Comparison of COVID-19 Pandemic Waves in 10 Countries in Southern Africa, 2020–2021

Appendix

Appendix Table 1. Dates for starts, ends and peaks of COVID-19 pandemic waves in 10 Southern African countries, 06 April 2020 to 19 September 2021

| Country   | First wave | Second wave | Third wave† |
|-----------|------------|-------------|-------------|
|           | Start      | Peak        | End         | Start      | Peak        | End         | Start    |
| Angola    | 06 July 2020 | (week 28)   | 25 Oct 2020 | (week 43)  | 07 Feb 2021 | (week 58)   | 29 March 2021 |
|           | (week 56)  | 07 Feb 2021 | (week 66)   | 30 May 2021 | 04 July 2021 | (week 74)   | 05 July 2021 |
|           | 07 Feb 2021 | (week 58)   | 30 May 2021 | (week 74)   | 04 July 2021 | (week 79)   | -         |
| Botswana  | 11 May 2020 | 18 Oct 2020 | (week 20)   | 11 Dec 2020 | 02 May 2021 | 17 May 2021 |
|           | 20 Dec 2020 | (week 31)   | 04 Jan 2021 | 07 March 2021 | 02 May 2021 | (week 80)   |
| Eswatini  | 22 June 2020 | 02 Aug 2020 | (week 20)   | 07 Dec 2020 | 07 June 2021 | 01 Aug 2021 |
|           | 11 Aug 2020 | 18 Oct 2020 | (week 31)   | 24 Jan 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 11 Dec 2020 | 02 Aug 2020 | (week 31)   | 21 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 04 Jan 2021 | 02 Aug 2020 | (week 31)   | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
| Lesotho   | 22 June 2020 | 02 Aug 2020 | (week 26)   | 30 Nov 2020 | 17 Jan 2021 | 17 May 2021 |
|           | 02 Aug 2020 | 18 Oct 2020 | (week 36)   | 10 Jan 2021 | 02 May 2021 | 27 June 2021 |
|           | 02 Aug 2020 | 18 Oct 2020 | (week 36)   | 28 Feb 2021 | 02 May 2021 | 27 June 2021 |
| Malawi    | 15 June 2020 | 12 July 2020 | 07 Dec 2020 | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 12 July 2020 | (week 25)   | 30 Nov 2020 | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 04 Oct 2020  | (week 28)   | 14 Dec 2020 | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
| Mozambique| 29 June 2020 | 02 Aug 2020 | 19 July 2020 | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 20 Sept 2020 | (week 25)   | 02 Aug 2020 | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 22 Nov 2020  | (week 34)   | 02 Aug 2020 | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
| Namibia   | 15 June 2020 | 12 July 2020 | (week 25)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 |
|           | 23 Aug 2020  | (week 25)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 08 Nov 2020  | (week 34)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
| South Africa | 06 April 2020 | 19 July 2020 | (week 15)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 |
|           | 06 April 2020 | (week 25)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 19 July 2020  | (week 34)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
| Zambia    | 06 July 2020 | 02 Aug 2020 | (week 28)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 |
|           | 25 Oct 2020  | (week 31)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
|           | 30 Nov 2020  | (week 43)   | 09 Nov 2020  | 07 March 2021 | 07 June 2021 | 08 Aug 2021 |
| Zimbabwe  | 29 June 2020 | 02 Aug 2020 | (week 27)   | 28 Dec 2020  | 09 Nov 2020  | 07 March 2021 |
|           | 20 Sept 2020 | (week 31)   | 28 Dec 2020  | 09 Nov 2020  | 07 March 2021 | 07 June 2021 |
|           | 20 Sept 2020 | (week 31)   | 28 Dec 2020  | 09 Nov 2020  | 07 March 2021 | 07 June 2021 |

Source: Our World in Data (OWID), accessed 20 September 2021

*We used Salyer et al.’s start week for a country’s first wave. Otherwise, ‘rising numbers of COVID-19 cases’ were classified by examining fold-increases in weekly cases per million, where the first week of at least 1-fold sequential week-by-week increases indicated the start week of a wave. Peak weeks were defined as a local maximum preceded by sequential week-by-week increases and followed by a sequential week-by-week decline. End weeks were defined as the first week of a local minimum following a sequential week-by-week decline. To align with global epidemiologic reporting, we used WHO epidemiologic weeks: start dates are the first day of that week (Monday); and end dates are the last day of that week (Sunday). Given the selected definition for start, peak and end weeks, wave periods used for this analysis and therefore resultant statistics may differ from those used in-country by Southern African governments that may have applied a different definition for wave start and end weeks.

†We used 19 Sept 2021 (week 90), the final date of data extraction for our study, as the end date of the third wave for all southern Africa countries although the wave was ongoing in Angola.

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## Appendix Table 2. World Health Organization (WHO) label classification of SARS-CoV-2 variants by Pango lineage

| WHO label                  | Pango lineage                      |
|---------------------------|------------------------------------|
| Alpha                     | B.1.1.7 + Q.x                      |
| Beta                      | B.1.351 + B.1.351.x                |
| Gamma                     | P.1 + P.1.x                        |
| Delta                     | B.1.617.2 + AY.x                   |
| Variants of interest (VOI)| C.37 (Lambda); B.1.621 (Mu)       |
| Variants under monitoring (VUM) | B.1.427; B.1.429; R.1; B.1.466.2; B.1.1.318; B.1.1.519; C.36.3; B.1.214.2; B.1.1.523; B.1.619; B.1.620; C.1.2; B.1.617.1 (Kappa); B.1.526 (Iota); B.1.525 (Eta); B.1.429 (Epsilon) |
| Former variant of interest (VOI)* | P.2 (Zeta); P.3 (Theta) |
| Other lineages            | All other lineages                 |

*No longer a VUM or VOI

Source: WHO variant label classification (https://www.who.int/en/activities/tracking-SARS-CoV-2-variants), accessed 20 September 2021

## Appendix Table 3. Distribution of SARS-CoV-2 lineages representing ≥1% of other lineages classification, 01 March 2020–19 September 2021

| Lineage classification in GISAID | Number of sequences | Other lineages category sequences, % |
|----------------------------------|---------------------|--------------------------------------|
| None*                            | 1,337               | 20.1                                 |
| B.1                              | 1,031               | 15.5                                 |
| B.1.1                            | 571                 | 8.6                                  |
| B.1.1.448                        | 467                 | 7.0                                  |
| C.1                              | 383                 | 5.8                                  |
| B.1.1.54                         | 297                 | 4.5                                  |
| B.1.237                          | 202                 | 3.0                                  |
| C.16                             | 187                 | 2.8                                  |
| B.1.1.273                        | 149                 | 2.2                                  |
| B.1.1.412                        | 129                 | 1.9                                  |
| B.1.381                          | 121                 | 1.8                                  |
| B.1.1.528                        | 89                  | 1.3                                  |
| AE.1                             | 83                  | 1.3                                  |
| B.1.1.57                         | 75                  | 1.1                                  |
| B.1.1.117                        | 73                  | 1.1                                  |
| B.1.1.34                         | 71                  | 1.1                                  |
| B.1.1.52                         | 71                  | 1.1                                  |
| B.1.1.111                        | 66                  | 1.0                                  |
| Total†                           | 5402                | 81.4                                 |

*No lineage was specified in the GISAID database, although a clade was specified for these specimens.
†There were a total of 6,640 sequences during the period. The displayed 5,402 sequences represented 81.4% total lineages that represented at least 1.0% each of the other lineages classification

Source: Global Initiative on Sharing Avian Influenza Data (GISAID), accessed 20 September 2021
Appendix Figure 1. Reported 7-day average A) new COVID-19 cases and COVID-19 deaths /1 million persons across pandemic waves in 10 southern Africa countries, 05 March 2020 – 19 September 2021. Colored lines indicate designated wave periods, dashed lines indicate interwave periods. Corresponding Y axes scales were used in this figure to better visualize the comparison of wave magnitudes across countries. Source: Our World in Data (OWID).
Appendix Figure 2. Percentage of collected SARS-CoV-2 specimens by country submitting to GISAID across 10 southern Africa countries, 1 March 2020 – 6 September 2021 (collection date). Source: Global Initiative on Sharing Avian Influenza Data (GISAID).

Appendix Figure 3. Counts of SARS-CoV-2 variants in 10 southern African countries, 1 March 2020 – 6 September 2021 (collection date). Variants were classified according to World Health Organization labels (Appendix Table 2). Corresponding Y axes scales were used in this figure to better visualize the comparison of genomic sampling magnitudes across countries. Source: Global Initiative on Sharing Avian Influenza Data (GISAID).