



COVID-19 UPDATES

3 June 2022



CAPRISA hosts a DSI-NRF Centre of Excellence in HIV Prevention



National Research Foundation



CAPRISA is the UNAIDS Collaborating Centre for HIV Research and Policy



CAPRISA hosts a MRC HIV-TB Pathogenesis and Treatment Research Unit
CAPRISA hosts a DoH-MRC Special Initiative for HIV Prevention Technology



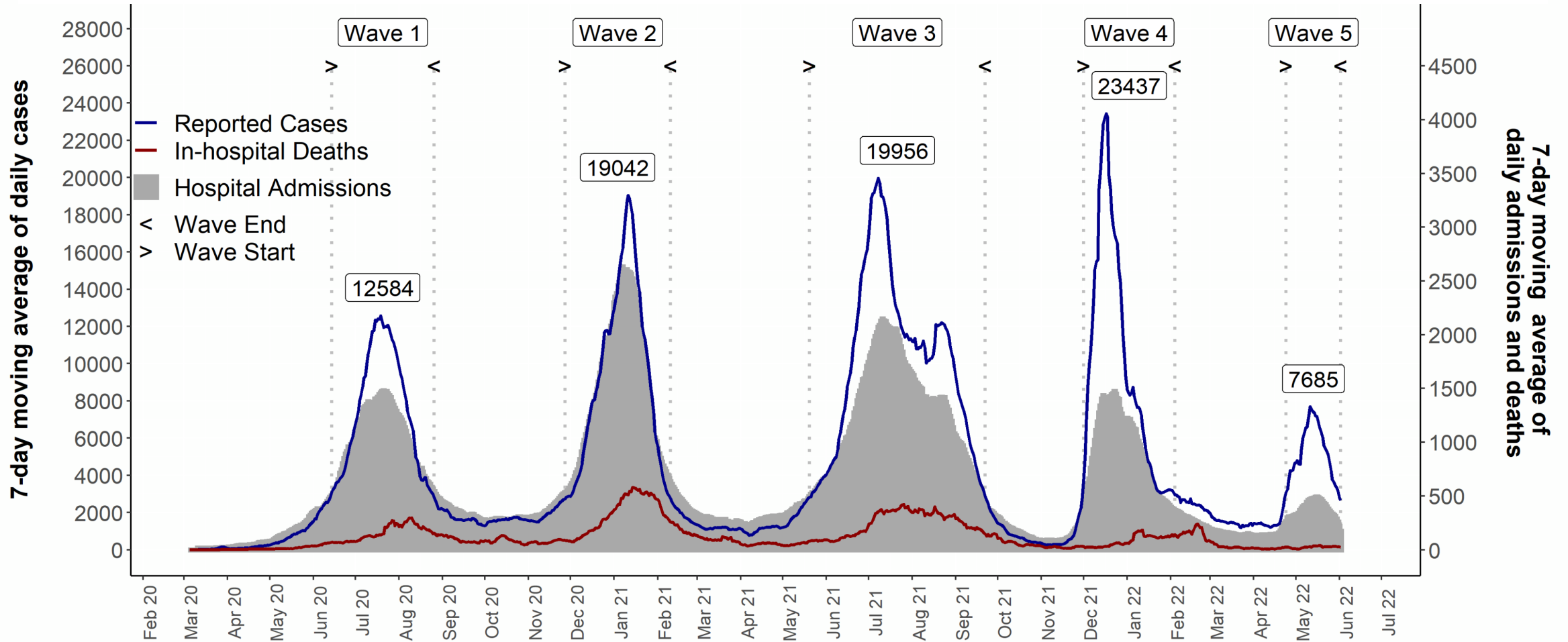
MAILMAN SCHOOL of PUBLIC HEALTH



UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Covid-19 in South Africa

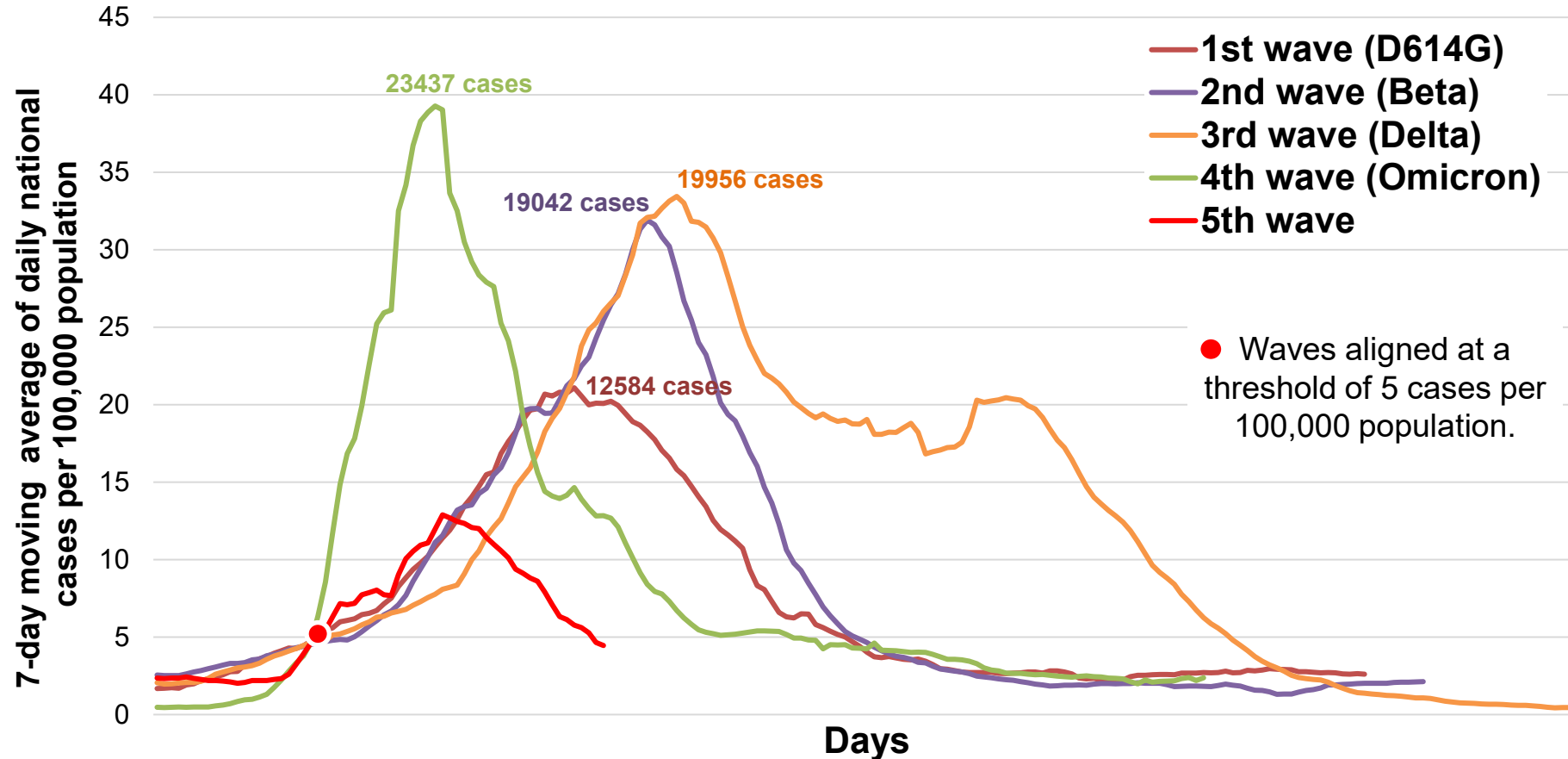
up to - 02 June 2022



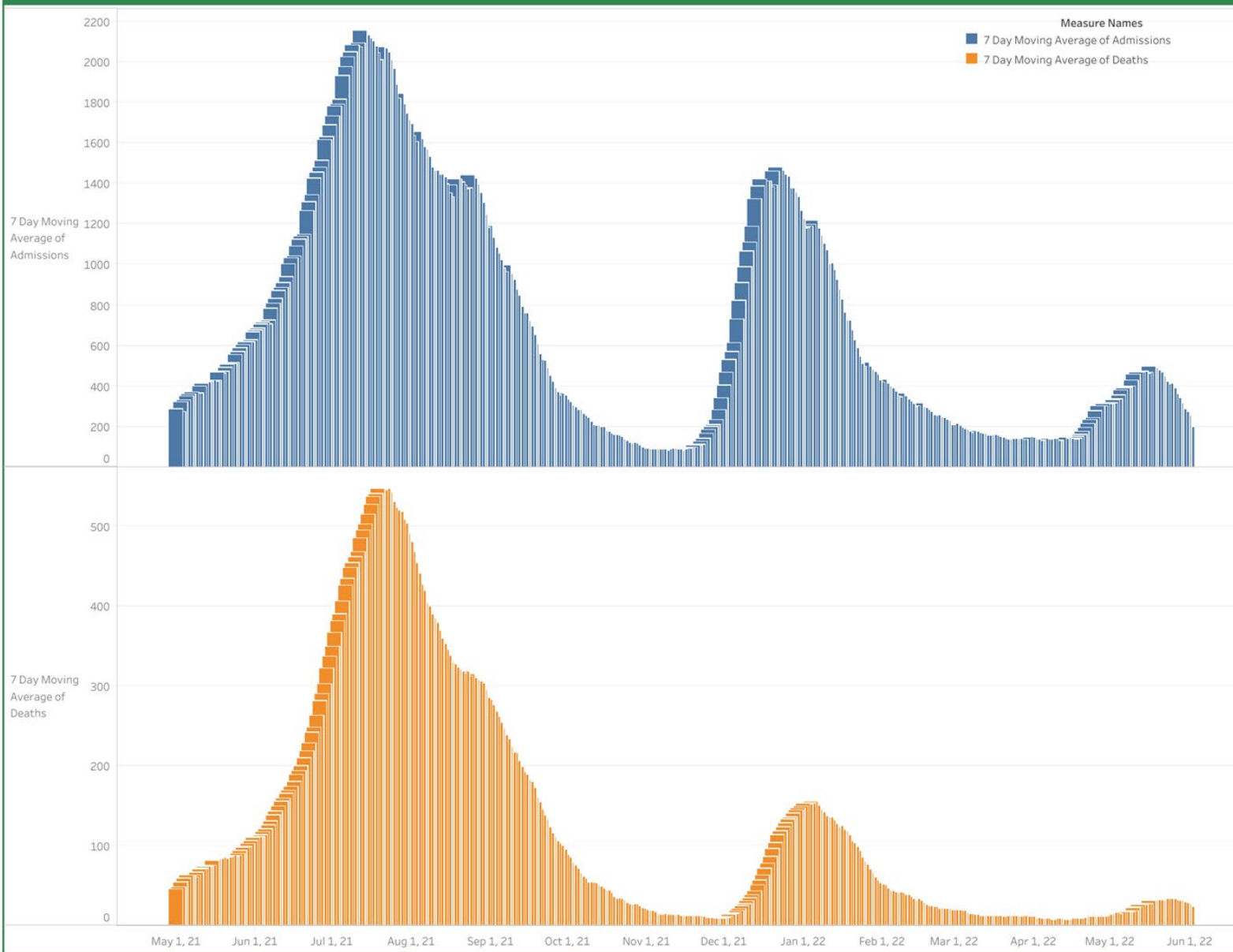
Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

SARS-Cov-2 cases waves: South Africa

up to - 02 June 2022



DATCOV Hospital Admissions and In-Hospital Deaths, 7-Day Moving Average - National

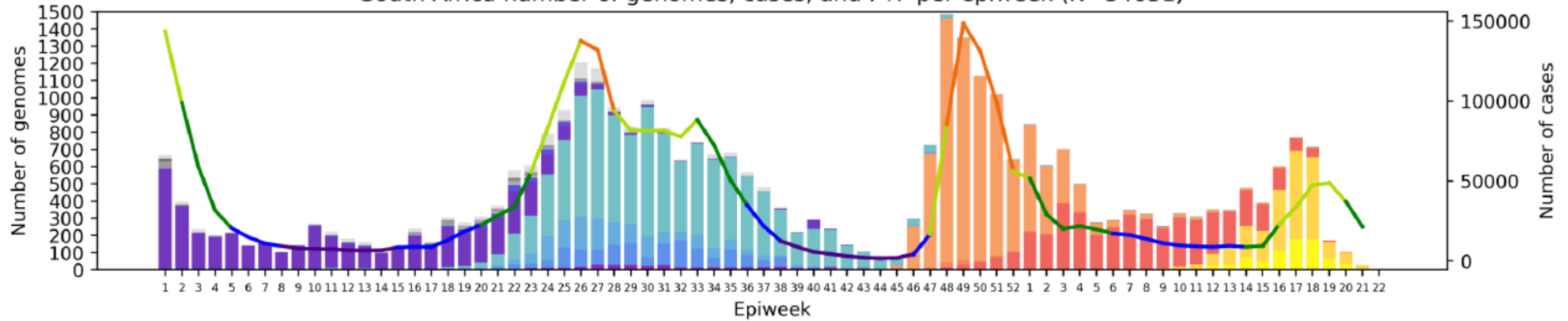


South Africa: National hospital admissions & in-hospital deaths

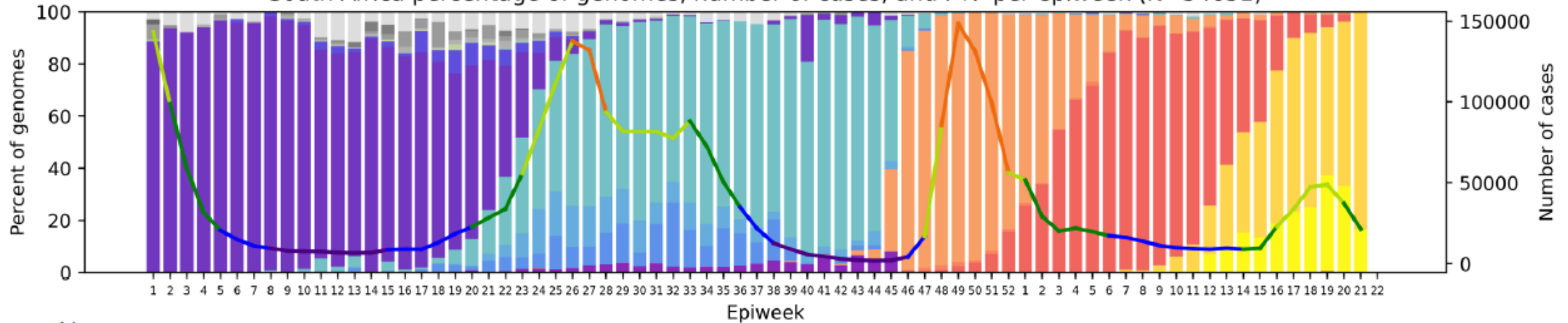
Data up to - 31 May 2022

South Africa, 2021-2022, n = 34 631*

South Africa number of genomes, cases, and PTP per epiweek (N=34631)



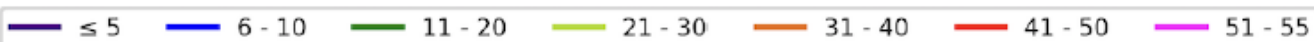
South Africa percentage of genomes, number of cases, and PTP per epiweek (N=34631)



Clade key (bar graph)



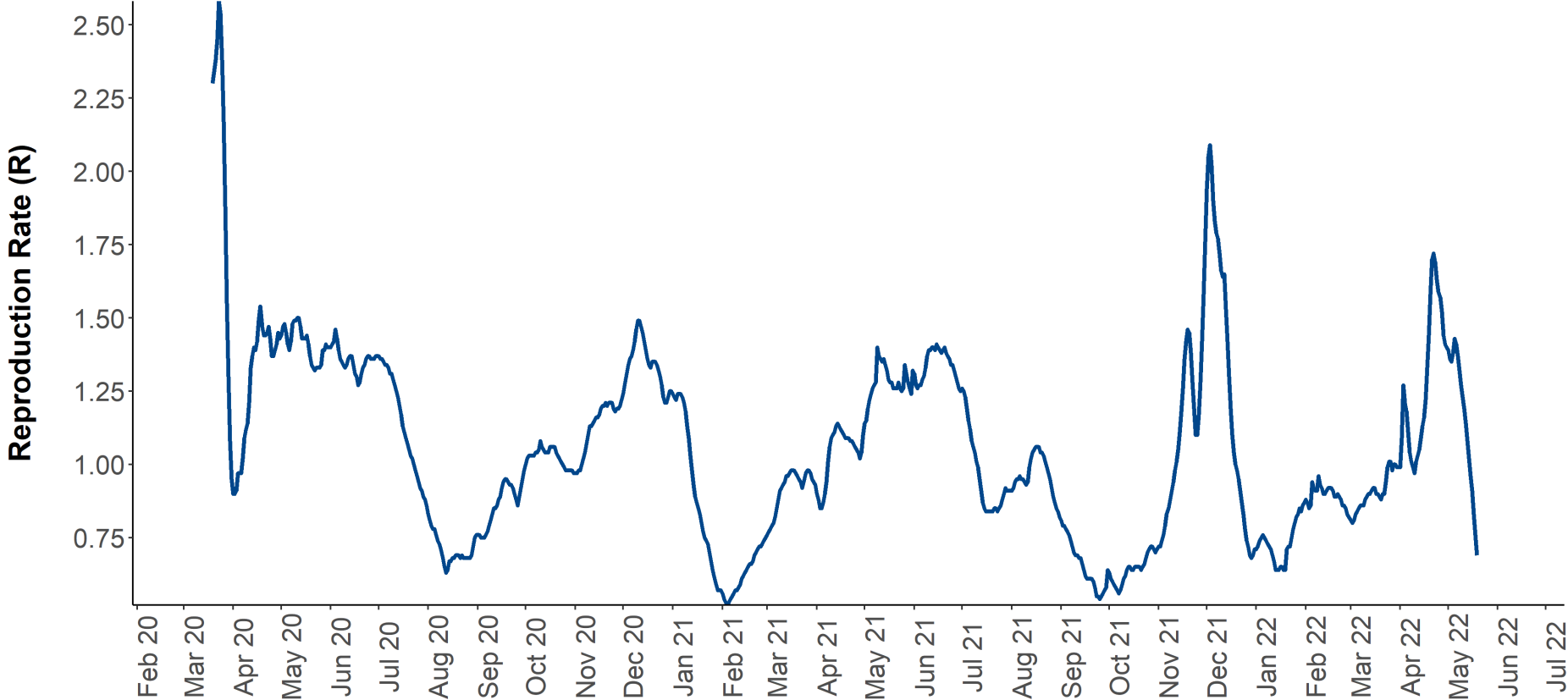
Weekly percentage testing positive key (line graph)



*Excludes sequences missing collection dates, as well as those collected January 1st and 2nd 2021 as they are part of epiweek 53 of 2020.

Estimated effective reproduction rate (R) of Covid-19 in South Africa

up to - 19 May 2022

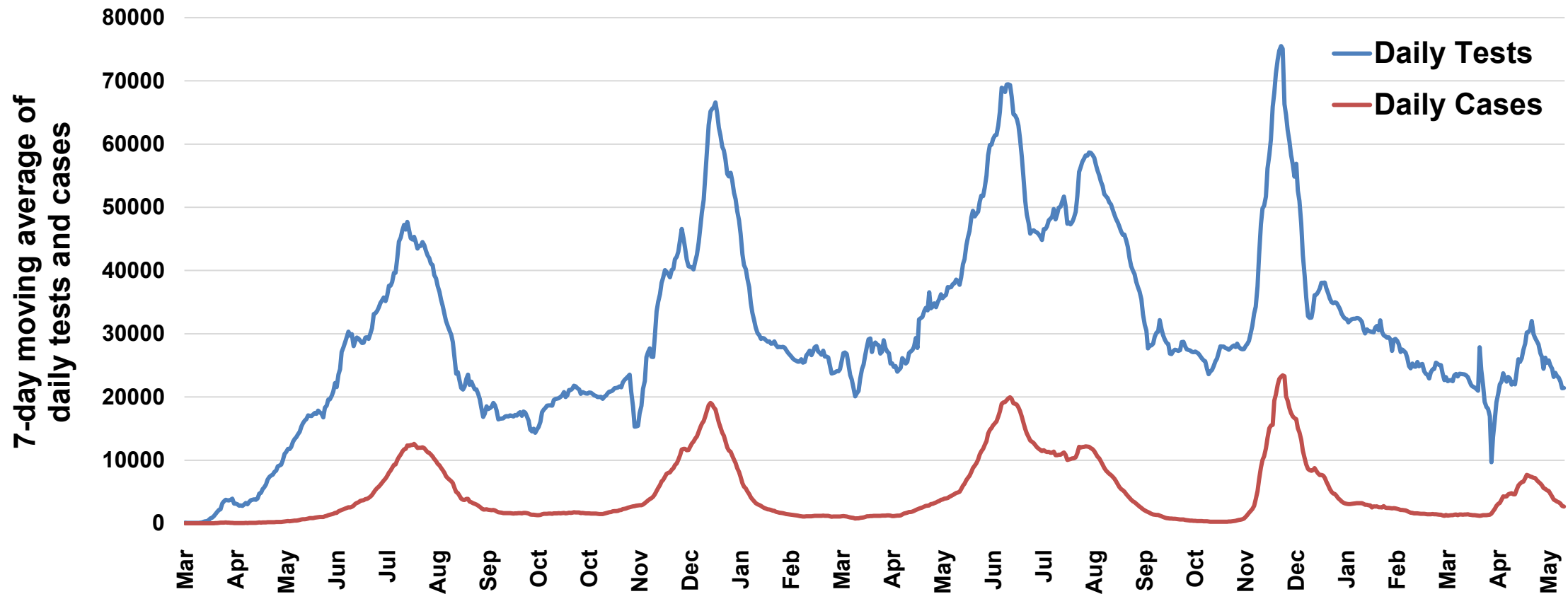


Source: Our World in Data; data explorer; Johns Hopkins University [COVID-19 Dashboard](#)

Covid-19 tests and cases in South Africa

7-day moving average cases per 100,000 population

up to - 02 June 2022



Average daily tests and proportion of positive tests

up to – 02 June 2022

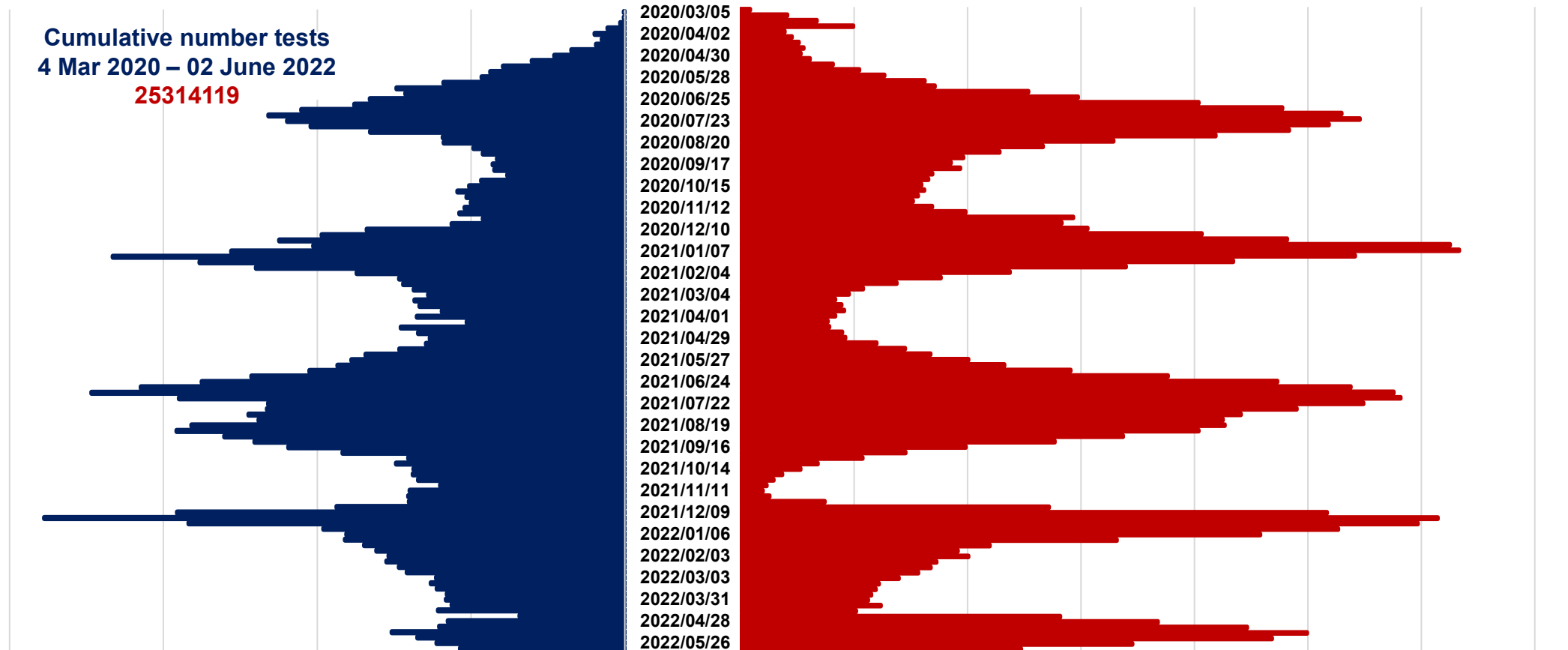
Average daily number of tests per week

80000 60000 40000 20000 0

Weekly positivity rate

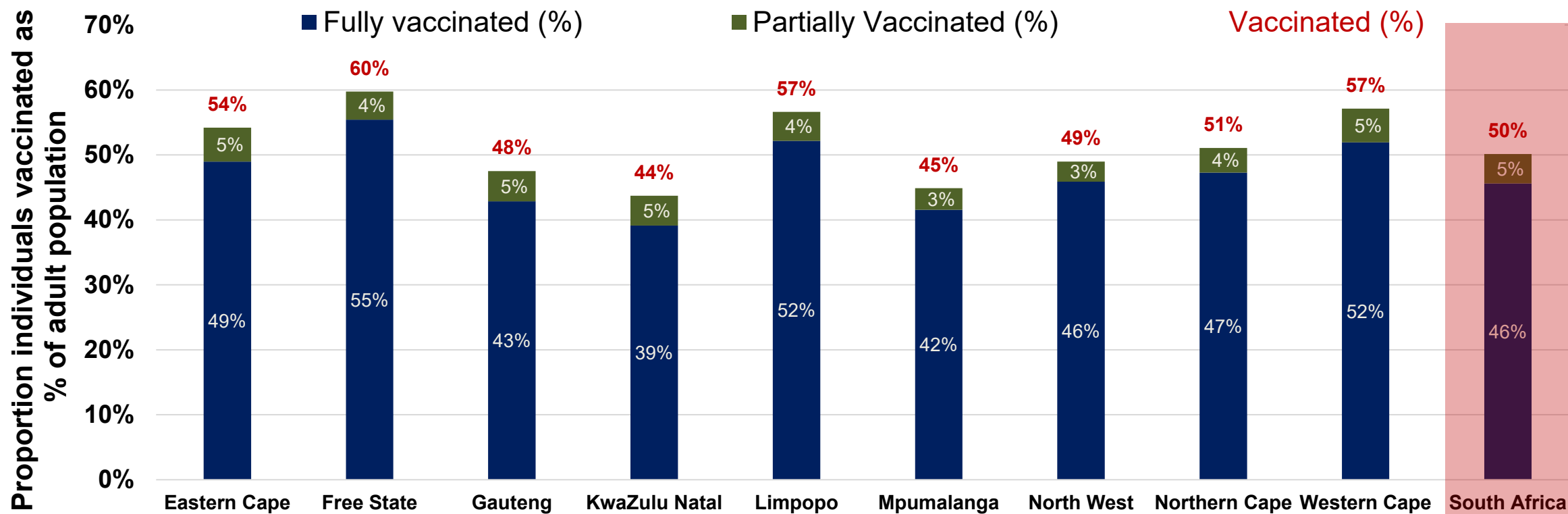
0% 5% 10% 15% 20% 25% 30% 35%

Cumulative number tests
4 Mar 2020 – 02 June 2022
25314119



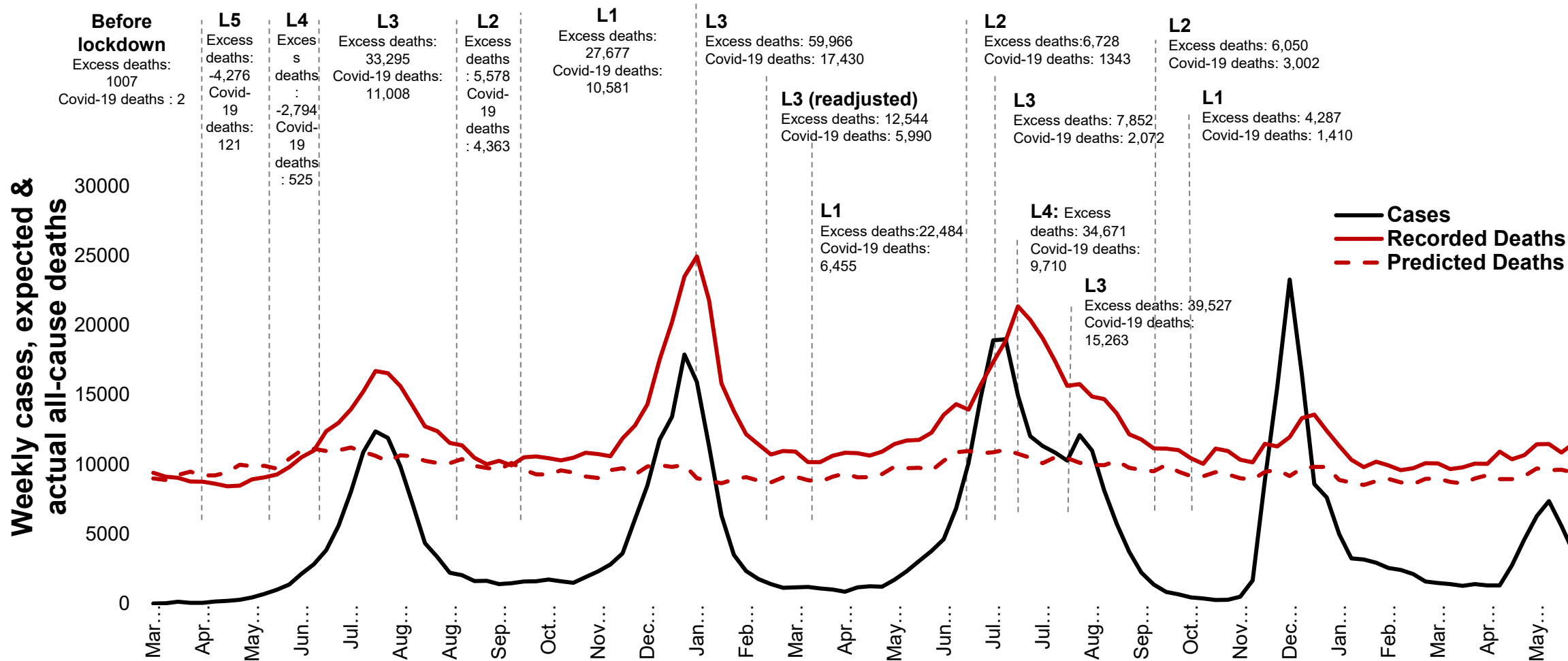
Proportion of individuals vaccinated as % of adult population

up to – 02 June 2022



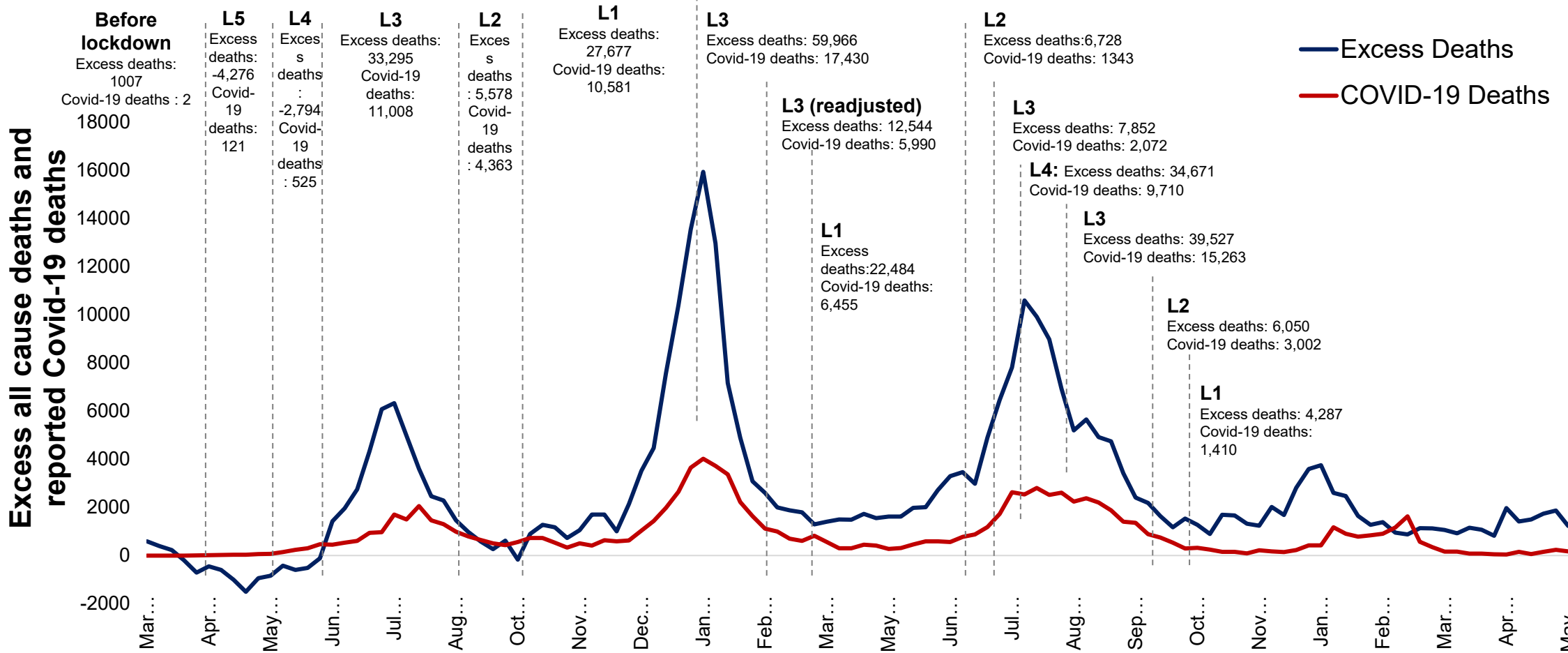
Expected & actual all-cause deaths during Covid-19

up to – 28 May 2022



Weekly excess all cause deaths & reported Covid-19 deaths

up to – 28 May 2022

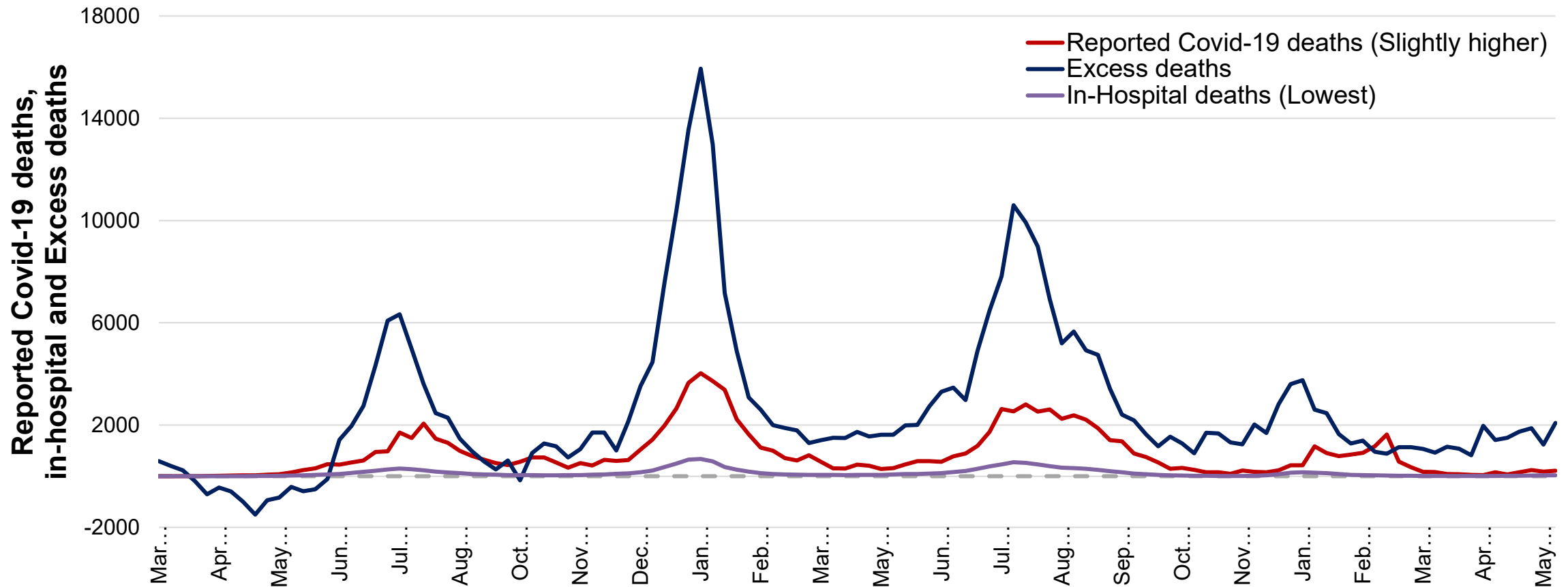


Source: Bradshaw et al.



Weekly In-hospital deaths, all reported Covid-19 deaths and excess deaths

In-hospital deaths (lowest), all reported Covid-19 deaths (slightly higher), and excess deaths
up to – 28 May 2022



Source: Bradshaw et al.

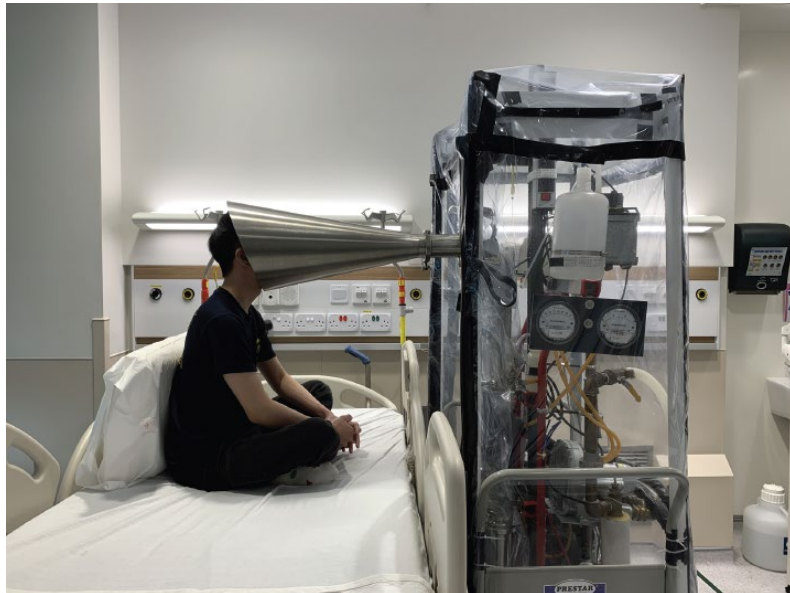
Fine aerosol droplets 85% more infectious than big droplets

Clinical
Infectious
Diseases

MIDSA hivma

Viral Load of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in Respiratory Aerosols Emitted by Patients With Coronavirus Disease 2019 (COVID-19) While Breathing, Talking, and Singing

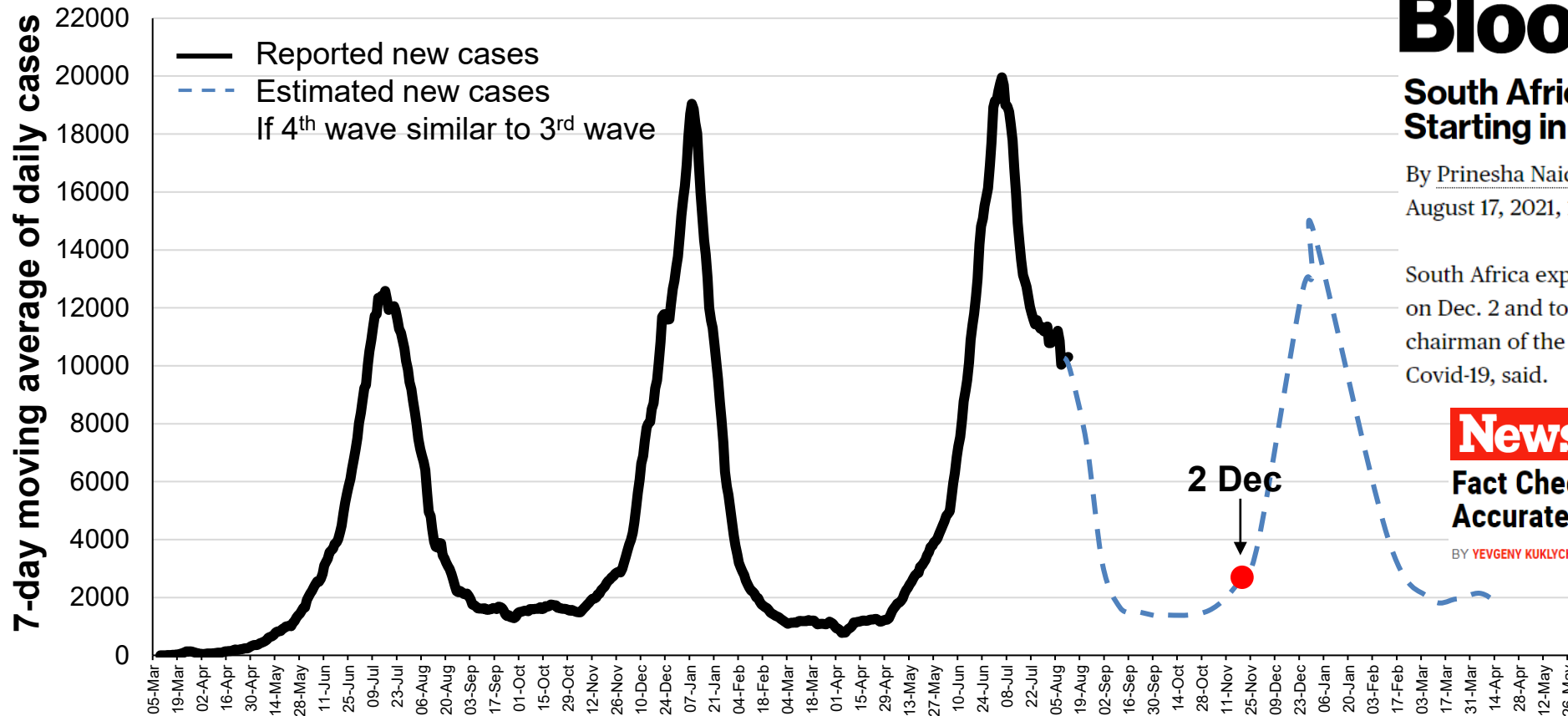
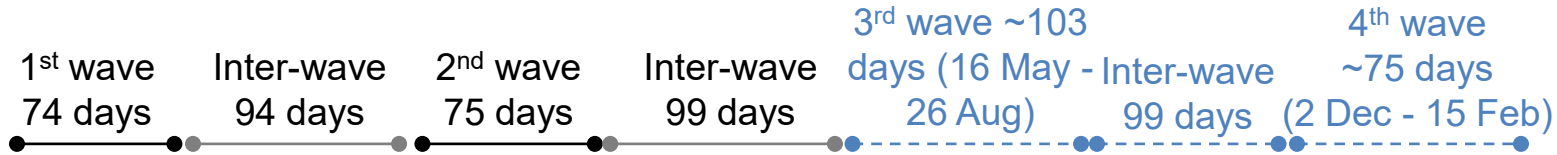
Kristen K. Coleman,^{1,a,*} Douglas Jie Wen Tay,^{2,a} Kai Sen Tan,^{3,4,5,6,a} Sean Wei Xiang Ong,^{7,8,a} The Son Than,^{1,2,b} Ming Hui Koh,^{2,b} Yi Qing Chin,^{7,b} Haziq Nasir,^{9,b} Tze Minn Mak,^{7,b} Justin Jang Hann Chu,^{3,5,6,10} Donald K. Milton,¹¹ Vincent T. K. Chow,^{3,5} Paul Anantharajah Tambyah,^{5,9} Mark Chen,^{7,8} and Kwok Wai Tham²



- **22 participants (Feb-Apr 2021)**
 - **Patients earlier in illness more likely to emit virus**
 - **94% SARS-CoV-2 RNA emitted by talking / singing**
 - **7 patients emitted more virus from talking than singing**
- **Fine aerosols (<5 microns) from talking and singing contain 85% more SARS-CoV-2 copies than larger (>5 microns) aerosols**
- **Highlights importance of mitigating exposure to fine aerosols, especially indoors**

In August 2021, I asked what may happen next....

(estimated case numbers assuming 4th wave has similar pattern & new variant)



Bloomberg

South Africa Sees Covid-19 Fourth Wave Starting in Early December

By Prinesha Naidoo

August 17, 2021, 10:09 AM GMT+2

South Africa expects a fourth wave of coronavirus infections to start on Dec. 2 and to last about 75 days, Salim Abdool Karim, former chairman of the government's ministerial advisory committee on Covid-19, said.

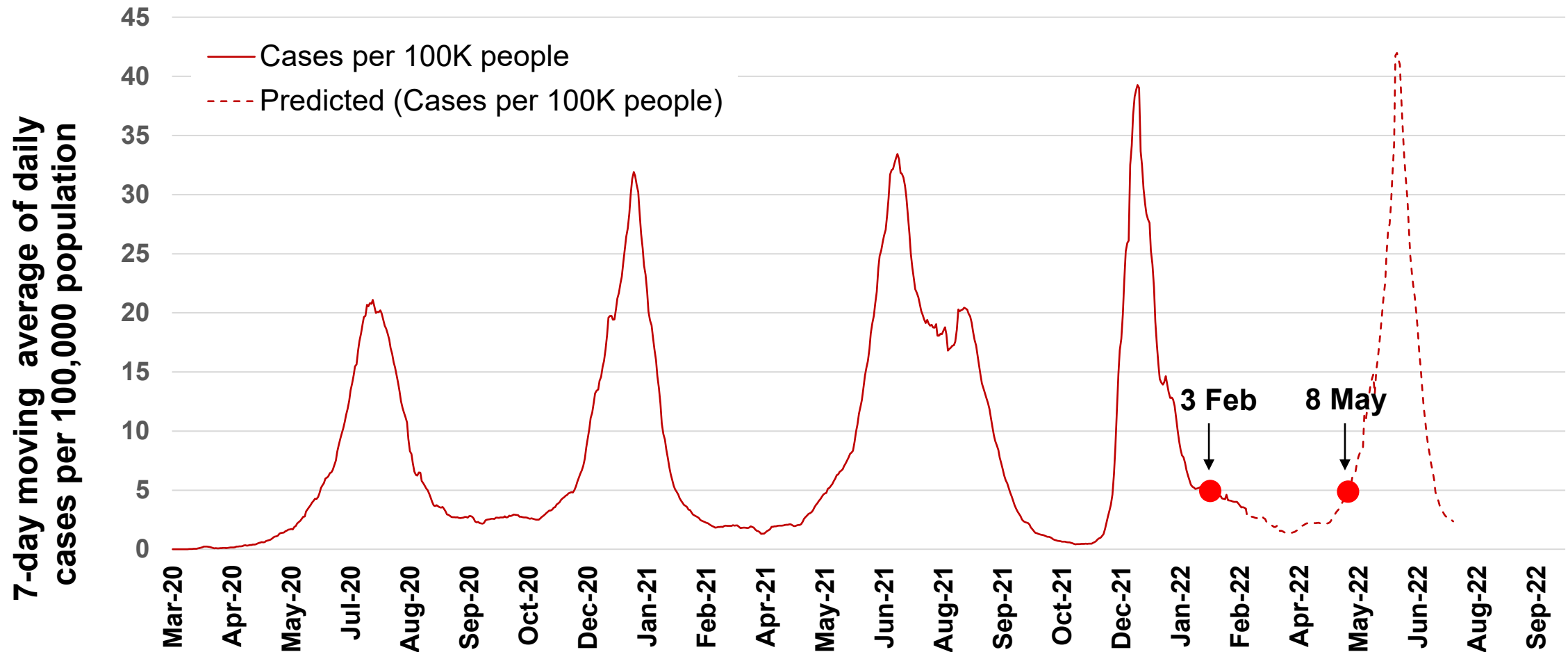
Newsweek

Fact Check: Did South African Epidemiologist Accurately Predict Nation's COVID Surge?

BY YEVGENY KUKLYCHEV ON 12/2/21 AT 1:53 PM EST

Note: New variant and other factors may change epidemic trajectory. These estimations are based on several assumptions and not on mathematical modelling

February 2022, I asked - 5th wave in SA? When?

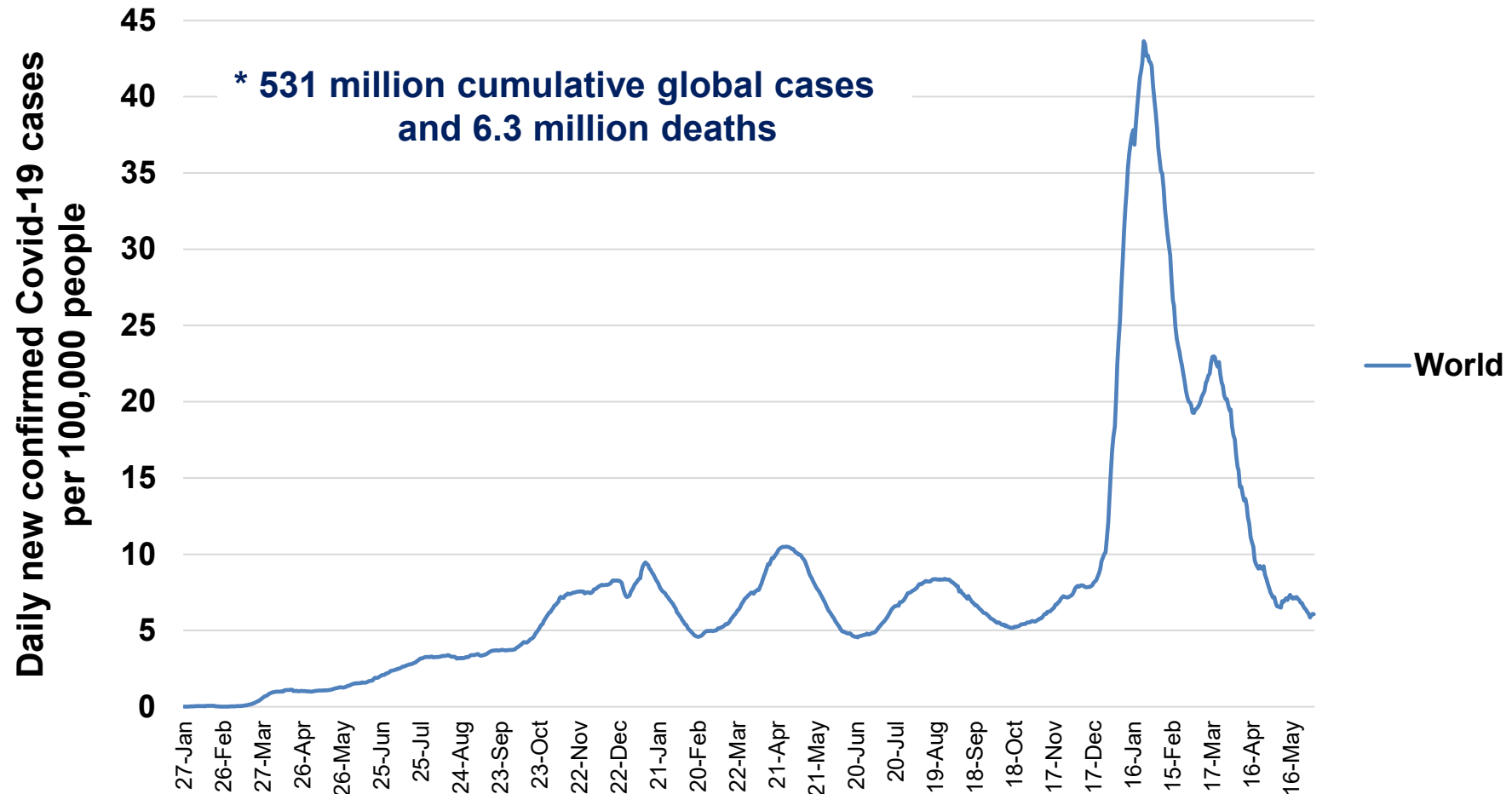


Note: New variant and other factors may change epidemic trajectory. These estimations are based on several assumptions and not on mathematical modelling

Global epidemiology: Reported cases by country, region and the world

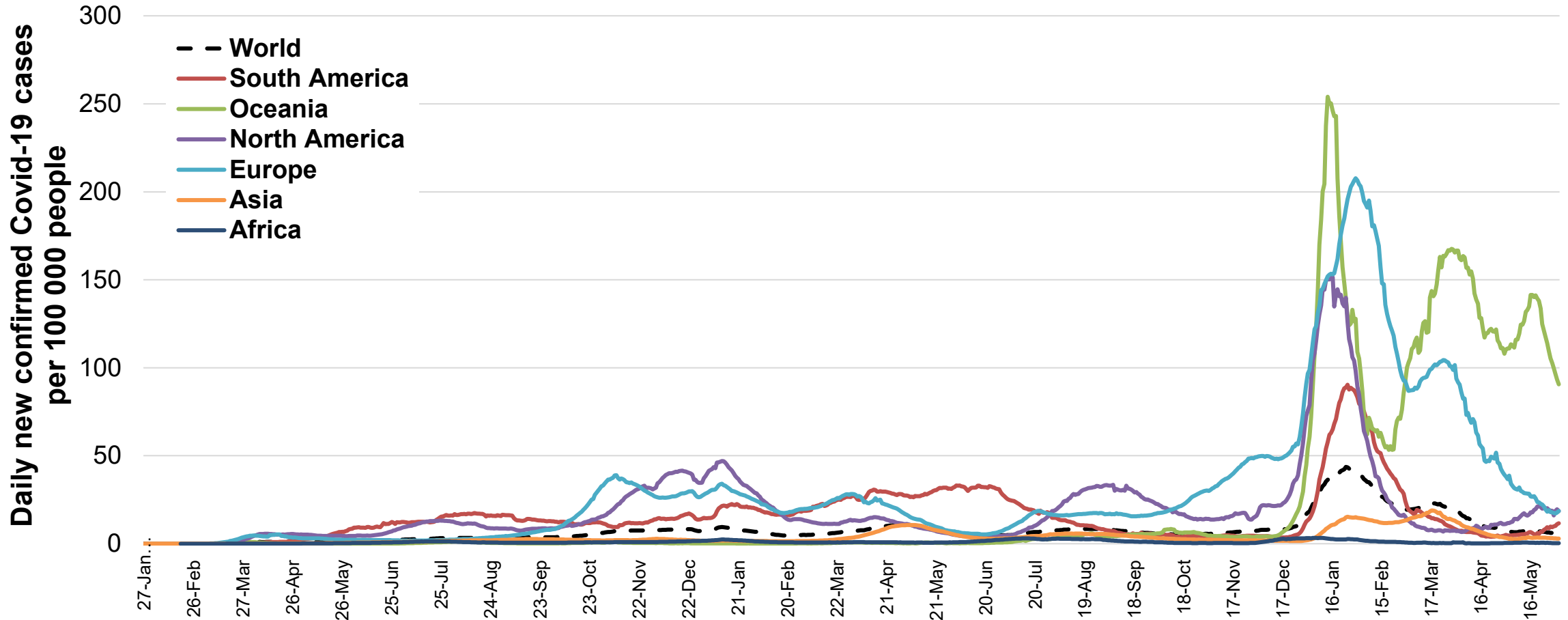
Global SARS-CoV-2 cases: Trends

7-day moving average cases per 100,000 population
up to - 02 June 2022



Cases stratified by continents showing the waves

7-day moving average cases per 100,000 population
up to - 02 June 2022

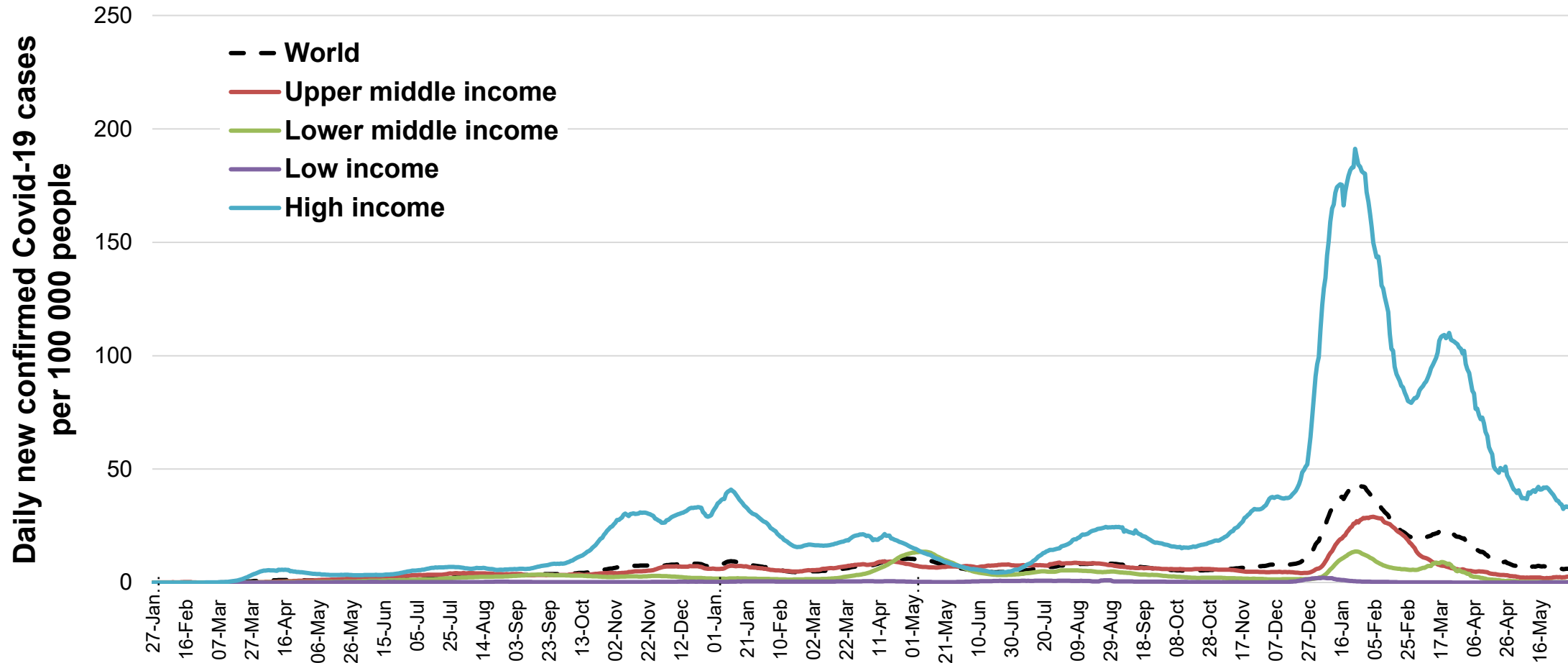


Data Source: Our World in Data; NICD

Covid-19 cases stratified by country income level

7-day moving average cases per 100,000 population

up to - 02 June 2022



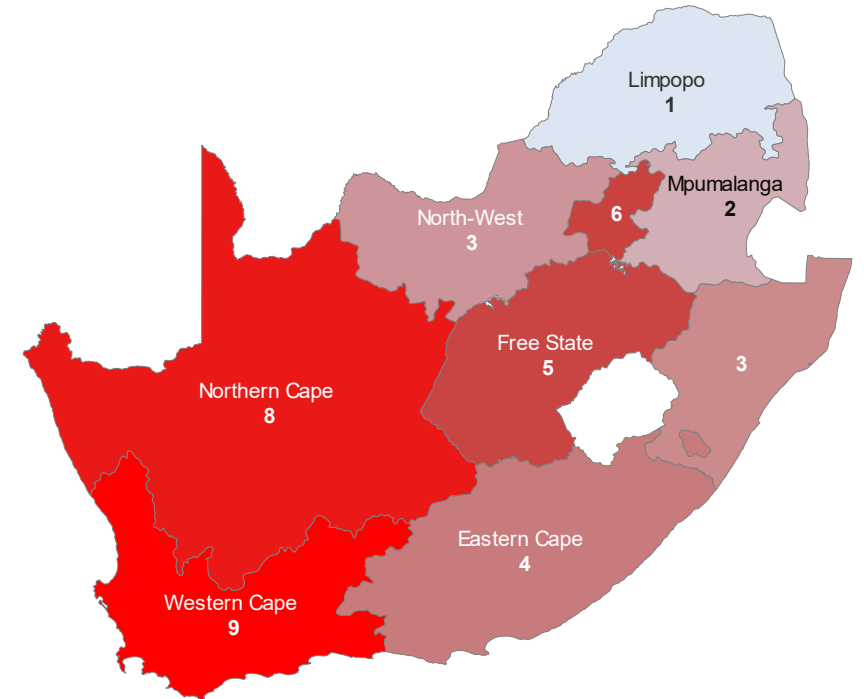
Data Source: Our World in Data; NICD

**South Africa:
Trends in reported provincial
SARS-CoV-2 cases**

Daily new cases over last 7 days per 100,000 pop

up to - 02 June 2022

Province	Population per 100,000	7 Days Moving Average				Increase / Decrease
		at 7 days back	Per 100K at 7 days back	at a day back	100K at a day back	
Eastern Cape	67	334	5	247	4	-26%
Free State	29	219	7	157	5	-28%
Gauteng	155	1286	8	868	6	-32%
KwaZulu Natal	115	558	5	375	3	-33%
Limpopo	59	51	1	46	1	-10%
Mpumalanga	47	139	3	106	2	-24%
North West	41	150	4	122	3	-19%
Northern Cape	13	147	11	99	8	-33%
Western Cape	71	899	13	629	9	-30%
South Africa	597	3784	6	2650	4	-30%
Africa	13410	5898	0	4645	0	-21%
World	77952	496831	6	477464	6	-4%

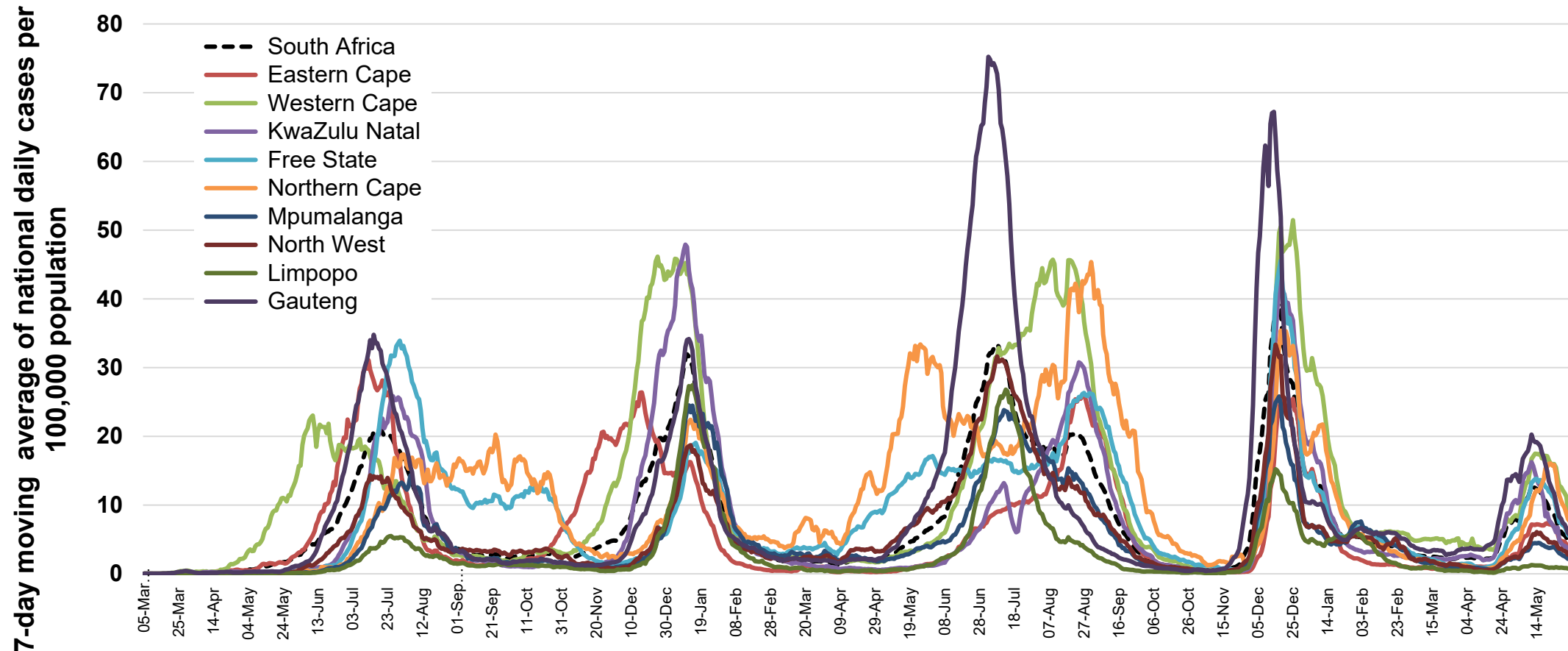


7 days moving average per 100K population 

Confirmed SARS-Cov-2 cases by province

7-day moving average cases per 100,000 population

up to – 02 June 2022

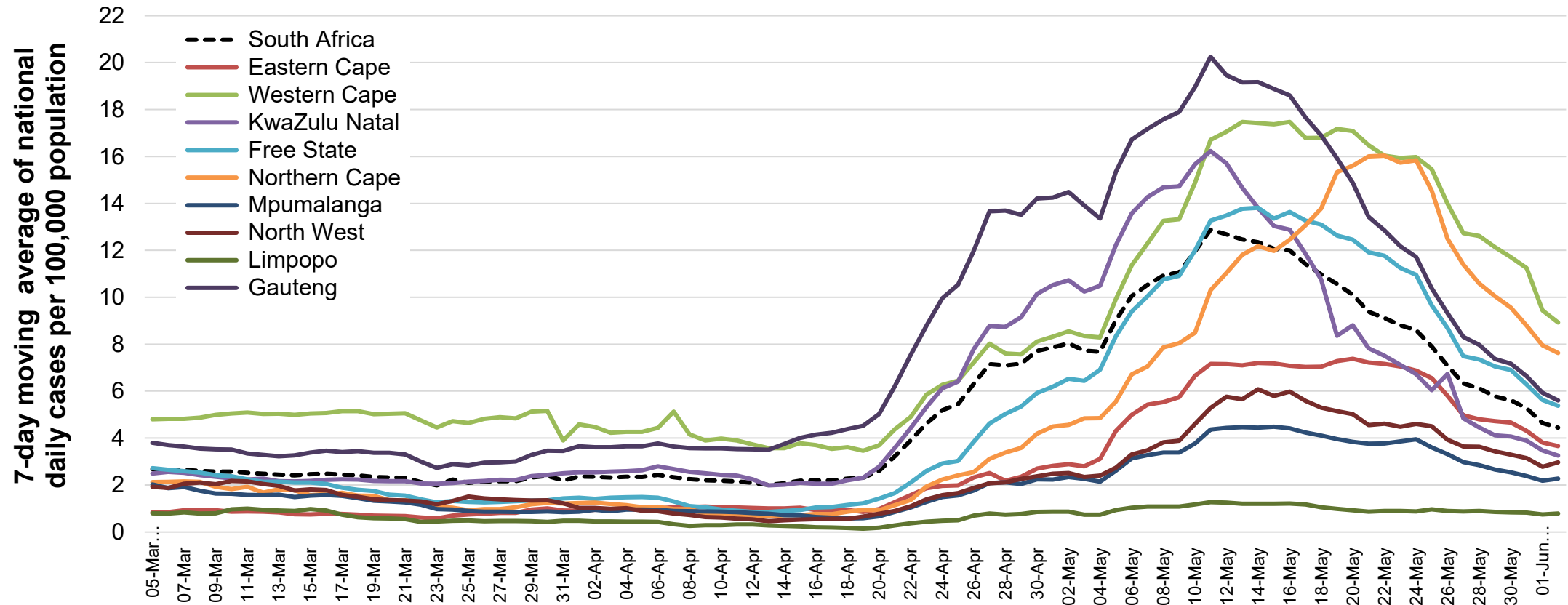


Data source: Department of Health; Analysis

Confirmed SARS-Cov-2 cases by province

7-day moving average cases per 100,000 population

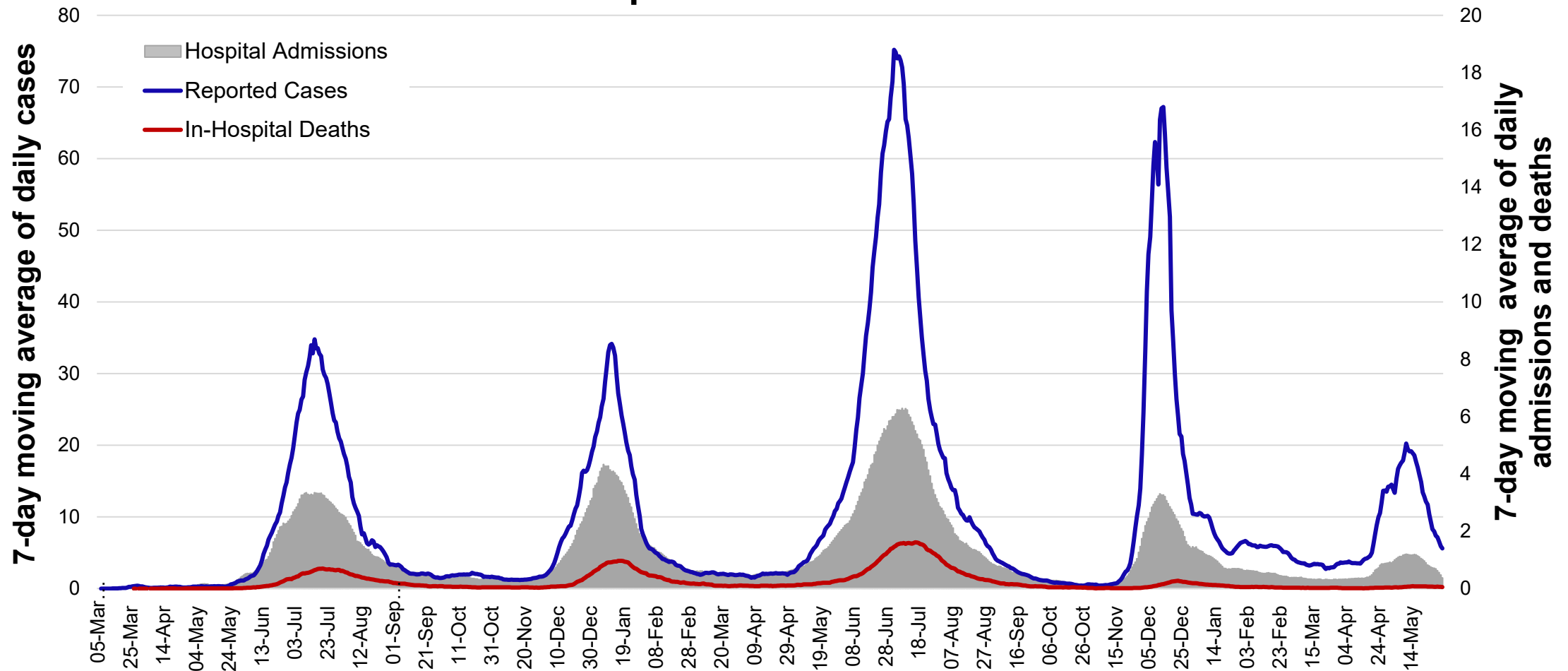
up to - 02 June 2022



Data source: Department of Health; Analysis

SARS-CoV-2 in Gauteng province

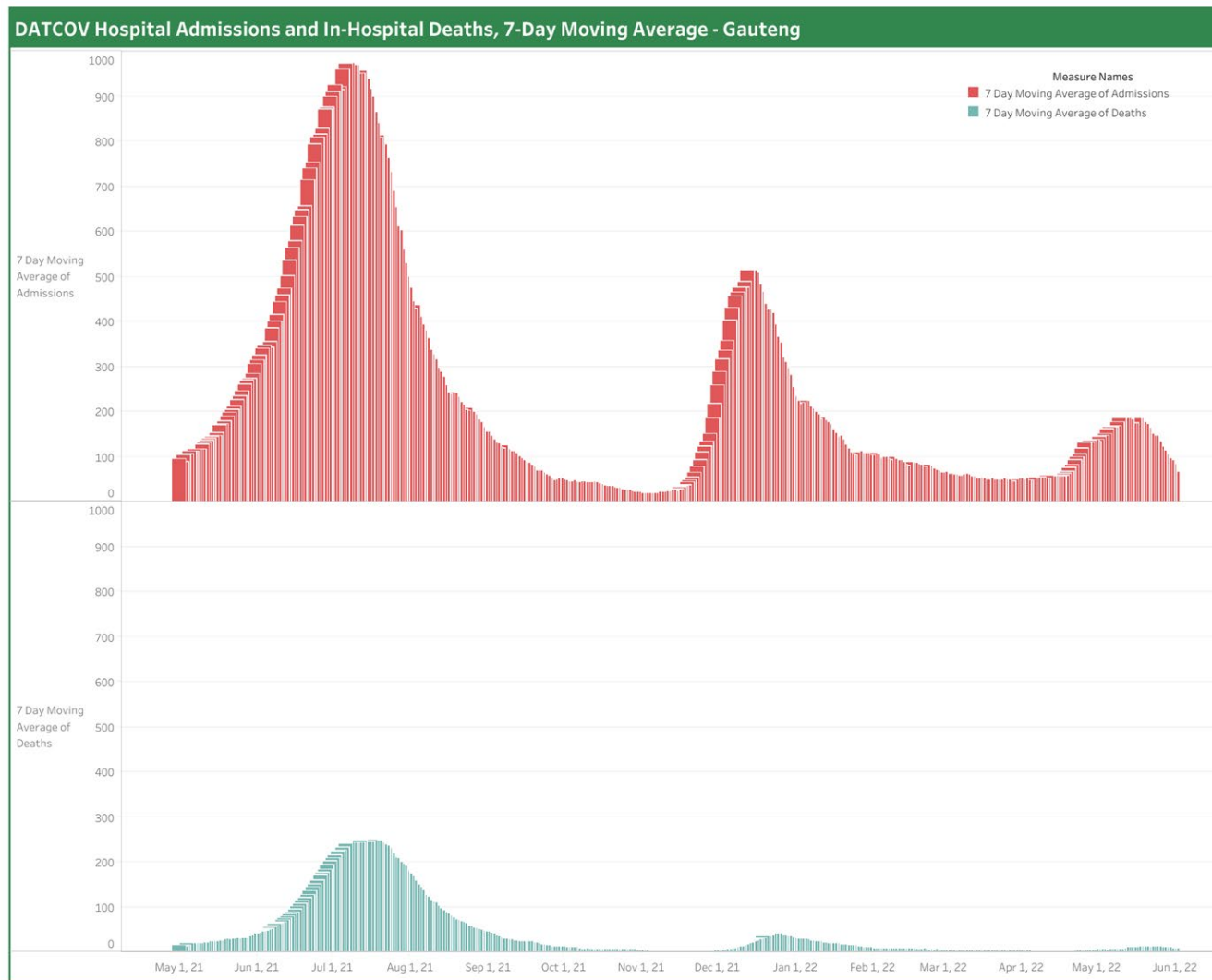
7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths up to - 02 June 2022



Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

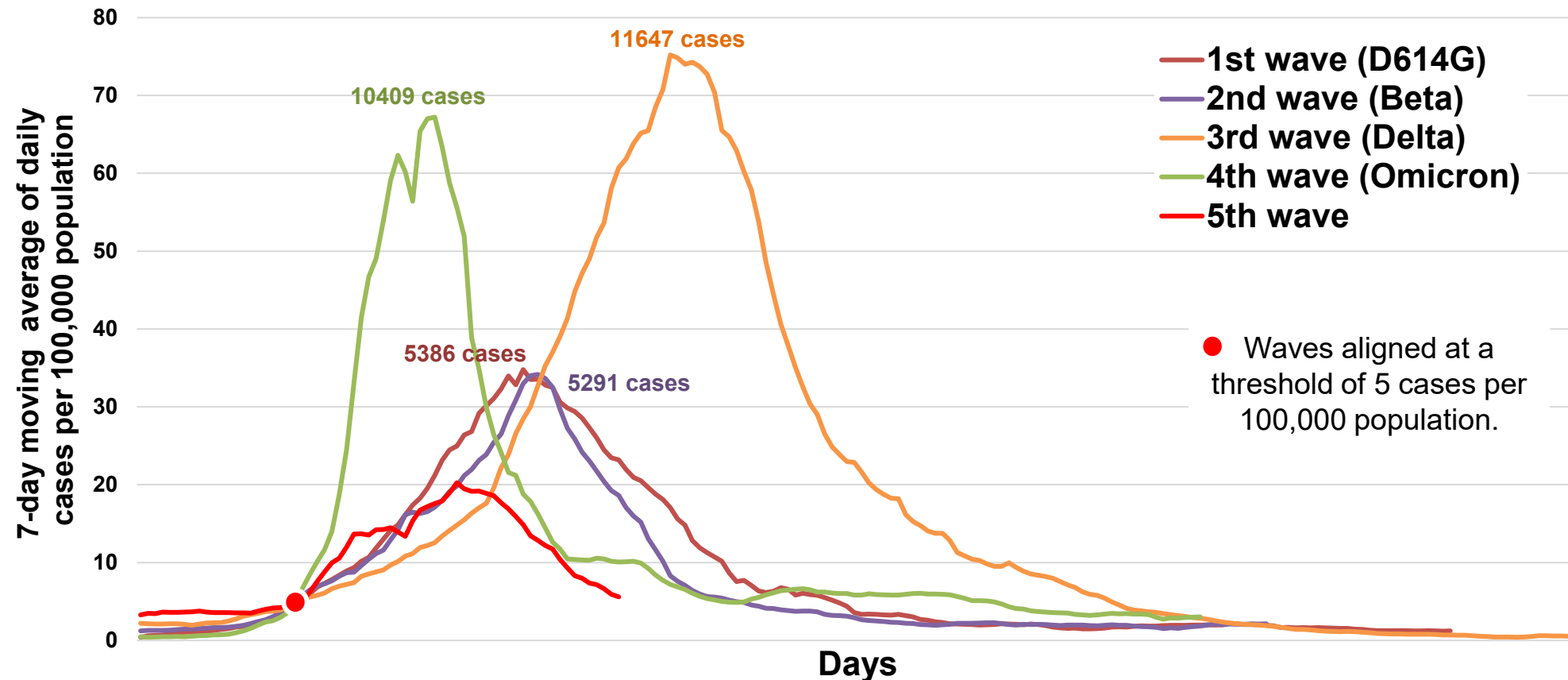
Gauteng Hospital Admissions & In-Hospital Deaths

up to - 31 May 2022



SARS-CoV-2 cases in waves: Gauteng

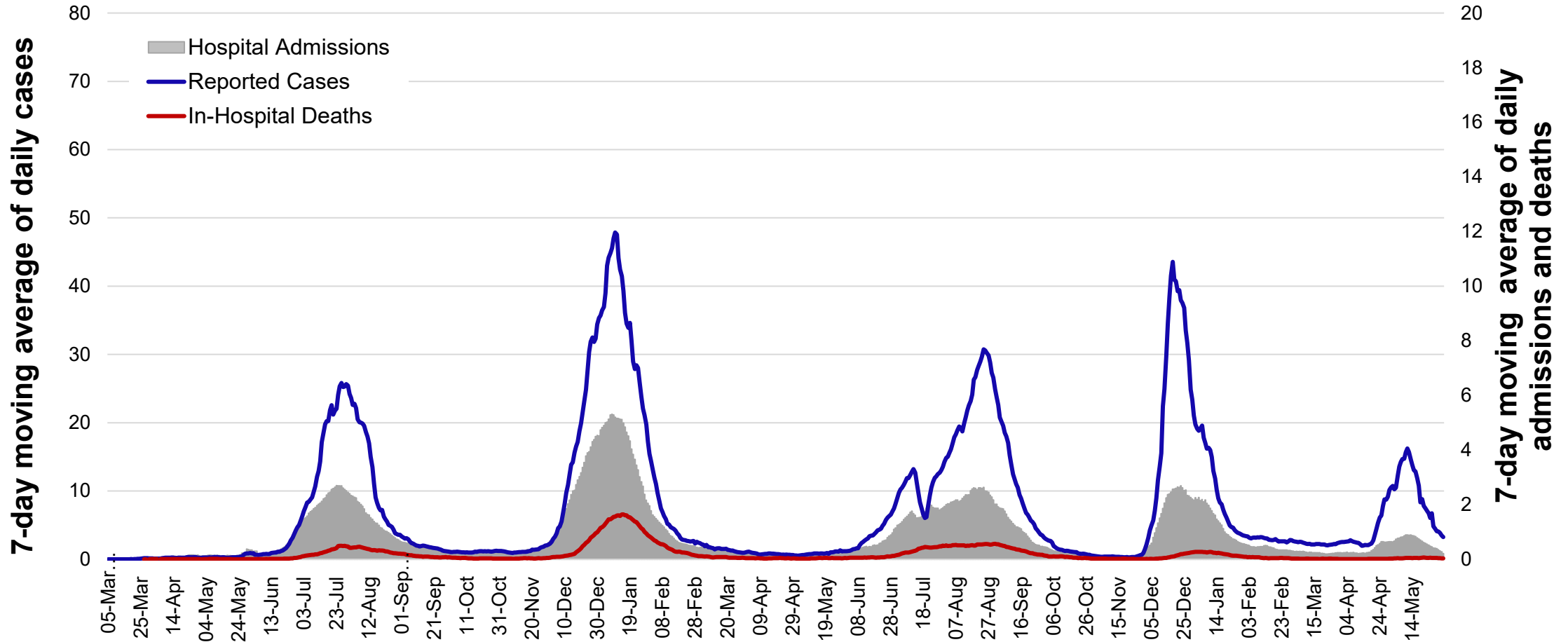
7-day moving average cases per 100,000 population
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in KwaZulu-Natal

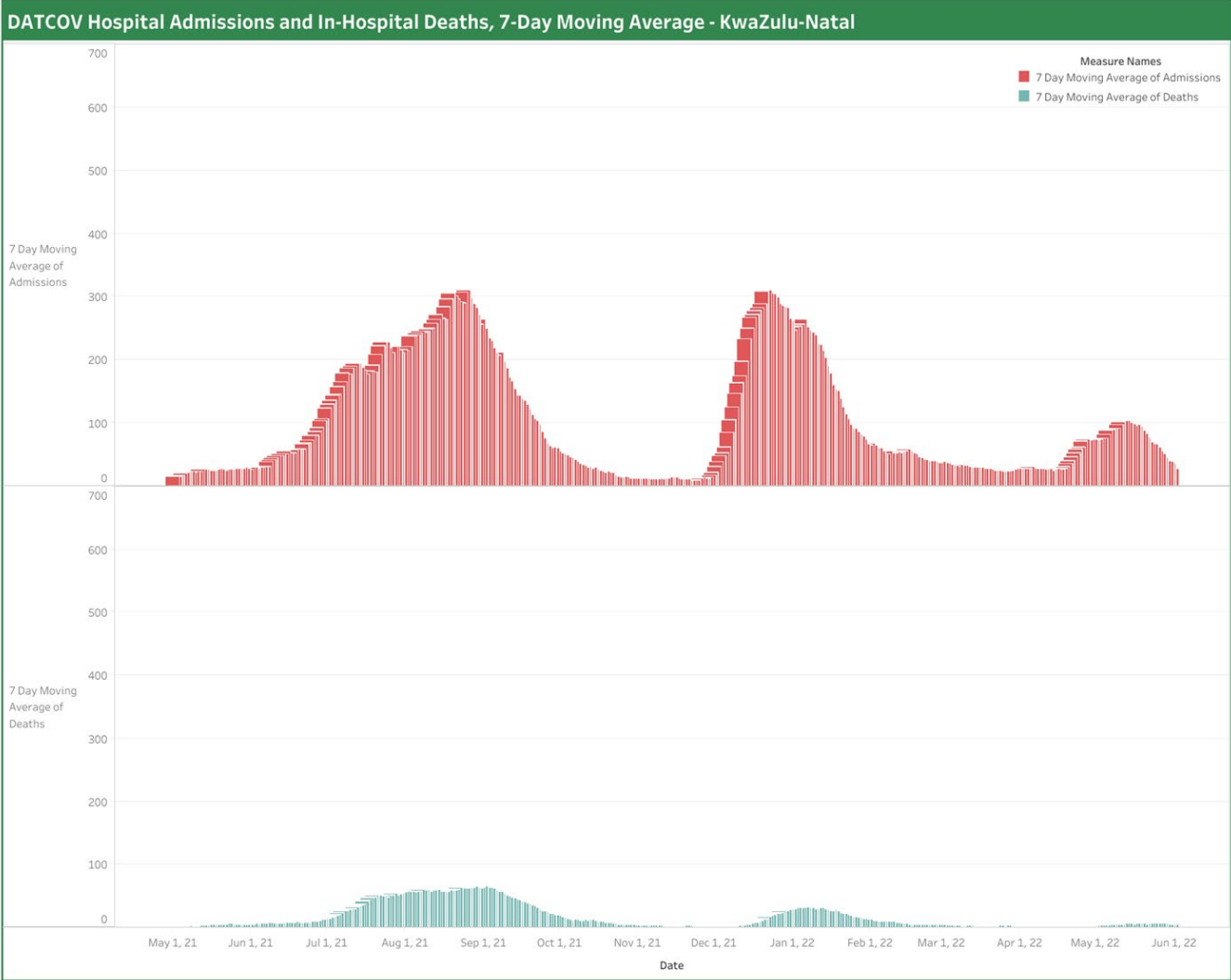
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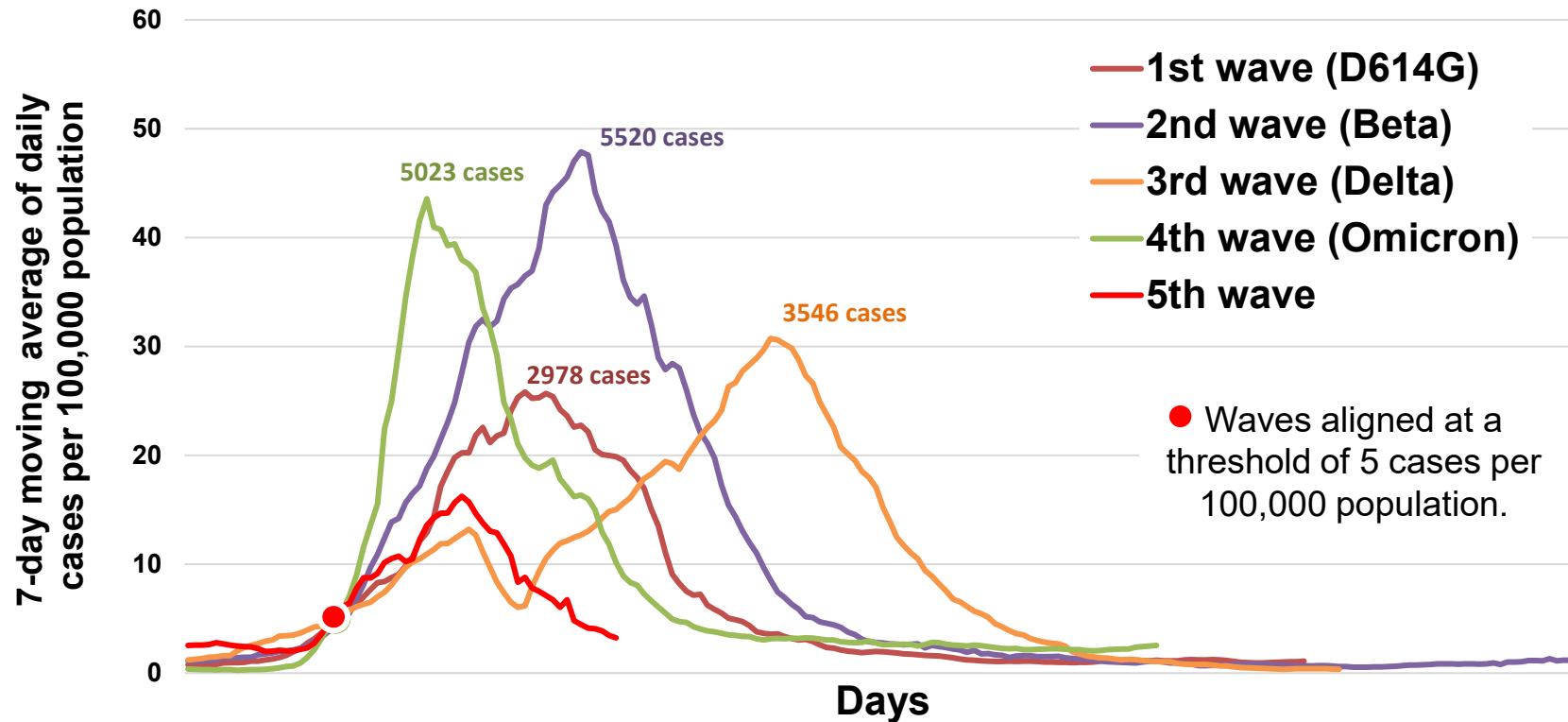
KwaZulu-Natal Hospital admissions & in-hospital deaths

up to - 31 May 2022



SARS-CoV-2 cases in waves: KwaZulu Natal

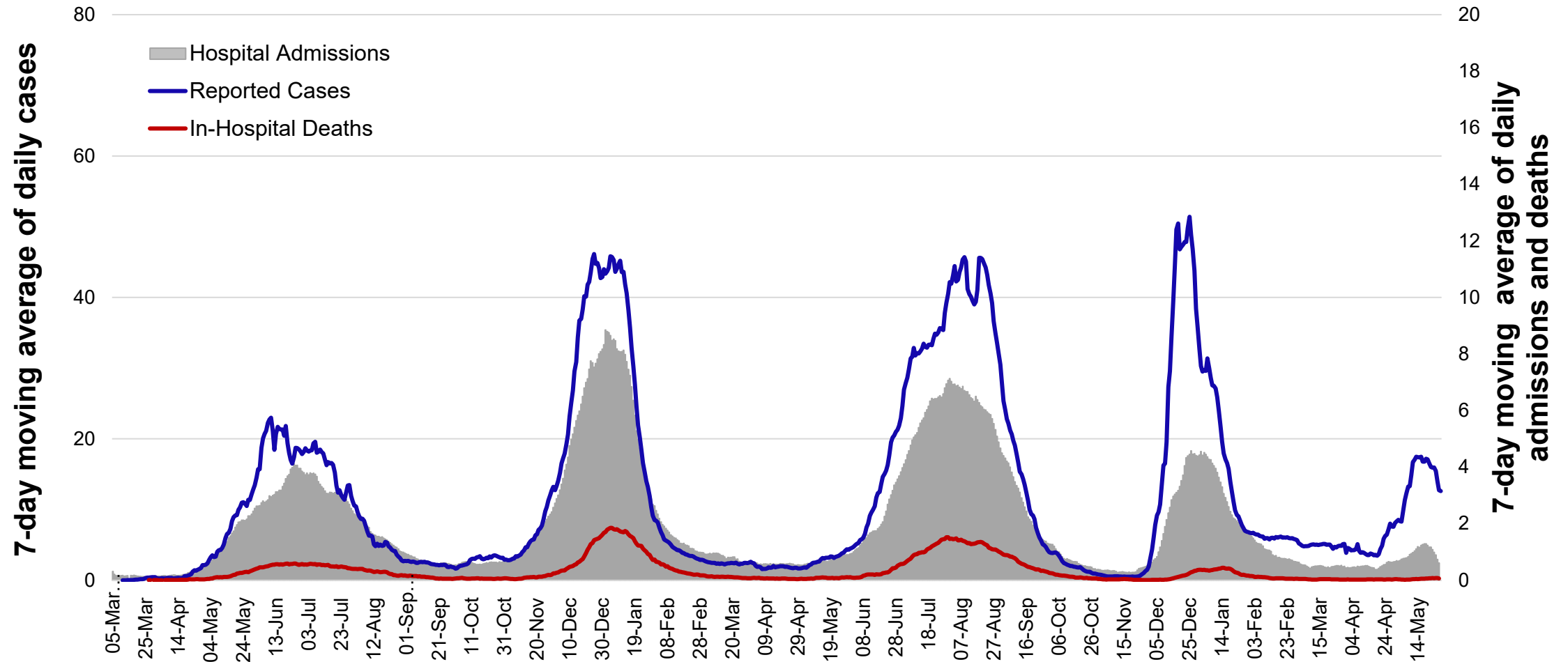
7-day moving average cases per 100,000 population
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in Western Cape

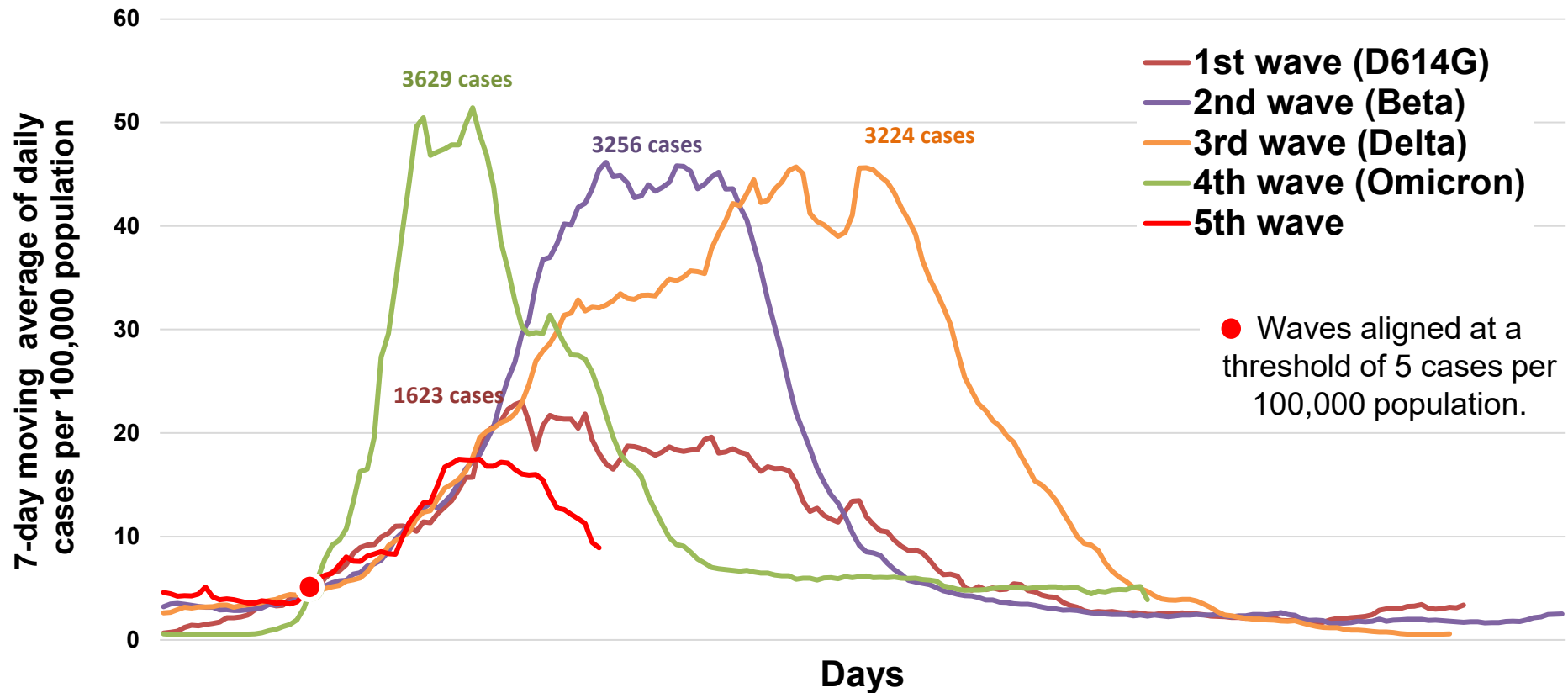
7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths up to - 02 June 2022



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SARS-CoV-2 cases in waves: Western Cape

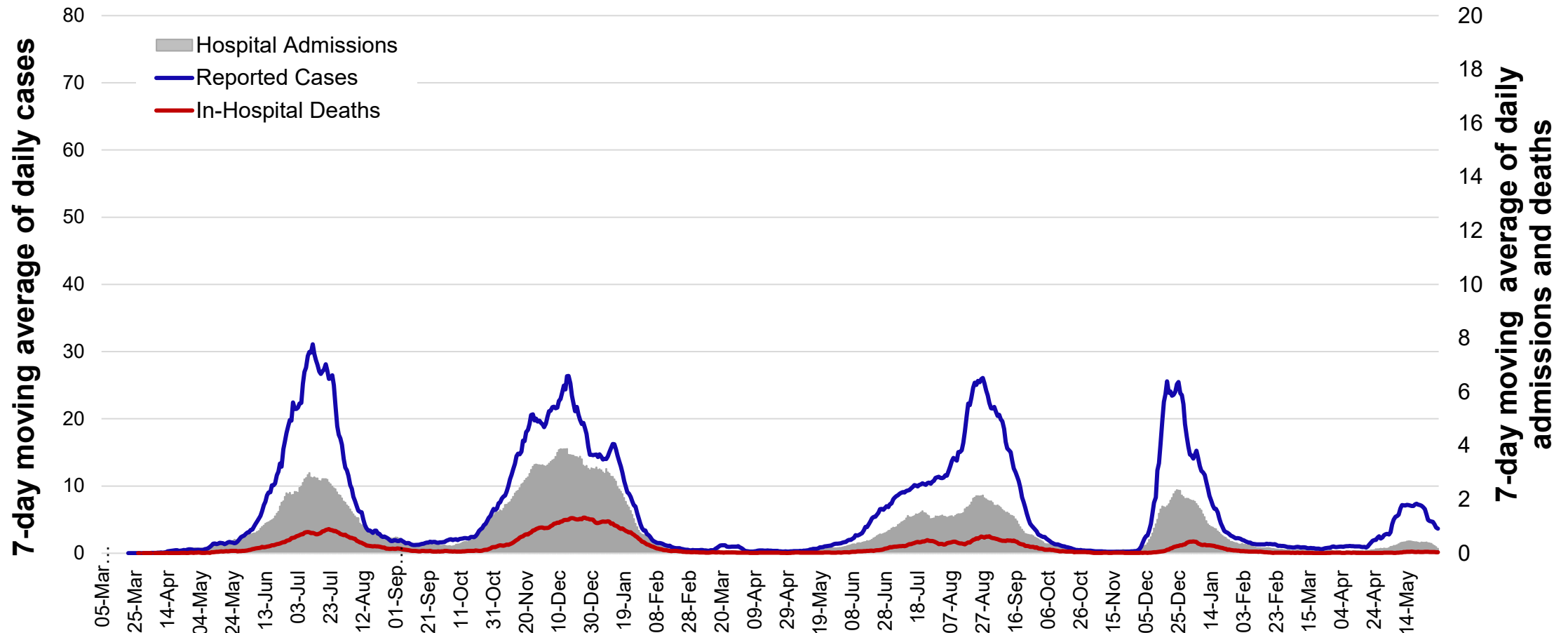
7-day moving average cases per 100,000 population
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in Eastern Cape

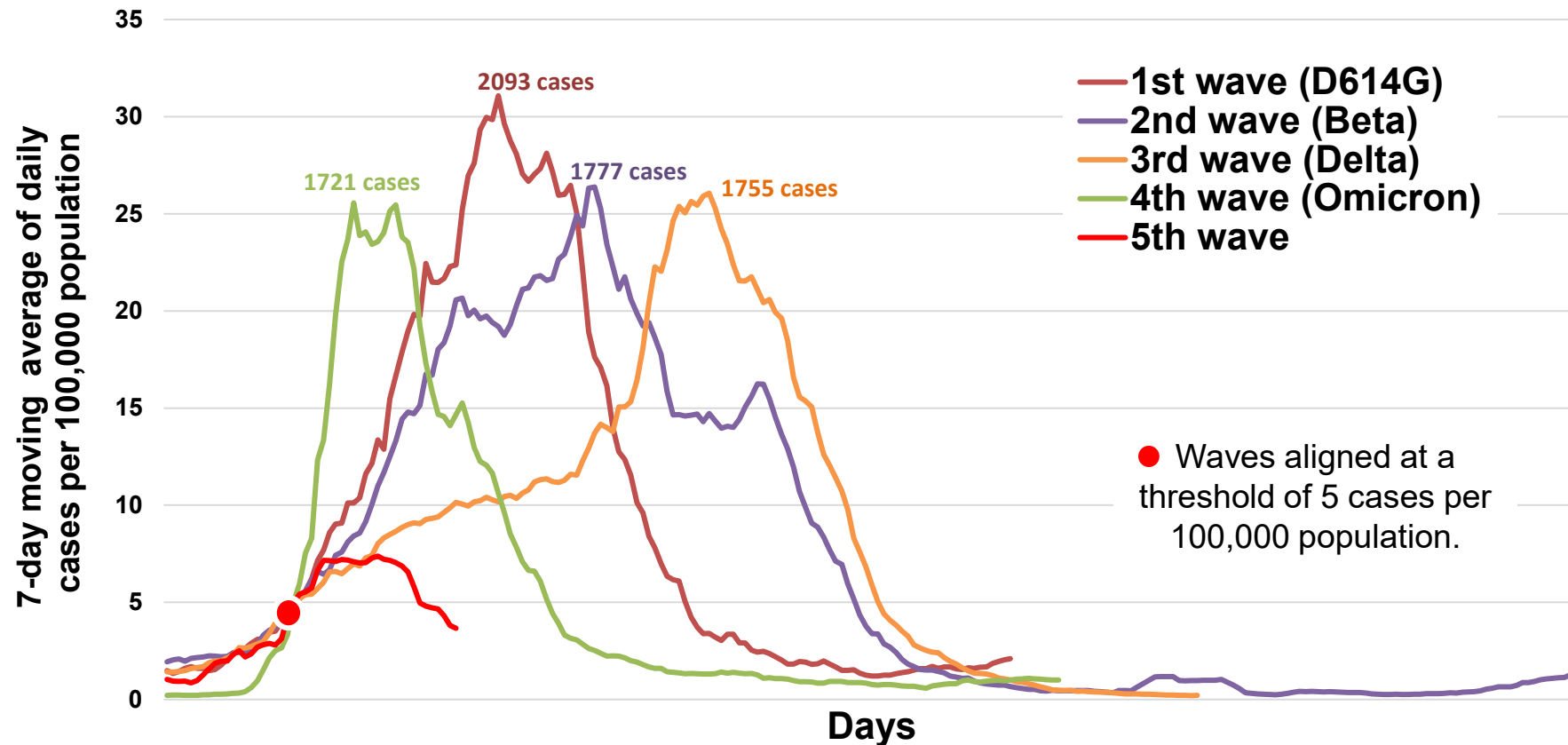
7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths
up to - 02 June 2022



Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

SARS-CoV-2 cases in waves: Eastern Cape

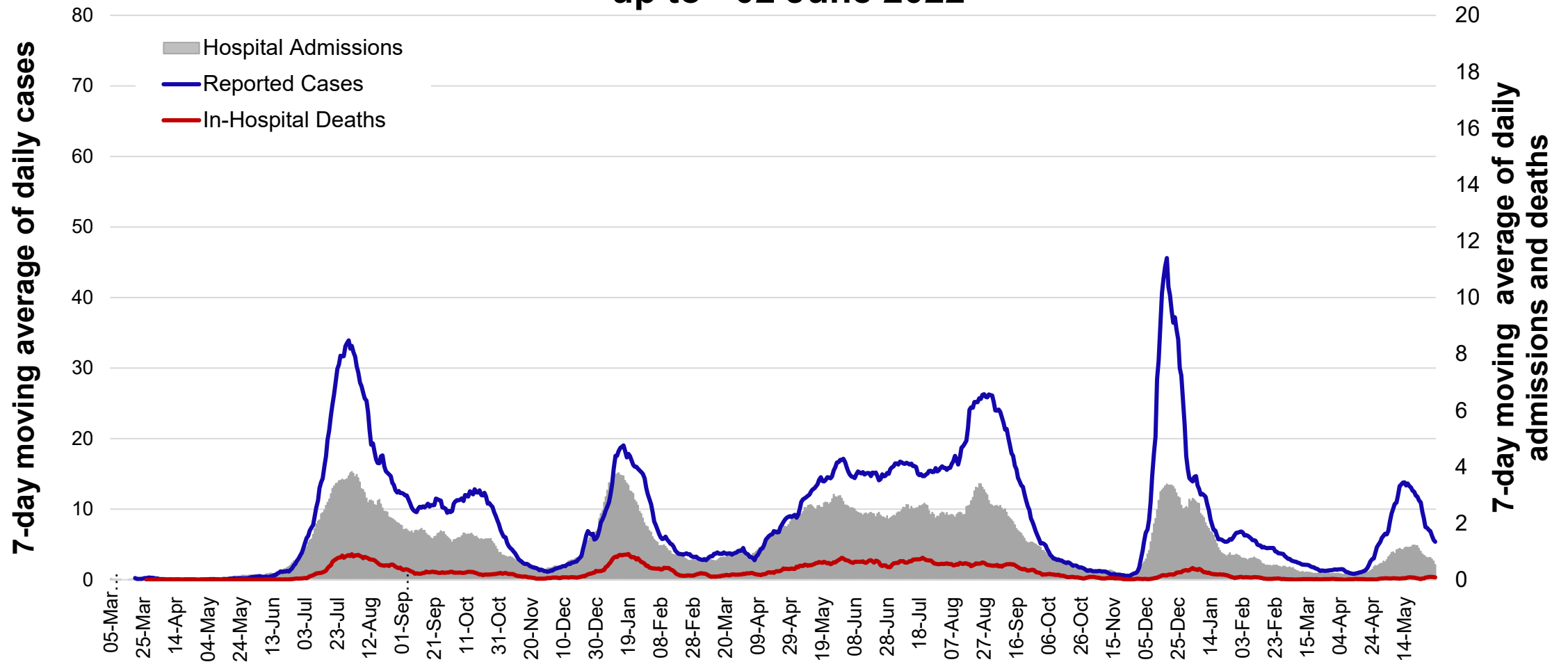
7-day moving average cases per 100,000 population
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in Free State province

7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths up to - 02 June 2022

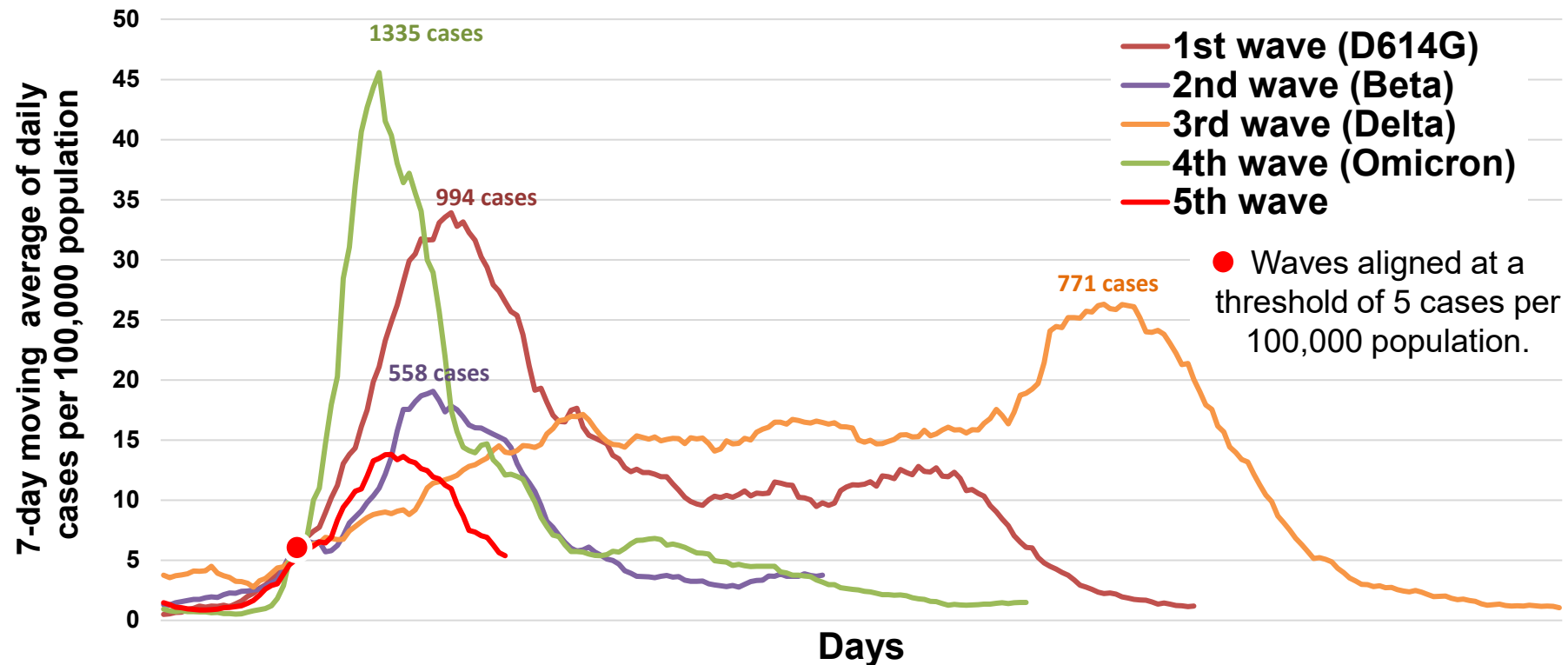


Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

SARS-CoV-2 cases in waves: Free State

7-day moving average cases per 100,000 population

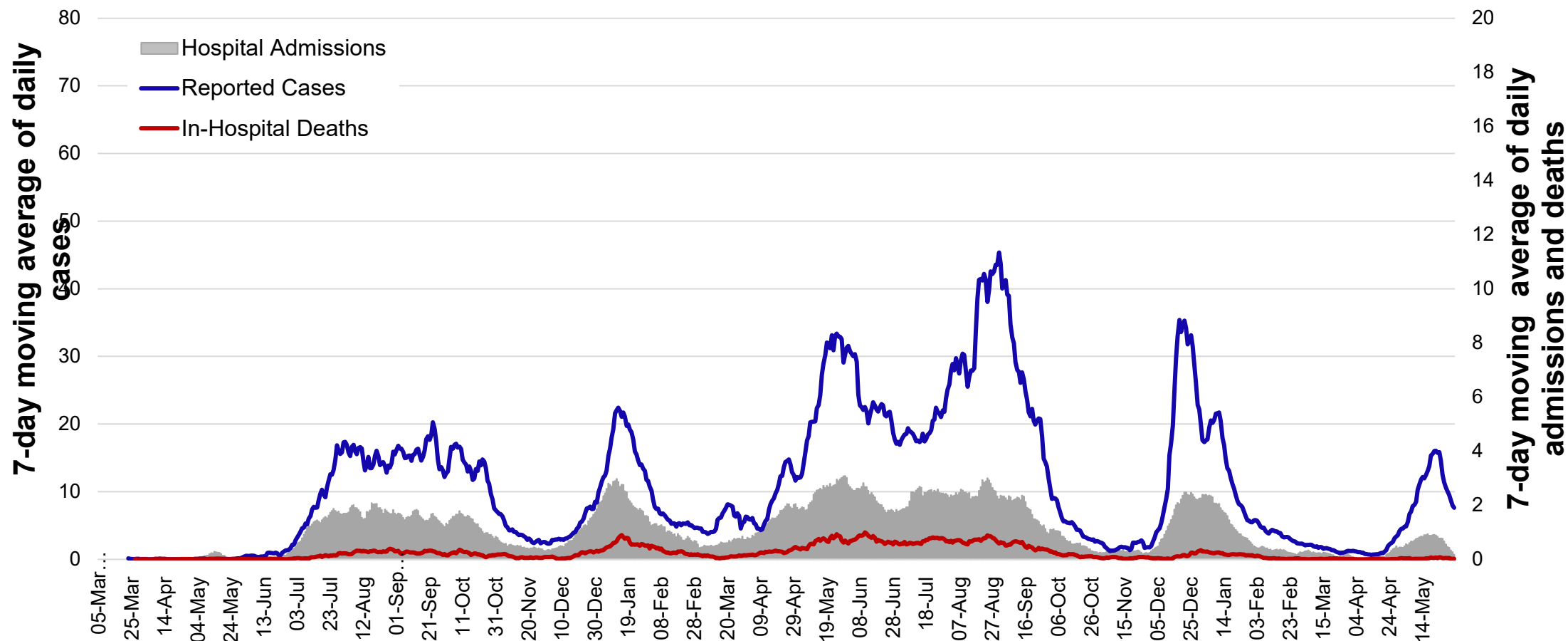
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in Northern Cape

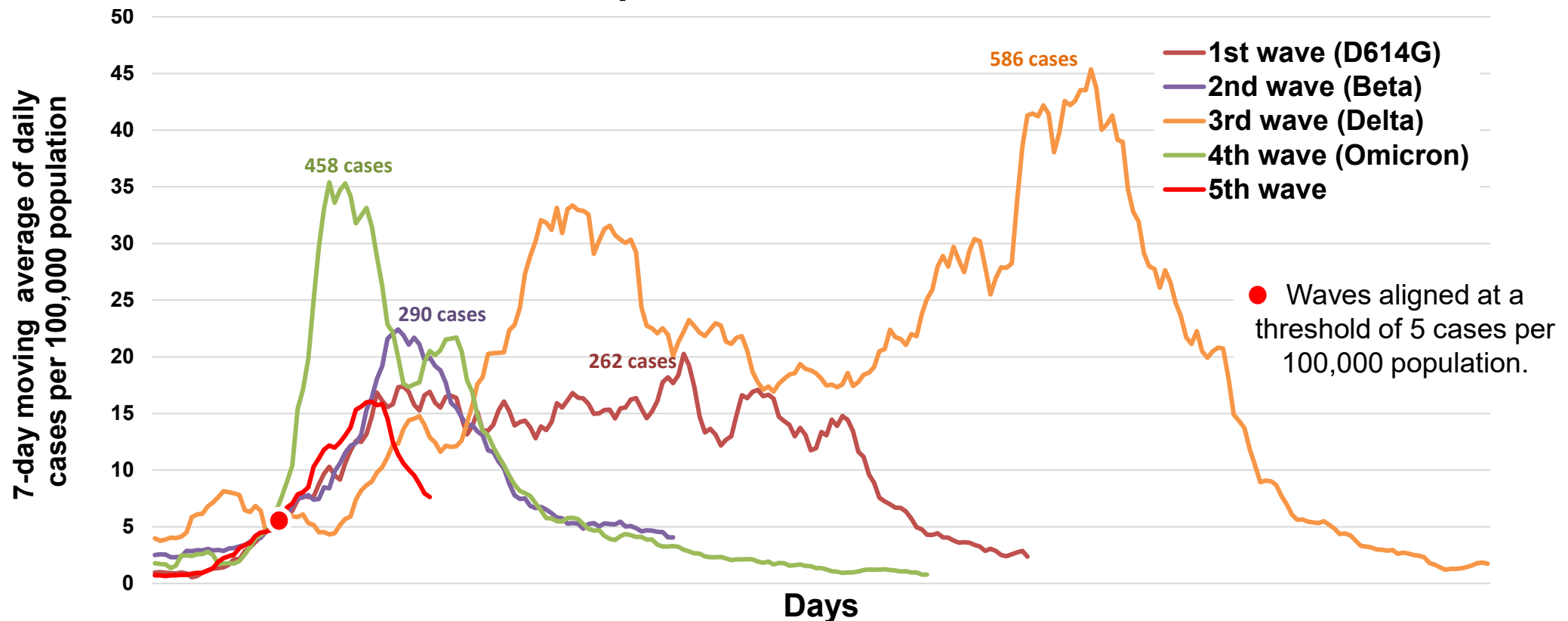
7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths
up to - 02 June 2022



Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

SARS-CoV-2 cases in waves: Northern Cape

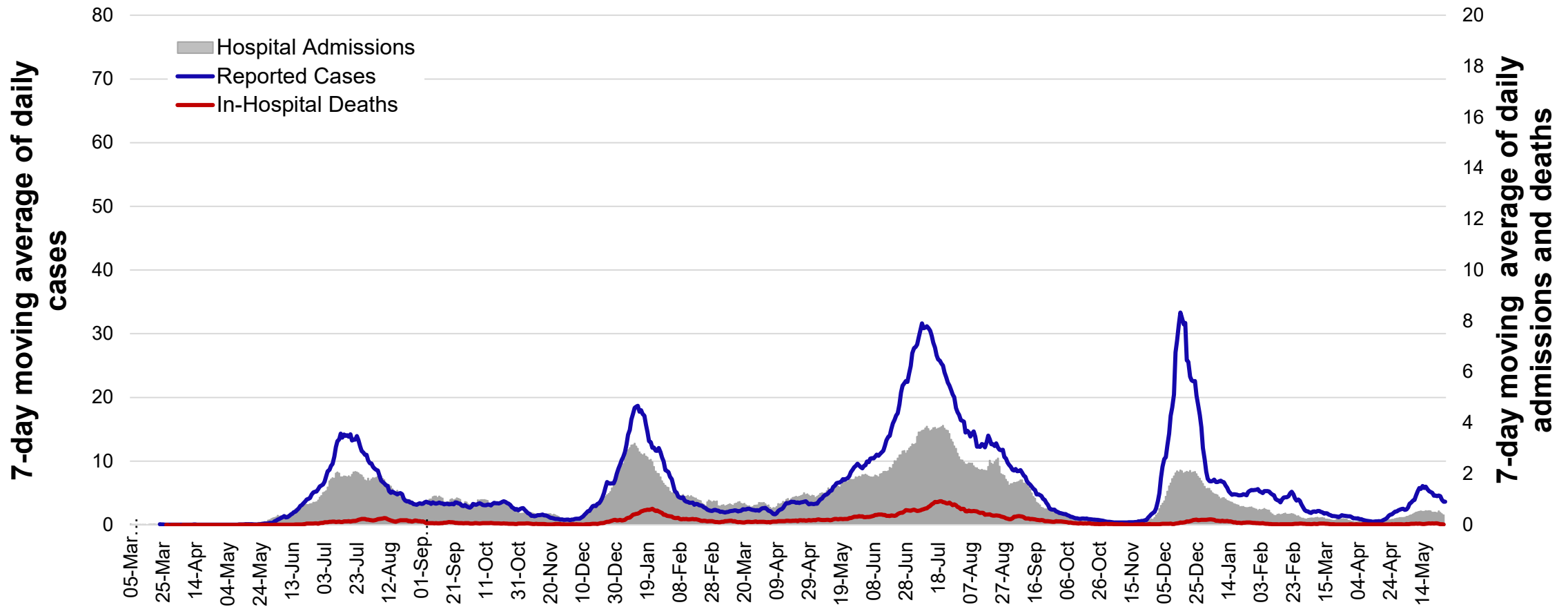
7-day moving average cases per 100,000 population
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in North West province

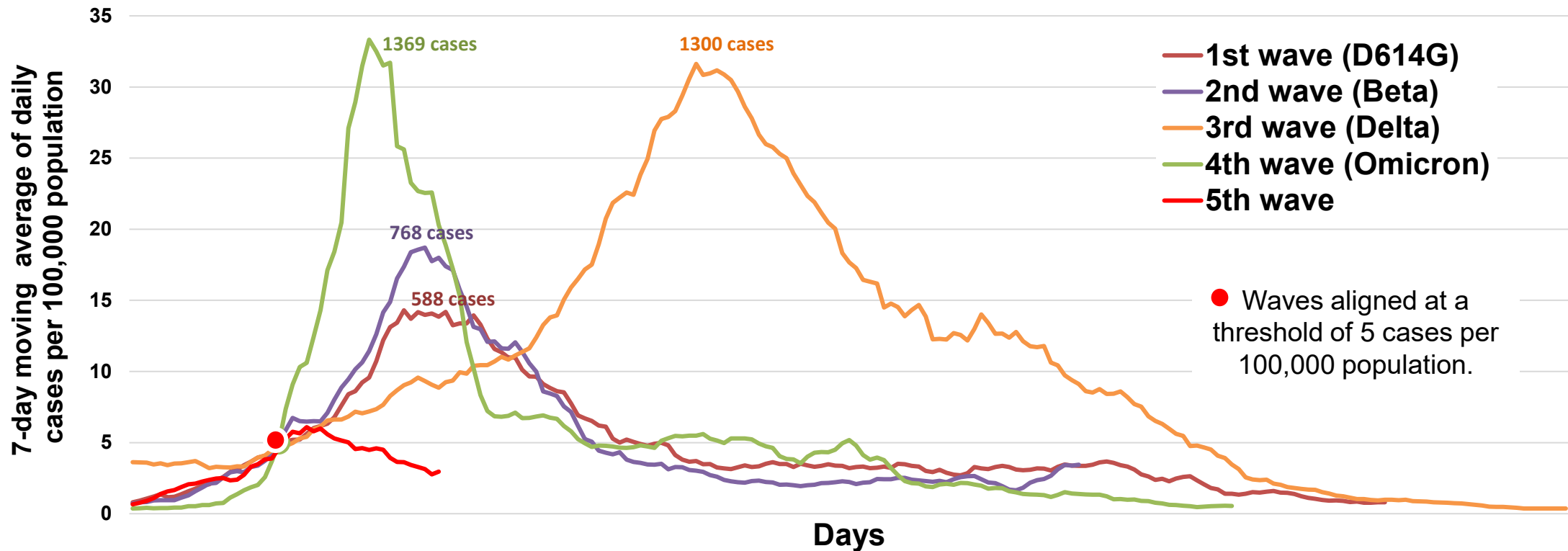
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SARS-CoV-2 cases in waves: North West

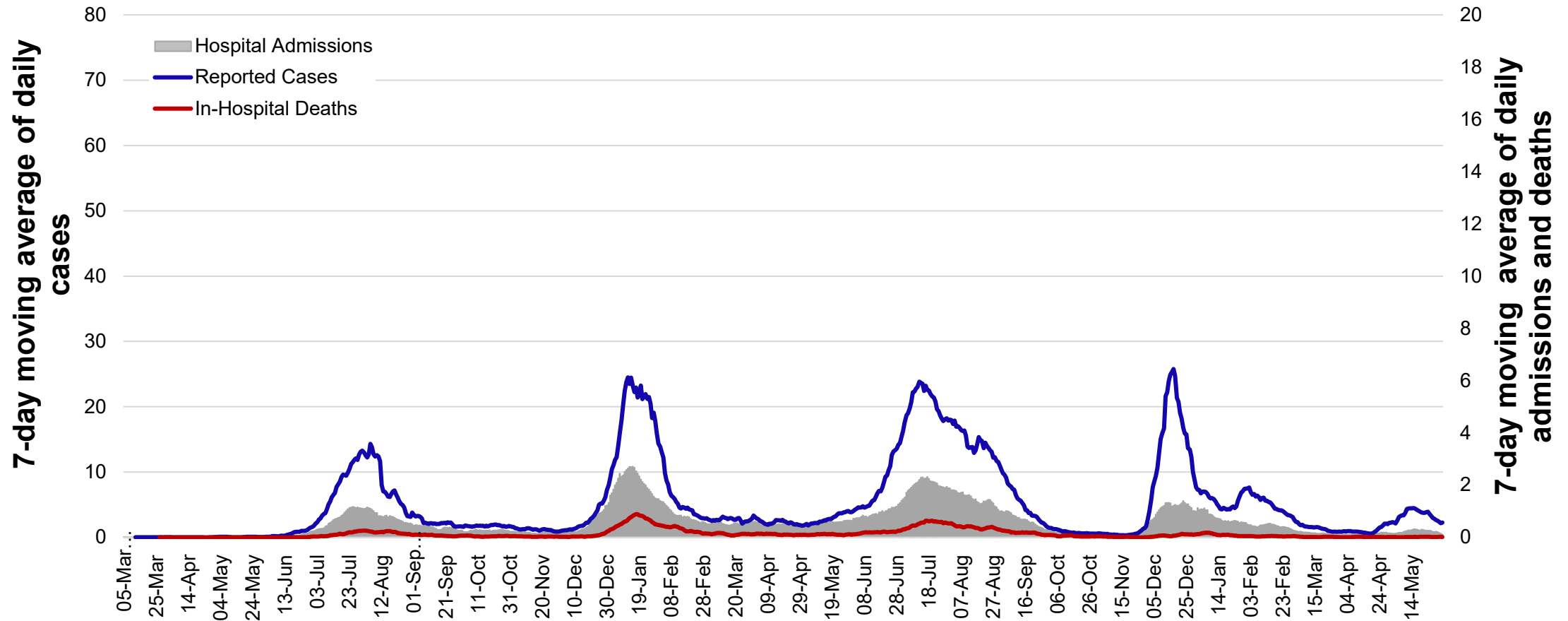
7-day moving average cases per 100,000 population
up to – 02 June 2022



Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in Mpumalanga

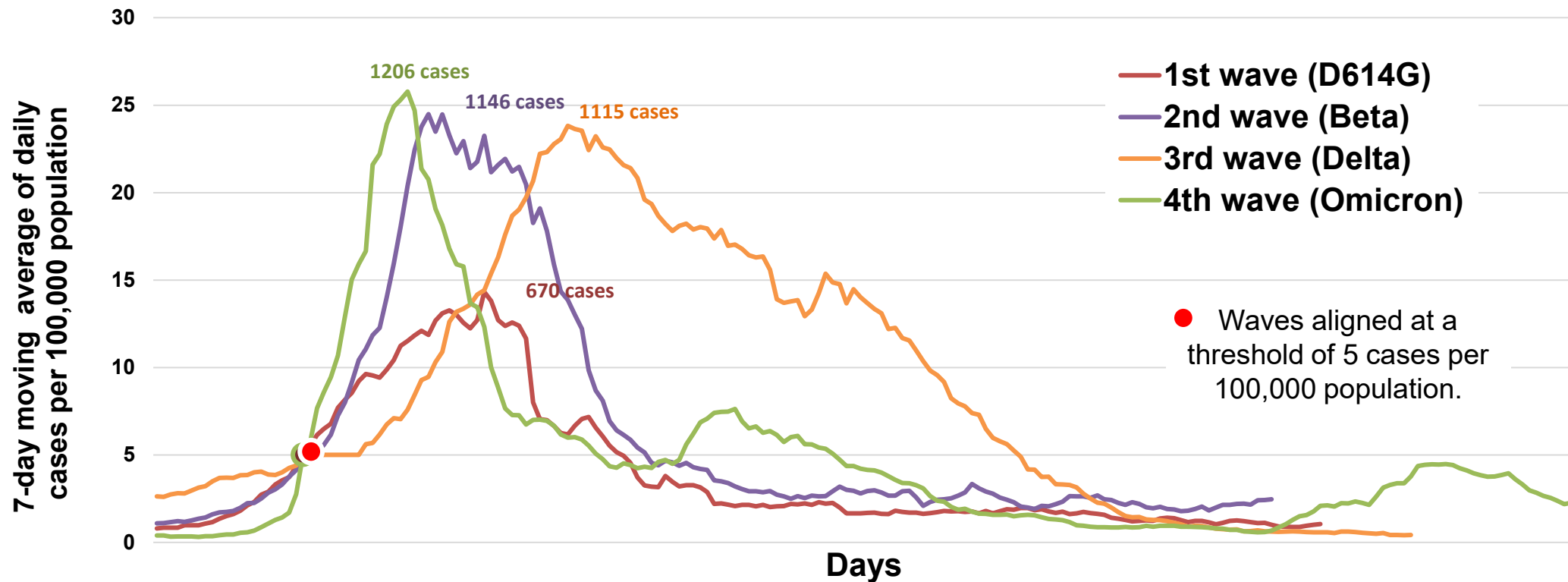
7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths
up to - 02 June 2022



Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

SARS-CoV-2 cases in waves: Mpumalanga

7-day moving average cases per 100,000 population
up to – 02 June 2022

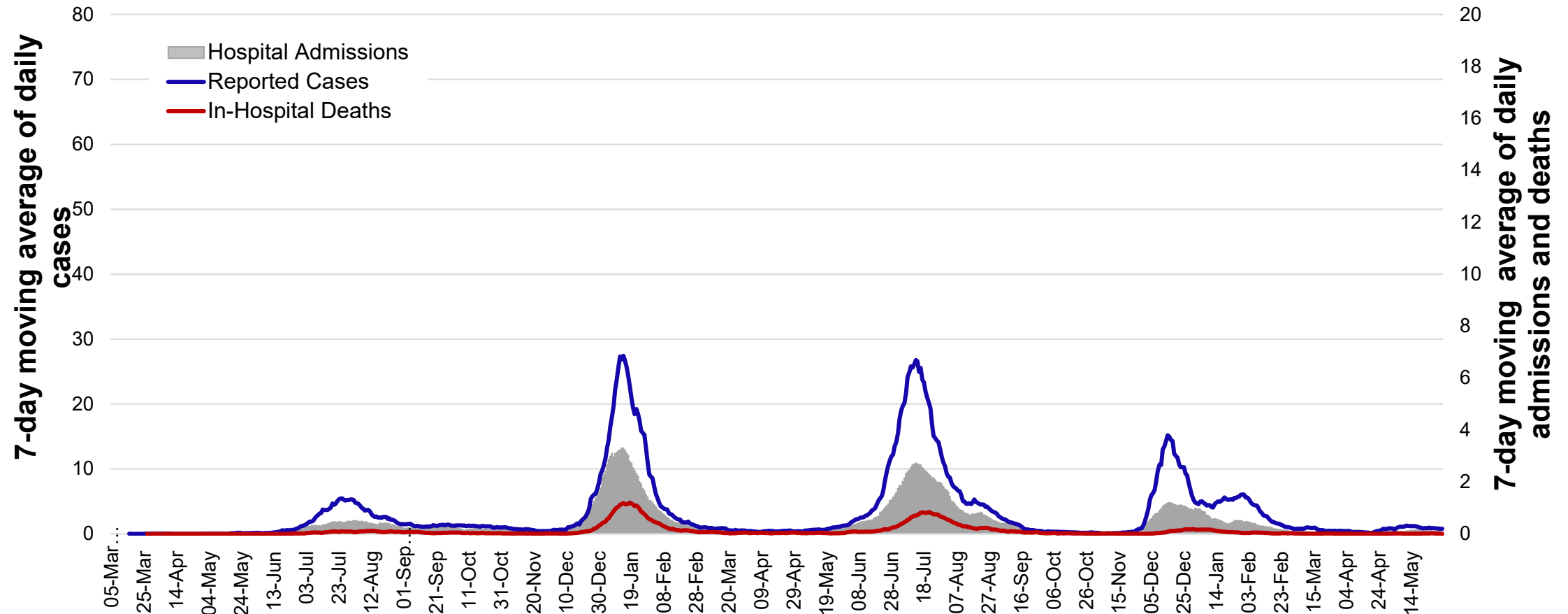


Data source: Department of Health; Analysis: Marothi Letsoalo; Ande Mchunu

SARS-CoV-2 cases in Limpopo province

7-day moving average of new cases, hospital admissions and in-hospital Covid-19 deaths

up to - 02 June 2022



Source of hospital admissions data: Lucille Blumberg, Richard Welch and Waasila Jassat – DATCOV, NICD

SARS-CoV-2 cases in waves: Limpopo

7-day moving average cases per 100,000 population
up to – 02 June 2022

