Covid 19: from pandemic to here for a long time ?

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Hôpital général juif
Jewish General Hospital

Disclosure

- Speakers, advisory boards (national, international) , research funds
  - Abbvie
  - Amgen
  - GSK
  - Merck
  - Novartis
  - Pfizer
  - Roche
  - Sanofi

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Global Confirmed
444,300,410

Global Deaths
5,992,708

U.S. Confirmed
79,252,917

U.S. Deaths
958,224

Global Map › U.S. Map ›

DATA IN MOTION

COVID-19 Data in Motion: Friday, March 4, 2022

A 60-second, daily summary of the most important data on COVID-19 in the U.S., updated every morning.

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Confirmed Cases
3,449,778

Deaths
37,476

VACCINE TRACKER
Learn more about vaccines ›

Doses Administered
81,967,208

People Fully Vaccinated
31,120,915

% of Population Fully Vaccinated
82.79%

March 27, 2022

It will take years to fully quantify the economic costs of the pandemic, but they are enormous. Early estimates suggest that lockdowns cost the United States between $20 and $35 billion per day[1,2]. Preliminary estimates of the pandemic's total economic impact —separate from the health costs—will be over $7.5 trillion in losses.

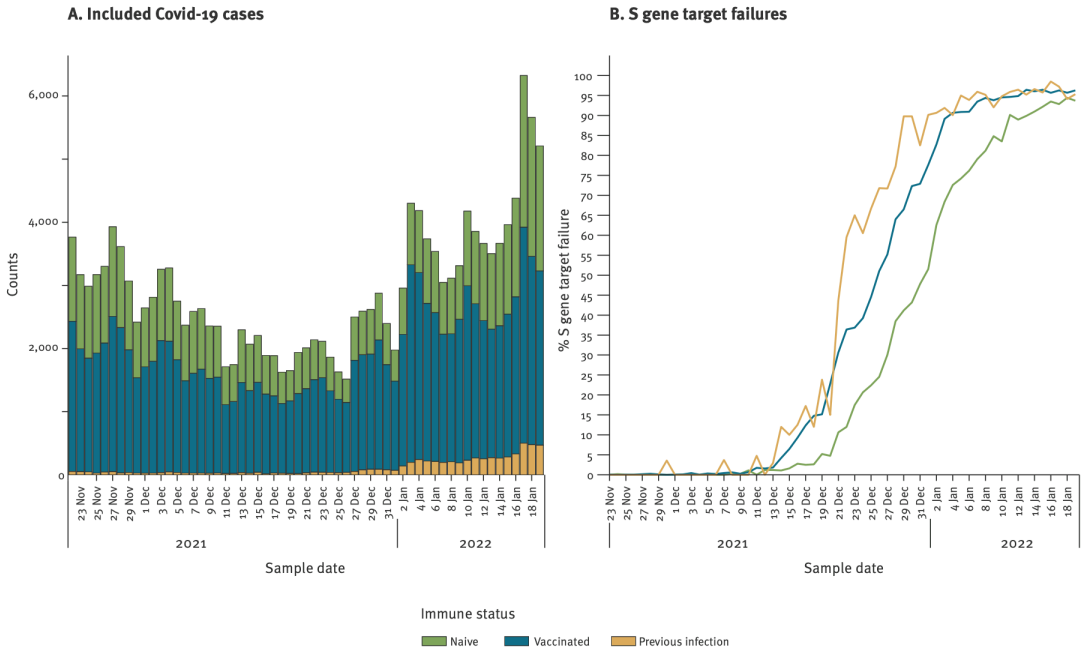
1 Mulligan C, Murphy K, Topel R. Some basic economics of Covid-19 policy. Chicago Booth Review. Published April 27, 2020. Accessed February 28, 2022. https://www.chicagobooth.edu/review/some-basic-economics-covid-19-policy
2 Michel N, Burton D. The cost of coronavirus shutdown orders. The Heritage Foundation. Published April 20, 2020. Accessed February 28, 2022. https://www.heritage.org/economic-and-property-rights/report/the-cost-coronavirus- shutdown-orders

Increased risk of infection with SARS-CoV-2 Omicron BA.1 compared with Delta in vaccinated and previously infected individuals, the Netherlands, 22 November 2021 to 19 January 2022

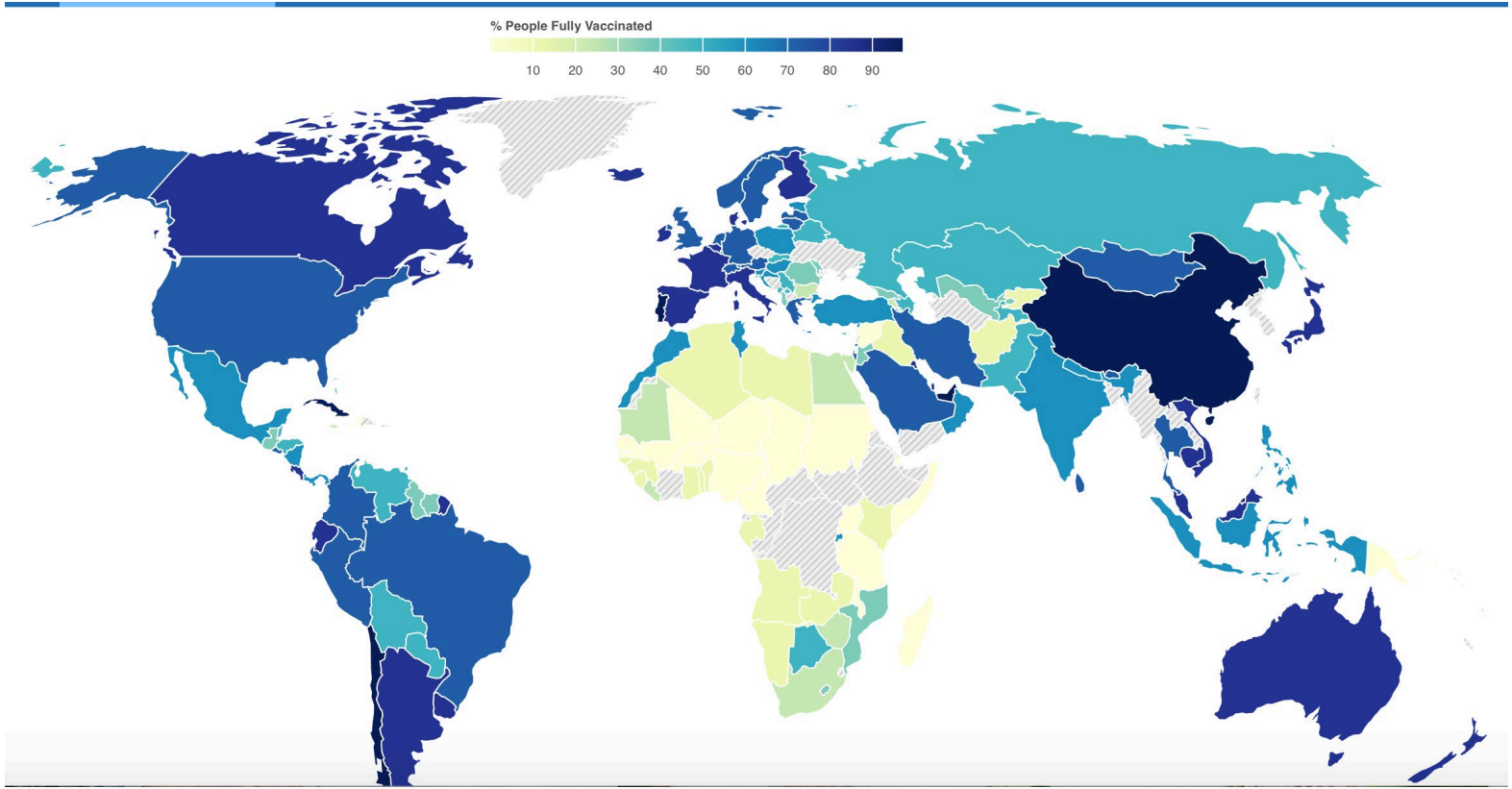
Dirk Eggink[1,*], Stijn P Andeweg[1,*], Harry Vennema[1], Noortje van Maarseveen[2,3], Klaas Vermaas[2], Boris Vlaemynck[4], Raf Schepers[4], Arianne B van Gageldonk-Lafeber[1], Susan van den Hof[1], Chantal BEM Reusken[1,**], Mirjam J Knol[1,**]

1. Center for Infectious Disease Control, WHO COVID-19 reference laboratory, National Institute for Public Health and the Environment (RIVM), Bilthoven, The Netherlands
2. Saltro Diagnostic Center for Primary Care, Utrecht, The Netherlands
3. Department of Medical Microbiology, University Medical Center Utrecht, Utrecht, the Netherlands
4. SYNLAB, Heppignies, Belgium

Number of included COVID-19 cases and percentage of S gene target failures by immune status, the Netherlands, 22 November 2021–19 January 2022 (n = 174,349)



Article submitted on 29 Dec 2021 / accepted on 27 Jan 2022 / published on 27 Jan 2022



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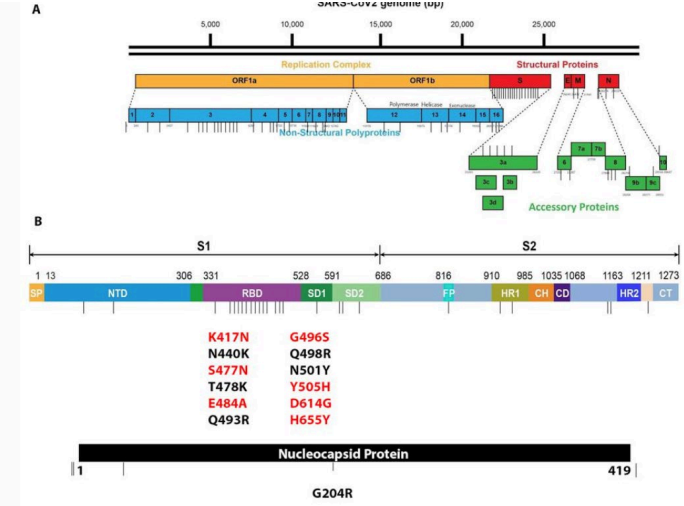
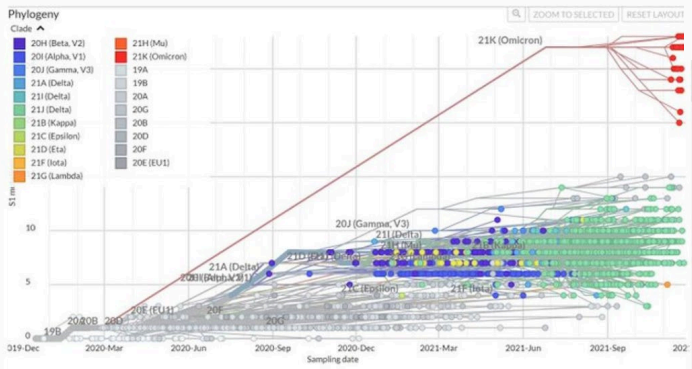
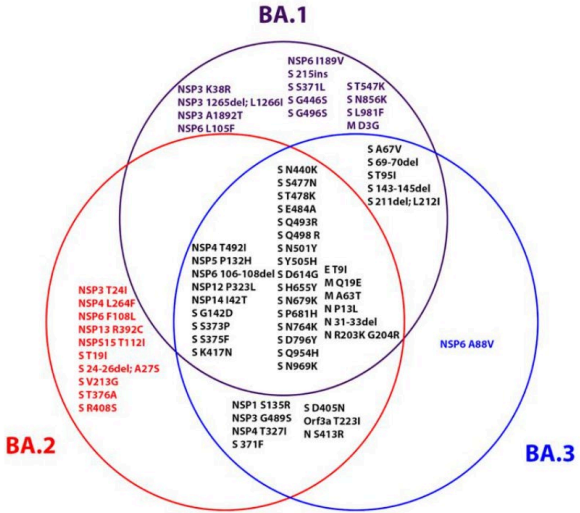




Time course for the evolution of significant SARS-CoV-2 variants, note the considerable divergence of the Omicron variants from all other variants, branching off from other variants as early as March 2020. [-] NEXTSTRAIN.ORG



GitHub. Proposal to split B.1.1.529 to incorporate a newly characterised sibling lineage. 2021. Available at: https://github.com/cov-lineages/pango-designation/issues/361

AGOSTINI ET AL.

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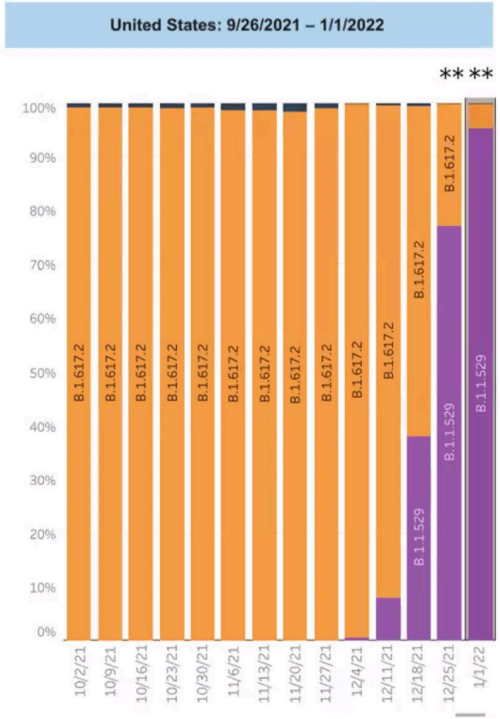

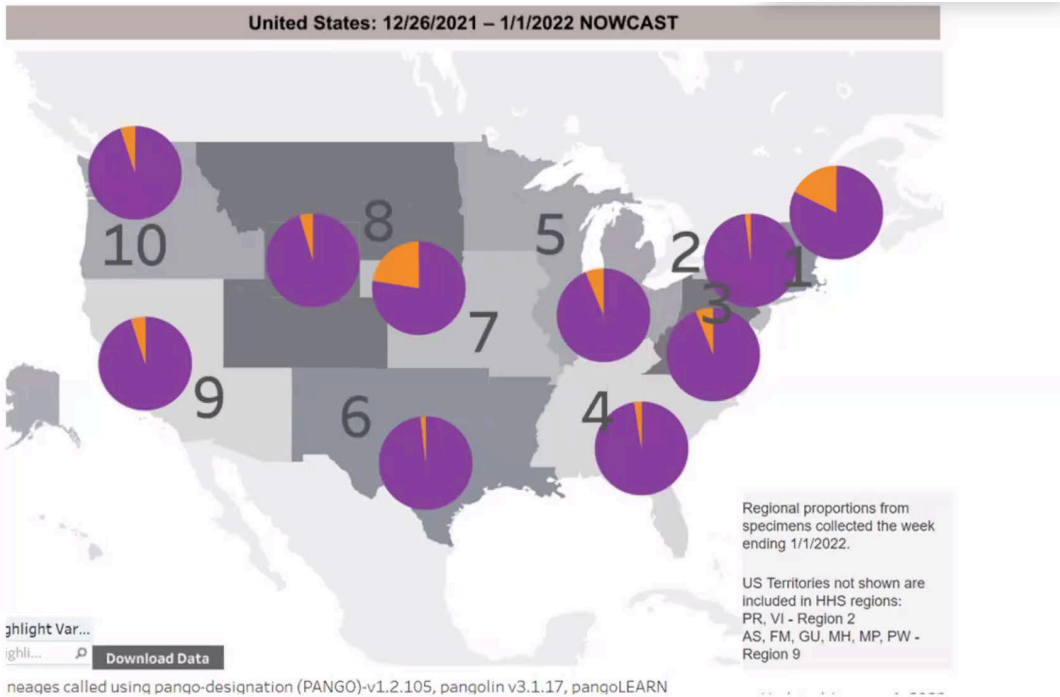

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

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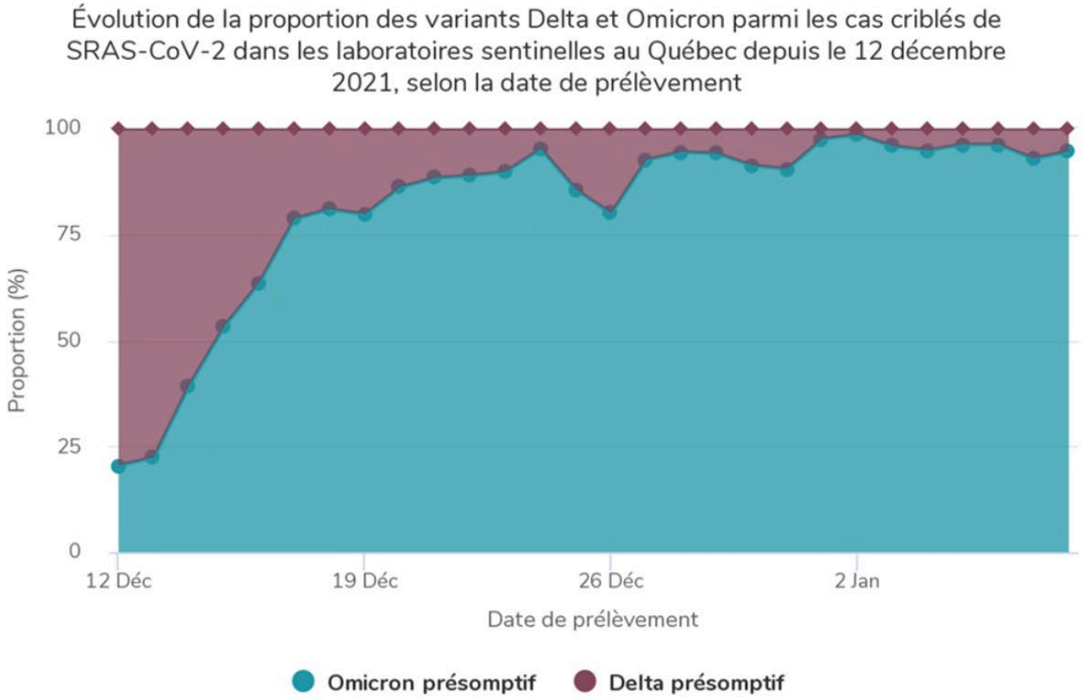

https://www.inspq.qc.ca/covid-19/donnees

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Reason for admission

Reason for admission was collected starting the week of January 2, 2022. These graphs include data submitted by 44 hospitals.

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Public Health Ontario | Santé publique Ontario

ENHANCED EPIDEMIOLOGICAL SUMMARY

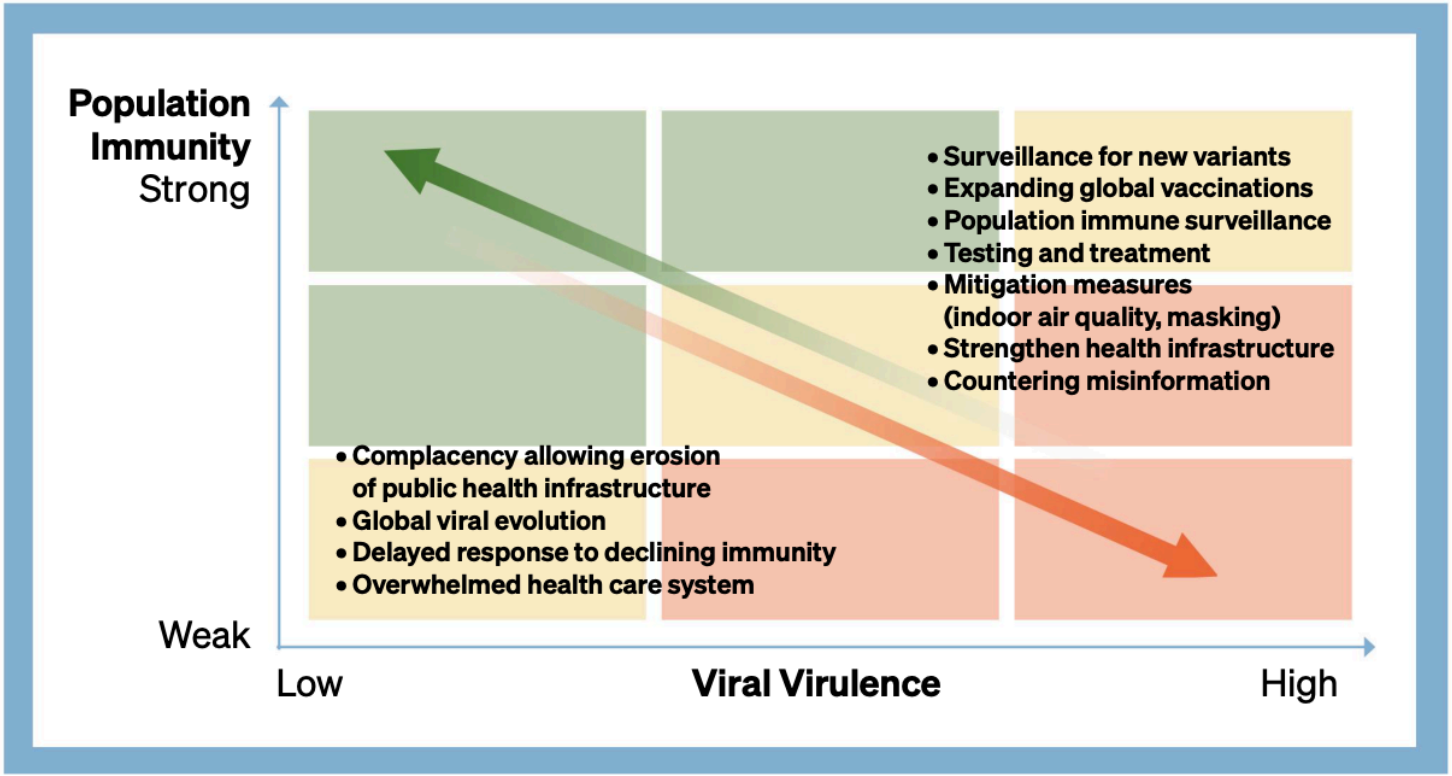
Early Estimates of Omicron Severity in Ontario based on a Matched Cohort Study, November 22 to December 25, 2021

Highlights

- Among matched Omicron cases with an onset date between November 22 and December 25, 2021:
  - 3/11,622 (0.03%) matched Omicron cases died, compared to 17/14,181 (0.12%) Delta cases.
  - 59/11,622 (0.5%) were hospitalized or died compared to 221/14,181 (1.6%) among Delta cases.
  - 7/11,622 (0.06%) matched Omicron cases were admitted to ICU or died, compared to 60/14,181 (0.42%) Delta cases.
- For Omicron cases compared to Delta cases, the risk of hospitalization or death was 65% lower (hazard ratio, HR=0.35, 95%CI: 0.26-0.46), while risk of ICU admission or death was 83% lower (HR=0.17, 95%CI: 0.08, 0.37).
- Stratified estimates by age (<60 and ≥60 years of age) also showed a lower risk of hospitalization or death when compared to Delta cases (HR<60=0.30, 95% CI: 0.19-0.48, HR ≥60=0.40, 95% CI: 0.28-0.56).
- Due to the increased transmissibility of Omicron, the absolute number of hospitalizations and impact on the healthcare system could still be significant, despite the probable reduction in severity.

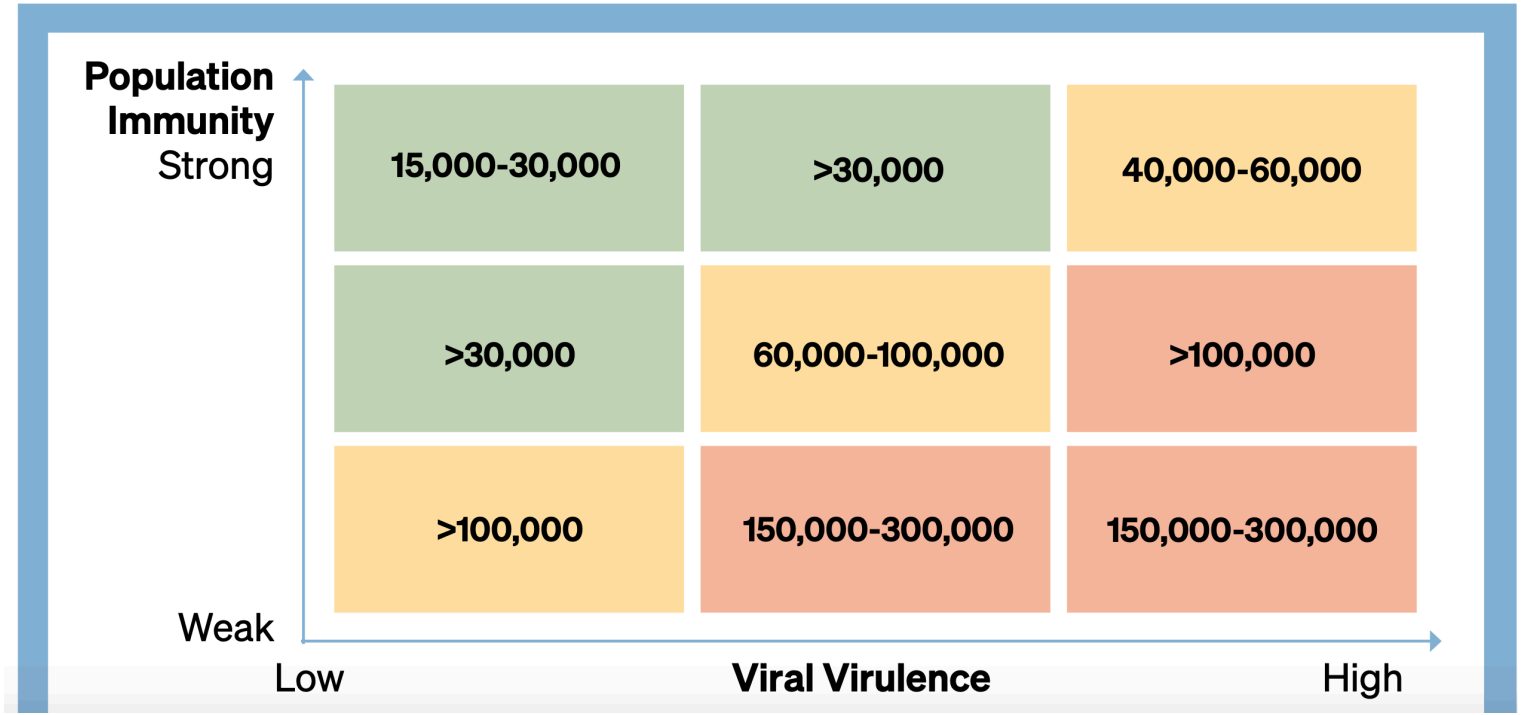
Figure 3

Interventions that Impact which Scenario is More Likely



Getting to and Sustaining the Next Normal: A Roadmap for Living with Covid

Potential Annual Deaths Across Virological And Immunological Possibilities



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Effectiveness of Face Mask or Respirator Use in Indoor Public Settings for Prevention of SARS-CoV-2 Infection — California, February–December 2021

Early Release / February 4, 2022 / 71

Kristin L. Andrejko[1,2,*]; Jake M. Pry, PhD[2,*]; Jennifer F. Myers, MPH[2]; Nozomi Fukui[2]; Jennifer L. DeGuzman, MPH[2]; John Openshaw, MD[2]; James P. Watt, MD[2]; Joseph A. Lewnard, PhD[1,3,4]; Seema Jain, MD[2]; California COVID-19 Case-Control Study Team (View author affiliations)

View suggested citation

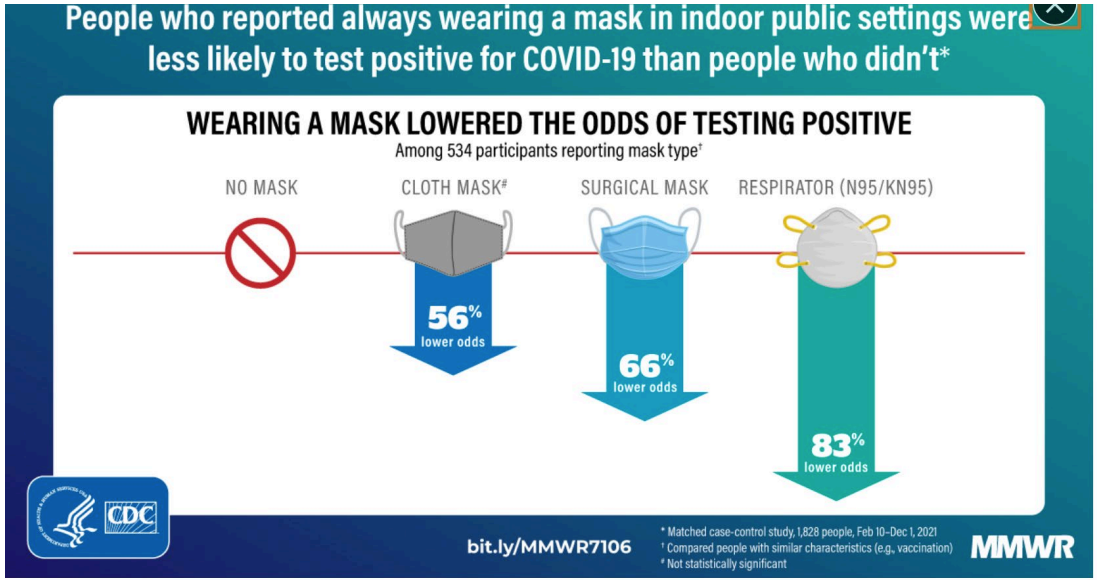

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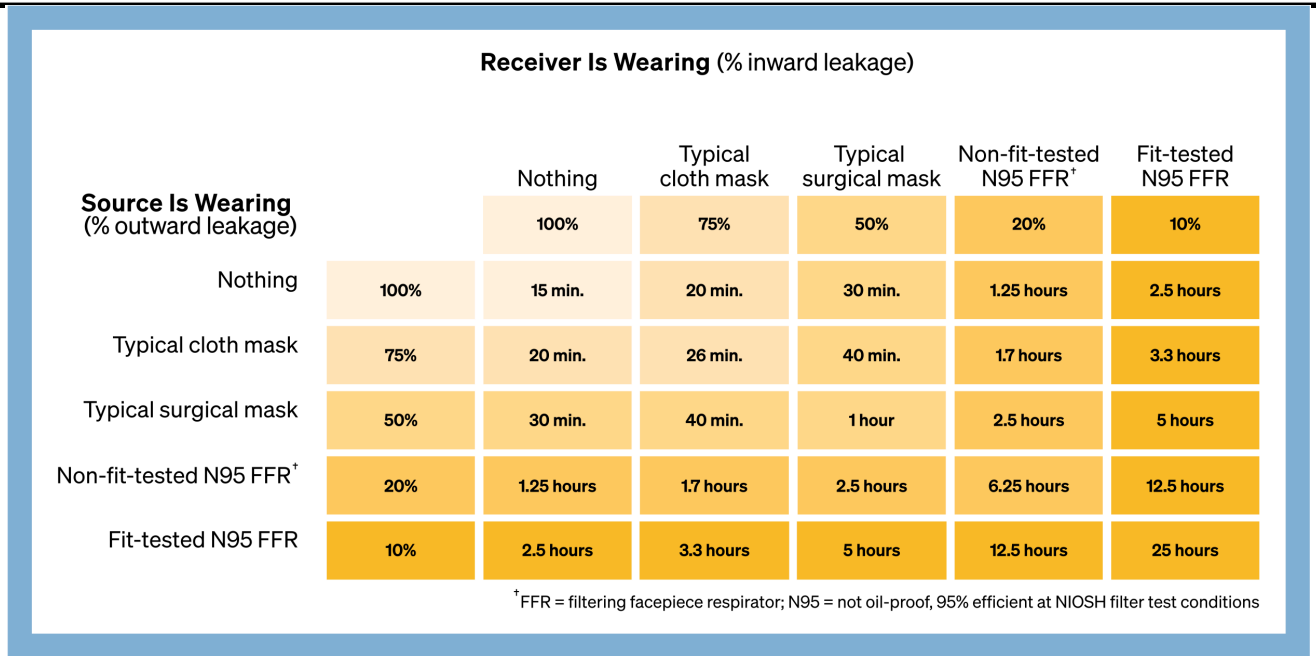
Figure 1

Time to infectious dose for an uninfected person (receiver)*



Receiver Is Wearing (% inward leakage)

Source Is Wearing (% outward leakage)		Nothing	Typical cloth mask	Typical surgical mask	Non-fit-tested N95 FFR†	Fit-tested N95 FFR
		100%	75%	50%	20%	10%
Nothing	100%	15 min.	20 min.	30 min.	1.25 hours	2.5 hours
Typical cloth mask	75%	20 min.	26 min.	40 min.	1.7 hours	3.3 hours
Typical surgical mask	50%	30 min.	40 min.	1 hour	2.5 hours	5 hours
Non-fit-tested N95 FFR†	20%	1.25 hours	1.7 hours	2.5 hours	6.25 hours	12.5 hours
Fit-tested N95 FFR	10%	2.5 hours	3.3 hours	5 hours	12.5 hours	25 hours

†FFR = filtering facepiece respirator; N95 = not oil-proof, 95% efficient at NIOSH filter test conditions

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40 Brosseau L, Ulrich A, Escandon K, Anderson C, Osterholm M. Commentary: What can masks do? Part 1: The science behind Covid-19 protection. Center for Infectious Disease Research and Policy. Published October 14, 2021. Accessed February 20, 2022. https://www.cidrap.umn.edu/news-perspective/2021/10/commentary-what-can-masks-do-part-1-science-behind-covid-19-protection

Testing and Surveillance

Cleaner, Safer Indoor Air

Personal Protective Equipment

Vaccines

Therapeutics

Long Covid

Health Data Infrastructure

Public Health Infrastructure

Healthcare Workforce

Communication and Education

Rapid Diagnostic Testing for SARS-CoV-2

Paul K. Drain, M.D., M.P.H.

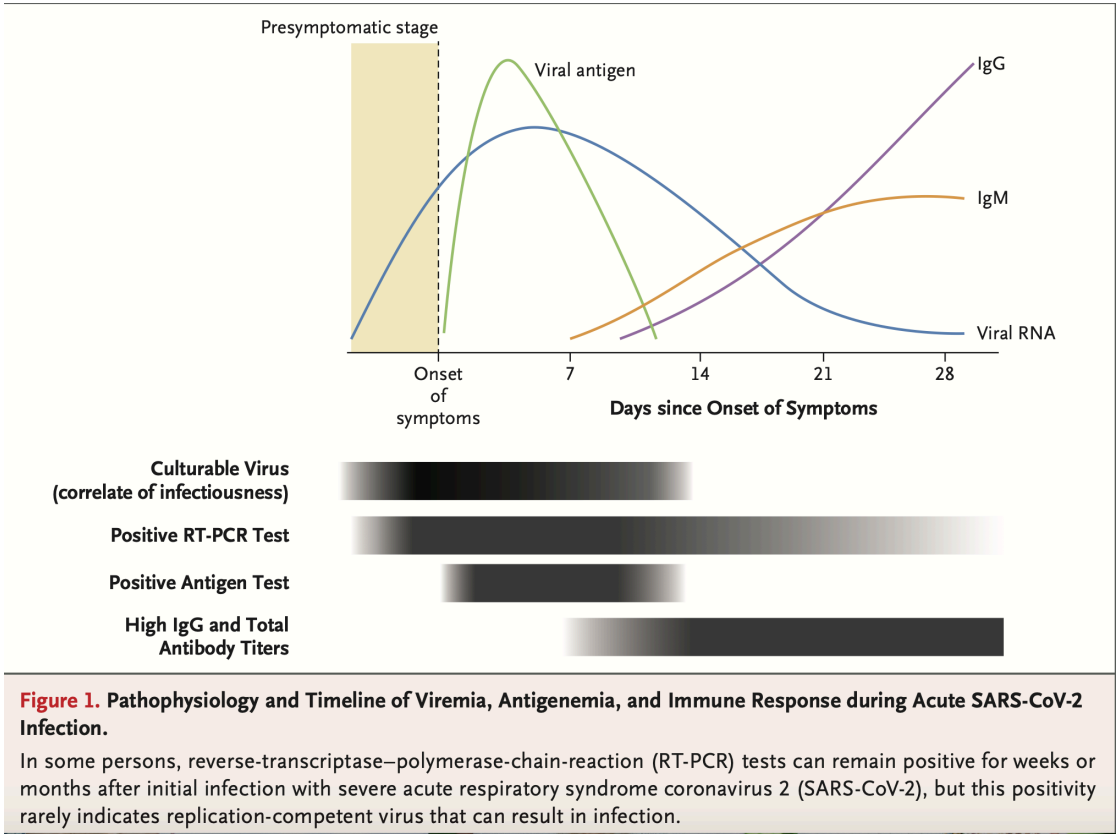

Figure 1. Pathophysiology and Timeline of Viremia, Antigenemia, and Immune Response during Acute SARS-CoV-2 Infection.

In some persons, reverse-transcriptase–polymerase-chain-reaction (RT-PCR) tests can remain positive for weeks or months after initial infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), but this positivity rarely indicates replication-competent virus that can result in infection.

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N Engl J Med 2022;386:264-72.
DOI: 10.1056/NEJMcp2117115

February 20, 2022
5:16 AM EST
Last Updated 3 days ago

United Kingdom

UK must cut spending on COVID testing, Johnson says

Reuters

"We need resilience ... but for instance, on testing. We don't need to keep spending at a rate of 2 billion pounds ($2.7 billion) a month, which is what we were doing in January."

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Efficacy of a Fourth Dose of Covid-19 mRNA Vaccine against Omicron

neutralizing antibodies. Along with previous data showing the superiority of a third dose to a second dose,[4] our results suggest that maximal immunogenicity of mRNA vaccines is achieved after three doses and that antibody levels can be restored by a fourth dose. Furthermore, we observed low vaccine efficacy against infections in health care workers, as well as relatively high viral loads suggesting that those who were infected were infectious. Thus, a fourth vaccination of healthy young health care workers may have only marginal benefits. Older and vulnerable populations were not assessed.

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Ministry of Health
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DOI: 10.1056/NEJMc2202542

Relative Effectiveness of Four Doses Compared to Three Dose of the BNT162b2 Vaccine in Israel

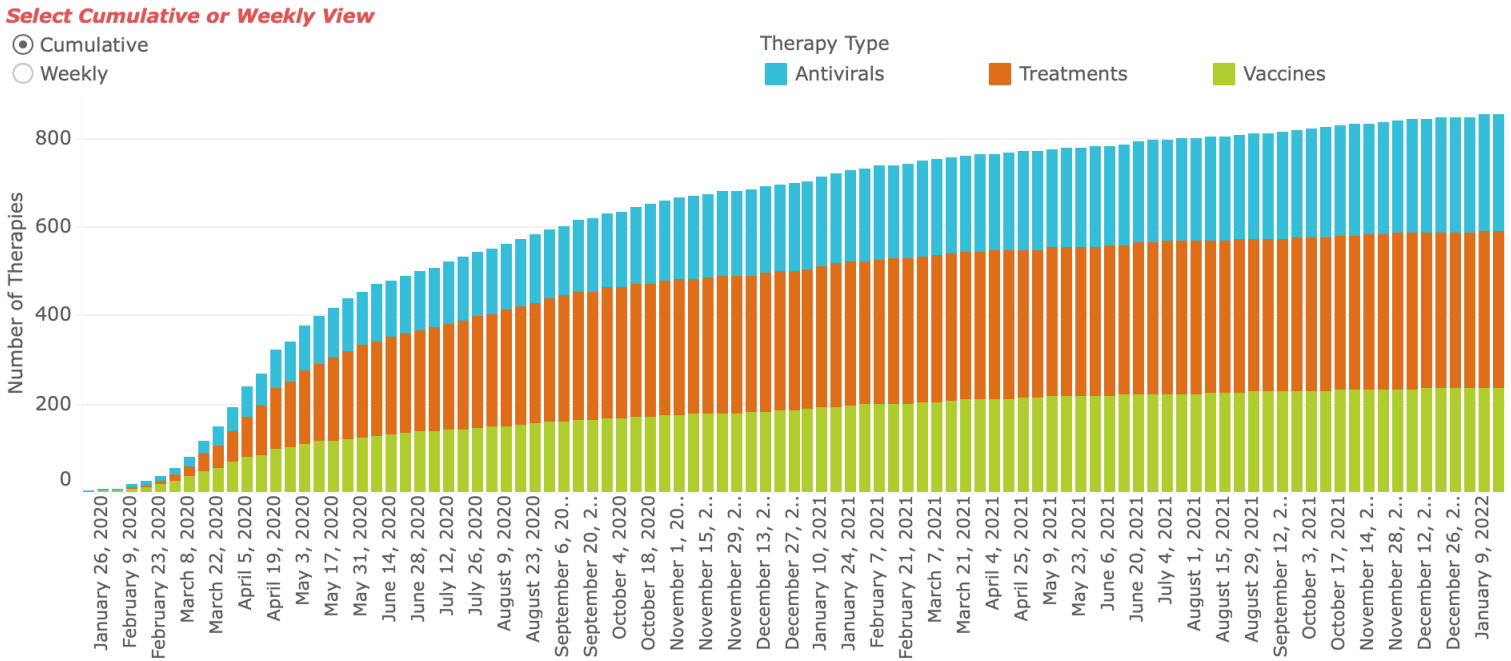
Sivan Gazit, MD, MA[1,2*]; Yaki Saciuk, MPH MA[1]; Galit Perez, MN MA[2]; Asaf Peretz, MD[3]; Virginia E. Pitzer, ScD[3]; Tal Patalon, MD[1,2]

Conclusions:

A fourth dose of the BNT162b2 vaccine provided considerable additional protection against both SARS-CoV-2 infection and severe disease relative to three doses of the vaccine. However, effectiveness of the fourth dose against infection wanes sooner than that of the third dose.

Development Start Date *(for COVID-19)* Demonstrates Unprecedented Industry Reponse

Biopharma companies - particularly small biotech companies - are undertaking a monumental campaign to combat, and hopefully eradicate, COVID-19.



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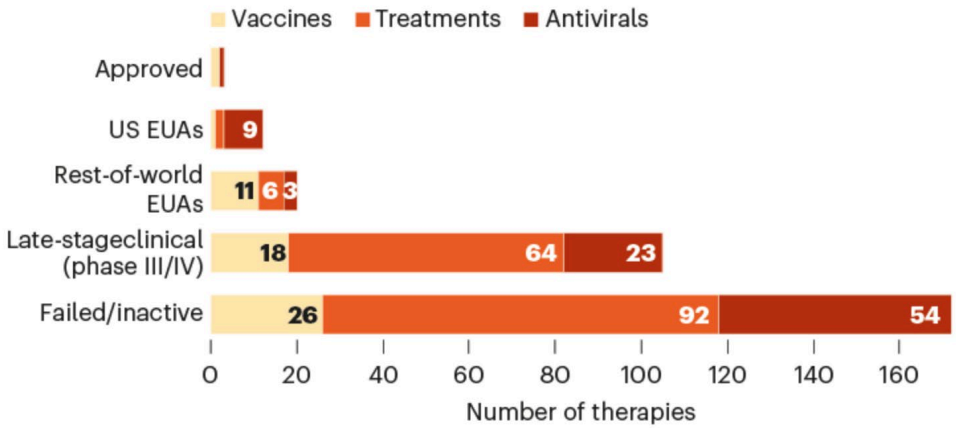
NEWS FEATURE | 01 March 2022

Hundreds of COVID trials could provide a deluge of new drugs

Two years into the pandemic, the COVID-19 drugs pipeline is primed to pump out novel treatments — and fresh uses for familiar therapies.

BURSTING PIPELINE

Researchers have devised and trialled a litany of compounds against COVID-19 — antivirals to disrupt the virus itself, treatments to improve disease symptoms, and vaccines that provide immunity. More than 100 are in late-stage trials, and a handful have emergency-use authorization (EUA) or are approved.



Data as of 24 February 2022

©nature

Source: BIO COVID-19 Therapeutic Development Tracker

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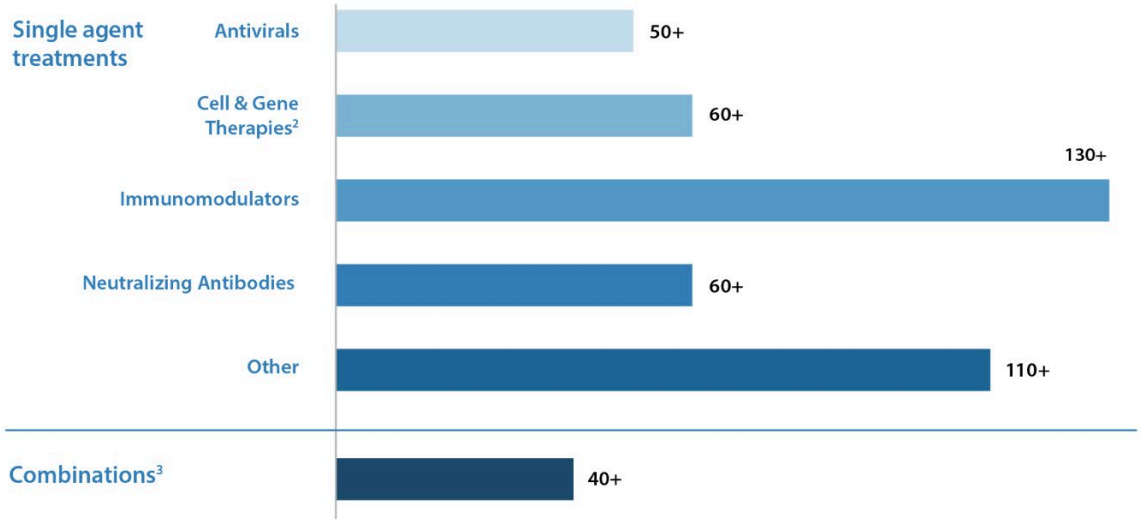
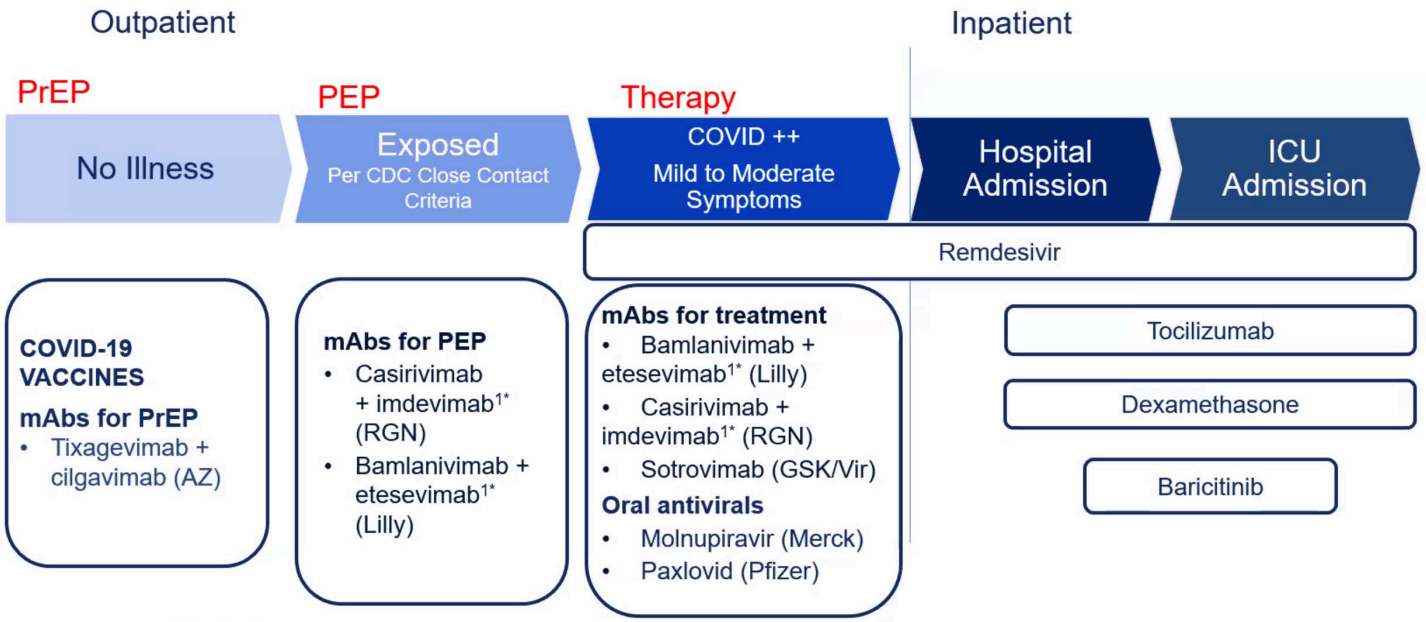
Coronavirus Treatment Acceleration Program (CTAP)

Type of COVID-19 Treatment Being Studied[1]



Stages of COVID-19 Therapeutics



[1]Allocation of bam/ete and REGEN-COV has resumed nationally as of 12/31/2021, see PHE.gov.
[*]The Omicron variant is not neutralized by bam/ete or REGEN-COV.

www.cdc.gov

Covid 19: the future

- 1. Define the next normal world
- 2. Reduce Covid transmission
  - Surveillance
  - Testing (auto testing, multiple tests, rapid…)
- 3. Reduce the severity of covid
  - PrEP, PEP
  - **3T**
    - Target the high-risk population
    - Test
    - Treat

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March 1, 2022
10:53 PM EST
Last Updated 4 days ago

Healthcare & Pharmaceuticals

Biden announces new COVID initiative that gives Americans free pills

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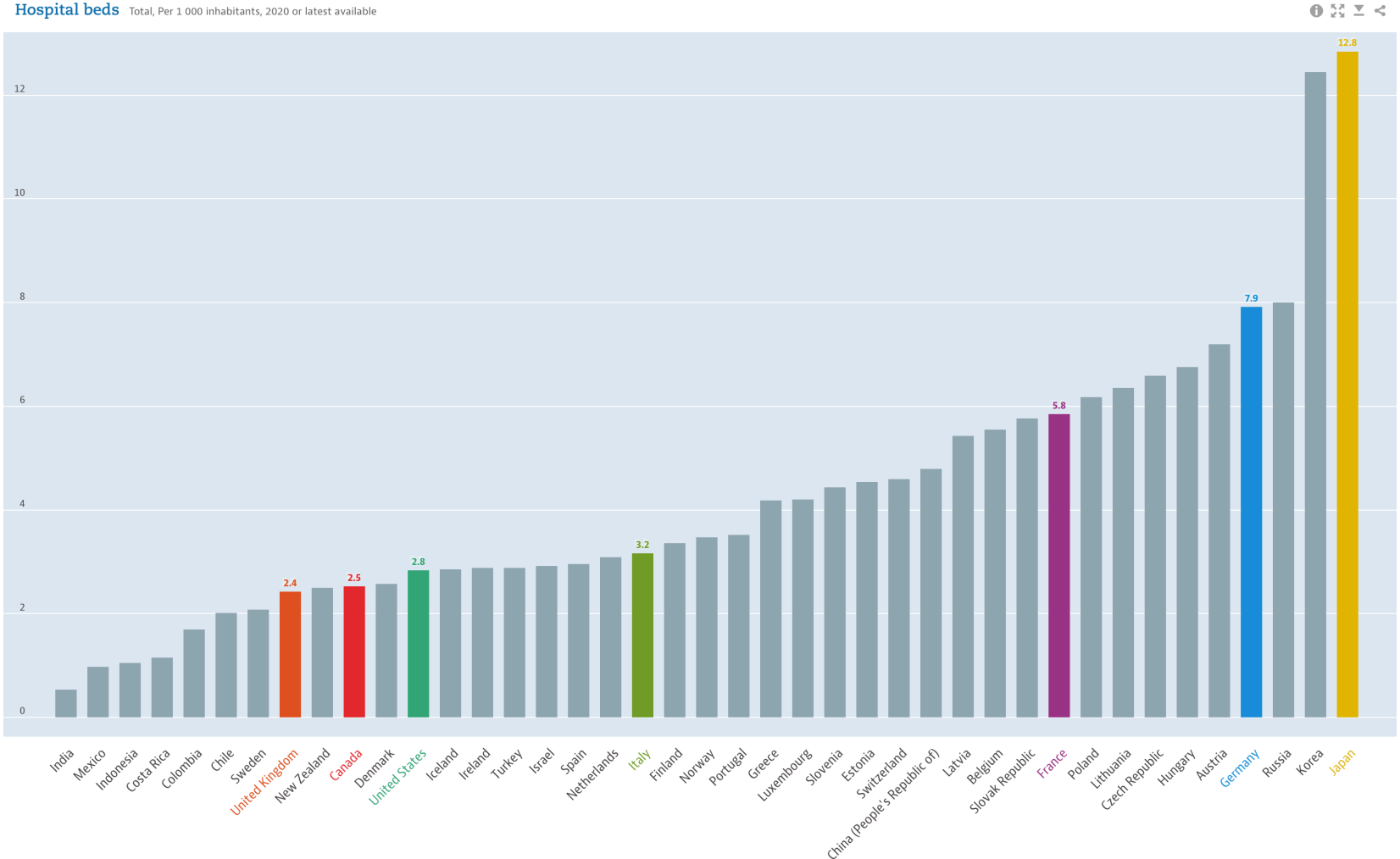
https://www.reuters.com/business/healthcare-pharmaceuticals/biden-announces-new-covid-initiative-that-gives-americans-free-pills-2022-03-02/



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Covid is not influenza

- Thrombosis and inflammation.
- Long Covid syndrome
- Higher mortality
- Aerosol-transmission
- But much better tools : (vaccines, medication, Mab..)
- From a pandemic to an endemic virus…

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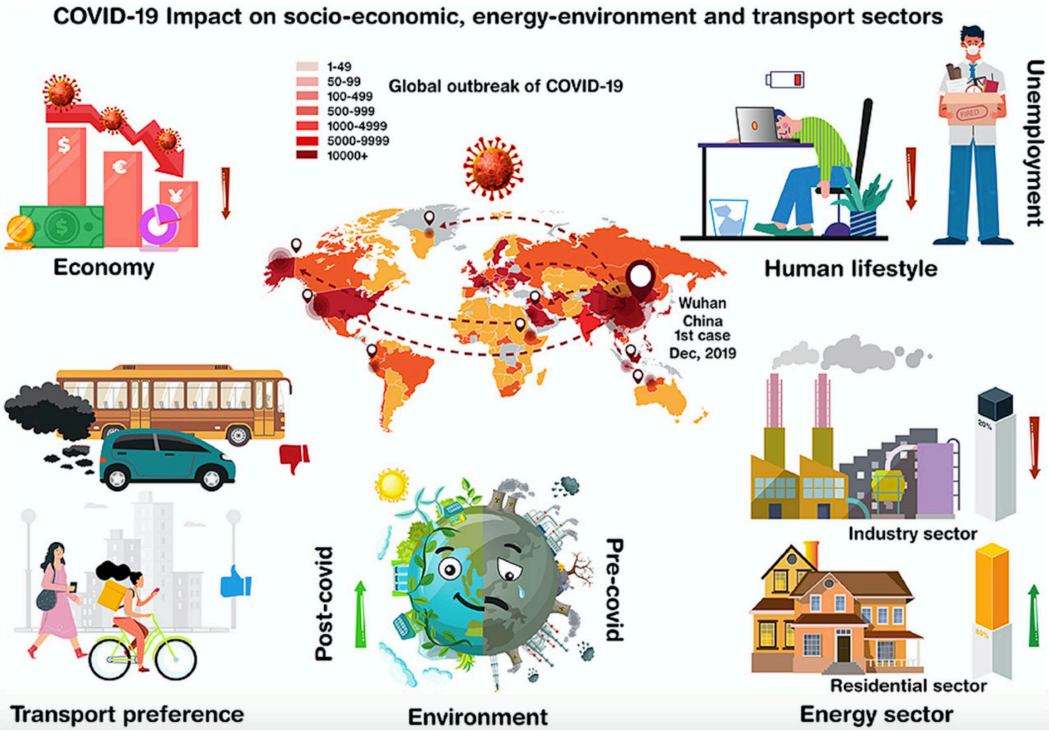
Optimism, yes; Inaction, No



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Today's Headlines: March 4, 2022

New from the Center

Avoid Clinical Trial 'Valley of Death' with Medical Countermeasure Program
(The Hill) The COVID-19 pandemic has put us on notice. It is critical to health and national security for the U.S. to prepare for the inevitable future infectious disease emergencies that will occur. It is clear that vaccines, antivirals, monoclonal antibodies and diagnostics are key components of preparedness and response. And we cannot relent, assuming another coronavirus will ignite the next pandemic. There are other threats out there. The United States needs to launch a strategic effort to create the capability to proactively develop a robust pipeline of products targeted toward the high consequence viral families most likely to cause a pandemic.