CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

COVID-19 UPDATES

13 April 2022

science & innovation
Department: Science and Innovation
REPUBLIC OF SOUTH AFRICA

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

NRF National Research Foundation

UNAIDS
CAPRISA is the UNAIDS Collaborating Centre for HIV Research and Policy

GVN GLOBAL VIRUS NETWORK

saMRC advancinglife

CAPRISA hosts a MRC HIV-TB Pathogenesis and Treatment Research Unit

CAPRISA hosts a DoH-MRC Special Initiative for HIV Prevention Technology

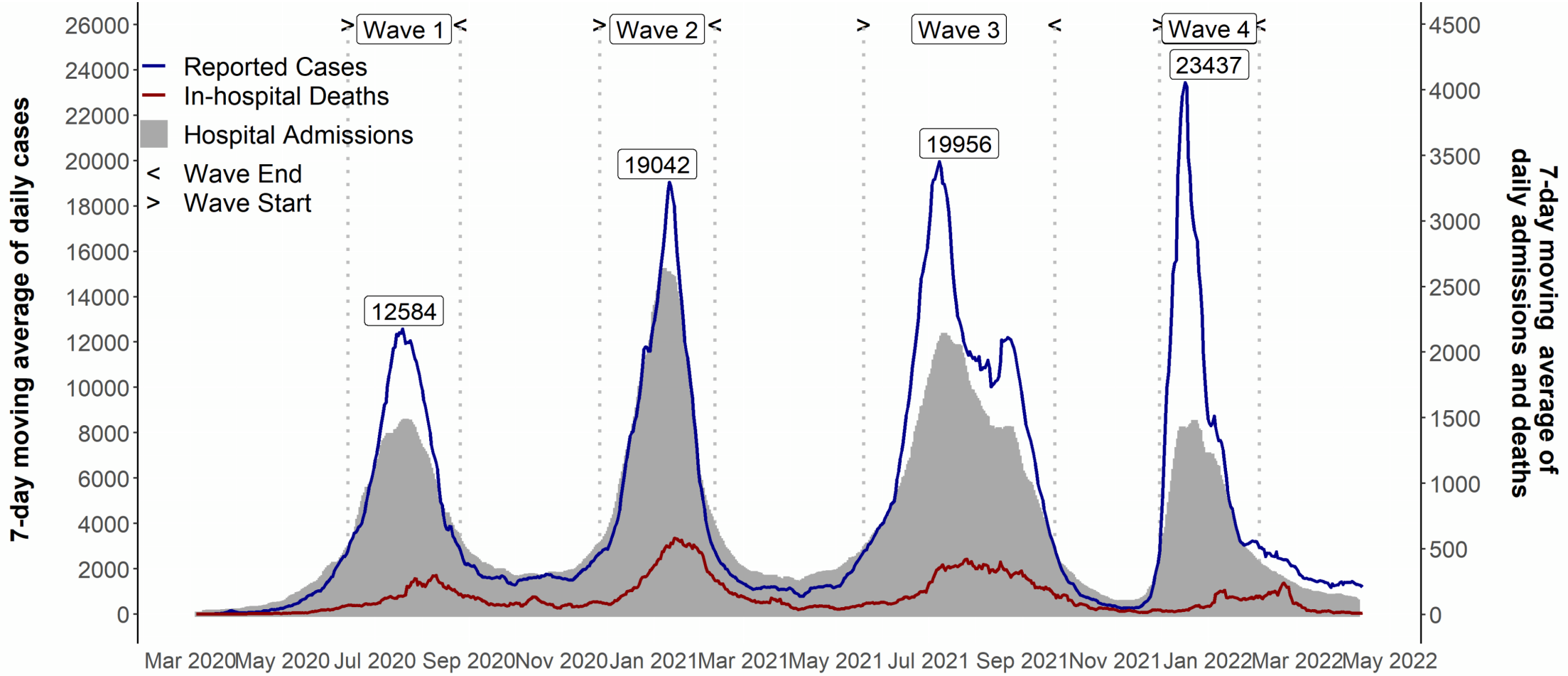
health
Department: Health
REPUBLIC OF SOUTH AFRICA

COLUMBIA UNIVERSITY | MAILMAN SCHOOL of PUBLIC HEALTH

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Covid-19 in South Africa

up to – 13 April 2022



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

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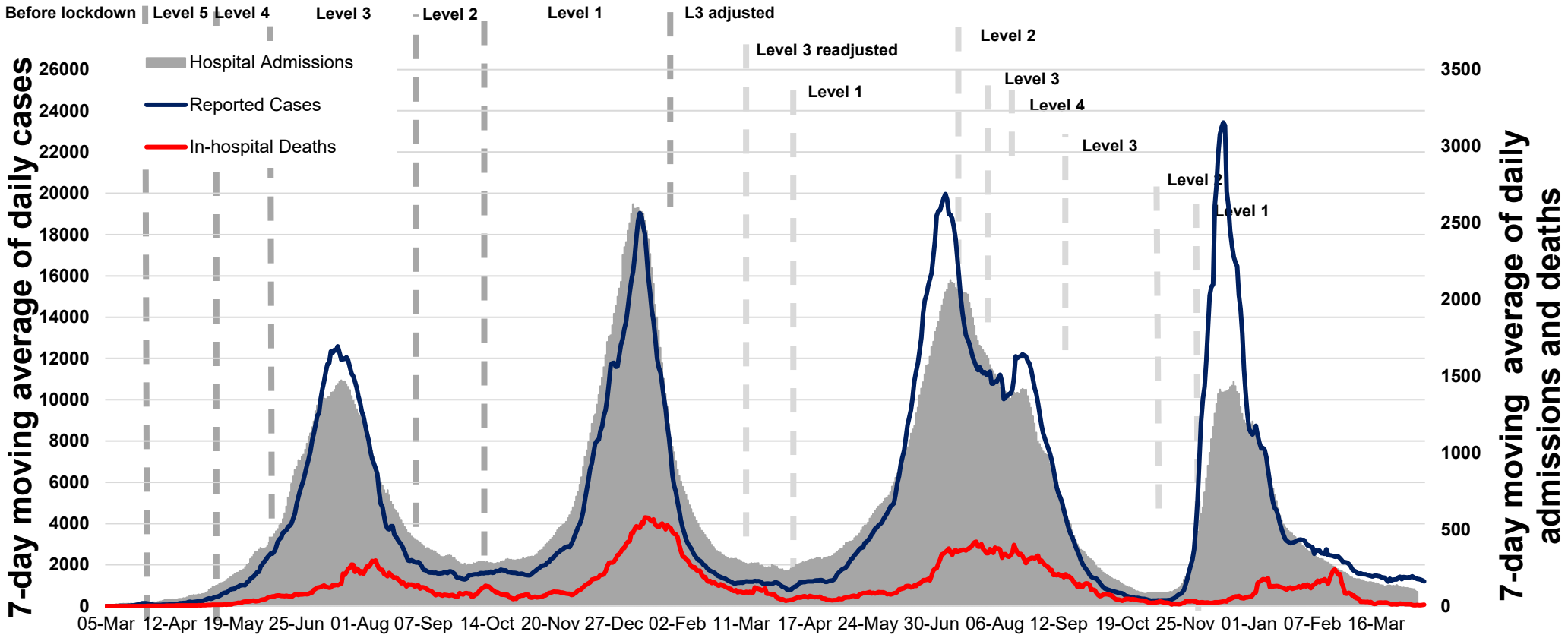
Covid-19 in South Africa

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

up to – 13 April 2022



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

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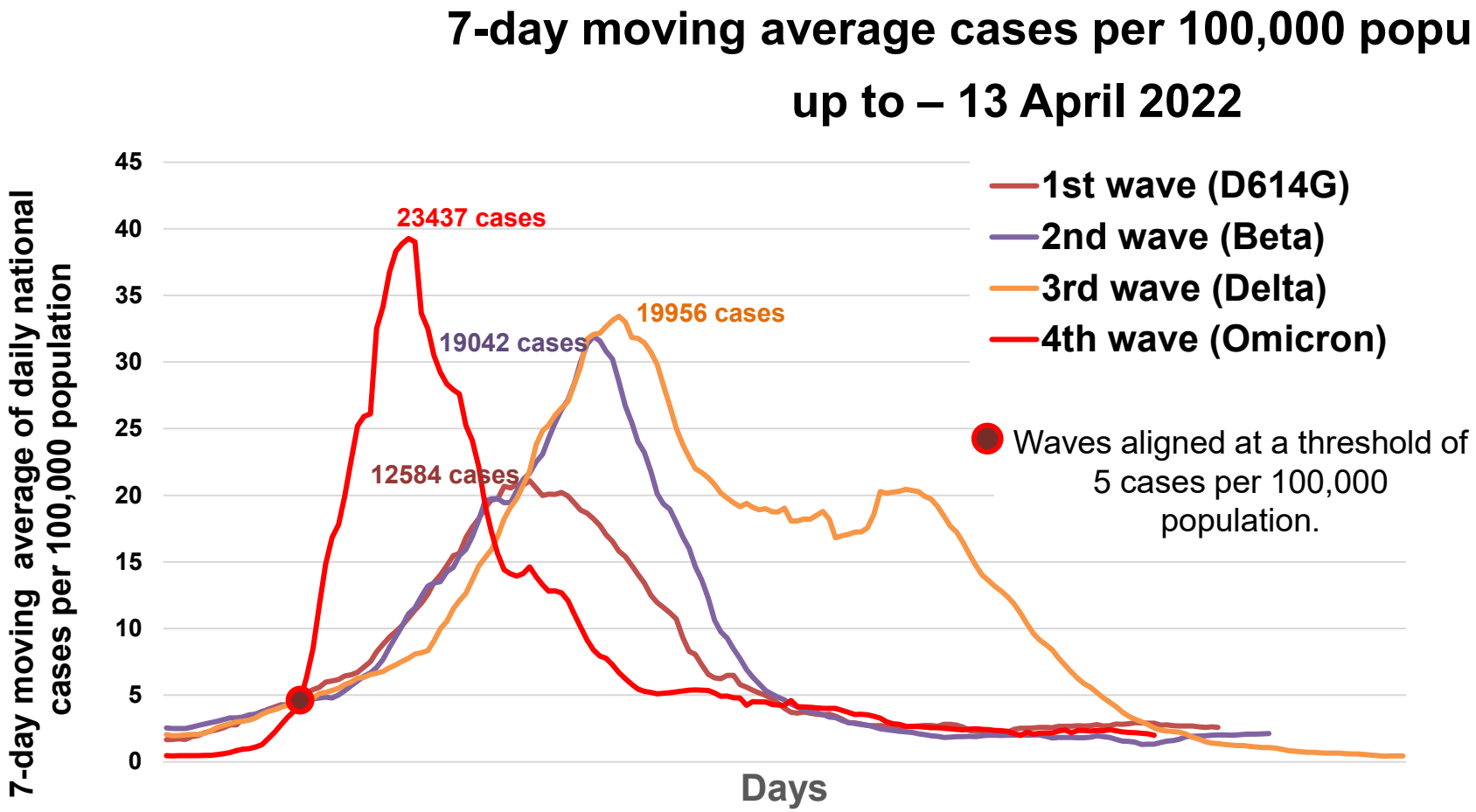
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: South Africa



Data source: Department of Health; Analysis: Marothi LETSOALO; Ande MCHUNU

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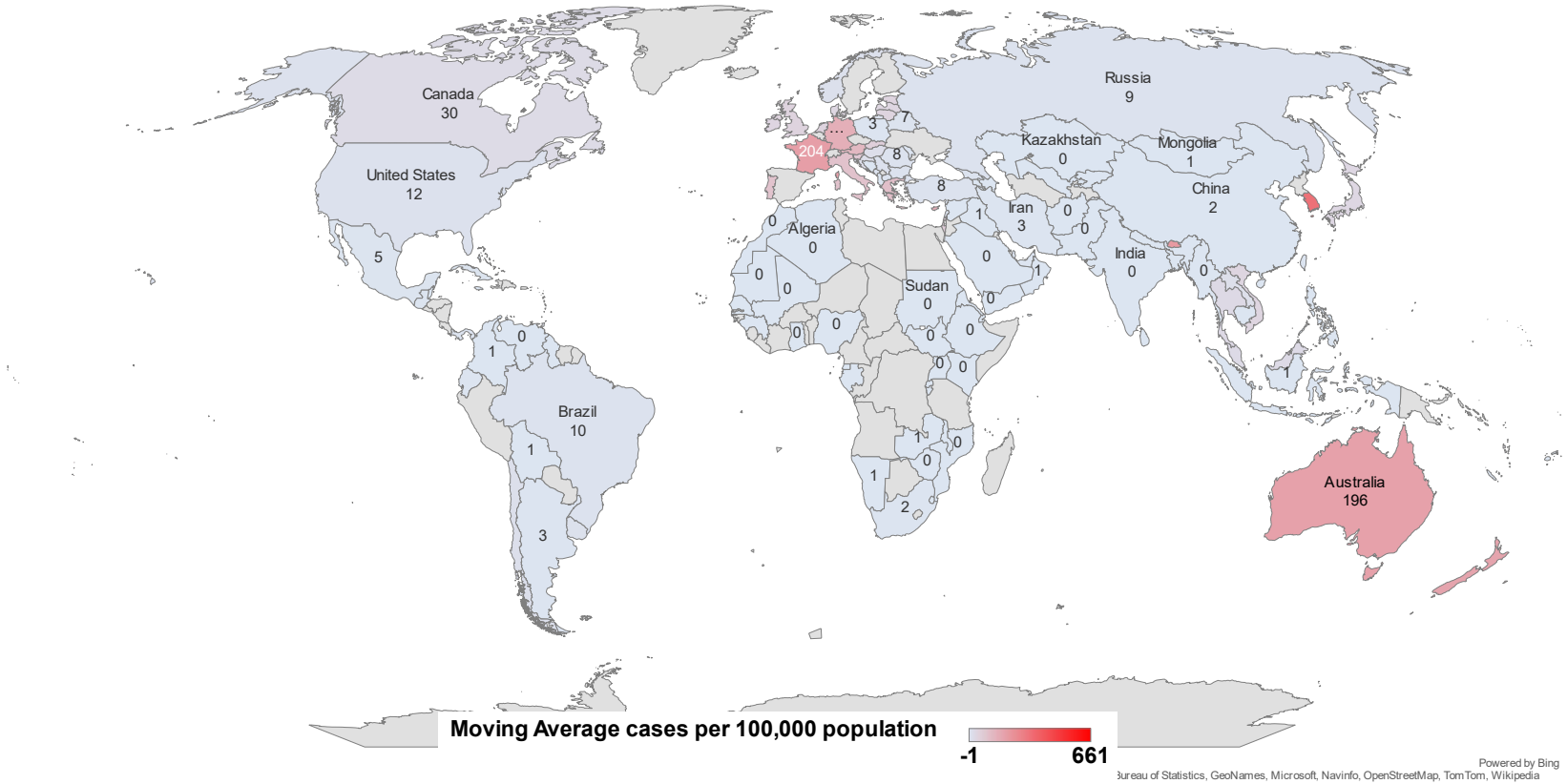
Global Covid-19 epidemic

7-day moving average cases per 100,000 population

up to – 13 April 2022



Source: *Our World in Data*

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Covid-19 in Africa
Omicron variant drives 4th wave

up to – 13 April 2022

Data Source: *Our World in Data; NICD*

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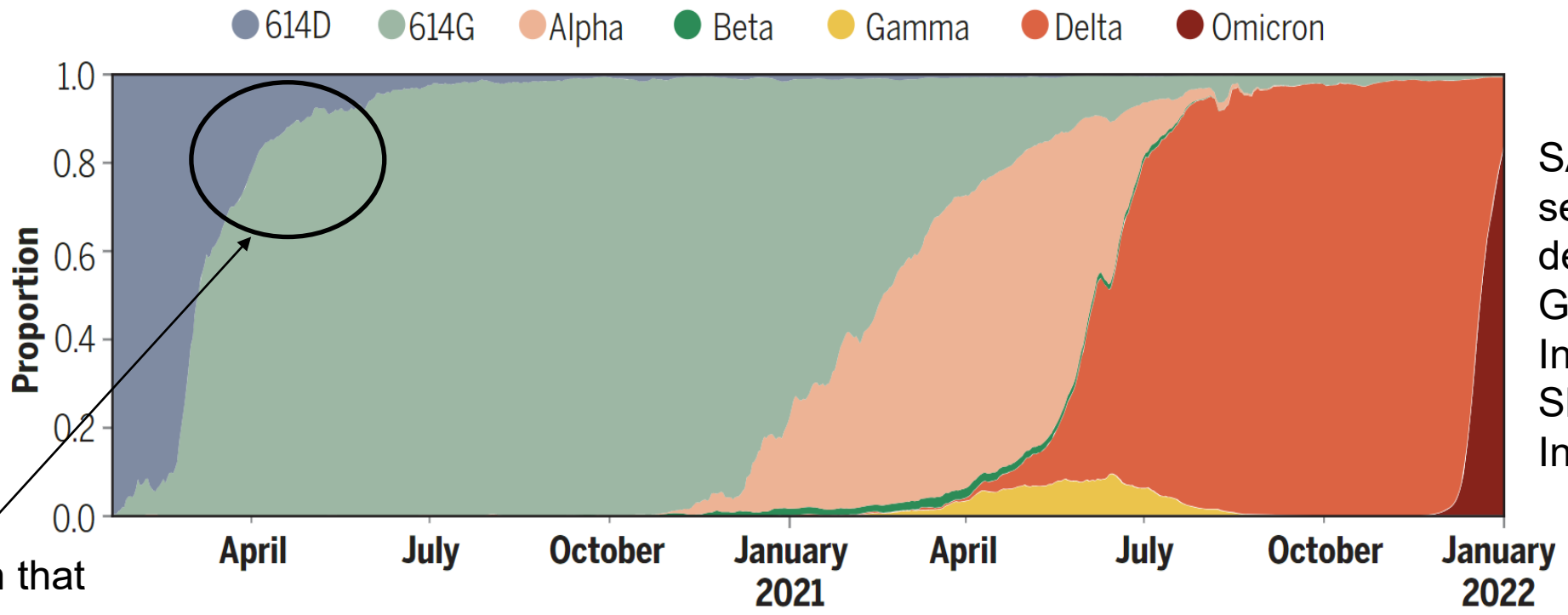
Science

The changing epidemiology of SARS-CoV-2

Katia Koelle[1]*, Michael A. Martin[1,2], Rustom Antia[1], Ben Lopman[3,4], Natalie E. Dean[3,5]

The frequencies of SARS-CoV-2 variants of concern over time



SARS-CoV-2 sequence data deposited in GISAID (Global Initiative for Sharing Avian Influenza Data)

1st indication that SAR-CoV-2 was adapting to humans

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Two good articles on the next variant in The Atlantic

The Atlantic

The Coronavirus's Next Move

Here are four shapes that the next variant might take—which will also dictate the shape of our response.

By Katherine J. Wu

The Coronavirus Will Surprise Us Again

The variant after Omicron could look very different from any yet.

By Sarah Zhang

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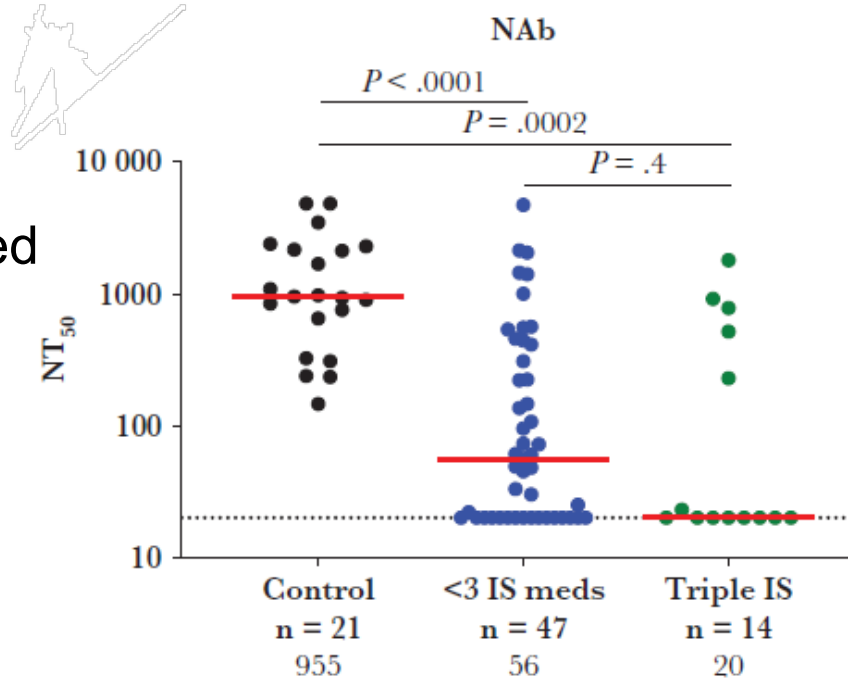
Poor vaccine immunity in immunocompromised

The Journal of Infectious Diseases

Coronavirus Disease 2019 Messenger RNA Vaccine Immunogenicity in Immunosuppressed Individuals

Ai-ris Y. Collier,[1,2,3] Jingyou Yu,[1] Katherine McMahan,[1] Jinyan Liu,[1] Caroline Atyeo,[2,4] Jessica L. Ansel,[1] Zachary P. Fricker,[2,5] Martha Pavlakis,[2,5]

- **99 participants enrolled**
  - 61 on immunosuppressive (IS) therapy & 21 controls.
- **Fever after 2nd vaccine:** 37% of control group compared to 3% in single/double IS group
- **Immunosuppressive therapy = ↓ Ab responses**
  - ↓ neutralizing, binding, and non-neutralizing Ab functions
  - ↓ CD4 and CD8 T-cell interferon-γ responses
  - ↓ cross-reactivity against SARS-CoV-2 variants



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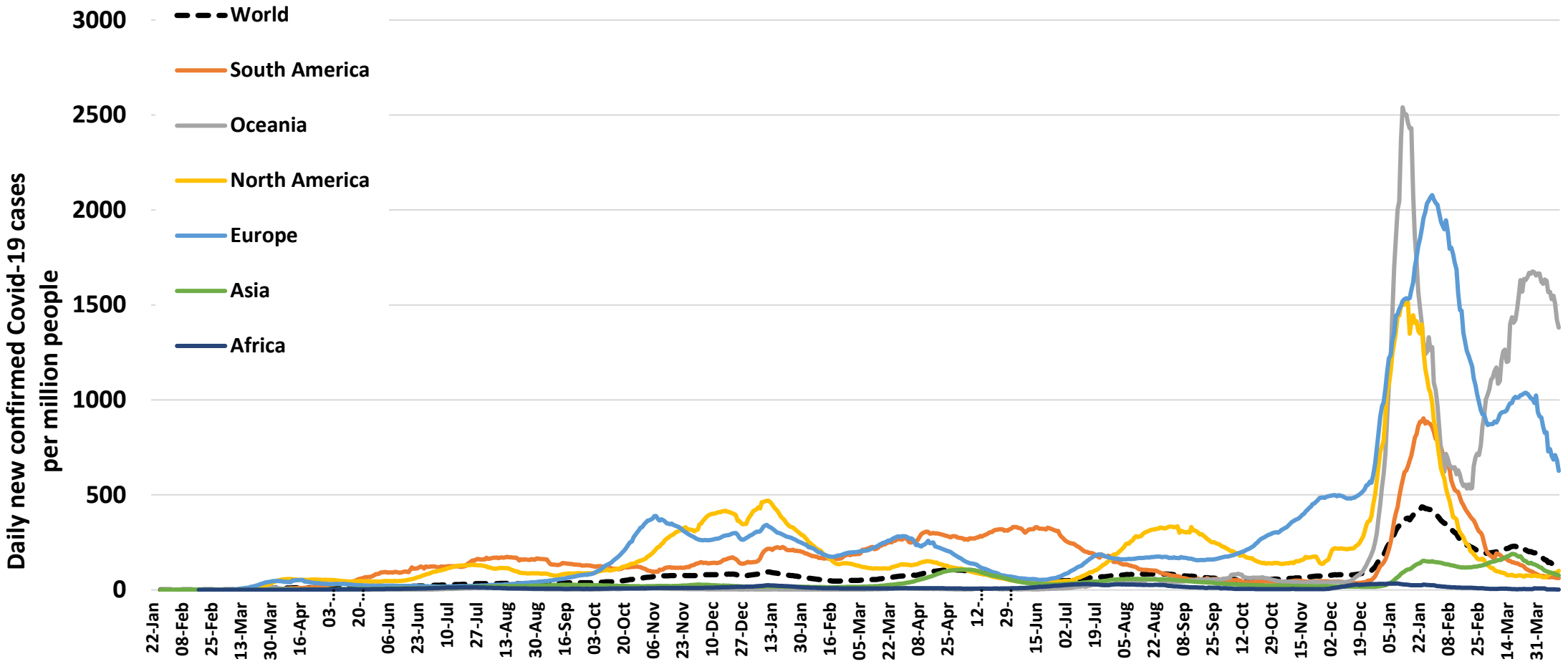
Covid-19 in Africa

Omicron variant drives 4th wave- Continents

up to - 13 April 2022



Data Source: *Our World in Data; NICD*

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

up to - 8 April 2022

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

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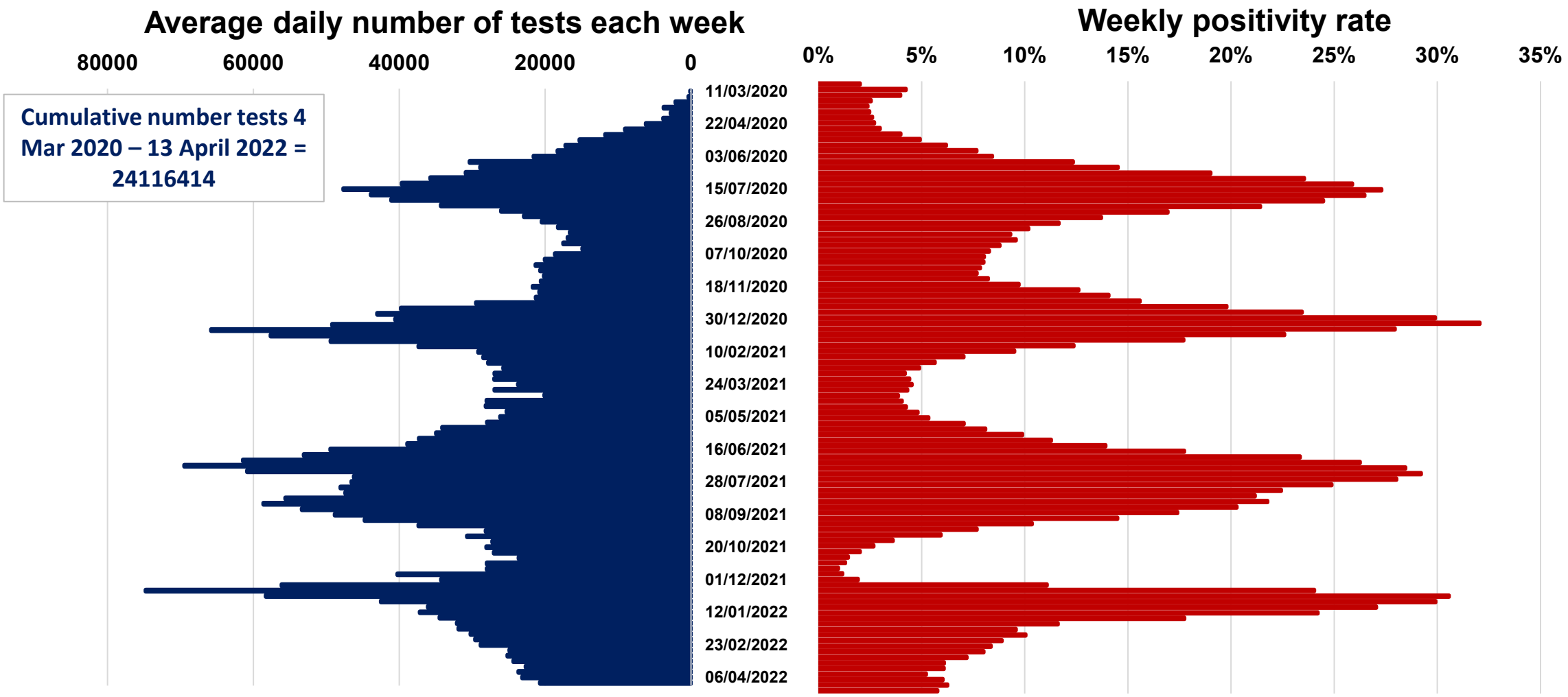
Average daily tests and proportion of positive tests

up to - 13 April 2022



Data source: Department of Health

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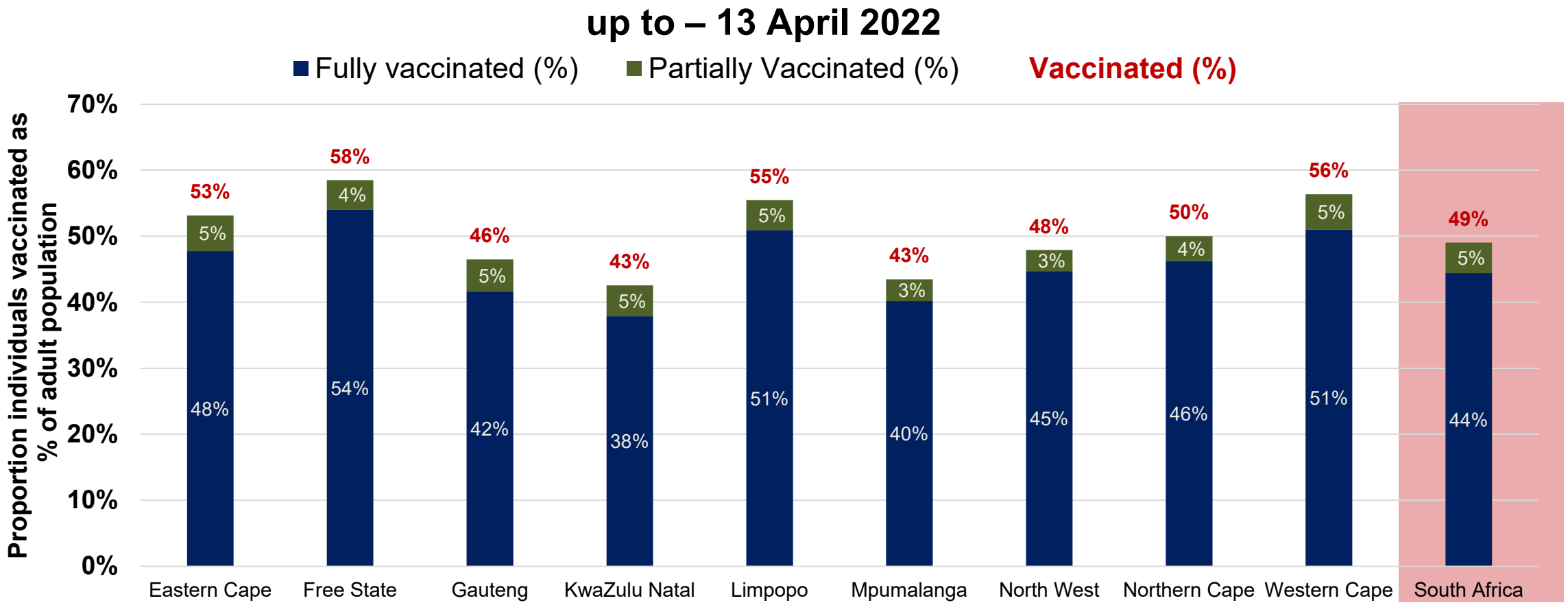
Proportion of individuals vaccinated as % of adult population



Source: *Department of Health. https://sacoronavirus.co.za/latest-vaccine-statistics/*

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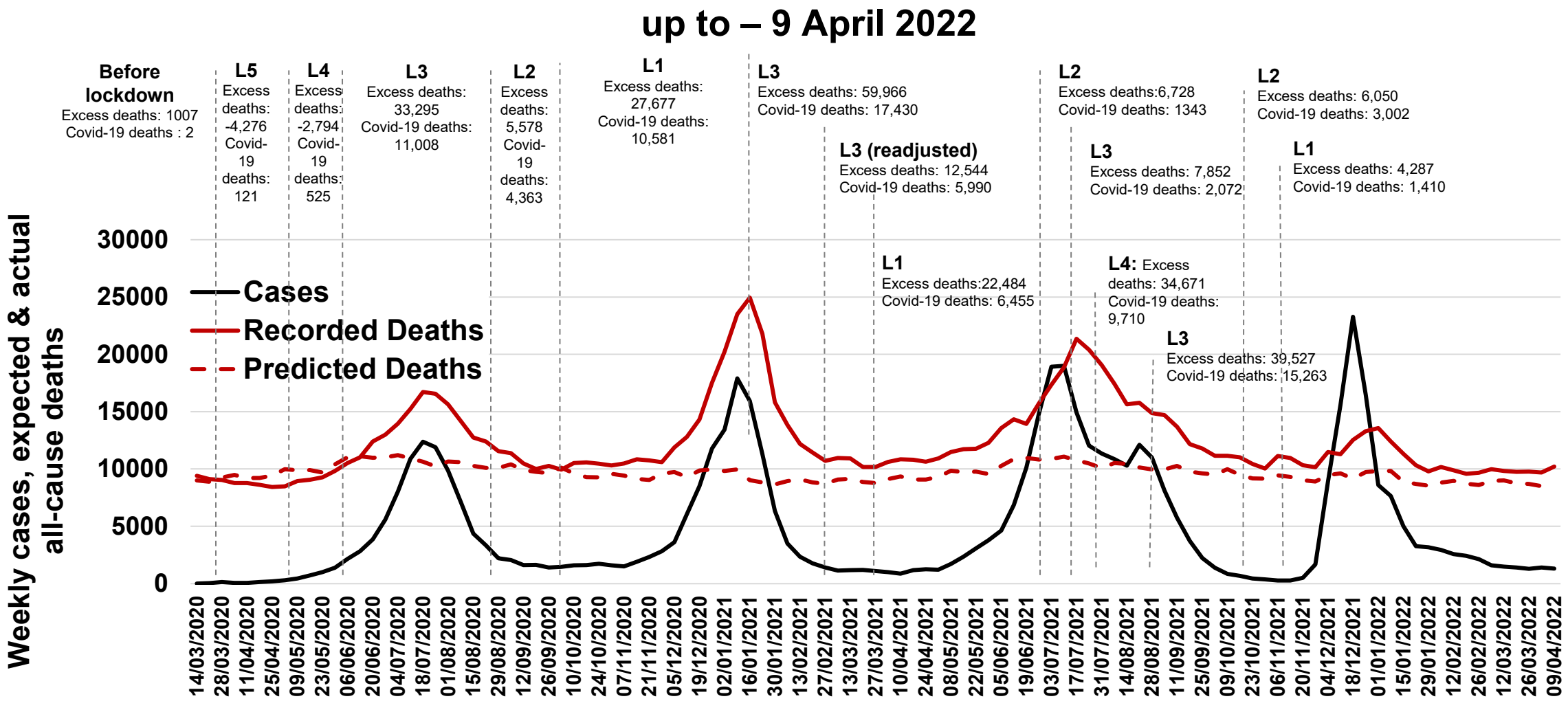
Expected & actual all-cause deaths during Covid-19



Source: Bradshaw D, et al

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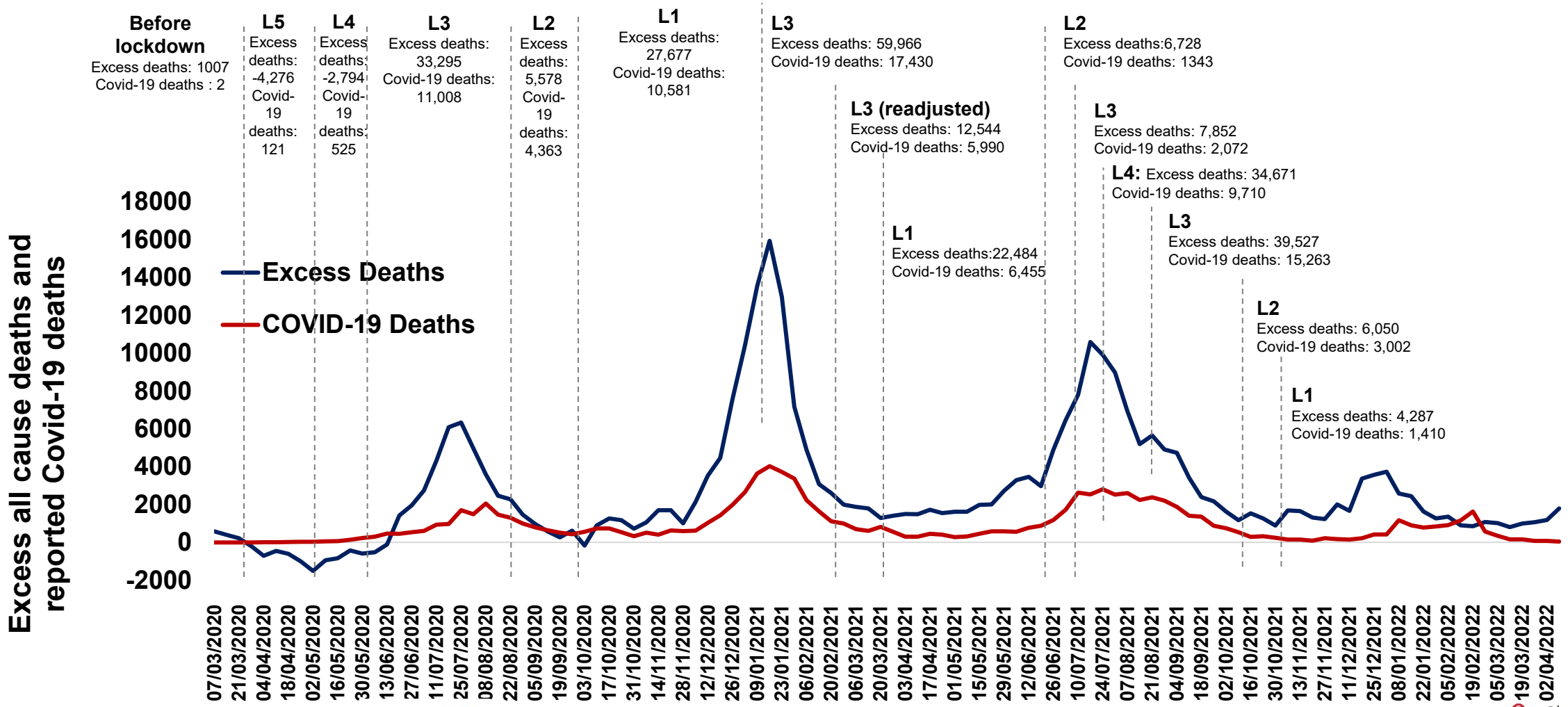
Weekly excess all cause deaths & reported Covid-19 deaths

up to – 9 April 2022



Source: Bradshaw D, et al

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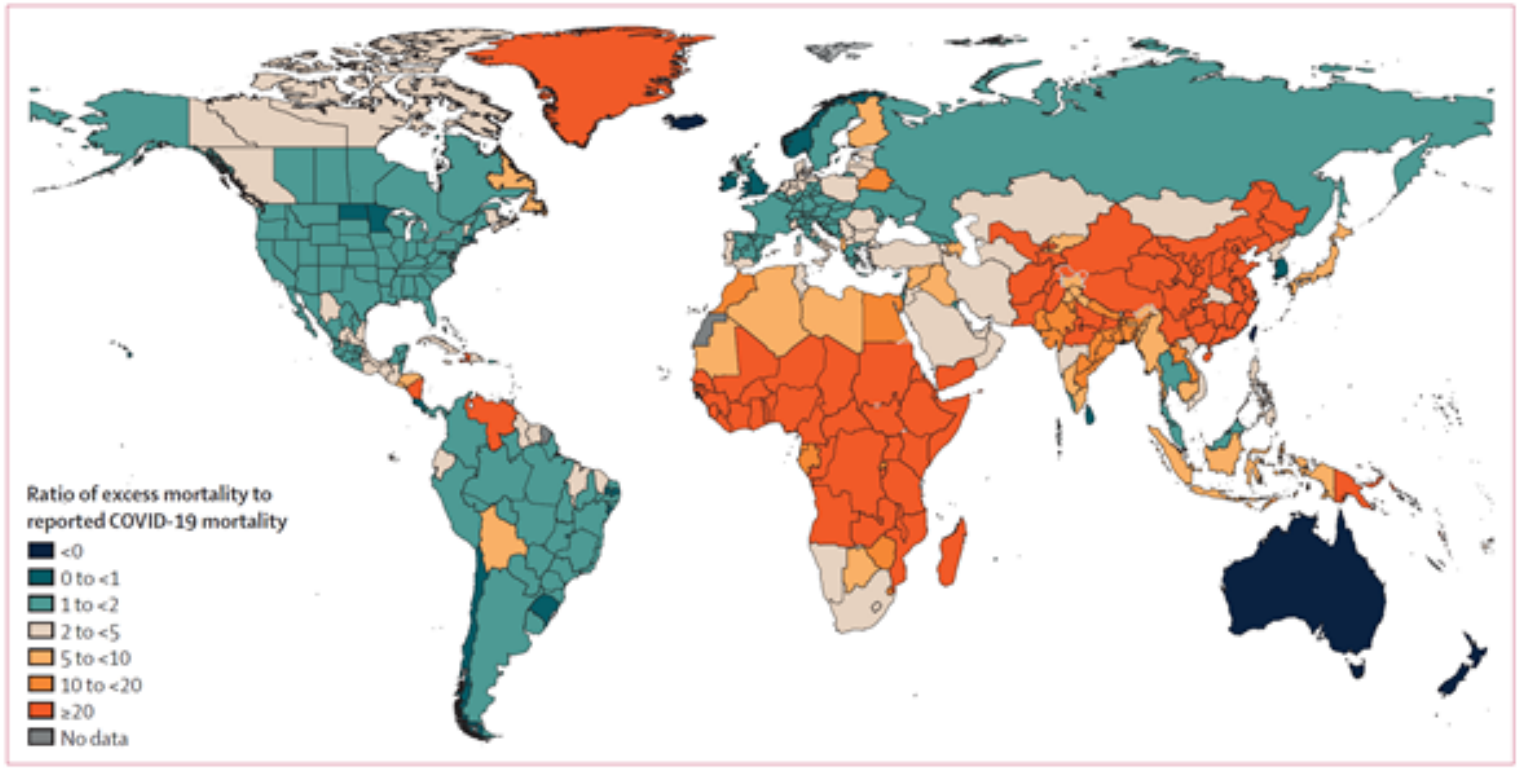
THE LANCET

Estimating excess mortality due to the COVID-19 pandemic: a systematic analysis of COVID-19-related mortality, 2020–21

*COVID-19 Excess Mortality Collaborators**



Ratio between estimated excess mortality rate due to COVID-19 and reported COVID-19 mortality rate between Jan 1, 2020, and Dec 31, 2021.

- **Dark green countries: Covid-19 death reporting good – similar to excess deaths**
- **Light green & grey countries: Reasonable Covid-19 death reporting – excess deaths <5 X higher (SA is grey)**
- **Countries in yellow and orange: Poor Covid-19 death reporting – excess deaths >10 X higher**
- **Americas have good routine Covid-19 death reporting; Africa & Asia - poor reporting**

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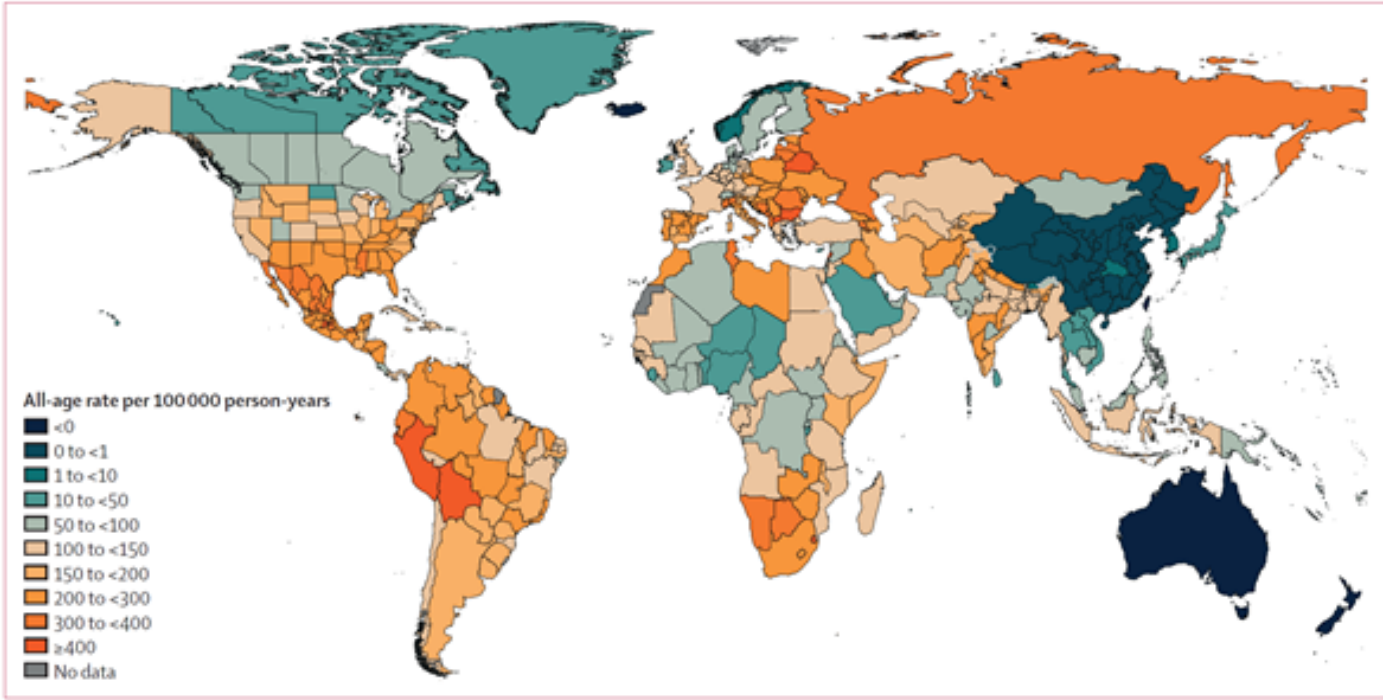
THE LANCET

Estimating excess mortality due to the COVID-19 pandemic: a systematic analysis of COVID-19-related mortality, 2020–21

COVID-19 Excess Mortality Collaborators*

- **Estimated 18.2 million excess deaths during the pandemic (to 31 Dec 2021; ie. pre-omicron)**
- **Top 5 countries with most excess deaths: India, USA, Russia, Mexico, Brazil**
- **Global all-age excess mortality in COVID-19 pandemic: ~120.3 deaths per 100,000 population**



Excess mortality rate due to COVID-19 between Jan 1, 2020, and Dec 31, 2021.

Excess mortality per 100,000 pop

- **Bolivia: 734**
- **Bulgaria: 647**
- **Russia: 374**
- **South Africa: 293**
- **USA: 179**
- **UK: 127**
- **Nigeria: 38**
- **Singapore: -16 (lowered deaths)**

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South Africa Provincial SARS-CoV-2 cases in the 4 waves

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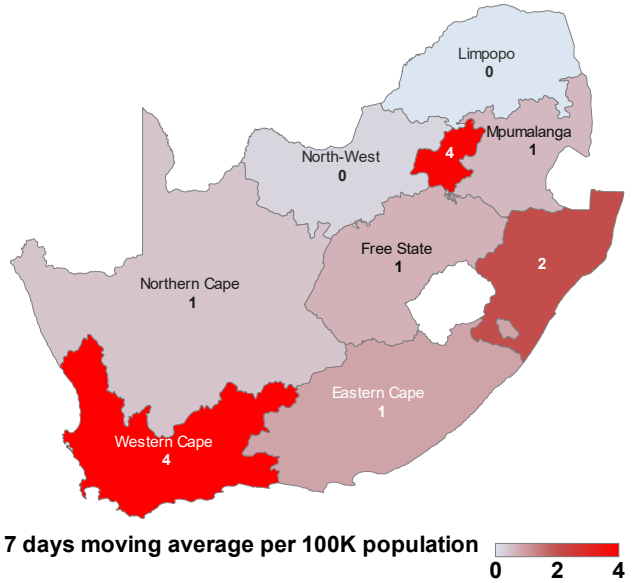
Daily new cases over last 7 days/100,000

up to – 13 April 2022

Province	Population per 100,000	7 Days Moving Average: at 7 days back	Per 100K at 7 days back	at a day back	100K at a day back	Increase / Decrease
Eastern Cape	67	71	1	68	1	-5%
Free State	29	38	1	25	1	-34%
Gauteng	155	565	4	542	4	-4%
KwaZulu Natal	115	308	3	228	2	-26%
Limpopo	59	19	0	16	0	-14%
Mpumalanga	47	42	1	36	1	-13%
North West	41	32	1	19	0	-40%
Northern Cape	13	13	1	8	1	-34%
Western Cape	71	304	4	252	4	-17%
South Africa	597	1391	2	1196	2	-14%
Africa	13410	3370	0	2365	0	-30%
World	77952	1133087	15	973077	12	-14%



Data source: Department of Health

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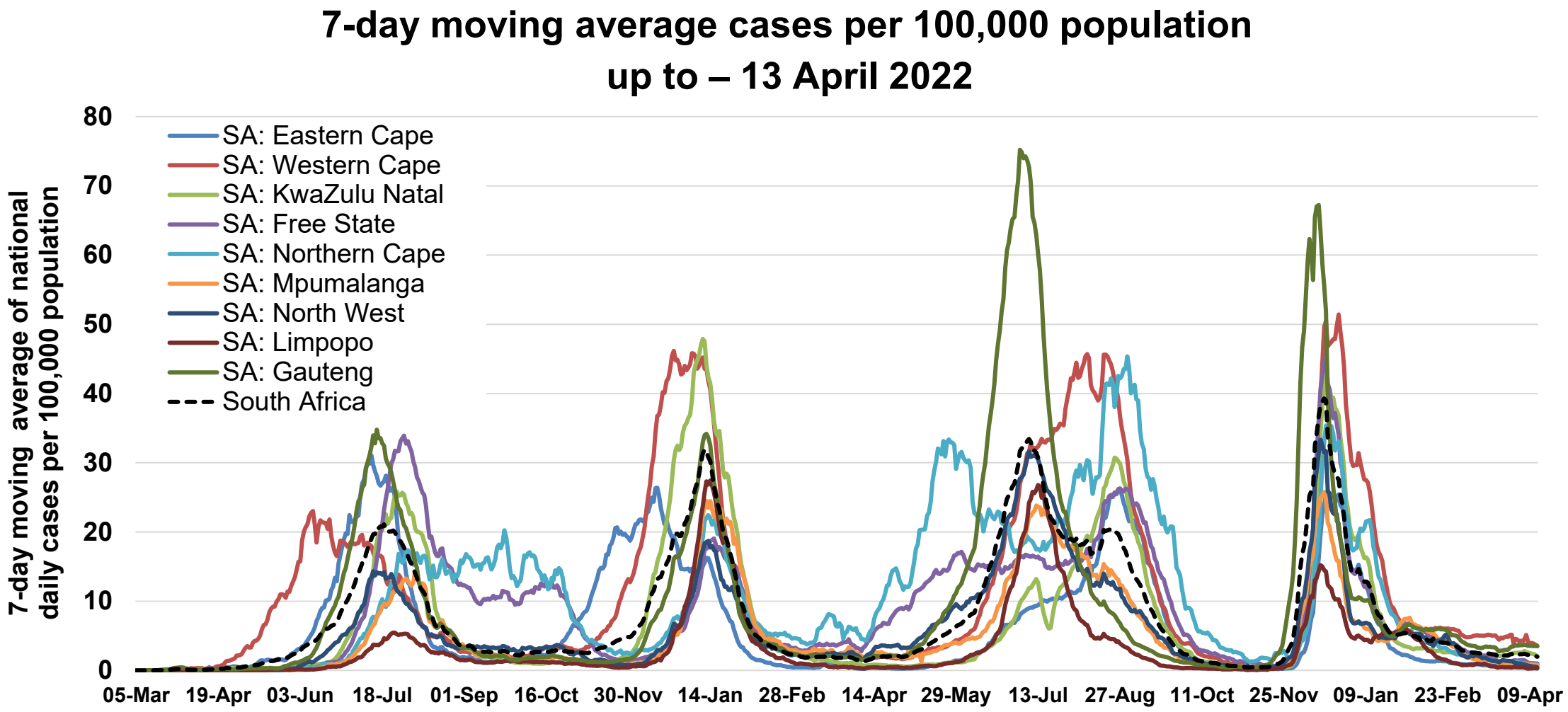
Confirmed SARS-Cov-2 cases by province



Data source: Department of Health; Analysis

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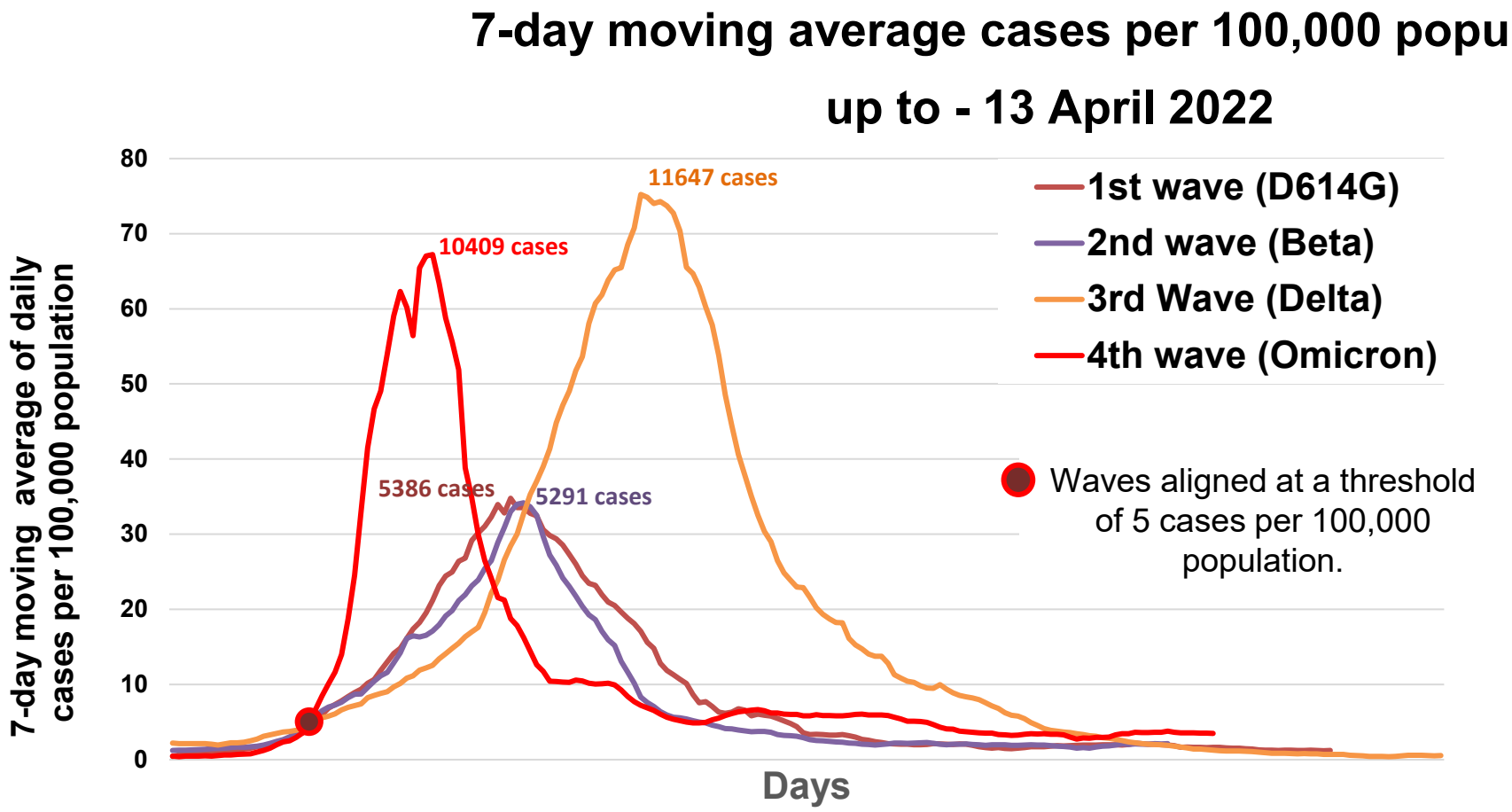
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Gauteng



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

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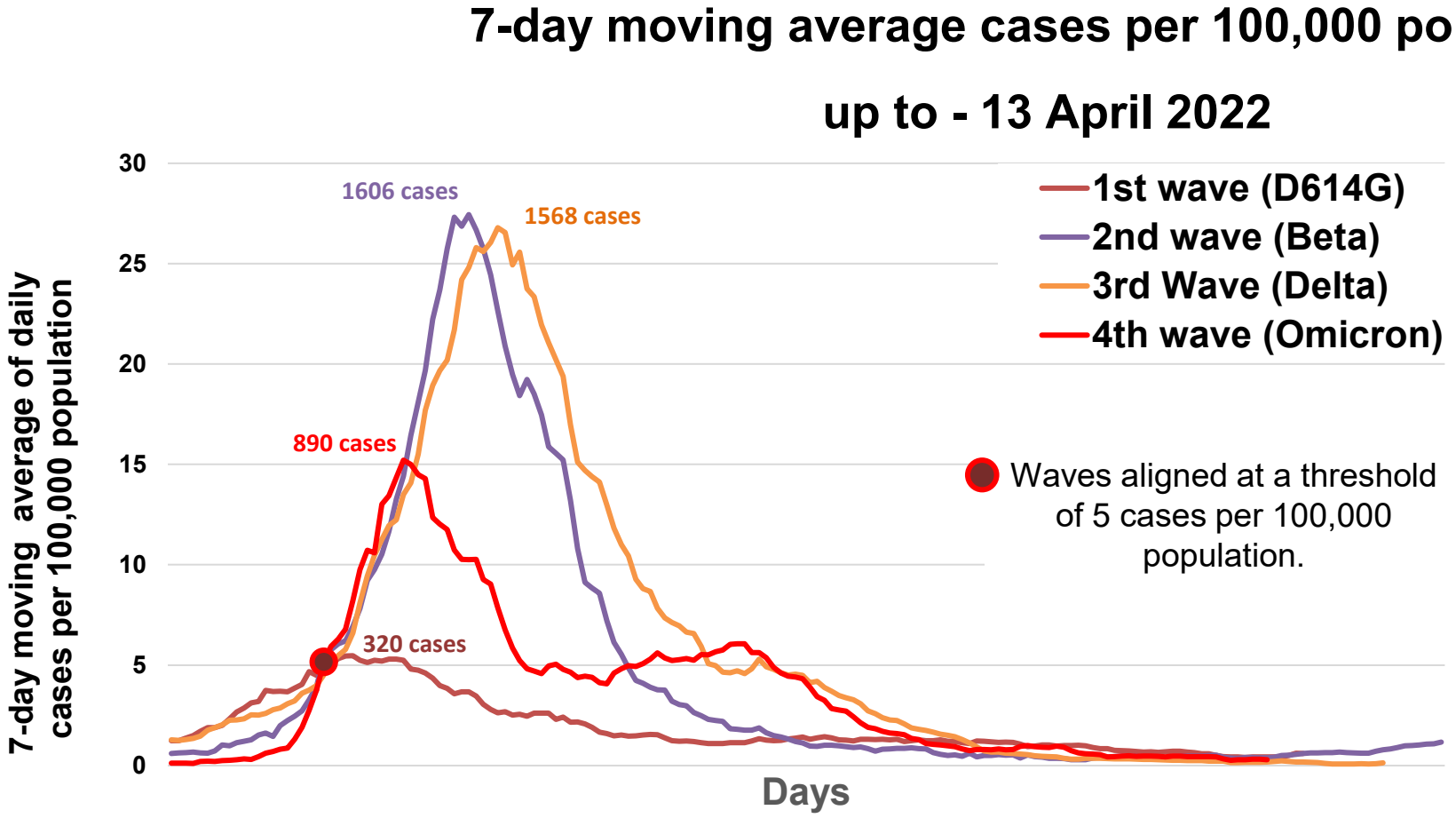
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Limpopo



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

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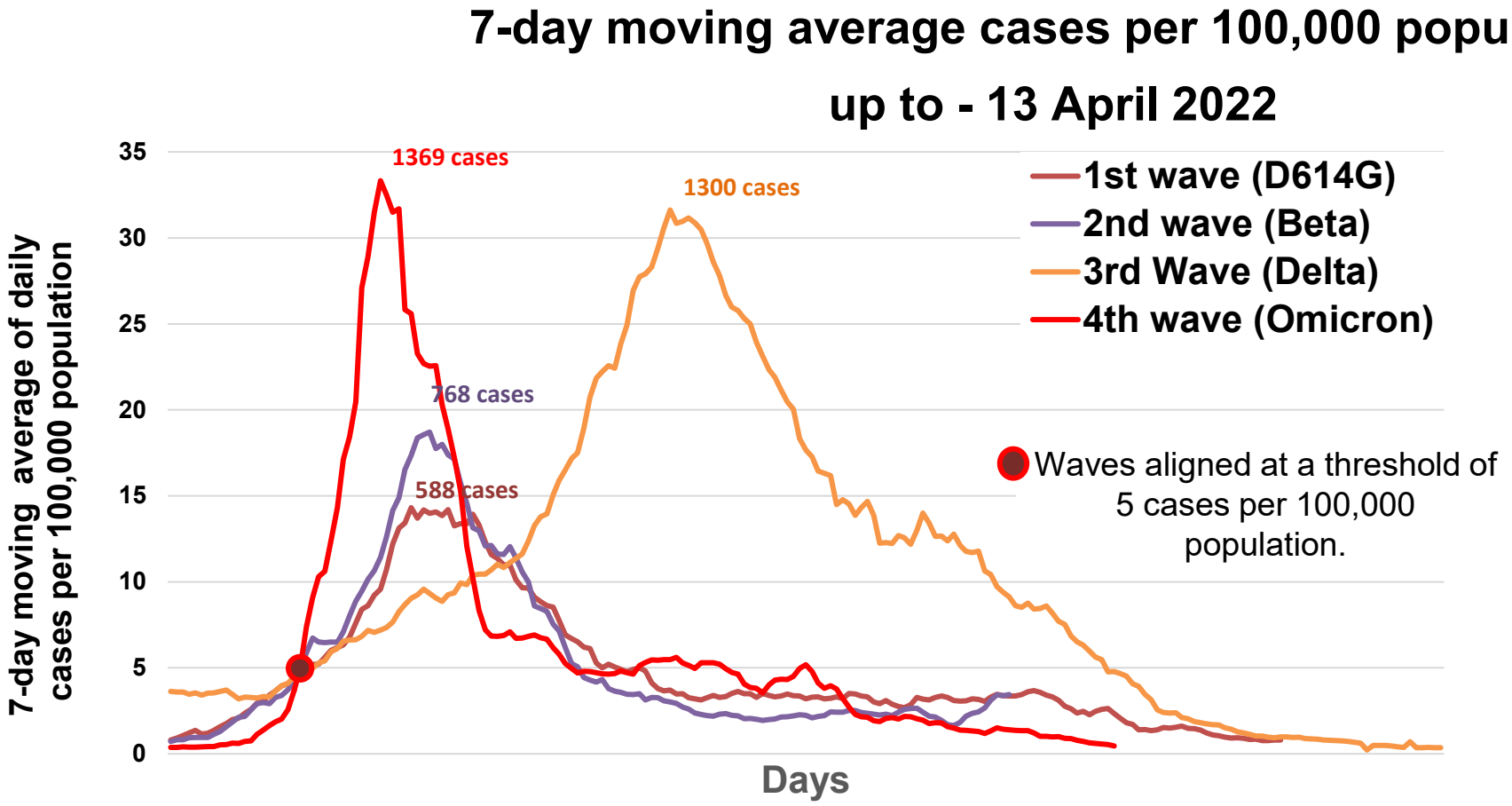
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: North West



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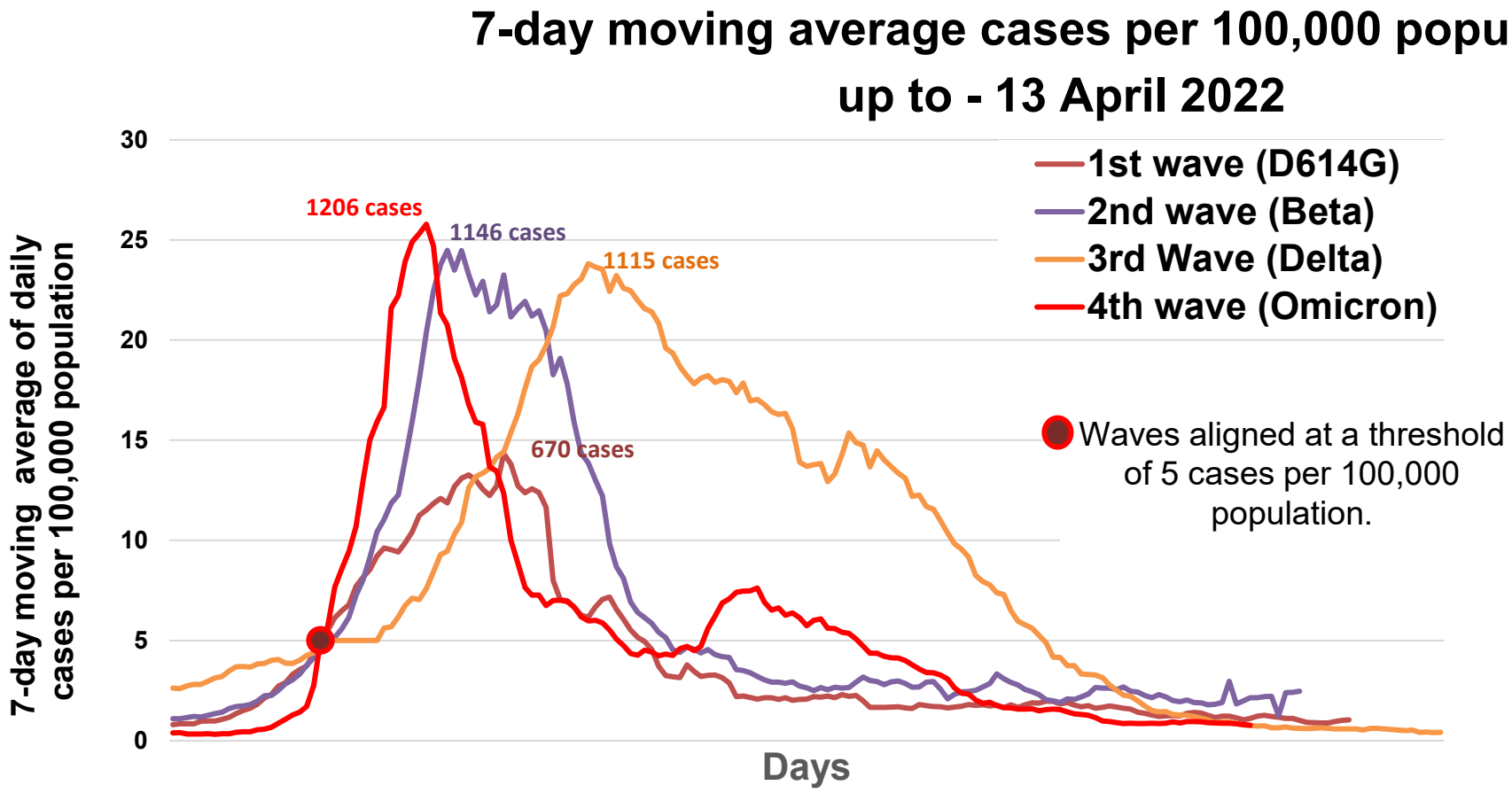
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Mpumalanga



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

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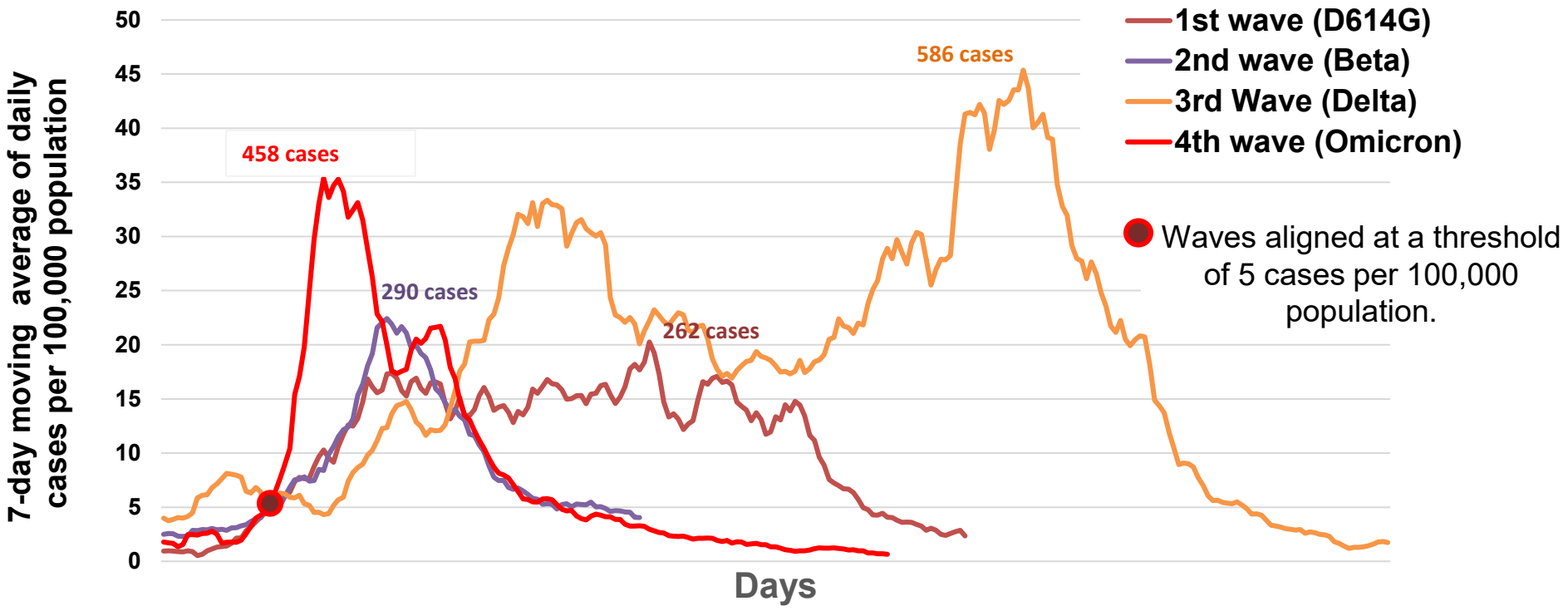
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Northern Cape

7-day moving average cases per 100,000 population
up to – 13 April 2022



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

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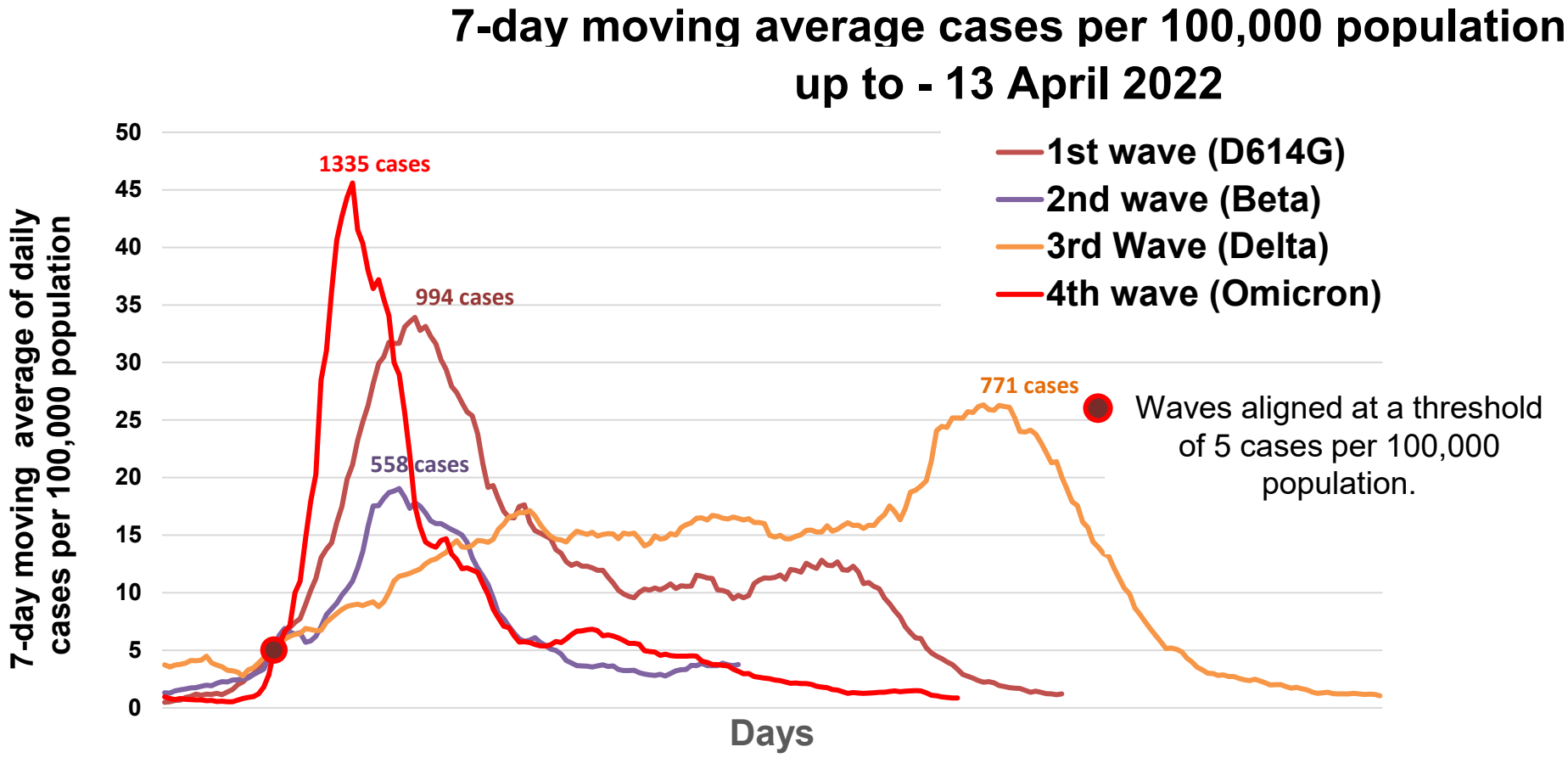
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Free State



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

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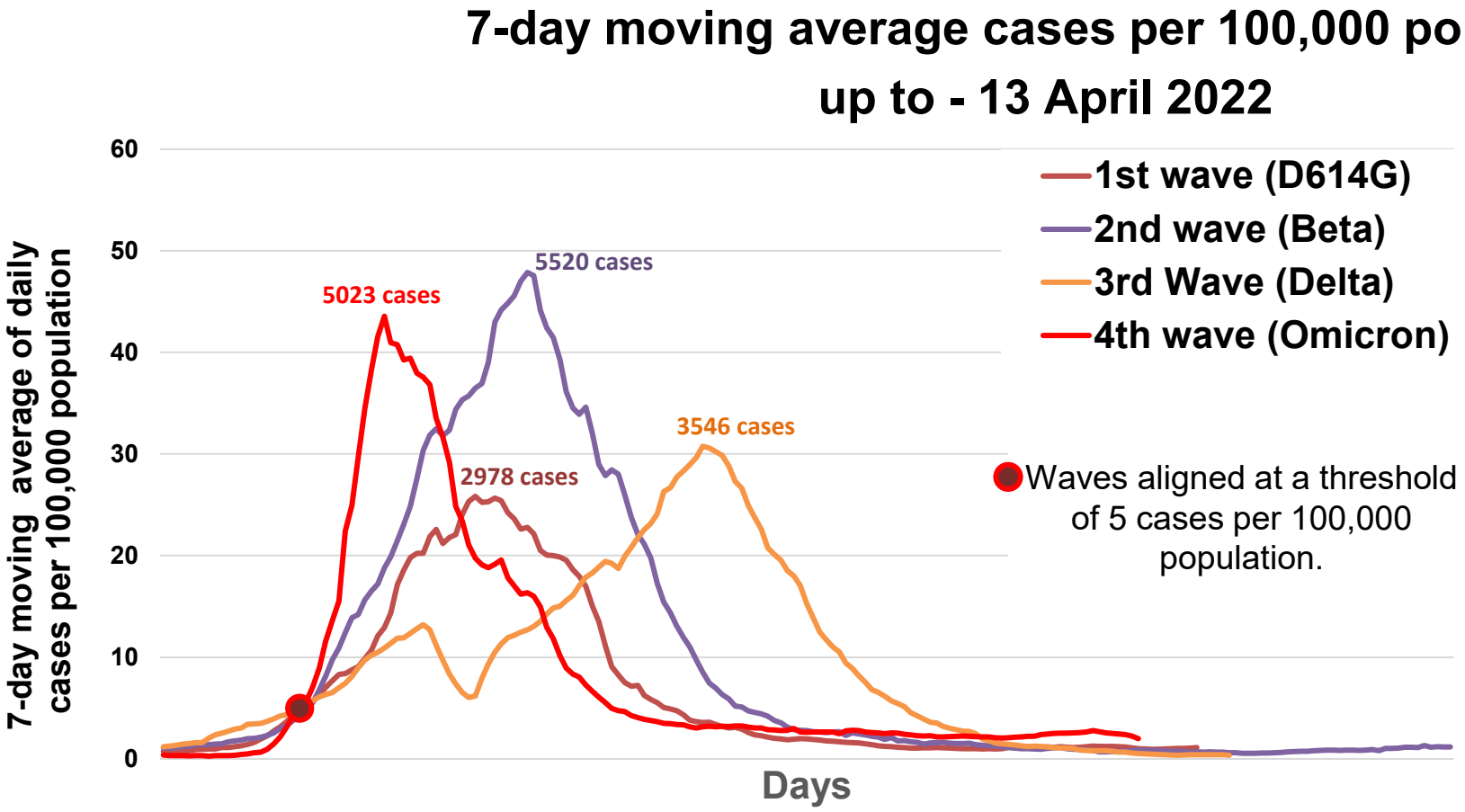
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: KwaZulu Natal



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

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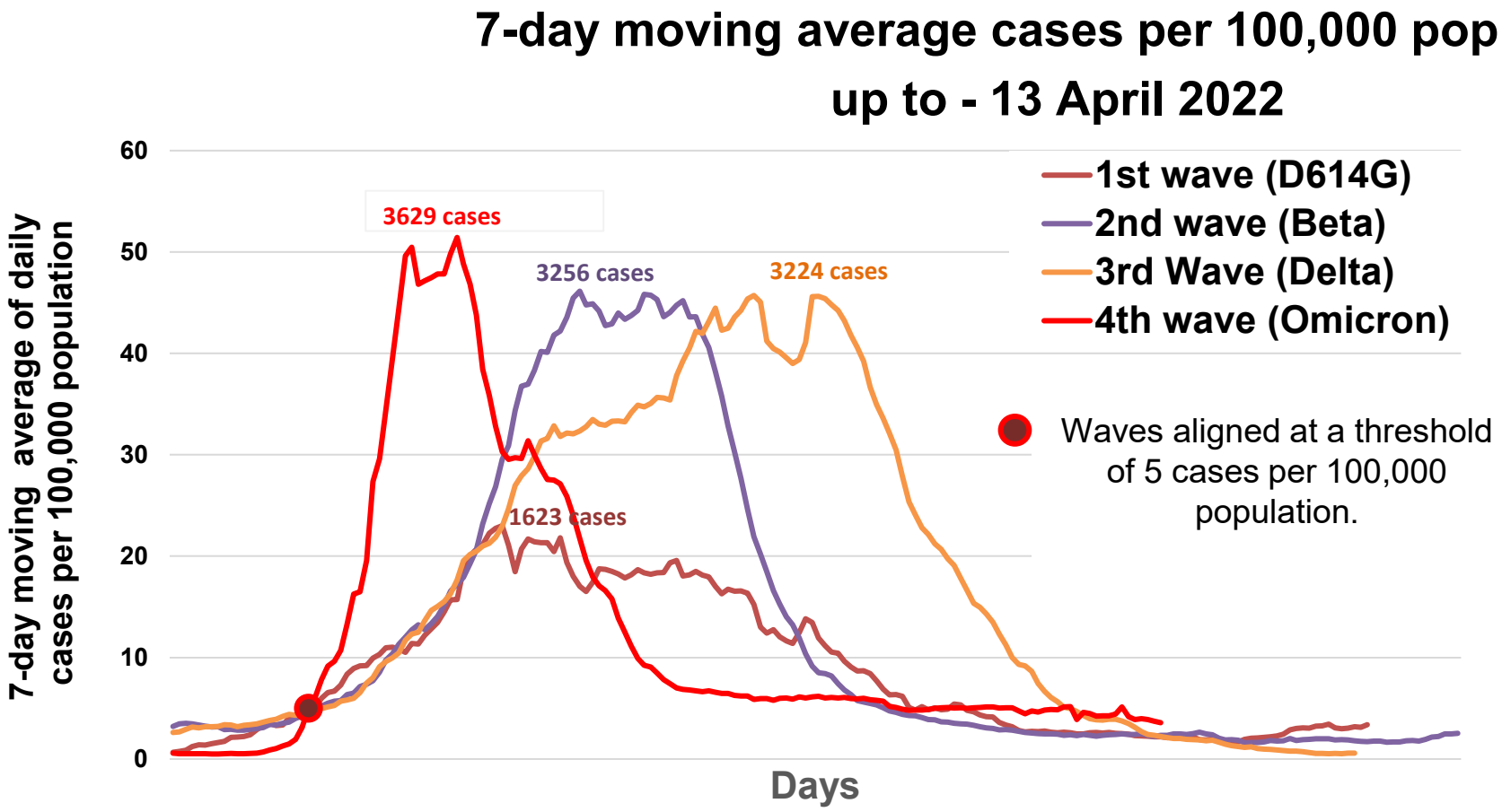
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Western Cape



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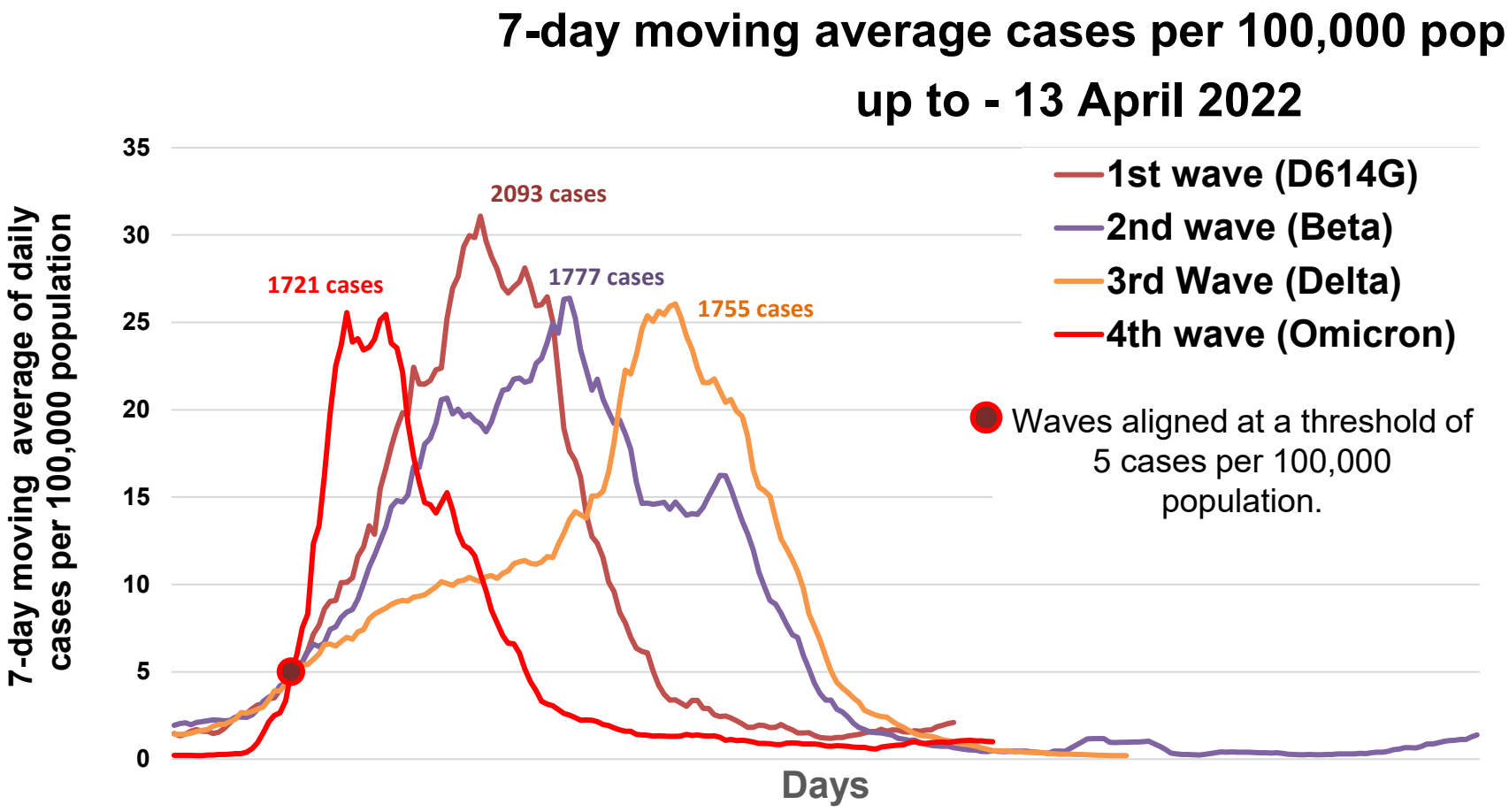
SARS-Cov-2 cases in 1st, 2nd & 3rd and 4th waves: Eastern Cape



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