



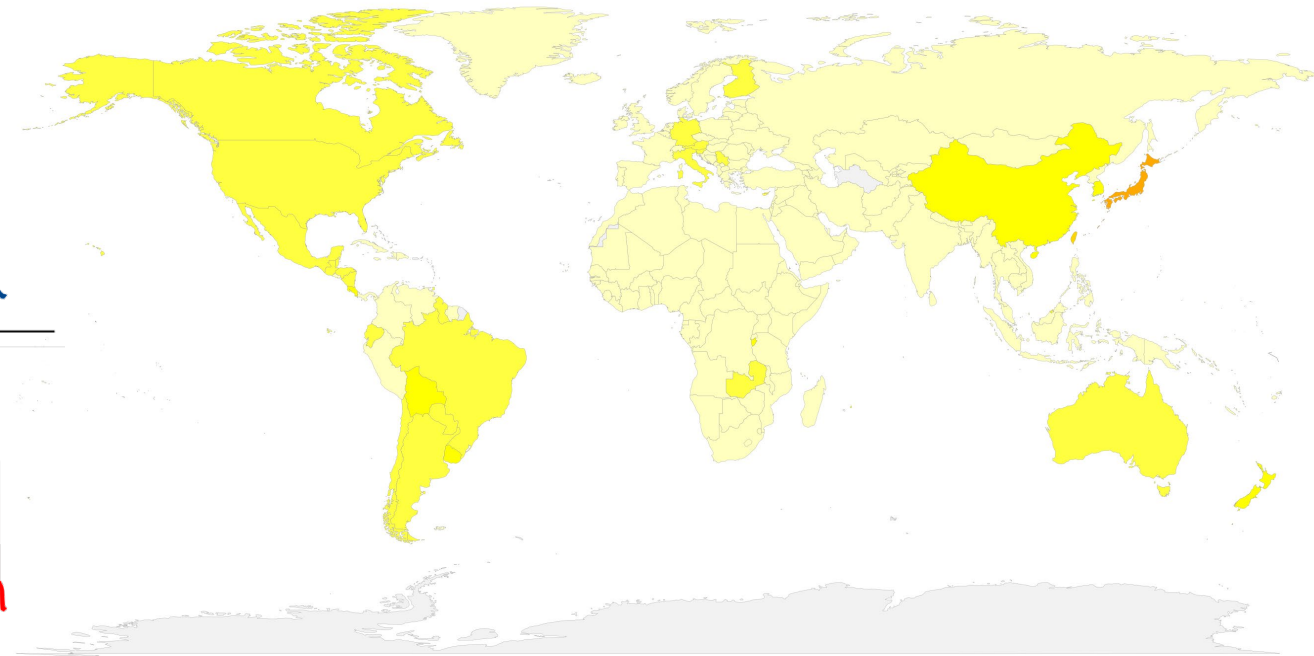
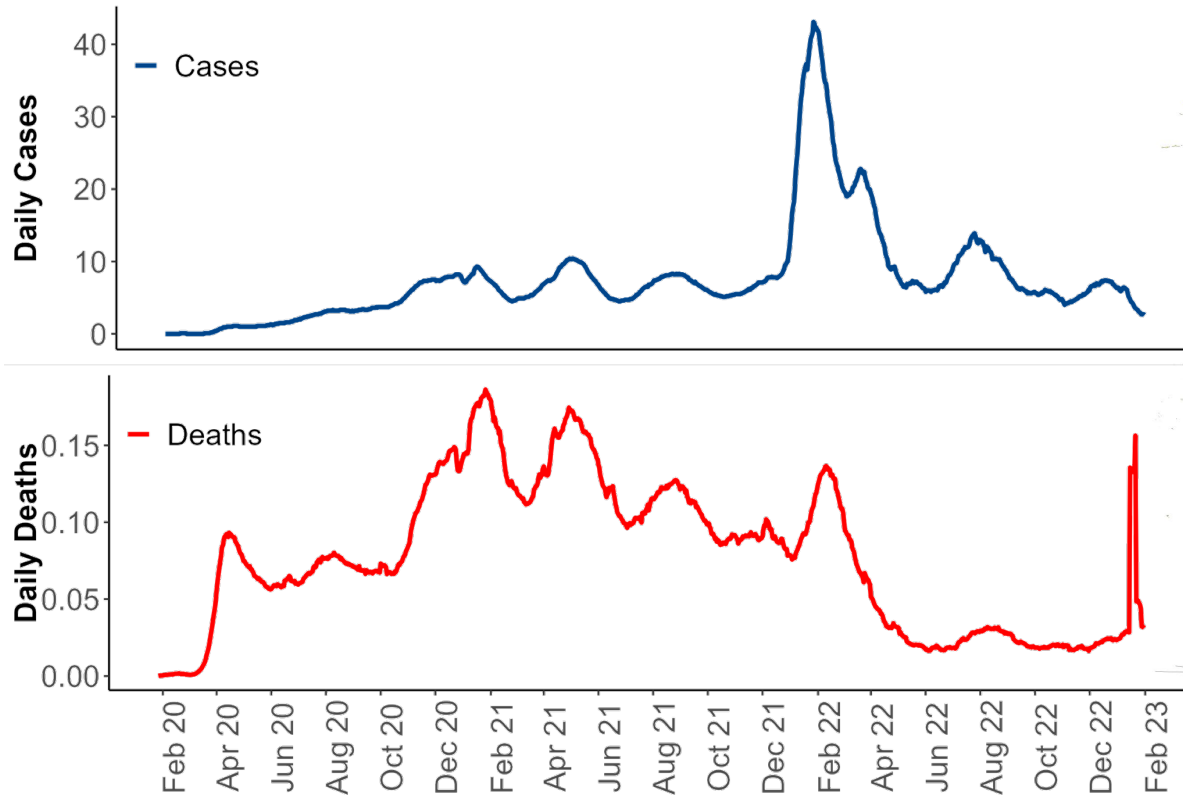
COVID-19 UPDATE

5 February 2023

1. Global COVID-19 pandemic at a glance

Time series of reported cases & deaths

7-day rolling average per 100,000 population



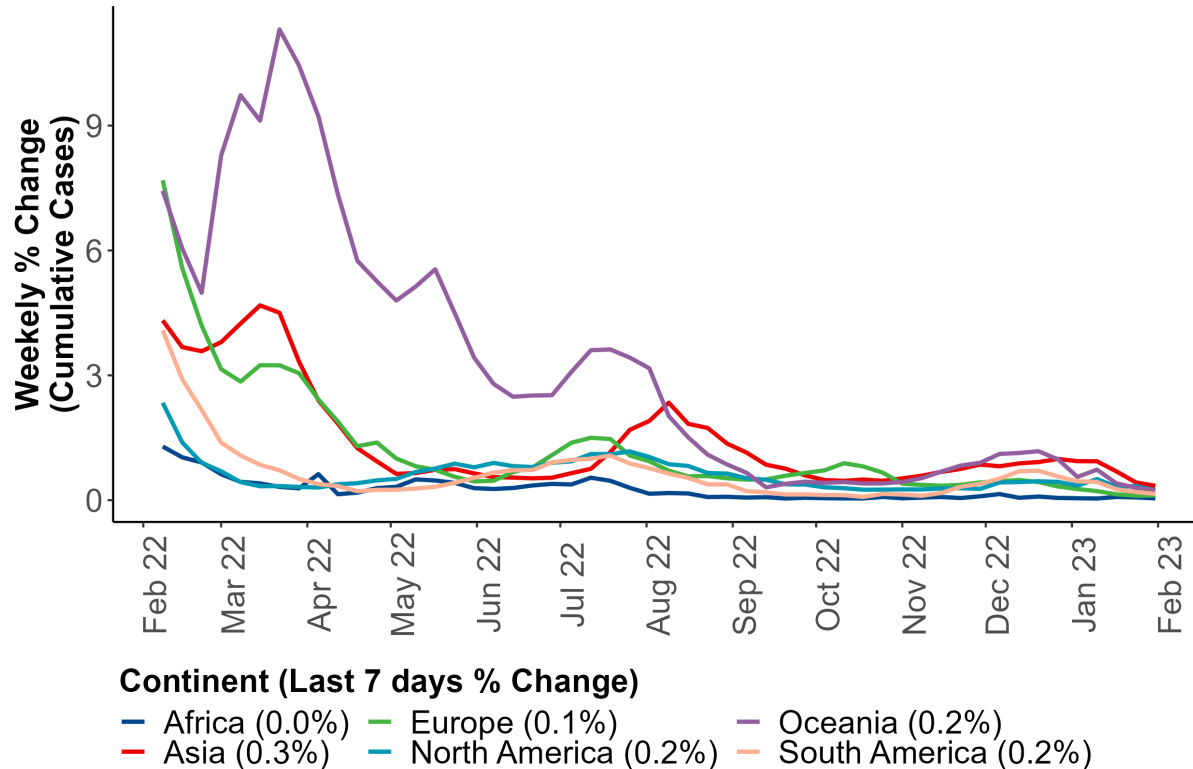
% change in cases last month

No Data | 0 1 2 5 10 20 40 50

Source: Our World in Data | Data to 31 January 2023

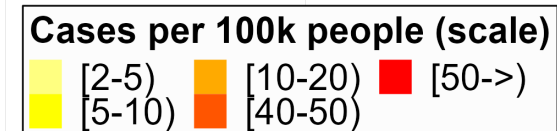
2. Trends in the Covid-19 pandemic Cases

Time series of % change in cases Continents | Past 7 days



Top 5 small & large countries with the biggest ↑ in cases last month

Small countries less than 20 million		Large countries at least 20 million	
1	Kiribati, 46.0%	1	Japan, 10.4%
2	Macao, 24.4%	2	Taiwan, 7.0%
3	Cook Islands, 9.5%	3	Hong Kong, 6.6%
4	Brunei, 3.5%	4	South Korea, 3.1%
5	Micronesia, 2.1%	5	New Zealand, 2.6%



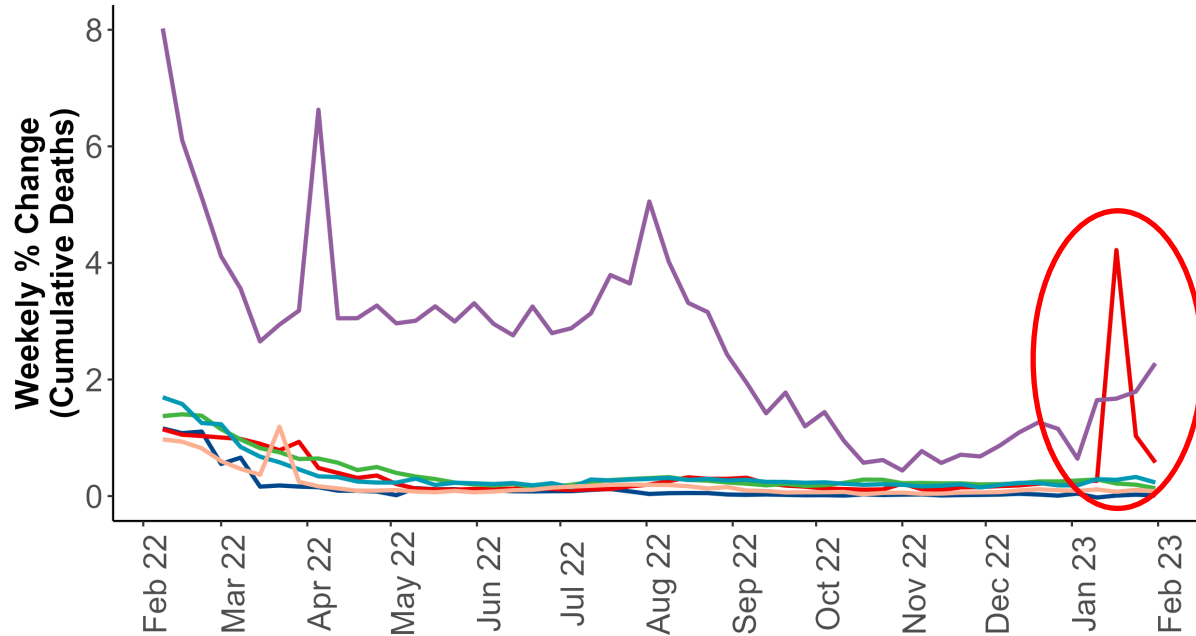
Source: Our World in Data | Data to 31 January 2023

3. Trends in the Covid-19 pandemic

Deaths

Time series of % change in deaths

Continents | Past 7 days



Continent (Last 7 days % Change)

Africa (0.0%) Europe (0.1%) Oceania (2.3%)
 Asia (0.6%) North America (0.2%) South America (0.1%)

Top 5 small & large countries with the biggest ↑ in deaths last month

Small countries less than 20 million

- 1 Macao, 114.3%
- 2 Cook Islands, 100.0%
- 3 Kiribati, 38.5%
- 4 Tonga, 8.3%
- 5 Bermuda, 2.6%

Large countries at least 20 million

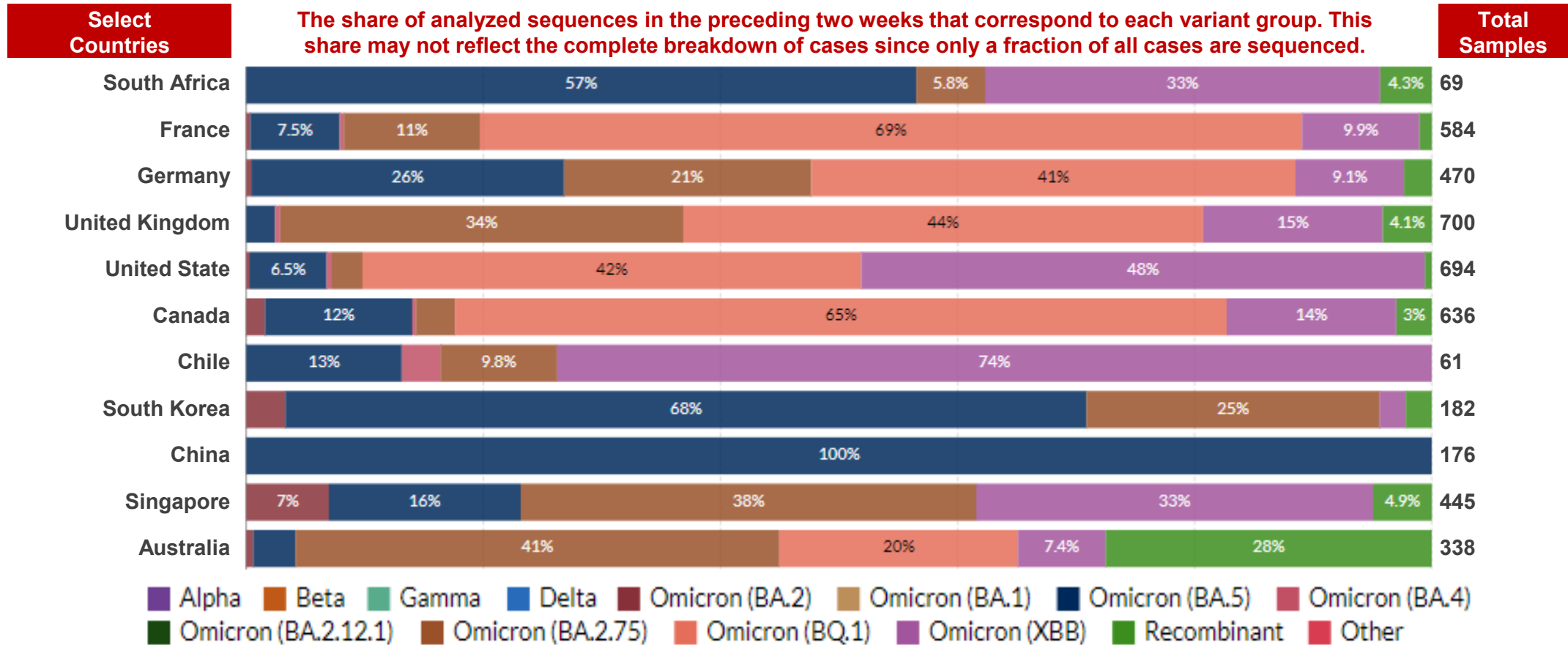
- 1 China, 1500.9%
- 2 Japan, 17.5%
- 3 Hong Kong, 9.9%
- 4 Finland, 7.9%
- 5 Norway, 7.2%

Cases per 100k people (scale)

[0-0.1] [0.2-0.5]
 [0.1-0.2] [0.5-1]

Source: Our World in Data | Data to 31 January 2023

4. Distribution of variants in select countries

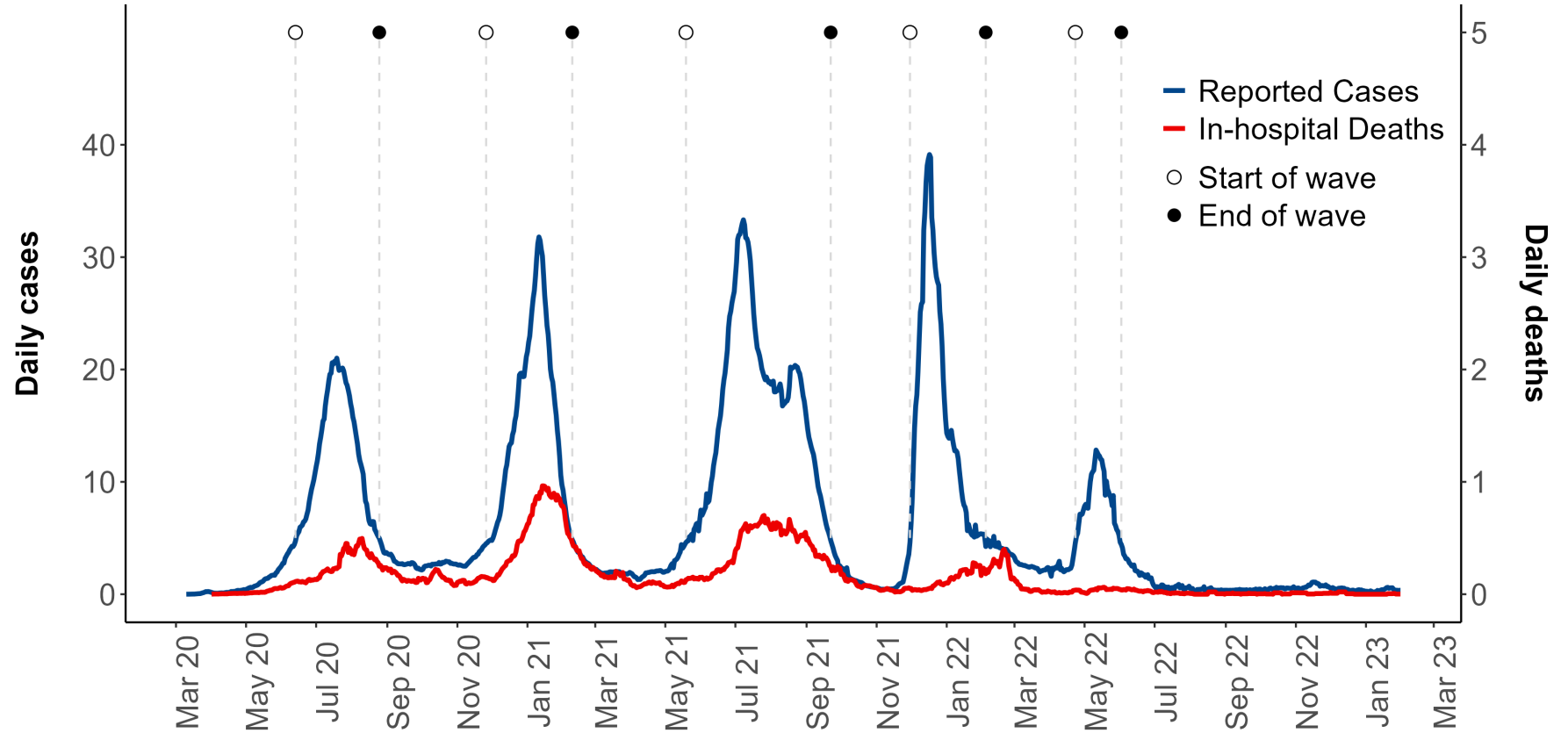


Source: Our World in Data; GISAID, via CoVariants.org; Data to 30th January 2023 (last 2 weeks samples)

5. COVID-19 in South Africa

Time series of reported cases & deaths

7-day rolling average per 100,000 population



Current

4,055,966
Cases

102595
Deaths

% change since last end-of-wave (236 days)

2.3% ↑ in
Cases

1.3% ↑ in
Deaths

Source: Our World in Data | Data to 31 January 2023

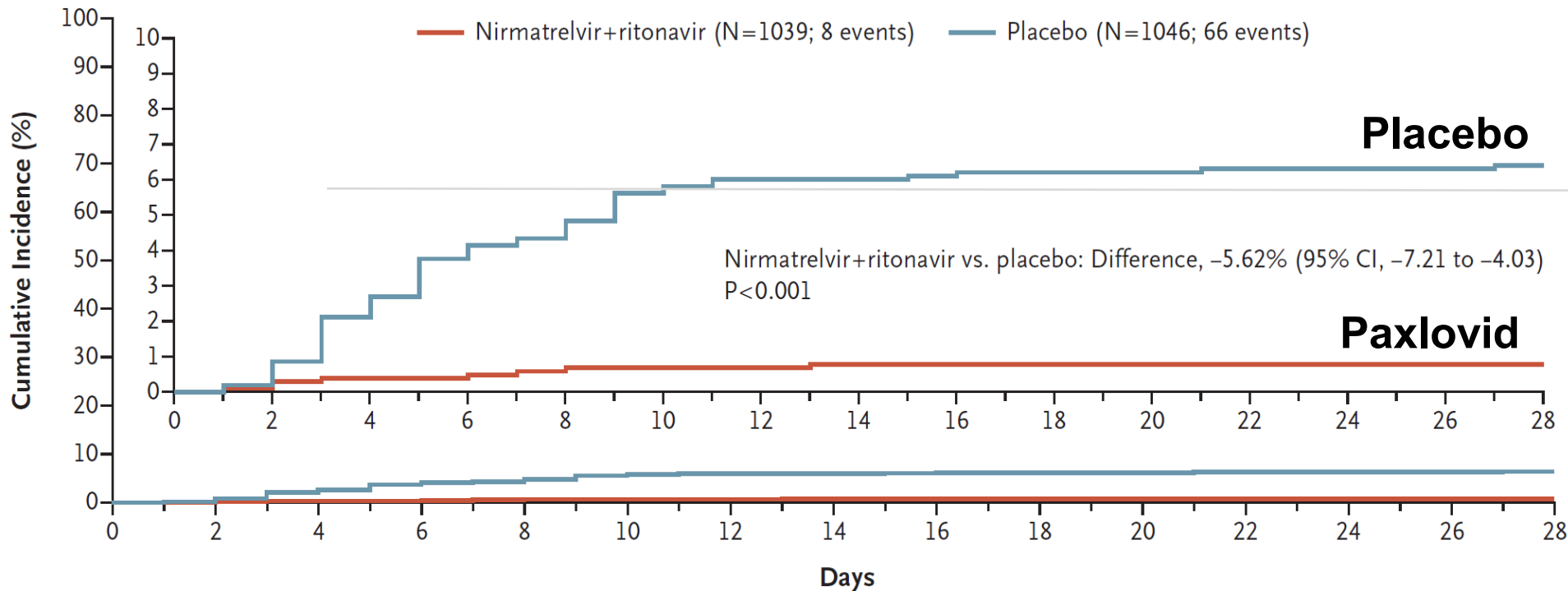
6. Paxlovid: a new chapter of “Test & Treat” for Covid-19



The NEW ENGLAND
JOURNAL of MEDICINE

Oral Nirmatrelvir for High-Risk, Nonhospitalized Adults with Covid-19

Jennifer Hammond, Heidi Leister-Tebbe, Annie Gardner, Paula Abreu, Weihang Bao, Wayne Wisemandle, MaryLynn Baniecki, Victoria M. Hendrick, Bharat Damle, Abraham Simón-Campos, Rienk Pypstra, and James M. Rusnak



Covid-19–Related Hospitalization or Death from Any Cause through Day 28 among Patients Treated ≤ 5 Days after Symptom Onset

- **RCT - 774 patients**
- **89% reduction in severe Covid-19**
- **0 vs 12 deaths in Paxlovid v placebo**
- **Paxlovid treated has lower viral load**
 - \downarrow **infectiousness**

7. Paxlovid highly effective in patients >65 years



The NEW ENGLAND
JOURNAL of MEDICINE

Nirmatrelvir Use and Severe Covid-19 Outcomes during the Omicron Surge

Ronen Arbel, Ph.D., Yael Wolff Sagy, Ph.D., Moshe Hoshen, Ph.D.,
Erez Battat, M.B.A., Gil Lavie, M.D., Ruslan Sergienko, M.A.,
Michael Friger, Ph.D., Jacob C. Wayman, M.D., Noa Dagan, M.D.

Patients ≥ 65 Yr of Age

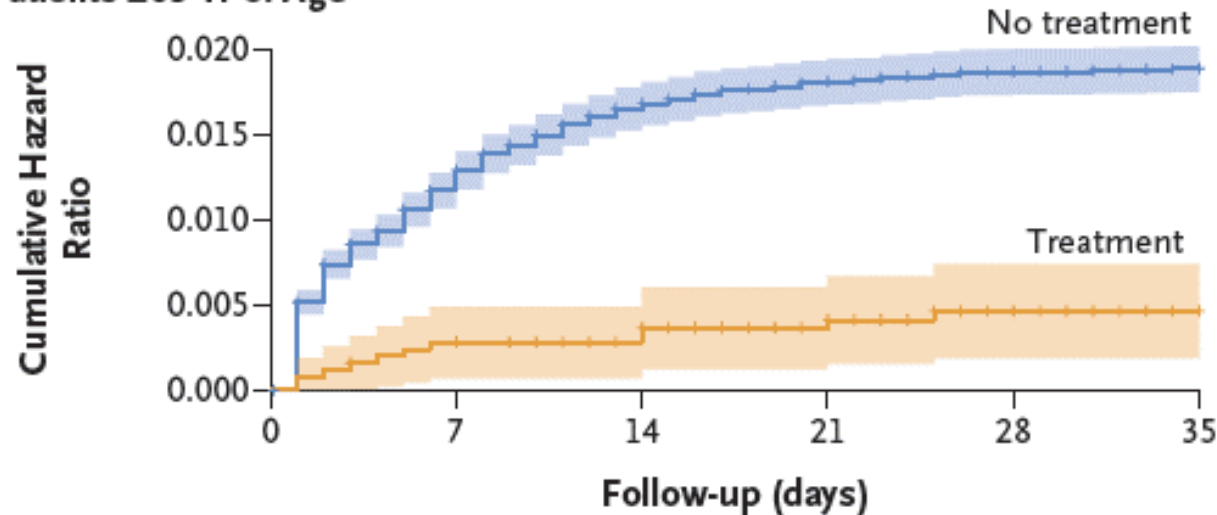


Figure. Cumulative Hazard Ratio for Hospitalization Due to Covid-19

109,254 patients – real world use, including vaccinated people

- **65+ yrs – 73% fewer hospitalizations in Paxlovid vs untreated**
- **65+ years – 79% fewer deaths**
- **40-64 yrs - No evidence of benefit of Paxlovid**

8. Paxlovid contra-indications

- **Authorized for 12+ years who weigh more than 40kgs**
- **Safe in pregnancy – JHU study in JAMA**
- **Cytochrome P450 3A inhibitor – CYP3A metabolises about 50% of all medicines. Contra-indicated because may reach toxic levels**
- **Ritonavir may cause ARV – Protease Inhibitor resistance**
- Alpha₁-adrenoreceptor antagonist: alfuzosin
- Analgesics: pethidine, piroxicam, propoxyphene
- Antianginal: ranolazine
- Anticancer drugs: neratinib, venetoclax
- Antiarrhythmic: amiodarone, bepridil, dronedarone, encainide, flecainide, propafenone, quinidine
- Antibiotics: fusidic acid, rifampicin
- Anticonvulsants: carbamazepine, phenobarbital, phenytoin
- Anti-gout: colchicine
- Antihistamines: astemizole, terfenadine
- Antipsychotics/neuroleptics: lurasidone, pimozide, clozapine, quetiapine
- Ergot derivatives: dihydroergotamine, ergonovine, ergotamine, methylergonovine
- GI motility agents: cisapride
- Herbal products: St. John's wort (*Hypericum perforatum*)
- Lipid-modifying agents:
 - HMG Co-A reductase inhibitors: lovastatin, simvastatin
 - Microsomal triglyceride transfer protein (MTTP) inhibitor: lomitapide
- PDE5 inhibitor: avanafil, sildenafil, vardenafil
- Sedative/hypnotics: clorazepate, diazepam, estazolam, flurazepam, oral midazolam and triazolam

9. Doctors are now a major barrier to Paxlovid

The New York Times *An Underused Covid Treatment*
German Lopez

Summary of article:

- The US has a large number of unnecessary deaths because doctors are not prescribing Paxlovid when indicated.
- Doctors prescribed ~45% of recorded cases in the US (1-14 Jan)
- Lack of public awareness & physician resistance – 3 Reasons
 1. Medication is relatively new – Some want more evidence
 2. Concern about “rebound” – some test Covid+ after treatment completion
 3. Potential drug-drug interactions