GECO Philippines SARS-CoV-2 Situation Report - 2022 August

Highlights

- Multiple BA.4 and BA.5 clusters were identified during June-July

SARS-CoV-2 variants detected in the Philippines

WHO label	Pango lineage	Classification	New submission	Isolated in 3 months	Total
Alpha	B.1.1.7/Q.x	VOC	0	1 (0.1)	2801
Beta	B.1.351	VOC	0	0	3280
Delta	B.1.617.2/AY.x	VOC	14 (2.2)	1 (0.1)	3490
Gamma	P.1	VOC	0	0	5
Omicron	B.1.1.529/BA.x	VOC	576 (90.7)	793 (90.4)	8025
Eta	B.1.525	VUM	0	0	8
Theta	P.3	VUM	0	0	523

Table 1. Number of available sequences by variant in the Philippines as of 23 August 2022. The variants (VOC/VUM) here only include sequences that present in the GISAID or GECO data base and fulfill the definitions of WHO at the time the report is prepared. *New submission*, new sequences submitted from the last report. *Isolated in 3 months*, sequences isolated from 1 June 2022 to 23 August 2022. Numbers in the parentheses are percentage of the category (%).

- **VOC (Variant of Concern):** A SARS-CoV-2 variant that meets the definition of a VOI (see below) and, through a comparative assessment, has been demonstrated to be associated with (a) increase in transmissibility, (b) increase in clinical disease presentation or (c) decrease in effectiveness of public health measures including diagnostics, vaccines, therapeutics.
- **VOI (Variant of Interest):** A SARS-CoV-2 variant: (a) with genetic changes that are predicted or known to affect virus characteristics such as transmissibility, disease severity, immune escape, diagnostic or therapeutic escape; AND (b) identified to cause significant community transmission or multiple COVID-19 clusters, in multiple countries with increasing relative prevalence alongside increasing number of cases over time.
- **VUM (Variant Under monitoring):** A SARS-CoV-2 variant with genetic changes that are suspected to affect virus characteristics with some indication that it may pose a future risk, but evidence of phenotypic or epidemiological impact is currently unclear, requiring enhanced monitoring and repeat assessment pending new evidence.
- **Pango lineage:** A dynamic SARS-CoV-2 naming system that uses a phylogenetic framework (methods that involve a tree-like structure inferred based on genetic information of viruses) to identify actively

spreading lineages. The Pango system is designed to track the transmission and spread of SARS-CoV-2, but does not attempt to identify or define VOCs or VOIs.

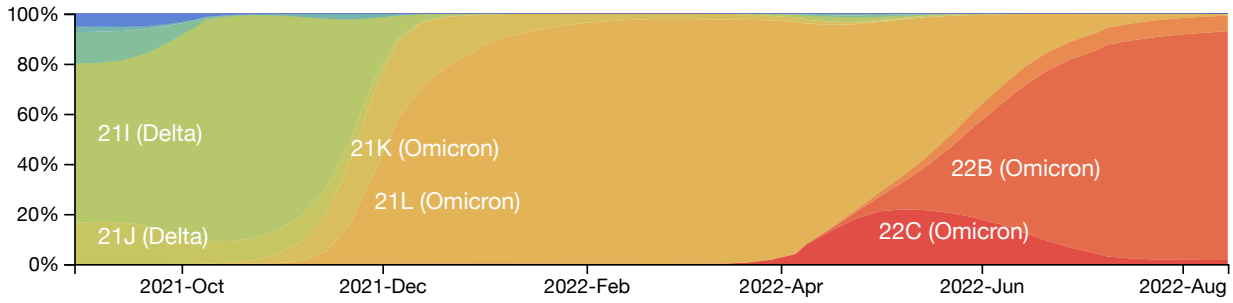

Figure 1. Temporal frequencies of SARS-CoV-2 variants in the Philippines. The figure is constructed with a subsampled genomic data set from all available sequences (methods). A more detailed illustration of SARS-CoV-2 lineages isolated in the country can be visualised by selecting Pango Lineage as the option for coloring in the control panel (icon on top left/right). **Note** that the latest available Philippine sequences were isolated on 18 July, 2022, thus the frequencies after the time point could harbor great uncertainty.

- **Nextstrain clade** and the corresponding Pango lineage name: 22B = BA.5, 22C = BA.2.12.1, 22A = BA.4, 21L = BA.2, 21K = BA.1.

Diversity within the Omicron variant

Pango lineage	New submission	Isolated in 3 months	Total
BA.1	7 (1.1)	0	597
BA.2.3	131 (20.6)	27 (3.1)	5680
BA.2.12.1	26 (4.1)	60 (6.8)	114
BA.2.75	0	0	0
Other BA.2	42 (6.6)	57 (6.5)	922
BA.4	33 (5.2)	47 (5.4)	52
BA.5	324 (51)	582 (66.4)	613

Table 1b. Number of available Omicron sequences in the Philippines as of 23 August 2022. *New submission*, new sequences submitted from the last report. *Isolated in 3 months*, sequences isolated from 1 June 2022 to 23 August 2022. Numbers in the parentheses are percentage of the category (%). Phylogenetic relationship of the sublineages of Omicron variant is available here.

Diversity within the Delta variants

More than 70 Pango lineages have been found among Delta variants isolated in the Philippines, with >40 sublineages that have more than 2 isolated sequences as of March 2022. Phylogenetic relationship of the sublineages of Delta variant is available here.

SARS-CoV-2 variants detected by administrative region

Region	New submission	Dominant variant in 3 months	Isolated in 3 months	Total
NCR	39 (6.1)	Omicron (86.4)	125 (14.3)	5738
Ilocos	25 (3.9)	Omicron (64.5)	31 (3.5)	669
CAR	24 (3.8)	Omicron (85.7)	28 (3.2)	1316
Cagayan Valley	14 (2.2)	Omicron (98)	50 (5.7)	1560
Central Luzon	15 (2.4)	Omicron (78.9)	19 (2.2)	1609
Calabarzon	82 (12.9)	Omicron (81.4)	140 (16)	3120
Mimaropa	1 (0.2)	Omicron (94.1)	34 (3.9)	486
Bicol	32 (5)	Omicron (86.6)	67 (7.6)	613
Western Visayas	8 (1.3)	Omicron (79.2)	24 (2.7)	1242
Central Visayas	13 (2)	Omicron (77.8)	9 (1)	1174
Eastern Visayas	1 (0.2)	Omicron (100)	5 (0.6)	233
Zamboanga Peninsula	16 (2.5)	Omicron (100)	6 (0.7)	778
Northern Mindanao	5 (0.8)	Omicron (100)	4 (0.5)	519
Davao	271 (42.7)	Omicron (99.2)	257 (29.3)	1667
Soccsksargen	75 (11.8)	Omicron (98.6)	73 (8.3)	462
Caraga	12 (1.9)	Omicron (100)	4 (0.5)	510
BARMM	2 (0.3)	Omicron (100)	1 (0.1)	121

Table 2. Number of available sequences by administrative region in the Philippines as of 23 August 2022. The variant definition is identical to Table 1 based on the WHO website. *New submission*, new sequences submitted from the last report. *Dominant variant in 3 months*, the major variant isolated from 1 June 2022 to 23 August 2022. A dash indicates no sequence isolated. *Isolated in 3 months*, sequences isolated from 1 June 2022 to 23 August 2022. Numbers next to the dominant variant indicate percentage of the variant in the region, whereas other numbers in the parentheses are percentage of the category.

NCR, National Capital Region; CAR, Cordillera Administrative Region; BARMM, Bangsamoro Autonomous Region in Muslim Mindanao.

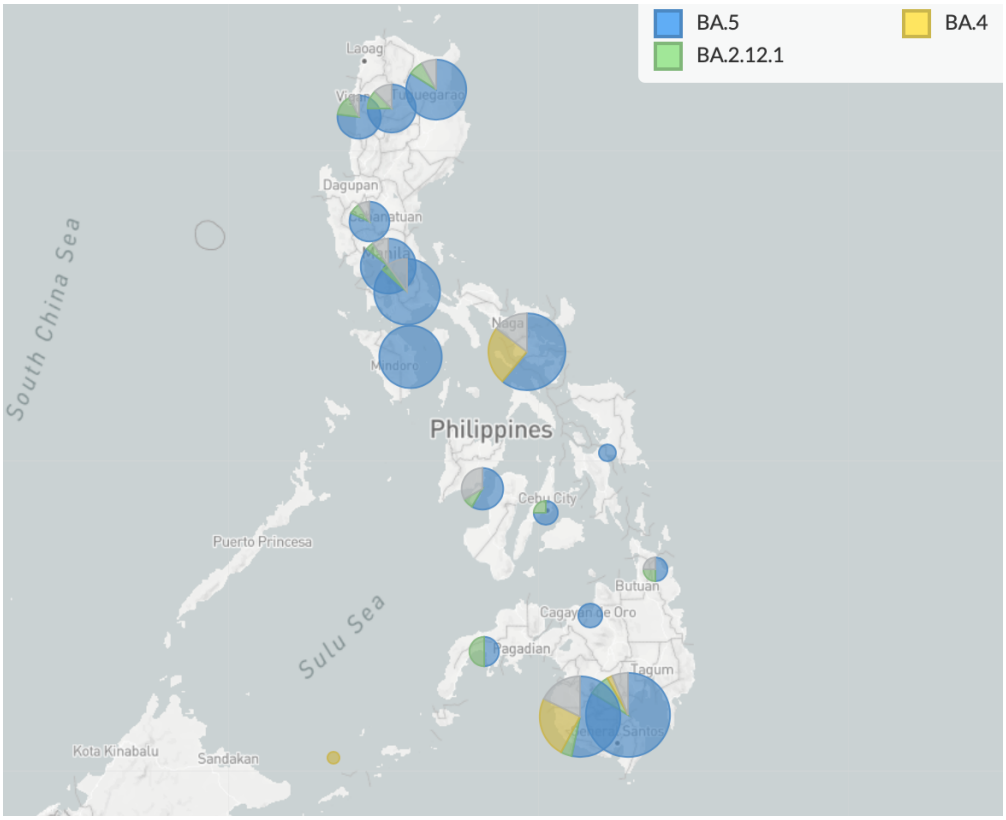

Figure 2. Frequencies of SARS-CoV-2 variants by administrative region in the Philippines since June 2022. The figure is constructed with a subsampled genomic data set from all available sequences as Figure 1. Frequencies of isolates in a particular time frame and frequencies classified with the Pango linage can be adjusted with the control panel (icon on top left/right).

Philippines specific SARS-CoV-2 lineages

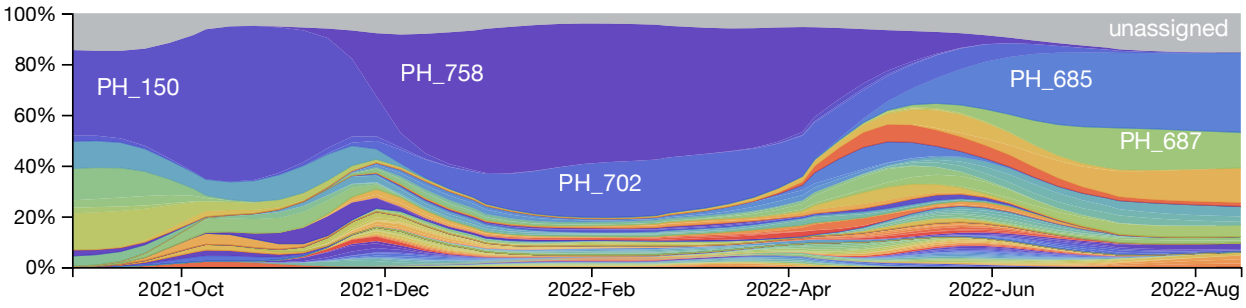

Figure 3. Temporal frequencies of Philippine lineages (clusters) identified by Grapevine-anywhere. Each sequence submitted to GECO database would undergo *Grapevine-anywhere* pipeline to detect sustain local transmission. A cluster is defined based on multiple sequences isolated in the Philippines that appeared to descend from the same introductory event on a phylogenetic tree. Phylogenetic relationships of these lineages can be found here.

Cluster name	Date first identified	Pango lineage	Distribution	New sub-mission	Isolated in 3 months	Total
PH_685	2022-05-15	BA.5.2	>3 regions	99	208	227
PH_687	2022-05-12	BA.5.2	>3 regions	126	136	140
PH_666	2022-06-08	BA.5	>3 regions	20	42	42
PH_653	2022-05-28	BA.4	Soccsksargen; Davao	21	21	23
PH_680	2022-06-15	BA.5.2.1	Bicol; Cagayan Valley	8	16	16
PH_619	2022-04-22	BA.2.12.1	>3 regions	3	16	30
PH_659	2022-06-03	BA.4	Bicol; Soccsksargen; BARMM	6	13	13
PH_672	2022-05-25	BA.5.2.1	>3 regions	0	12	14
PH_613	2022-04-15	BA.2.12.1	>3 regions	12	12	21
PH_702	2021-12-19	BA.2.3	>3 regions	10	11	1020
PH_699	2022-06-09	BA.5.5	Davao; Northern Mindanao	8	8	8
PH_614	2022-05-20	BA.2.12.1	Davao; NCR	5	6	9
PH_758	2021-05-15	BA.2.3	>3 regions	58	6	3583
PH_560	2022-03-02	BA.2.9	>3 regions	1	5	8
PH_682	2022-01-07	BA.5.2.1	>3 regions	1	5	6
PH_568	2022-05-31	BA.2	NCR; Calabarzon; Western Visayas	0	4	5
PH_584	2021-12-29	BA.2	>3 regions	2	4	52
PH_592	2022-04-21	BA.2	Cagayan Valley; NCR; CAR	0	2	10
PH_807	2022-02-16	BA.2.3	>3 regions	1	1	9
PH_609	2022-01-16	BA.2	>3 regions	0	1	5
PH_600	2022-01-04	BA.2.3	>3 regions	1	1	20
PH_266	2021-02-10	B.1.1.7	>3 regions	0	1	432
PH_632	2022-04-29	BA.2.12.1	Mimaropa; Calabarzon	0	0	13
PH_571	2022-03-24	BA.2	NCR; Calabarzon	0	0	13
PH_593	2022-02-13	BA.2	NCR; Calabarzon; Western Visayas	0	0	5
PH_576	2022-01-30	BA.2.10	>3 regions	0	0	8
PH_822	2022-01-29	BA.2	NCR	0	0	5
PH_607	2022-01-16	BA.2	Central Visayas; NCR; Davao	0	0	5
PH_448	2022-01-14	BA.1.17.2	Central Visayas	0	0	5
PH_707	2022-01-13	BA.2.3	Zamboanga Peninsula; Western Visayas; Davao	0	0	7
PH_727	2022-01-10	BA.2.3	>3 regions	0	0	10
PH_731	2022-01-10	BA.2.3	>3 regions	0	0	9
PH_773	2022-01-09	BA.2.3	CAR; Ilocos; NCR	0	0	14
PH_538	2022-01-08	BA.1.1	Central Visayas	0	0	6
PH_792	2022-01-08	BA.2.3	>3 regions	1	0	8
PH_820	2022-01-08	BA.2	Central Visayas; NCR	0	0	7
PH_763	2022-01-06	BA.2.3	>3 regions	1	0	16
PH_777	2022-01-05	BA.2.3	>3 regions	1	0	10
PH_765	2022-01-04	BA.2.3	>3 regions	0	0	13
PH_786	2022-01-04	BA.2.3	>3 regions	0	0	12
PH_793	2022-01-03	BA.2.3	>3 regions	1	0	14
PH_796	2022-01-03	BA.2.3	>3 regions	0	0	7
PH_769	2022-01-02	BA.2.3	>3 regions	0	0	14
PH_808	2022-01-02	BA.2.3	>3 regions	0	0	33
PH_782	2022-01-01	BA.2.3	>3 regions	0	0	20
PH_556	2021-12-31	BA.2	>3 regions	0	0	9
PH_597	2021-12-31	BA.2	>3 regions	0	0	6

Cluster name	Date first identified	Pango lineage	Distribution	New submission	Isolated in 3 months	Total
PH_443	2021-12-30	BA.1.17.2	Central Visayas; NCR; Calabarzon	0	0	15
PH_741	2021-12-30	BA.2.3	>3 regions	0	0	13
PH_639	2021-12-29	BA.2	>3 regions	2	0	56
PH_641	2021-12-29	BA.2	Central Luzon; Central Visayas; NCR	0	0	5
PH_775	2021-12-29	BA.2.3	>3 regions	0	0	5
PH_806	2021-12-29	BA.2.3	>3 regions	1	0	9
PH_809	2021-12-29	BA.2.3	>3 regions	0	0	11
PH_811	2021-12-29	BA.2.3	>3 regions	1	0	13
PH_512	2021-12-28	BA.1	Central Visayas; NCR	0	0	7
PH_513	2021-12-28	BA.1	>3 regions	0	0	9
PH_742	2021-12-28	BA.2.3	>3 regions	0	0	22
PH_761	2021-12-27	BA.2.3	>3 regions	0	0	24
PH_762	2021-12-27	BA.2.3	>3 regions	0	0	8
PH_767	2021-12-27	BA.2.3	>3 regions	2	0	44
PH_797	2021-12-27	BA.2.3	>3 regions	1	0	147
PH_810	2021-12-27	BA.2.3	>3 regions	0	0	135
PH_799	2021-12-26	BA.2.3	>3 regions	0	0	34
PH_477	2021-12-25	BA.1	Central Visayas; NCR; Davao	1	0	6
PH_750	2021-12-23	BA.2.3	>3 regions	0	0	16
PH_768	2021-12-23	BA.2.3	>3 regions	1	0	15
PH_466	2021-12-22	BA.1.1	NCR; Central Visayas	0	0	7
PH_490	2021-12-22	BA.1.1	>3 regions	0	0	74
PH_812	2021-12-22	BA.2.3	>3 regions	0	0	64
PH_476	2021-12-21	BA.1.1	>3 regions	1	0	54
PH_495	2021-12-20	BA.1.1	>3 regions	0	0	27
PH_507	2021-12-19	BA.1.15	NCR; Central Luzon	0	0	5
PH_483	2021-12-18	BA.1.1	>3 regions	0	0	9
PH_535	2021-12-18	BA.1.1	>3 regions	0	0	5
PH_449	2021-12-14	BA.1.17.2	Central Visayas; NCR	0	0	11
PH_509	2021-12-13	BA.1.15	Central Luzon; Central Visayas	0	0	8
PH_544	2021-12-06	BA.1	>3 regions	0	0	35
PH_547	2021-11-20	BA.1	>3 regions	0	0	16
PH_83	2021-08-15	AY.122	Mimaropa; Calabarzon; Bicol	0	0	6
PH_179	2021-08-07	B.1.617.2	Caraga	0	0	10
PH_171	2021-08-05	B.1.617.2	Calabarzon; NCR	0	0	5
PH_126	2021-07-31	AY.1	>3 regions	0	0	5
PH_120	2021-07-29	AY.1	>3 regions	0	0	5
PH_178	2021-07-26	B.1.617.2	>3 regions	0	0	24
PH_62	2021-07-24	AY.98.1	NCR	0	0	6
PH_121	2021-07-23	AY.1	>3 regions	0	0	7
PH_140	2021-07-22	B.1.617.2	>3 regions	0	0	10
PH_114	2021-07-18	AY.112	NCR; CAR; Ilocos	0	0	12
PH_96	2021-07-16	AY.107	>3 regions	1	0	29
PH_118	2021-07-14	AY.1	NCR; Ilocos; Central Luzon	0	0	14
PH_124	2021-07-13	AY.1	>3 regions	0	0	13
PH_99	2021-07-13	AY.107	Central Luzon; NCR	0	0	6
PH_128	2021-07-12	AY.87	NCR; Calabarzon	0	0	12
PH_67	2021-07-10	AY.23	Calabarzon	0	0	5

Cluster name	Date first identified	Pango lineage	Distribution	New sub-mission	Isolated in 3 months	Total
PH_61	2021-07-08	AY.112	Northern Mindanao; Cagayan Valley; BARMM	0	0	8
PH_115	2021-07-07	AY.112	>3 regions	0	0	14
PH_175	2021-07-07	B.1.617.2	>3 regions	0	0	9
PH_79	2021-07-07	AY.122	>3 regions	0	0	7
PH_66	2021-07-05	AY.23	>3 regions	0	0	20
PH_161	2021-07-04	AY.65	NCR; Calabarzon	0	0	11
PH_107	2021-07-02	AY.116	NCR; Calabarzon	0	0	6
PH_166	2021-07-01	B.1.617.2	Calabarzon; NCR	0	0	11
PH_187	2021-07-01	B.1.617.2	>3 regions	0	0	71
PH_81	2021-06-28	AY.122	>3 regions	0	0	61
PH_116	2021-06-27	AY.112	>3 regions	0	0	28
PH_137	2021-06-27	AY.106	>3 regions	0	0	92
PH_117	2021-06-23	AY.1	>3 regions	0	0	223
PH_59	2021-06-23	B.1.617.2	>3 regions	0	0	9
PH_182	2021-06-21	AY.122	>3 regions	1	0	214
PH_165	2021-06-19	B.1.617.2	>3 regions	1	0	317
PH_148	2021-05-29	B.1.617.2	>3 regions	0	0	168
PH_150	2021-05-08	B.1.617.2	>3 regions	10	0	1474
PH_271	2021-05-06	B.1.1.7	>3 regions	0	0	7
PH_261	2021-04-30	B.1.1.7	Davao; Caraga; NCR	0	0	19
PH_143	2021-04-29	AY.14	>3 regions	0	0	150
PH_147	2021-04-24	B.1.617.2	>3 regions	0	0	14
PH_265	2021-04-19	B.1.1.7	Davao; Soccsksargen	0	0	18
PH_278	2021-04-19	B.1.1.7	>3 regions	0	0	16
PH_257	2021-04-14	B.1.1.7	>3 regions	0	0	21
PH_260	2021-04-13	B.1.1.7	Davao; Caraga; Central Luzon	0	0	13
PH_352	2021-04-02	B.1.1.519	NCR	0	0	5
PH_259	2021-03-25	B.1.1.7	>3 regions	0	0	29
PH_270	2021-03-22	B.1.1.7	>3 regions	0	0	32
PH_268	2021-03-20	B.1.1.7	Bicol; NCR	0	0	6
PH_274	2021-03-19	B.1.1.7	>3 regions	0	0	12
PH_269	2021-03-15	B.1.1.7	NCR; Bicol; Calabarzon	0	0	7
PH_73	2021-03-13	B.1.1.7	>3 regions	0	0	8
PH_255	2021-03-06	B.1.1.7	>3 regions	0	0	31
PH_256	2021-03-05	B.1.1.7	>3 regions	0	0	24
PH_264	2021-03-05	B.1.1.7	>3 regions	0	0	32
PH_279	2021-03-05	B.1.1.7	>3 regions	0	0	24
PH_296	2021-03-05	B.1.1.7	>3 regions	0	0	32
PH_387	2021-03-05	B.1.1.63	NCR; Calabarzon	0	0	5
PH_277	2021-03-04	B.1.1.7	>3 regions	0	0	18
PH_275	2021-02-22	B.1.1.7	NCR; Calabarzon; Central Luzon	0	0	13
PH_305	2021-02-15	B.1.1.7	>3 regions	0	0	55
PH_311	2021-02-12	B.1.1.7	>3 regions	0	0	72
PH_295	2021-02-11	B.1.1.7	>3 regions	0	0	14
PH_190	2021-01-31	B.1.351	>3 regions	0	0	3036
PH_376	2021-01-27	B.1.1.63	NCR; Calabarzon	0	0	7
PH_249	2021-01-26	B.1.1.7	NCR; Calabarzon; Central Visayas	0	0	5

Cluster name	Date first identified	Pango lineage	Distribution	New sub-mission	Isolated in 3 months	Total
PH_306	2021-01-26	B.1.1.7	>3 regions	0	0	48
PH_381	2021-01-25	B.1.1.63	Calabarzon	0	0	5
PH_212	2021-01-21	B.1.466.1	Calabarzon; NCR	0	0	21
PH_326	2021-01-19	B.1.1	>3 regions	0	0	29
PH_417	2021-01-15	B.1.1.28	Davao; NCR; Soccsksargen	0	0	9
PH_242	2021-01-14	B.1.1.7	NCR; Central Visayas; CAR	0	0	5
PH_213	2021-01-12	B.1.441	NCR; Central Visayas	0	0	5
PH_416	2021-01-11	B.1.1.28	Soccsksargen; Davao; Calabarzon	0	0	12
PH_423	2021-01-11	B.1.1.28	Davao	0	0	14
PH_402	2021-01-08	B.1.1	Calabarzon; Central Visayas; NCR	0	0	6
PH_424	2021-01-08	P.3	>3 regions	0	0	452
PH_244	2021-01-07	B.1.1.7	NCR; Central Luzon	0	0	5
PH_250	2021-01-07	B.1.1.7	NCR	0	0	7
PH_289	2021-01-07	B.1.1.7	>3 regions	0	0	342
PH_412	2021-01-06	B.1.1.28	>3 regions	0	0	45
PH_304	2021-01-05	B.1.1.7	>3 regions	0	0	133
PH_413	2021-01-03	B.1.1.28	Davao; Soccsksargen	0	0	17
PH_290	2020-12-29	B.1.1.7	>3 regions	0	0	8
PH_38	2020-12-28	B.1.524	>3 regions	0	0	10
PH_358	2020-12-18	B.1.1.63	Cagayan Valley; NCR	0	0	7
PH_343	2020-12-17	B.1.1.263	CAR; Cagayan Valley; Central Luzon	0	0	65
PH_366	2020-12-15	B.1.1.63	NCR; Calabarzon; CAR	0	0	11
PH_291	2020-12-10	B.1.1.7	NCR; Calabarzon; Central Visayas	0	0	5
PH_362	2020-12-10	B.1.1.63	Calabarzon; NCR	0	0	5
PH_36	2020-12-08	B.1.1.7	>3 regions	0	0	978
PH_395	2020-12-04	B.1.1.63	NCR; Central Luzon	0	0	10
PH_419	2020-12-02	B.1.1.28	>3 regions	0	0	36
PH_420	2020-12-02	B.1.1.28	NCR; Calabarzon; Caraga	0	0	21
PH_330	2020-11-25	B.1.1	Calabarzon; NCR	0	0	11
PH_373	2020-11-22	B.1.1.63	Calabarzon; NCR	0	0	9
PH_27	2020-11-18	B.1.1.7	Calabarzon; Mimaropa	0	0	6
PH_346	2020-11-15	B.1.1.263	CAR; Cagayan Valley; Calabarzon	0	0	9
PH_17	2020-11-10	B.6	NCR; Calabarzon	0	0	5
PH_415	2020-11-07	B.1.1.28	Calabarzon; NCR; Central Luzon	0	0	6
PH_216	2020-11-06	B.1.36	Calabarzon; NCR	0	0	9
PH_372	2020-11-03	B.1.1.63	Calabarzon	0	0	6
PH_368	2020-11-02	B.1.1.63	>3 regions	0	0	35
PH_385	2020-11-01	B.1.1.63	>3 regions	0	0	14
PH_345	2020-10-30	B.1.1.263	NCR; Ilocos; Central Visayas	0	0	6
PH_349	2020-10-11	B.1.1.263	>3 regions	0	0	67
PH_422	2020-08-24	B.1.1.28	>3 regions	0	0	15
PH_39	2020-08-22	B.1	NCR; Calabarzon; Davao	0	0	12
PH_370	2020-08-13	B.1.1.63	>3 regions	0	0	190
PH_329	2020-08-07	B.1.1	NCR	0	0	5
PH_394	2020-08-07	B.1.1.63	>3 regions	0	0	20

Cluster name	Date first identified	Pango lineage	Distribution	New submission	Isolated in 3 months	Total
PH_19	2020-08-06	B.6	>3 regions	0	0	40
PH_331	2020-08-05	B.1.1	Calabarzon; NCR	0	0	5
PH_411	2020-08-05	B.1.1.28	>3 regions	0	0	229
PH_319	2020-08-04	B.1.1	Calabarzon; NCR; Cagayan Valley	0	0	27
PH_92	2020-07-22	B.1.1.63	>3 regions	0	0	127
PH_369	2020-07-19	B.1.1.63	Calabarzon; NCR; Western Visayas	0	0	24
PH_24	2020-07-15	B.1	>3 regions	0	0	33
PH_320	2020-07-12	B.1.1	NCR; Calabarzon; Mimaropa	0	0	12
PH_314	2020-07-09	B.1.1	>3 regions	0	0	223
PH_357	2020-07-09	B.1.1.63	>3 regions	0	0	121
PH_317	2020-07-08	B.1.1	NCR; Calabarzon; Central Luzon	0	0	16
PH_382	2020-07-08	B.1.1.63	>3 regions	0	0	79
PH_40	2020-07-08	B.1	Mimaropa; NCR; Central Visayas	0	0	9
PH_356	2020-07-07	B.1.1.63	>3 regions	0	0	31
PH_384	2020-07-07	B.1.1.63	NCR; Calabarzon; Cagayan Valley	0	0	12
PH_414	2020-07-05	B.1.1.28	>3 regions	0	0	6
PH_353	2020-07-01	B.1.1.63	Calabarzon; NCR; CAR	0	0	9
PH_378	2020-07-01	B.1.1.63	>3 regions	0	0	234
PH_361	2020-06-29	B.1.1.63	>3 regions	0	0	133
PH_393	2020-06-23	B.1.1.63	NCR	0	0	5
PH_339	2020-06-16	B.1.1.263	>3 regions	0	0	136
PH_41	2020-06-11	B.1	NCR; Western Visayas	0	0	9
PH_16	2020-03-11	B.6	NCR; Cagayan Valley	0	0	6
PH_2	2020-03-10	B.6	>3 regions	0	0	21

Table 3. Number of sequences by cluster identified with the Grapevine-anywhere as of 23 August 2022. A cluster is defined based on multiple sequences isolated in the Philippines that appeared to descend from the same introductory event on a phylogenetic tree. *Date first identified*, the isolation date of the first identified sequence. *Pango lineage*, the major Pango lineage of the sequences that belong to the same cluster. *New submission*, new sequences submitted from the last report. *Isolated in 3 months*, sequences isolated from 1 June 2022 to 23 August 2022.

SARS-CoV-2 sequencing in the Philippines

Total available SARS-CoV-2 sequences in the Philippines: 21835

SARS-CoV-2 sequences from GECO project: 2283

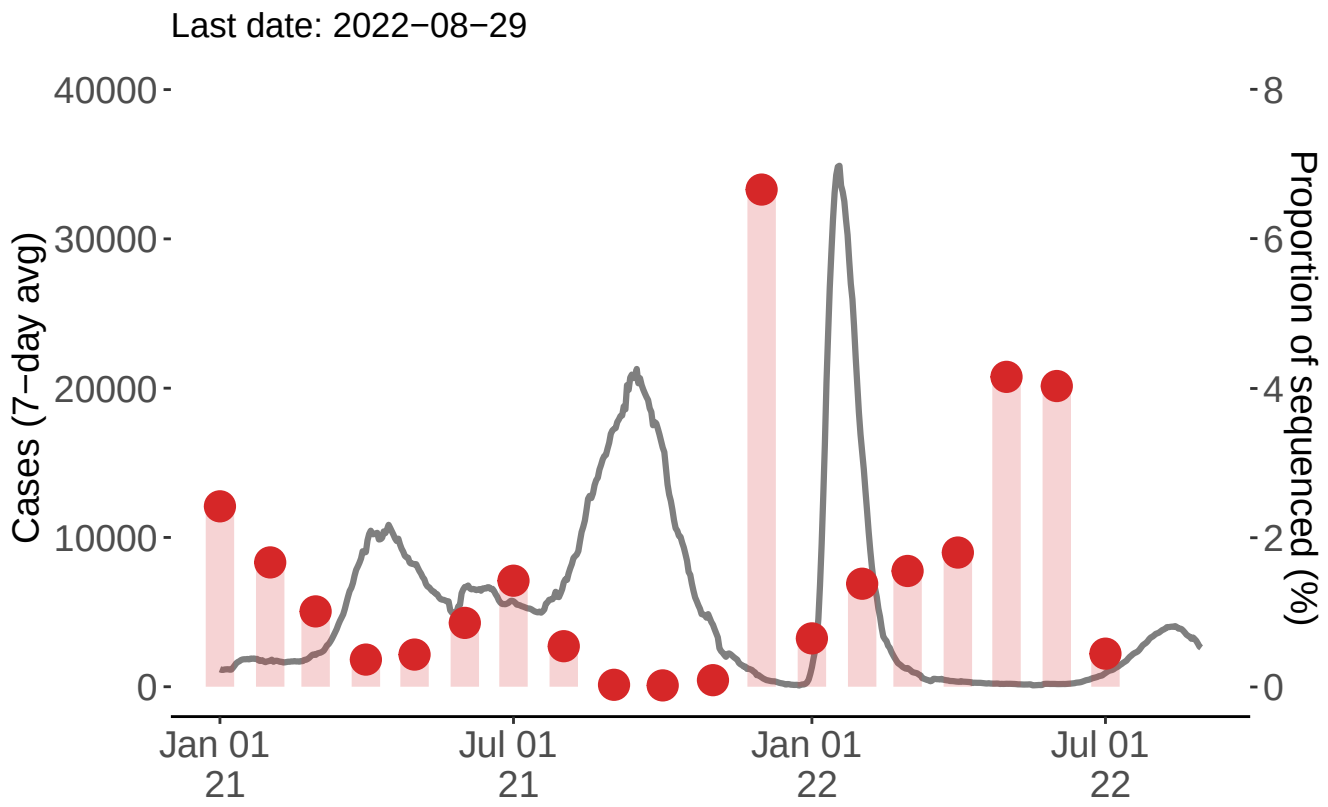

Figure 4. Number of COVID-19 cases and the proportion of sequenced samples in the Philippines from January 2021. The gray line indicates the mean cases in a 7 days window based on the JHU data base, whereas the red bars indicate the estimated percentage of sequenced samples among cases in a month.

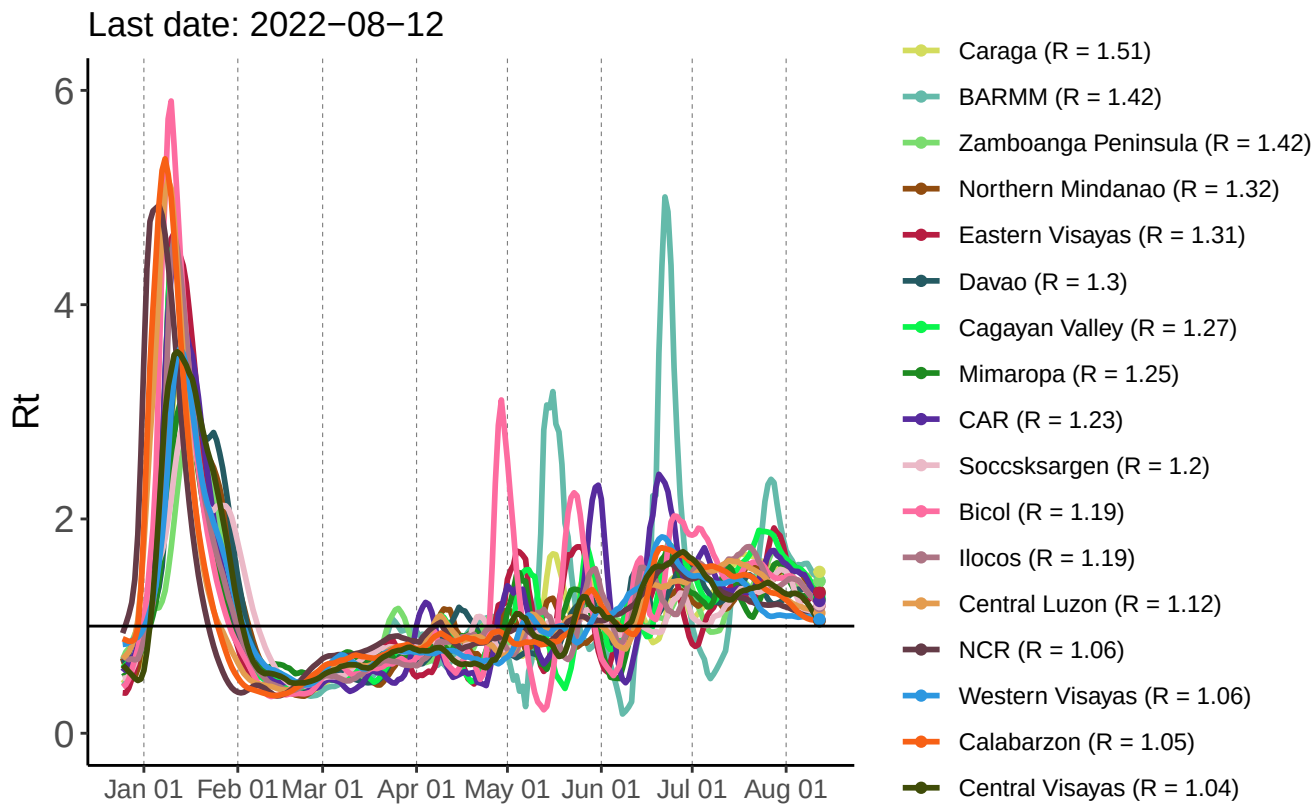

Figure 5. Mean effective reproductive number (Rt) of COVID-19 in the Philippines by region from December 2021 to August 2022. The reproductive number (R) is defined as the number of new infections that one infected patient can cause in a susceptible population. Here, *the mean effective reproductive number* (Rt) was inferred by daily number of cases reported in MOH, Philippines in a window of seven days. The horizontal line indicates one. If Rt is greater than 1, the case number in the region will likely continue to grow. If the Rt is below 1, the new cases may continue to appear at a slower rate. The R values denoted with the region name represent the most recent estimates. More regional epidemiological statistics can be found here.

SARS-CoV-2 mutations of interest

Spike protein

- **69-70Del** (Alpha, Omicron): Distribution on the Philippine isolates
- **T95I** (Mu, Omicron): Distribution on the Philippine isolates
- **144-** (Alpha, Eta, Omicron): Distribution on the Philippine isolates
- **R346T** (BA.4/BA.5): Distribution on the Philippine isolates
- **K417N** (Beta, Omicron): Distribution on the Philippine isolates

- **L452R** (Delta, BA.4/BA.5): Distribution on the Philippine isolates
- **T478K** (Delta, Omicron): Distribution on the Philippine isolates
- **E484K** (Beta, Gamma, Eta, Mu): Distribution on the Philippine isolates
- **F486V** (BA.4/BA.5): Distribution on the Philippine isolates
- **N501Y** (Alpha, Beta, Gamma, Mu, Omicron): Distribution on the Philippine isolates
- **H655Y** (Gamma, Omicron): Distribution on the Philippine isolates

Relevant functions including antibody escape (S 69-70Del, S 144, S 346, S 417, S 484) and receptor binding (S 417, S 484, S 501). 69-70Del, deletions at positions 69-70.

Data sources and references

Data

- GECO website
- DOH Data drop
- GISAID (EPI-SET: EPI_SET_20220823rm)
- JHU COVID data

Methods

- Analyses in this report
- Nextstrain (build for GECO project)
- Grapevine-anywhere

References

- WHO
- Pango lineage list

Online version and previous reports

GECO Monthly Report

2022-07 pdf

Genomic Epidemiology of COVID in the Philippines (GECO PH)