CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

COVID-19 UPDATE

12 February 2023

science & innovation Department: Science and Innovation REPUBLIC OF SOUTH AFRICA
NRF National Research Foundation
CAPRISA hosts a DSI-NRF Centre of Excellence in HIV Prevention

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

GVN GLOBAL VIRUS NETWORK

german Cooperation DEUTSCHE ZUSAMMENARBEIT
CAPRISA has a GIZ-funded Epidemic Intelligence Unit

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

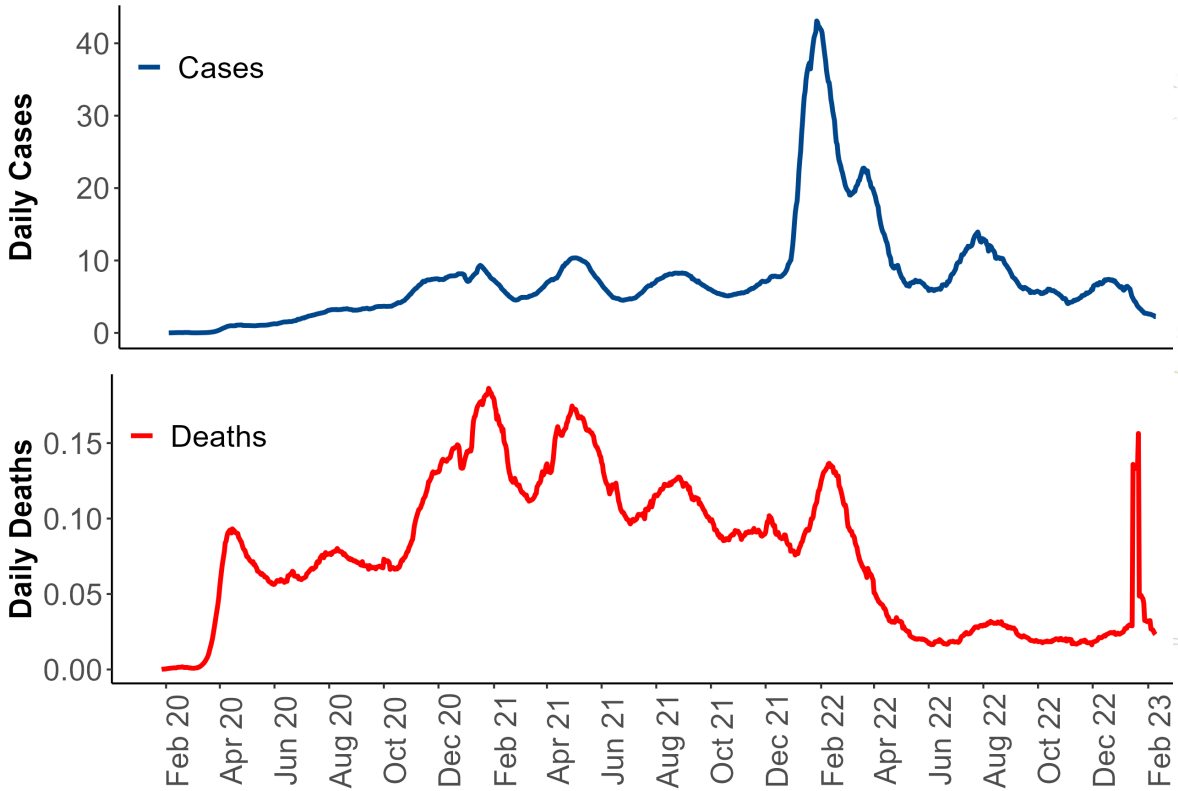
COLUMBIA UNIVERSITY | MAILMAN SCHOOL of PUBLIC HEALTH

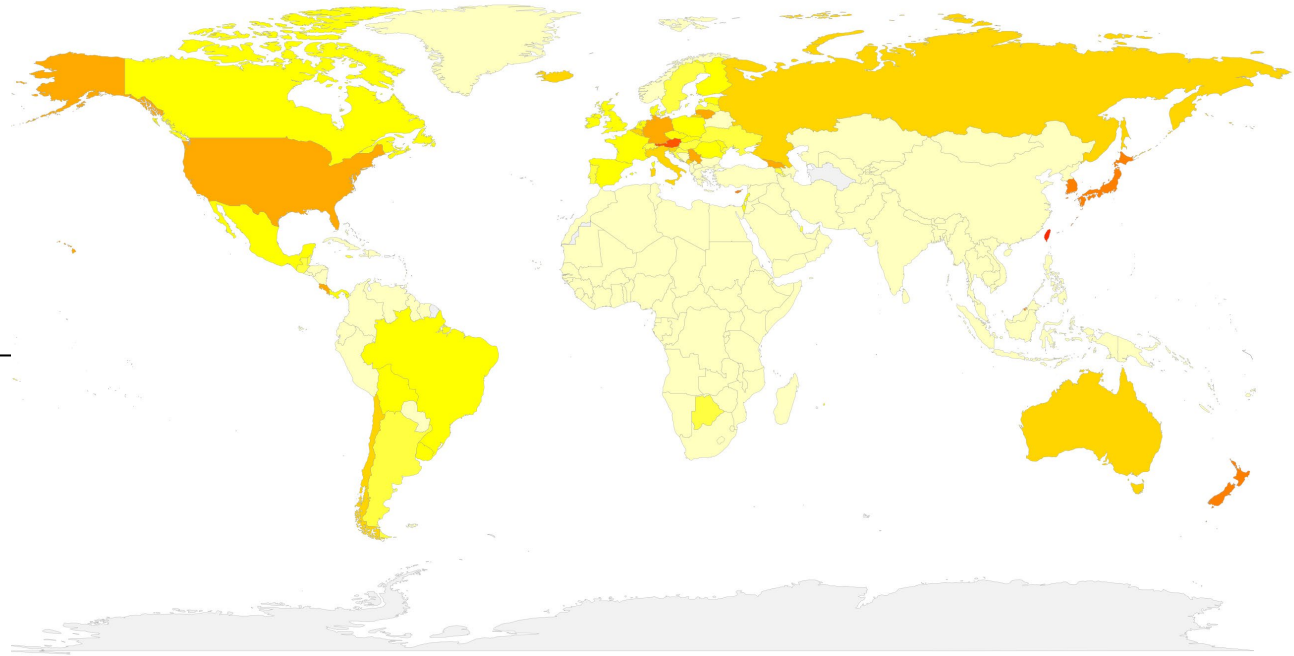
UNIVERSITY OF KWAZULU-NATAL INYUVESI YAKWAZULU-NATALI

1. Global COVID-19 pandemic at a glance

Time series of reported cases & deaths

7-day rolling average per 100,000 population





Source: Our World in Data | Data to 09 February 2023

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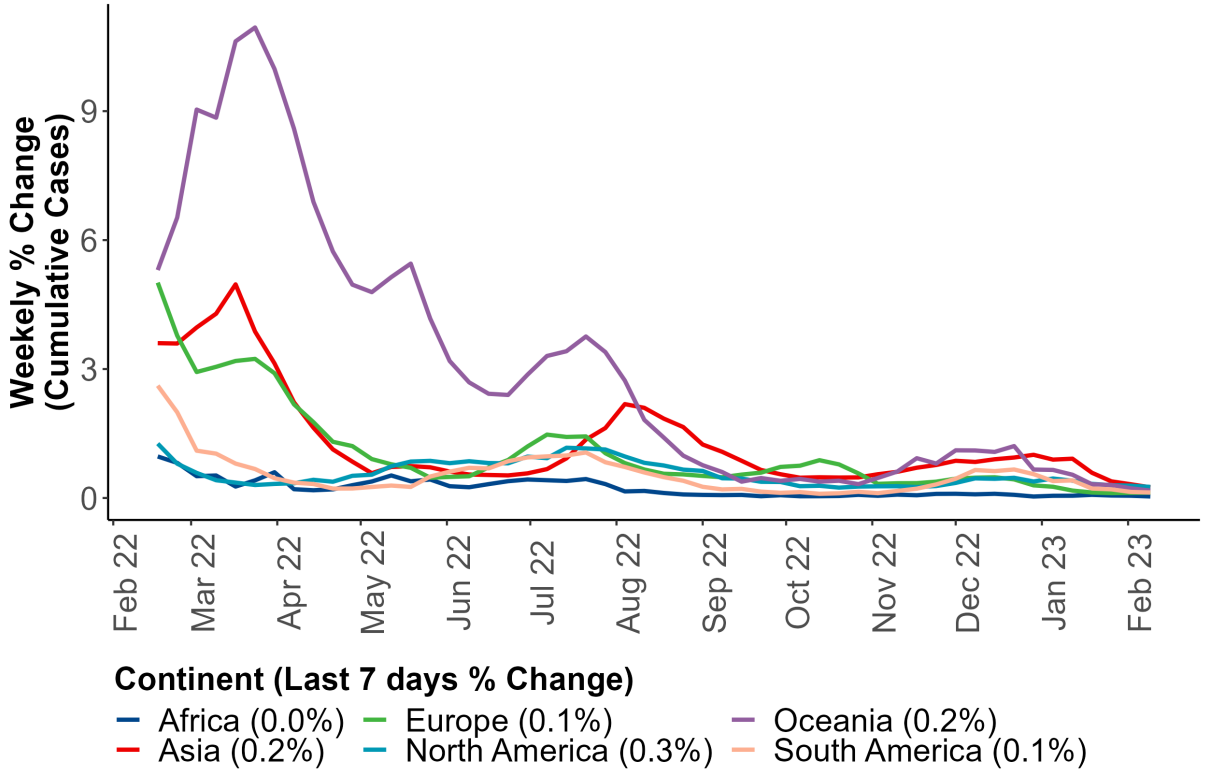
2. Trends in the Covid-19 pandemic

Cases

Time series of % change in cases

Continents | Past 7 days



Top 5 small & large countries with the biggest ↑ in cases last 7 days

Small countries
less than 20 million

1. Nauru-4.2%
2. Macao-0.4%
3. Tonga-0.4%
4. Cook Islands-0.3%
5. St. Lucia-0.3%

Cases per 100k people (scale)
[0-1) [1-2) [5-10) [10-20) [50->)

Large countries
at least 20 million

1. Taiwan-1.6%
2. Japan-0.8%
3. South Korea-0.3%
4. Mexico-0.3%
5. Russia-0.3%

Cases per 100k people (scale)
[0-1) [2-5) [5-10) [10-20) [20-30) [50->)

Source: Our World in Data | Data to 09 February 2023

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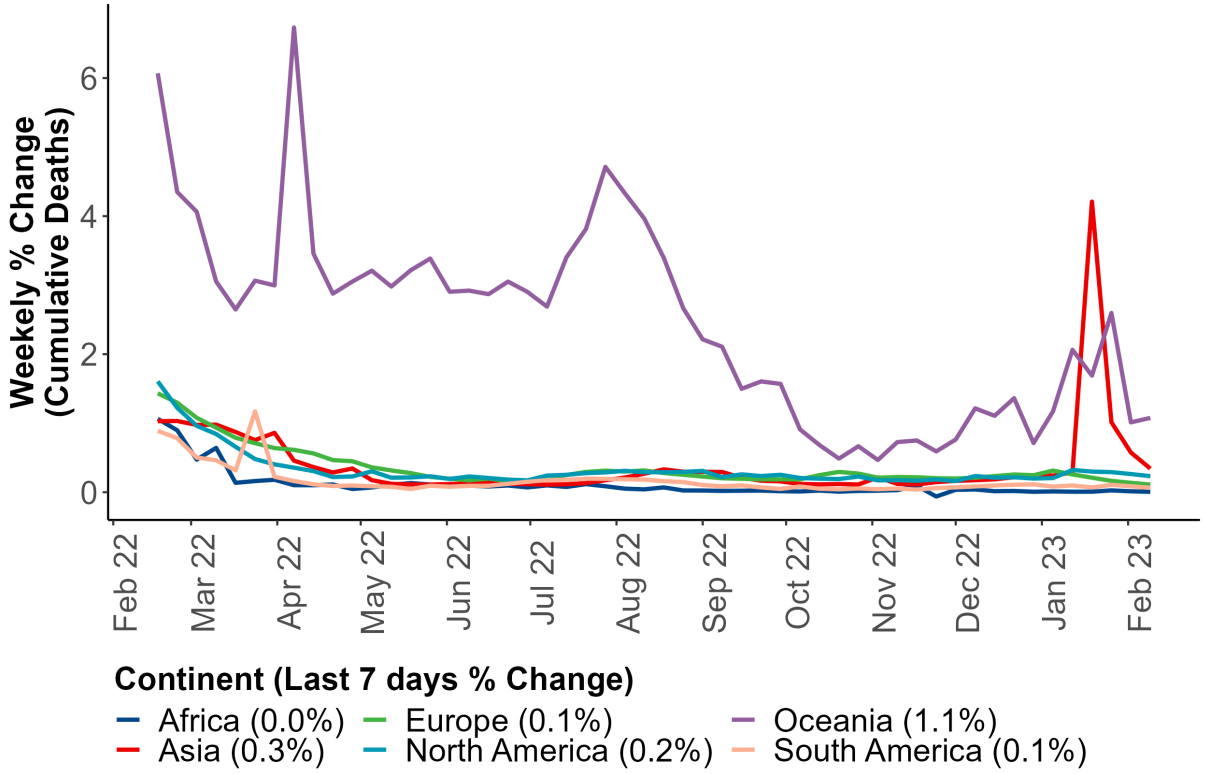
3. Trends in the Covid-19 pandemic

Deaths

Time series of % change in deaths

Continents | Past 7 days



Top 5 small & large countries with the biggest ↑ in deaths last 7 days

Small countries
less than 20 million

1. Monaco-3.1%
2. Macao-0.8%
3. Aruba-0.4%
4. Guyana-0.2%
5. Luxembourg-0.1%

Cases per 100k people (scale)
[0-0.1) [0.1-0.2) [0.5-1)

Large countries
at least 20 million

1. China-3.9%
2. Taiwan-2.8%
3. Japan-2.0%
4. Australia-1.2%
5. Finland-0.9%

Cases per 100k people (scale)
No Data
[0-0.1)
[0.1-0.2)
[0.2-0.5)

Source: Our World in Data | Data to 09 February 2023

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4. Distribution of variants in select countries

Select Countries	The share of analyzed sequences in the preceding two weeks that correspond to each variant group. This share may not reflect the complete breakdown of cases since only a fraction of all cases are sequenced.	Total Samples
South Africa	29% · 9.2% · 42% · 18%	153
France	6.7% · 9.7% · 71% · 10%	1067
Germany	27% · 21% · 41% · 9.1%	471
United Kingdom	4.7% · 34% · 42% · 15%	1910
United State	5.8% · 4% · 40% · 50%	4806
Canada	9.3% · 4.5% · 62% · 20%	2431
Chile	5.7% · 66% · 26%	140
South Korea	100%	1379
China	33% · 63%	673
Singapore	7.7% · 8.7% · 30% · 17% · 28% · 9.2%	207
Australia	43% · 18% · 6.1% · 30%	511

Alpha · Beta · Gamma · Delta · Omicron (BA.2) · Omicron (BA.1) · Omicron (BA.5) · Omicron (BA.4) · Omicron (BA.2.12.1) · Omicron (BA.2.75) · Omicron (BQ.1) · Omicron (XBB) · Recombinant · Other

Source: Our World in Data; GISAID, via CoVariants.org; Data to 09 Fecruary 2023 (last 2 weeks samples)

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5. COVID-19 in South Africa

Time series of reported cases & deaths

Current

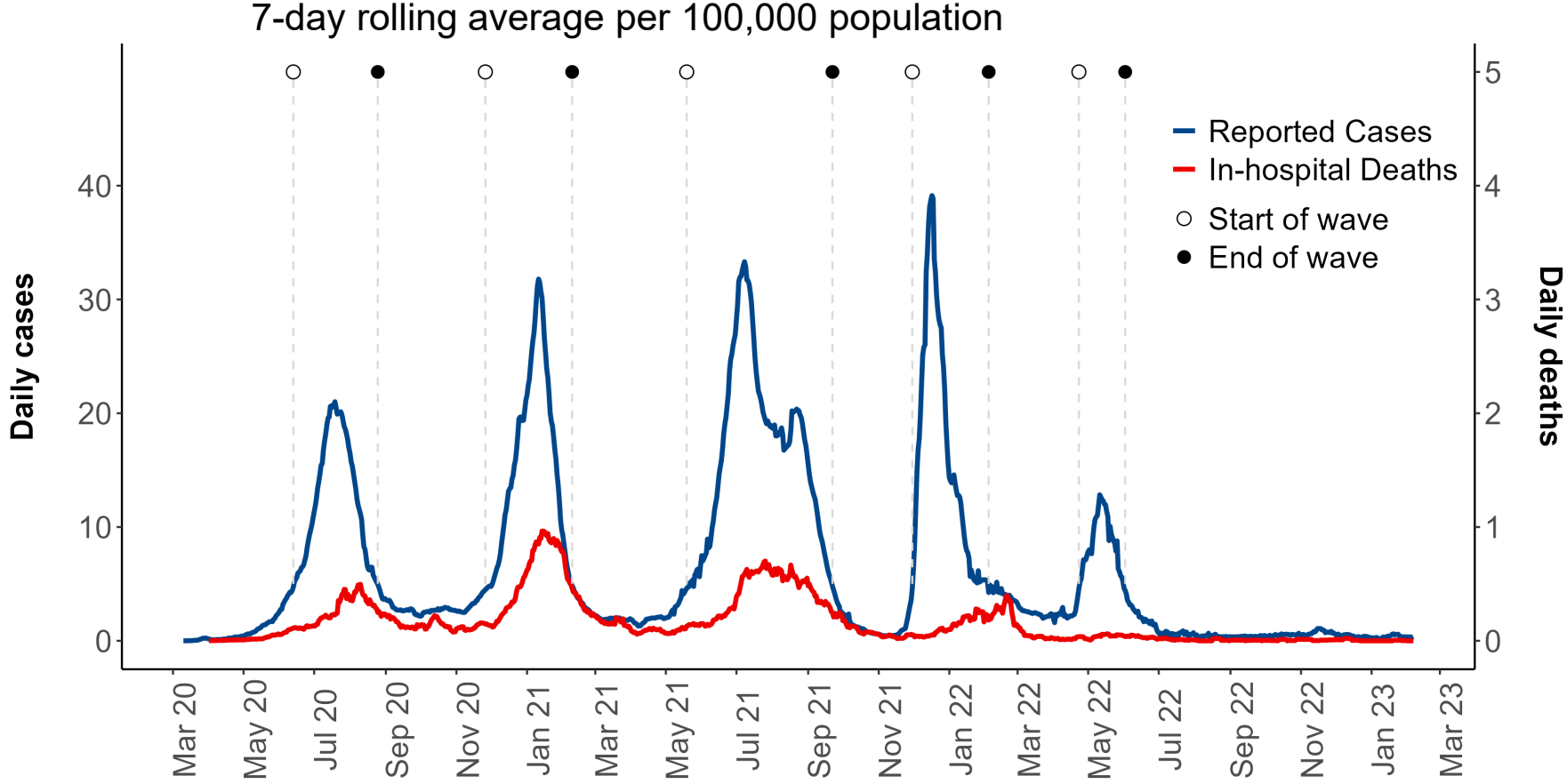
4,057,211 Cases

102595 Deaths

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

2.37% ↑ in Cases

1.31% ↑ in Deaths



Source: Our World in Data | Data to 09 February 2023

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6. Paxlovid reduces hospitalization and mortality

THE LANCET
Infectious Diseases

Real-world use of nirmatrelvir–ritonavir in outpatients with COVID-19 during the era of omicron variants including BA.4 and BA.5 in Colorado, USA: a retrospective cohort study

Neil R Aggarwal, Kyle C Molina*, Laurel E Beaty, Tellen D Bennett, Nichole E Carlson, David A Mayer, Jennifer L Peers, Seth Russell, Matthew K Wynia, Adit A Ginde*

- Retrospective, observational cohort study
- N = 21,493: 9881 Paxlovid & 11,612 untreated
- **Paxlovid treatment →**
  - **55% lower hospitalizations**
  - **85% lower mortality**
- 18-64 years: 47% less hospitalisation
- ≥65 years: 63% less hospitalisation

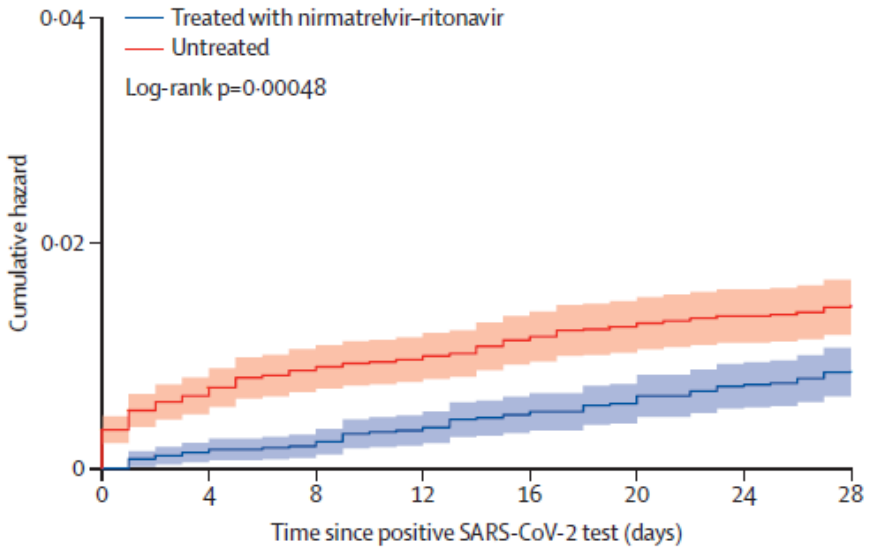

Figure 1. Cumulative incidence plots for all-cause hospitalisation to day 28 by treatment status

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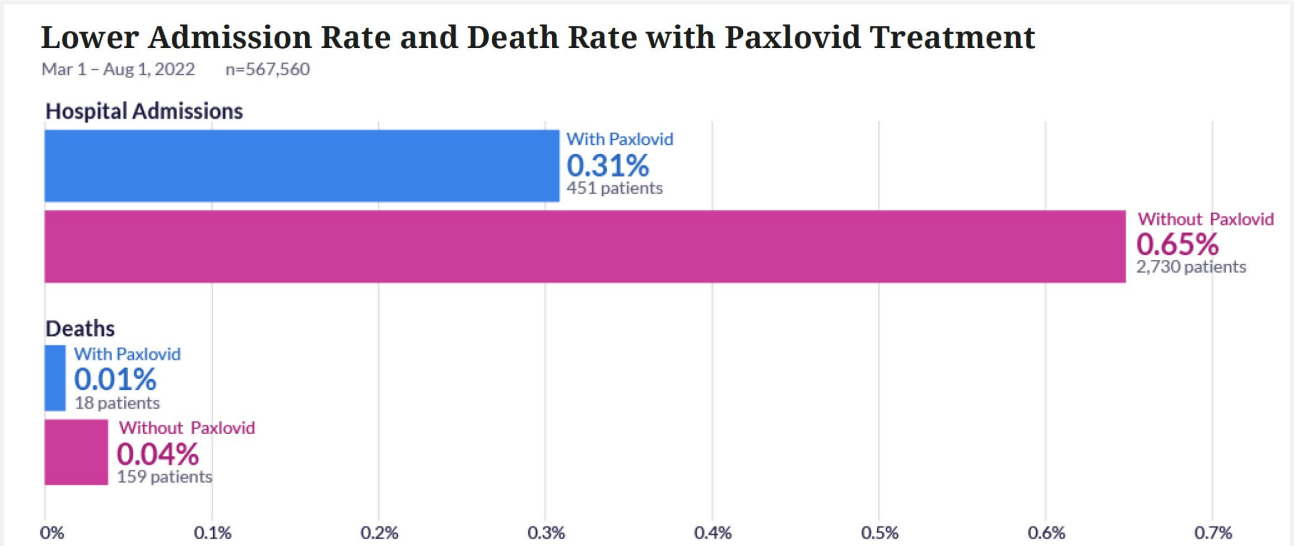

Figure 1. Overall Covid-19 hospitalization and death rates by Paxlovid

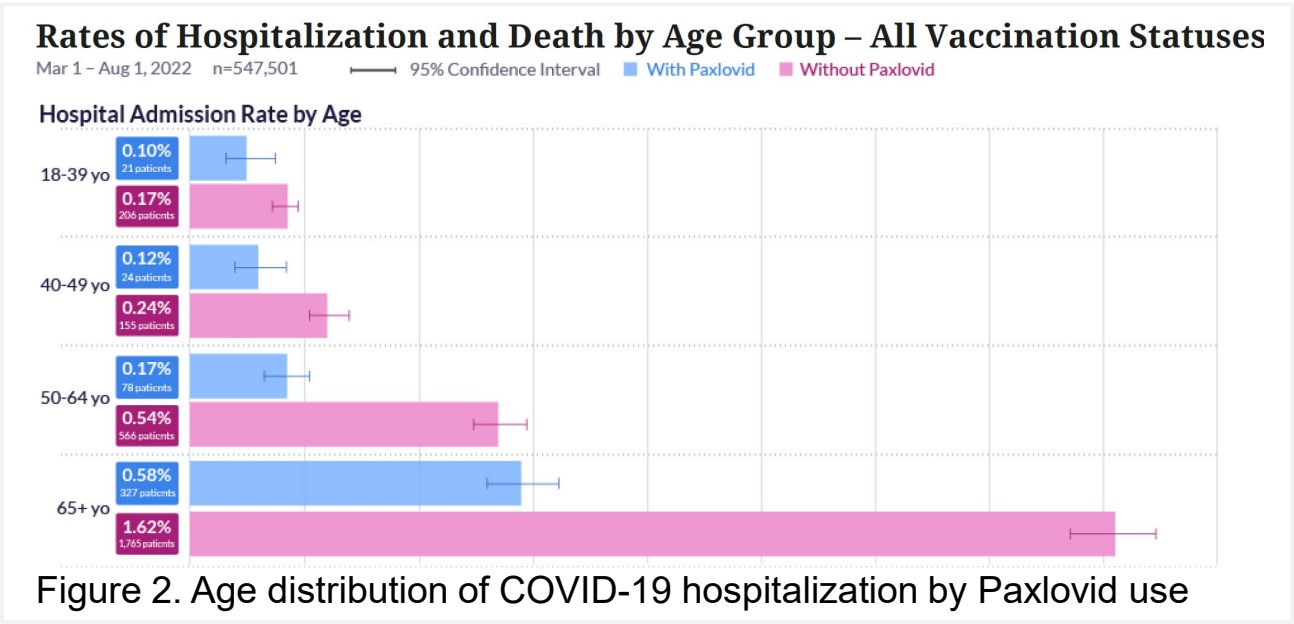

Figure 2. Age distribution of COVID-19 hospitalization by Paxlovid use

Epic Research

Paxlovid Significantly Reduces COVID-19 Hospitalizations and Deaths

Jeff Trinkl, MD; Kersten Bartelt, RN; Brendan Joyce; Sam Sahakian; Neil Sandberg
Steve Allen, MD; Jackie Gerhart, MD; Eric Barkley; Cory Sweet

All ages benefit

Fully vaccinated patients over 50 years on Paxlovid are ~3 times less likely to be hospitalized than those not treated with Paxlovid

8. Covid-19 outcomes vary with interferon treatment

Repurposed Antiviral Drugs for Covid-19 — Interim WHO Solidarity Trial Results

WHO Solidarity Trial Consortium*

Interferon β-1a → little or no effect on hospitalized patients with Covid-19

Safety and efficacy of inhaled nebulised interferon beta-1a (SNG001) for treatment of SARS-CoV-2 infection: a randomised, double-blind, placebo-controlled, phase 2 trial

Phillip D Monk, Richard J Marsden, Victoria J Tear, Jody Brookes, Toby N Batten, Marcin Mankowski, Felicity J Gabbay, Donna E Davies, Stephen T Holgate, Ling-Pei Ho, Tristan Clark, Ratko Djukanovic, Tom M A Wilkinson, on behalf of the Inhaled Interferon Beta COVID-19 Study

Interferon β-1a → greater odds of improvement and more rapid recovery

Role of interferon therapy in severe COVID-19: the COVIFERON randomized controlled trial

Ilad Alavi Darazam[1,2,12], Shervin Shokouhi[1,2,12], Mohamad Amin Pourhoseingholi[3,12], Seyed Sina Naghibi Irvani[1,12]✉, Majid Mokhtari[4,12], Minoosh Shabani[1,2,12]

Interferon β-1b & β-1a → IFNβ-1a reduced time to clinical improvement, not IFNβ-1b

A Randomized Clinical Trial of the Efficacy and Safety of Interferon β-1a in Treatment of Severe COVID-19

Effat Davoudi-Monfared,[a] Hamid Rahmani,[a] Hossein Khalili,[a] Mahboubeh Hajiabdolbaghi,[b] Mohamadreza Salehi,[b] Ladan Abbasian,[b] Hossein Kazemzadeh,[c] Mir Saeed Yekaninejad[d]

Interferon β-1a → no change in the time to reach clinical response

9. Pegylated interferon lambda ↓ hospitalization

The NEW ENGLAND JOURNAL of MEDICINE

Early Treatment with Pegylated Interferon Lambda for Covid-19

G. Reis, E.A.S. Moreira Silva, D.C. Medeiros Silva, L. Thabane, V.H.S. Campos, T.S. Ferreira, C.V.Q. Santos, A.M.R. Nogueira, A.P.F.G. Almeida, L.C.M. Savassi, A.D. Figueiredo-Neto, A.C.F. Dias, A.M. Freire Júnior, C. Bitarães, A.C. Milagres

- **Randomized, controlled, adaptive trial**
- **N = 1949 (931 on pegylated IF lambda)**
- **PCR+ adults;**
- **83% vaccinated (Brazil & Canada)**
- **51% reduction in hospitalisation or emergency room visit (2.7% vs 5.6%)**

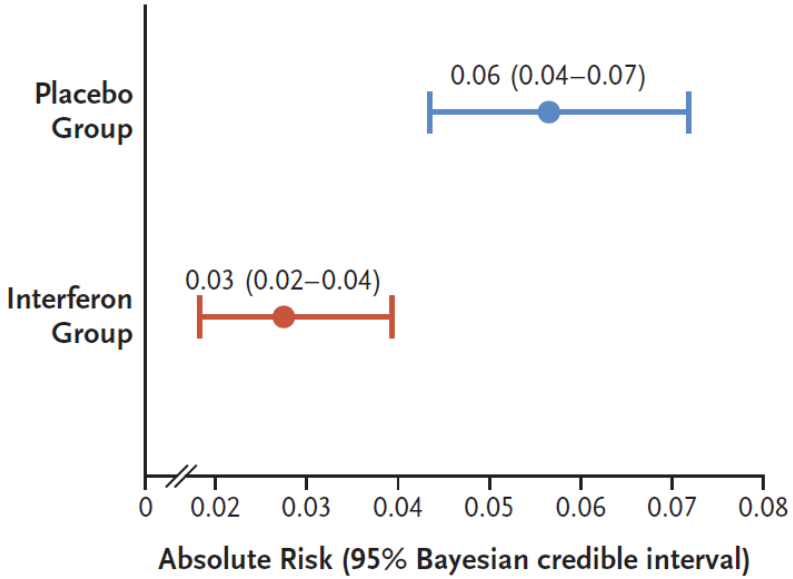

Figure. Absolute reduction in the risk of hospitalization or an ER visit due to Covid-19