1	EPI_ISL_4496815
Gamma	Gamma	P.1	EPI_ISL_4496816
Gamma	Gamma	P.1	EPI_ISL_4496875
Gamma	Gamma	P.1.10	EPI_ISL_3050249
Gamma	Gamma	P.1.10	EPI_ISL_4496856
Gamma	Gamma	P.1.10	EPI_ISL_4496866

Gamma	Gamma	P.1.10	EPI_ISL_4496871
Gamma	Gamma	P.1.10	EPI_ISL_4496883
Gamma	Gamma	P.1.17	EPI_ISL_4496877
Gamma	Gamma	P.1.17	EPI_ISL_4496901
Not a VOC	Not a VOC	A.2.5	EPI_ISL_3050209
Not a VOC	Not a VOC	A.2.5	EPI_ISL_3050212
Not a VOC	Not a VOC	A.2.5	EPI_ISL_3050213
Not a VOC	Not a VOC	A.2.5	EPI_ISL_3050214
Not a VOC	Not a VOC	A.2.5	EPI_ISL_3050251
Not a VOC	Not a VOC	A.2.5	EPI_ISL_4496879
Not a VOC	Not a VOC	B.1	EPI_ISL_3050206
Not a VOC	Not a VOC	B.1	EPI_ISL_3722198
Not a VOC	Not a VOC	B.1	EPI_ISL_4496826
Not a VOC	Not a VOC	B.1.1.318	EPI_ISL_4496870
Not a VOC	Not a VOC	B.1.1.519	EPI_ISL_4496824
Not a VOC	Not a VOC	B.1.311	EPI_ISL_4072038
Not a VOC	Not a VOC	B.1.427	EPI_ISL_4496835
Not a VOC	Not a VOC	B.1.427	EPI_ISL_4496836
Not a VOC	Not a VOC	B.1.427	EPI_ISL_4496889
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496817
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496818
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496819
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496822
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496823
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496834
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496837
Not a VOC	Not a VOC	B.1.429	EPI_ISL_4496845
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496810
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496814
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496825
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496827
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496872
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496884
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496894
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496899
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496902
Not a VOC	Not a VOC	B.1.526	EPI_ISL_4496903
Not a VOC	Not a VOC	B.1.627	EPI_ISL_4496862
Not a VOC	Not a VOC	B.1.637	EPI_ISL_3050248
Not a VOC	Not a VOC	B.1.637	EPI_ISL_3236140
Not a VOC	Not a VOC	B.1.637	EPI_ISL_3390720
Not a VOC	Not a VOC	B.1.637	EPI_ISL_3390721
Not a VOC	Not a VOC	B.1.637	EPI_ISL_3390722
Not a VOC	Not a VOC	B.1.637	EPI_ISL_4496852
Not a VOC	Not a VOC	B.1.637	EPI_ISL_4496854
Not a VOC	Not a VOC	B.1.637	EPI_ISL_4496878
Not a VOC	Not a VOC	B.1.637	EPI_ISL_4496886
Not a VOC	Not a VOC	B.1.637	EPI_ISL_4496887
Not a VOC	Not a VOC	B.1.637	EPI_ISL_4496895
Not a VOC	Not a VOC	XB	EPI_ISL_3050187
Not a VOC	Not a VOC	XB	EPI_ISL_3050197
Not a VOC	Not a VOC	XB	EPI_ISL_4072042
Not a VOC	Not a VOC	XB	EPI_ISL_4072043
Not a VOC	Not a VOC	XB	EPI_ISL_4496863
Not a VOC	Not a VOC	XB	EPI_ISL_4496864
Not a VOC	Not a VOC	XB	EPI_ISL_4496873

Not a VOC	Not a VOC	XB	EPI_ISL_4496893
Not a VOC	Not a VOC	XB	EPI_ISL_4496904
Omicron	Omicron	BA.1	EPI_ISL_7808007
Omicron	Omicron	BA.1	EPI_ISL_7808009
Omicron	Omicron	BA.1	EPI_ISL_7808012
Omicron	Omicron	BA.1	EPI_ISL_8131086
Omicron	Omicron	BA.1	EPI_ISL_8131087
Omicron	Omicron	BA.1	EPI_ISL_8131088
Omicron	Omicron	BA.1	EPI_ISL_8131090
Omicron	Omicron	BA.1	EPI_ISL_8131091
Omicron	Omicron	BA.1	EPI_ISL_8131093
Omicron	Omicron	BA.1	EPI_ISL_8131094
Omicron	Omicron	BA.1	EPI_ISL_8131096
Omicron	Omicron	BA.1	EPI_ISL_8131099
Omicron	Omicron	BA.1	EPI_ISL_8131102
Omicron	Omicron	BA.1	EPI_ISL_8131103
Omicron	Omicron	BA.1	EPI_ISL_8131109
Omicron	Omicron	BA.1	EPI_ISL_8131110
Omicron	Omicron	BA.1	EPI_ISL_8131111
Omicron	Omicron	BA.1	EPI_ISL_8131112
Omicron	Omicron	BA.1	EPI_ISL_8131114
Omicron	Omicron	BA.1	EPI_ISL_8131116
Omicron	Omicron	BA.1	EPI_ISL_8131117
Omicron	Omicron	BA.1	EPI_ISL_8131118
Omicron	Omicron	BA.1	EPI_ISL_8131119
Omicron	Omicron	BA.1	EPI_ISL_8131120
Omicron	Omicron	BA.1	EPI_ISL_8131121
Omicron	Omicron	BA.1	EPI_ISL_8131122
Omicron	Omicron	BA.1	EPI_ISL_8131123
Omicron	Omicron	BA.1	EPI_ISL_8131125
Omicron	Omicron	BA.1	EPI_ISL_8131128
Omicron	Omicron	BA.1	EPI_ISL_8406558
Omicron	Omicron	BA.1	EPI_ISL_8406559
Omicron	Omicron	BA.1	EPI_ISL_8406561
Omicron	Omicron	BA.1	EPI_ISL_8406562
Omicron	Omicron	BA.1	EPI_ISL_8406565
Omicron	Omicron	BA.1	EPI_ISL_8406570
Omicron	Omicron	BA.1	EPI_ISL_8406571
Omicron	Omicron	BA.1	EPI_ISL_8406573
Omicron	Omicron	BA.1	EPI_ISL_8406574
Omicron	Omicron	BA.1	EPI_ISL_8406575
Omicron	Omicron	BA.1	EPI_ISL_8406576
Omicron	Omicron	BA.1	EPI_ISL_8406579
Omicron	Omicron	BA.1	EPI_ISL_8406581
Omicron	Omicron	BA.1	EPI_ISL_8406587
Omicron	Omicron	BA.1	EPI_ISL_8406590
Omicron	Omicron	BA.1	EPI_ISL_8406591
Omicron	Omicron	BA.1	EPI_ISL_8406592
Omicron	Omicron	BA.1	EPI_ISL_8406593
Omicron	Omicron	BA.1	EPI_ISL_8406594
Omicron	Omicron	BA.1	EPI_ISL_8406595
Omicron	Omicron	BA.1	EPI_ISL_8406598
Omicron	Omicron	BA.1	EPI_ISL_8435104
Omicron	Omicron	BA.1	EPI_ISL_8749105
Omicron	Omicron	BA.1	EPI_ISL_8749114
Omicron	Omicron	BA.1	EPI_ISL_8749122

Omicron	Omicron	BA.1	EPI_ISL_8749124
Omicron	Omicron	BA.1	EPI_ISL_8749126
Omicron	Omicron	BA.1	EPI_ISL_8749127
Omicron	Omicron	BA.1	EPI_ISL_8749129
Omicron	Omicron	BA.1	EPI_ISL_8749130
Omicron	Omicron	BA.1	EPI_ISL_8749132
Omicron	Omicron	BA.1	EPI_ISL_8749133
Omicron	Omicron	BA.1	EPI_ISL_8749134
Omicron	Omicron	BA.1	EPI_ISL_8749135
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Omicron	Omicron	BA.1	EPI_ISL_8749137
Omicron	Omicron	BA.1	EPI_ISL_8749138
Omicron	Omicron	BA.1	EPI_ISL_8749139
Omicron	Omicron	BA.1	EPI_ISL_8749141
Omicron	Omicron	BA.1	EPI_ISL_8749142
Omicron	Omicron	BA.1	EPI_ISL_8749143
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Omicron	Omicron	BA.1	EPI_ISL_8953933

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Omicron	Omicron	BA.1	EPI_ISL_8953960
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Omicron	Omicron	BA.1.1	EPI_ISL_8131107
Omicron	Omicron	BA.1.1	EPI_ISL_8131108
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Omicron	Omicron	BA.1.1	EPI_ISL_8406586
Omicron	Omicron	BA.1.1	EPI_ISL_8406588
Omicron	Omicron	BA.1.1	EPI_ISL_8406589
Omicron	Omicron	BA.1.1	EPI_ISL_8406596
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Omicron	Omicron	BA.1.1	EPI_ISL_8749145

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Omicron	Omicron	BA.1.1	EPI_ISL_8749159
Omicron	Omicron	BA.1.1	EPI_ISL_8749160
Omicron	Omicron	BA.1.1	EPI_ISL_8749162
Omicron	Omicron	BA.1.1	EPI_ISL_8749163
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Omicron	Omicron	BA.1.1	EPI_ISL_8953889
Omicron	Omicron	BA.1.1	EPI_ISL_8953892
Omicron	Omicron	BA.1.1	EPI_ISL_8953893
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Omicron	Omicron	BA.1.1	EPI_ISL_8953905
Omicron	Omicron	BA.1.1	EPI_ISL_8953906
Omicron	Omicron	BA.1.1	EPI_ISL_8953907
Omicron	Omicron	BA.1.1	EPI_ISL_8953911
Omicron	Omicron	BA.1.1	EPI_ISL_8953914
Omicron	Omicron	BA.1.1	EPI_ISL_8953915
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Omicron	Omicron	BA.1.1	EPI_ISL_8953954
Omicron	Omicron	BA.1.1	EPI_ISL_8953956
Omicron	Omicron	BA.1.1	EPI_ISL_8953958
Omicron	Omicron	BA.1.1	EPI_ISL_8953962

VOC, variant of concern

[a] Pangolin version 3.1.17

Supplemental Table 4. Patient Characteristics and Aggregate Genotyping RT-qPCR Screening Results During Initial Study Period (n=1,657)

Characteristic	All SARS-CoV-2 Infections	RT-qPCR Subset	WGS Validation Subset
Patients	1,657	1,093	502
Age at First Positive NAAT	33 [21-49]	33 [22-49]	33 [22-48]
Female	842 (51%)	571 (52%)	265 (53%)
Initial Diagnostic Specimen	-	-	-
Month of Diagnosis	-	-	-
May 2021 & prior	416 (25%)	299 (27%)	87 (17%)
June 2021	224 (14%)	149 (14%)	77 (15%)
July 2021 & after	1017 (61%)	645 (59%)	338 (67%)
Specimen Collection Site	-	-	-
Outpatient COVID-19 Screening Site	658 (40%)	412 (38%)	198 (39%)
Emergency Department	392 (24%)	287 (26%)	104 (21%)
Outpatient Laboratory	167 (10%)	100 (9%)	57 (11%)
Occupational/Student Health	160 (10%)	104 (10%)	67 (13%)
Outpatient Clinic	105 (6%)	57 (5%)	36 (7%)
Urgent Care	80 (5%)	63 (6%)	34 (7%)
Inpatient	49 (3%)	30 (3%)	4 (1%)
Perioperative/Periprocedural	46 (3%)	40 (4%)	2 (<1%)
Specimen Source	-	-	-
Nasopharyngeal Swab	989 (59%)	661 (61%)	281 (56%)
Mid-Turbinate Nasal Swab	659 (40%)	428 (39%)	219 (44%)
Other[a]	9 (1%)	4 (<1%)	2 (<1%)
NAAT Platform	-	-	-
Hologic Panther[b]	869 (52%)	512 (47%)	246 (49%)
Cepheid GeneXpert[c]	234 (14%)	180 (16%)	87 (17%)
Applied Biosystems QuantStudio[b]	220 (13%)	155 (14%)	93 (19%)
Genmark Eplex[c]	169 (10%)	133 (12%)	19 (4%)
Qiagen Rotor-Gene LDT[b]	136 (8%)	85 (8%)	44 (9%)
Roche Liat[c]	29 (2%)	28 (3%)	13 (3%)
Variant of Concern	-	-	-
Alpha	-	150 (14%)	43 (9%)
Beta[d]	-	6 (1%)	2 (<1%)
Gamma[d]	-	32 (3%)	20 (4%)
Delta	-	660 (60%)	378 (75%)
Not a Variant of Concern	-	93 (9%)	59 (12%)
Unable to Genotype[e]	-	152 (14%)	-

Data provided as N (column %) or median [interquartile range]
NAAT, nucleic acid amplification test; LDT, lab-developed test; RT-qPCR, reverse transcription quantitative polymerase chain reaction; WGS, whole-genome sequencing
[a] Other includes Nasal Swab, Lung BAL, Oropharynx
[b] Laboratory-based testing methods
[c] Near-care testing methods
[d] RT-qPCR cannot distinguish variants of concern Beta and Gamma variants from variant of interest Mu.
[e] Low viral load, amplification failure, or reaction set-up failure.