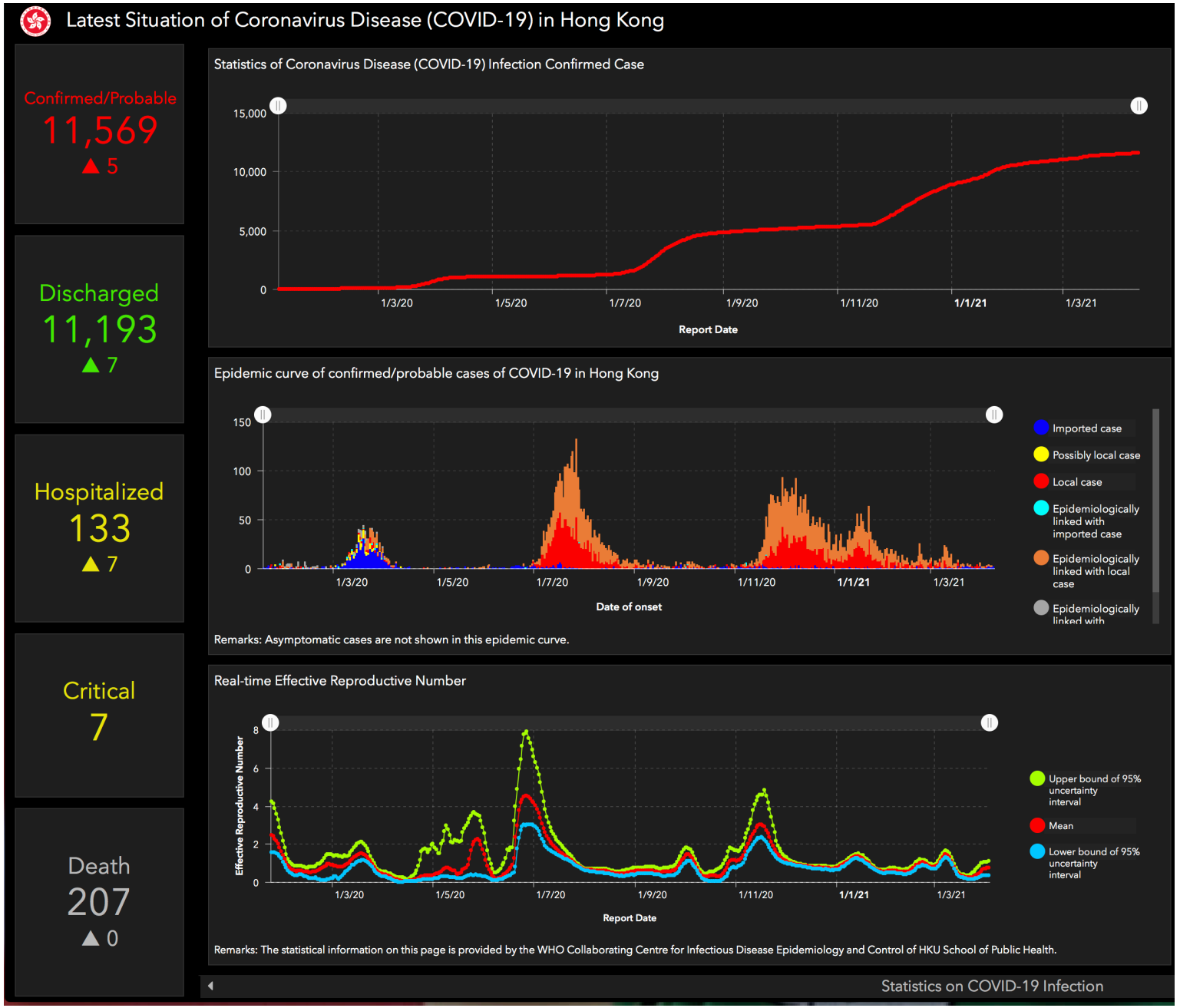
香港災難醫療學會
Hong Kong Disaster Medicine Association

COVID-19 vaccination: what does the future hold?

Dr Thomas TSANG

April 14, 2021



https://chp-dashboard.geodata.gov.hk/covid-19/en.html (Apr 11, 2021)

COVID-19 vaccination program in HK

- Commenced on Feb 26, 2021
- Government-run and free of charge to the public
- 2 vaccines at present
  - Comirnaty (BionTech/Fosun)
  - Coronavac (Sinovac)
- Delivered via
  - Community Vaccination Centres
  - Private clinics and hospitals
  - General outpatient clinics
  - Elderly homes

What does the future hold?

- What coverage rate may we attain? Shall we get herd immunity?
- Will we need future booster or re-vaccination?
- Will we get some other kinds of COVID-19 vaccines?
- How may we increase vaccination uptake?
- Will vaccination bring back normal living in our society?

Vaccination Dashboard

Total Doses Administered

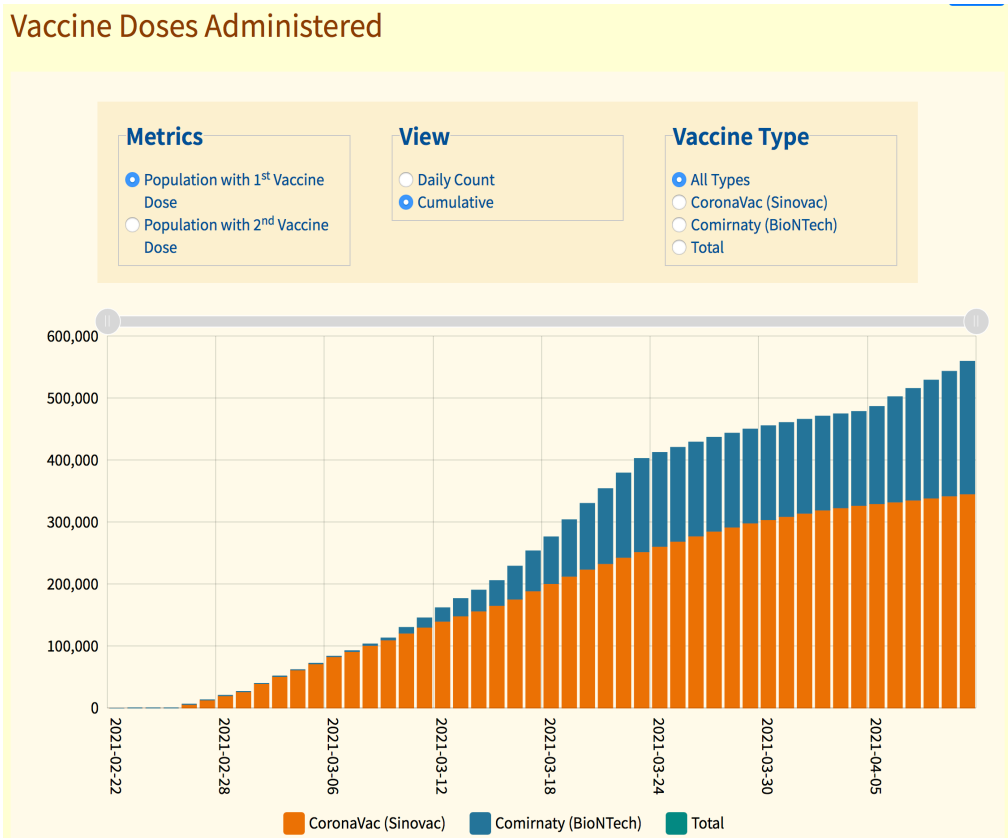
791,277

Total Population with 1st Vaccine Dose: 559,825 (8.5%)

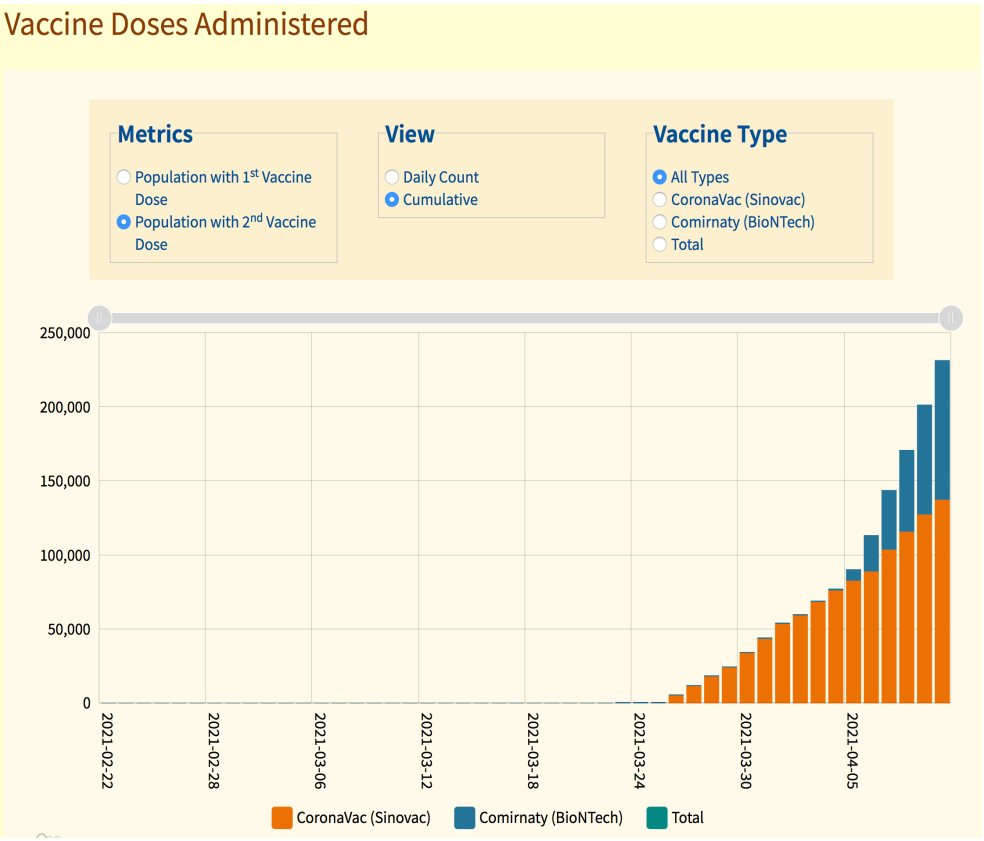
Total Population with 2nd Vaccine Dose: 231,452 (3.5%)

Click to Download JSON data
Click to Download CSV data

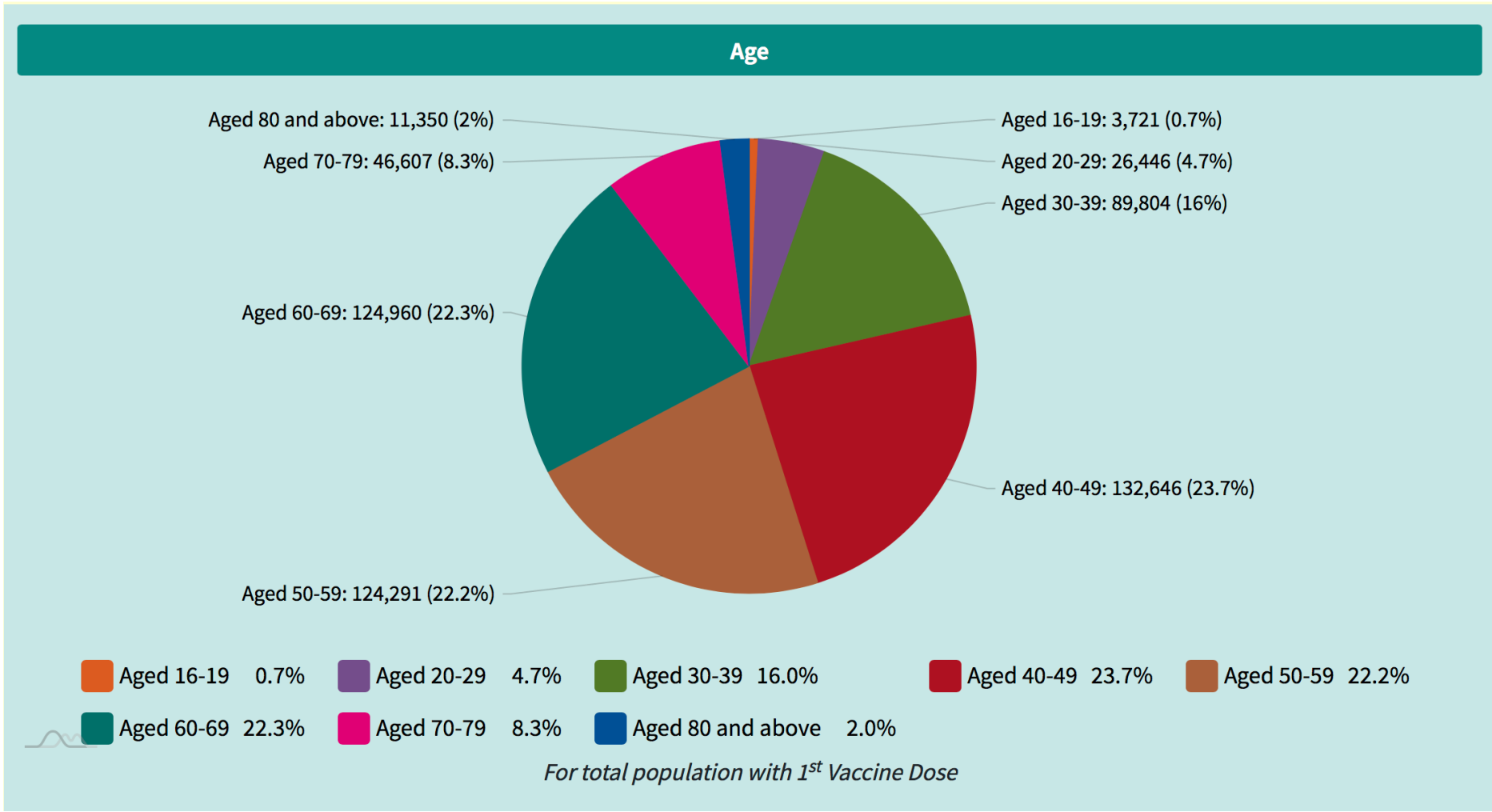
Vaccine Doses Administered

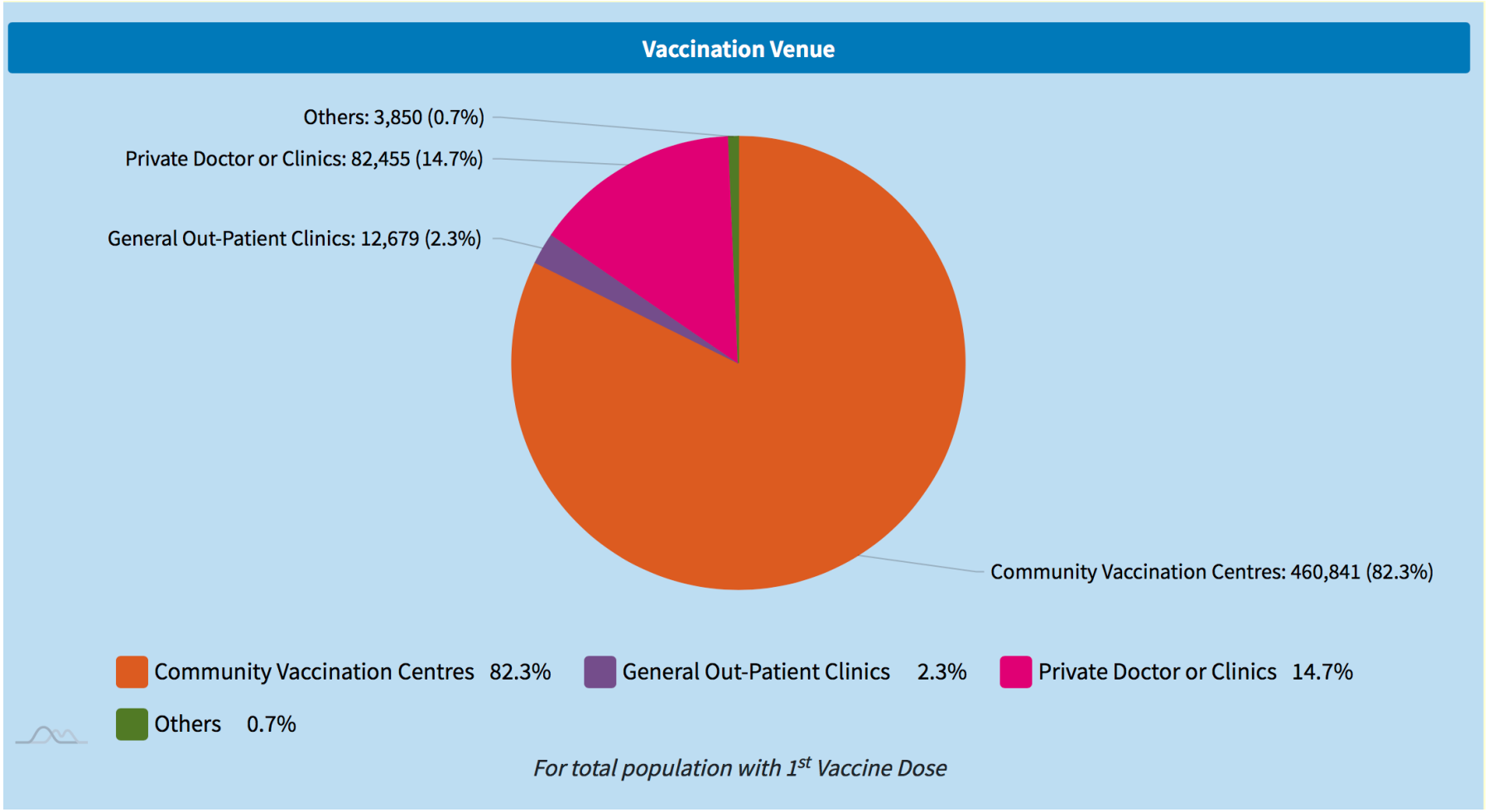


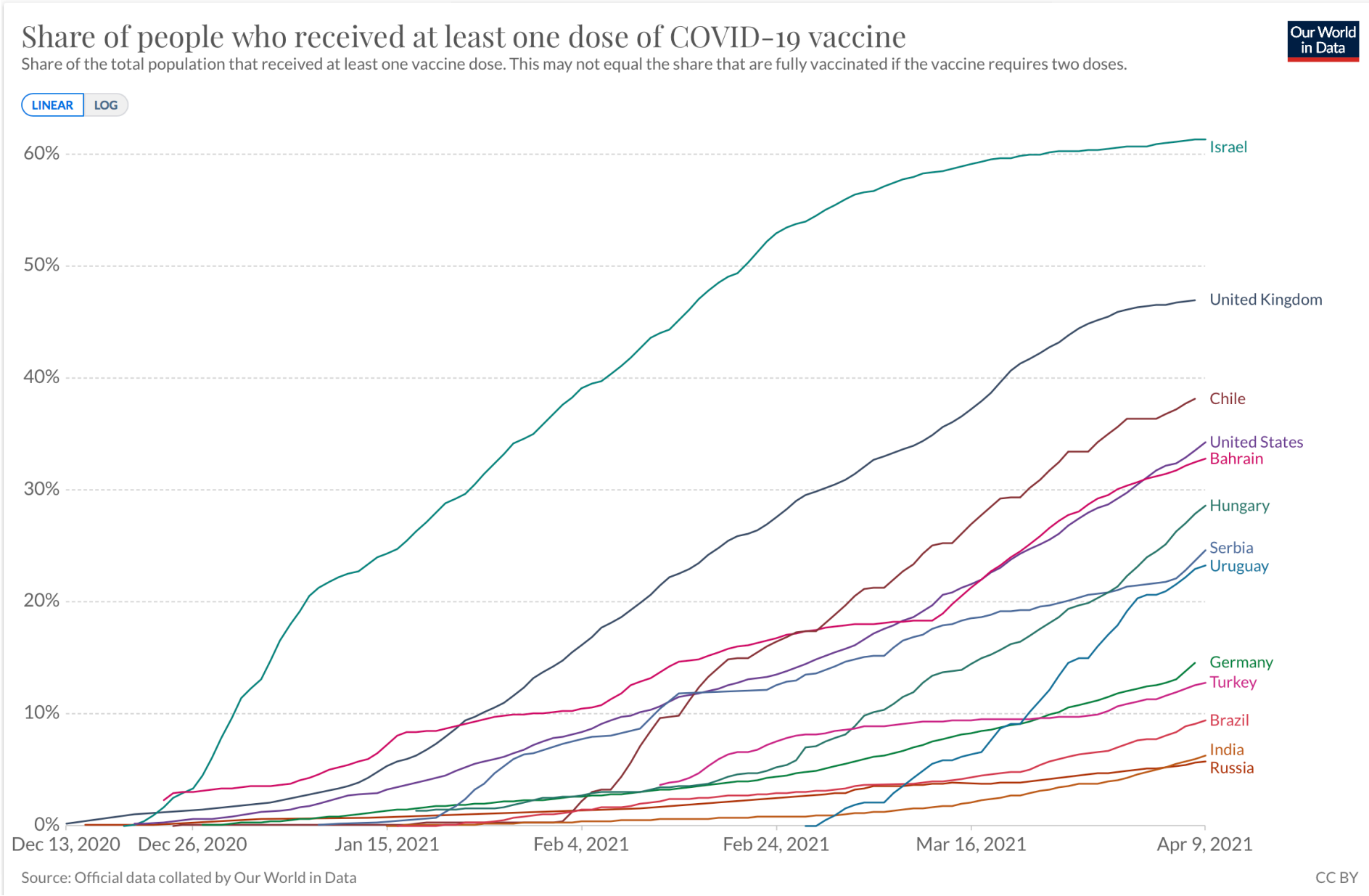
Vaccine Doses Administered



https://www.covidvaccine.gov.hk/en/dashboard (Apr 11, 2021)


Age
Aged 80 and above: 11,350 (2%)
Aged 70-79: 46,607 (8.3%)
Aged 60-69: 124,960 (22.3%)
Aged 50-59: 124,291 (22.2%)
Aged 16-19: 3,721 (0.7%)
Aged 20-29: 26,446 (4.7%)
Aged 30-39: 89,804 (16%)
Aged 40-49: 132,646 (23.7%)
Aged 16-19 0.7%
Aged 20-29 4.7%
Aged 30-39 16.0%
Aged 40-49 23.7%
Aged 50-59 22.2%
Aged 60-69 22.3%
Aged 70-79 8.3%
Aged 80 and above 2.0%
For total population with 1st Vaccine Dose


Vaccination Venue
Others: 3,850 (0.7%)
Private Doctor or Clinics: 82,455 (14.7%)
General Out-Patient Clinics: 12,679 (2.3%)
Community Vaccination Centres: 460,841 (82.3%)
Community Vaccination Centres 82.3%
General Out-Patient Clinics 2.3%
Private Doctor or Clinics 14.7%
Others 0.7%
For total population with 1st Vaccine Dose



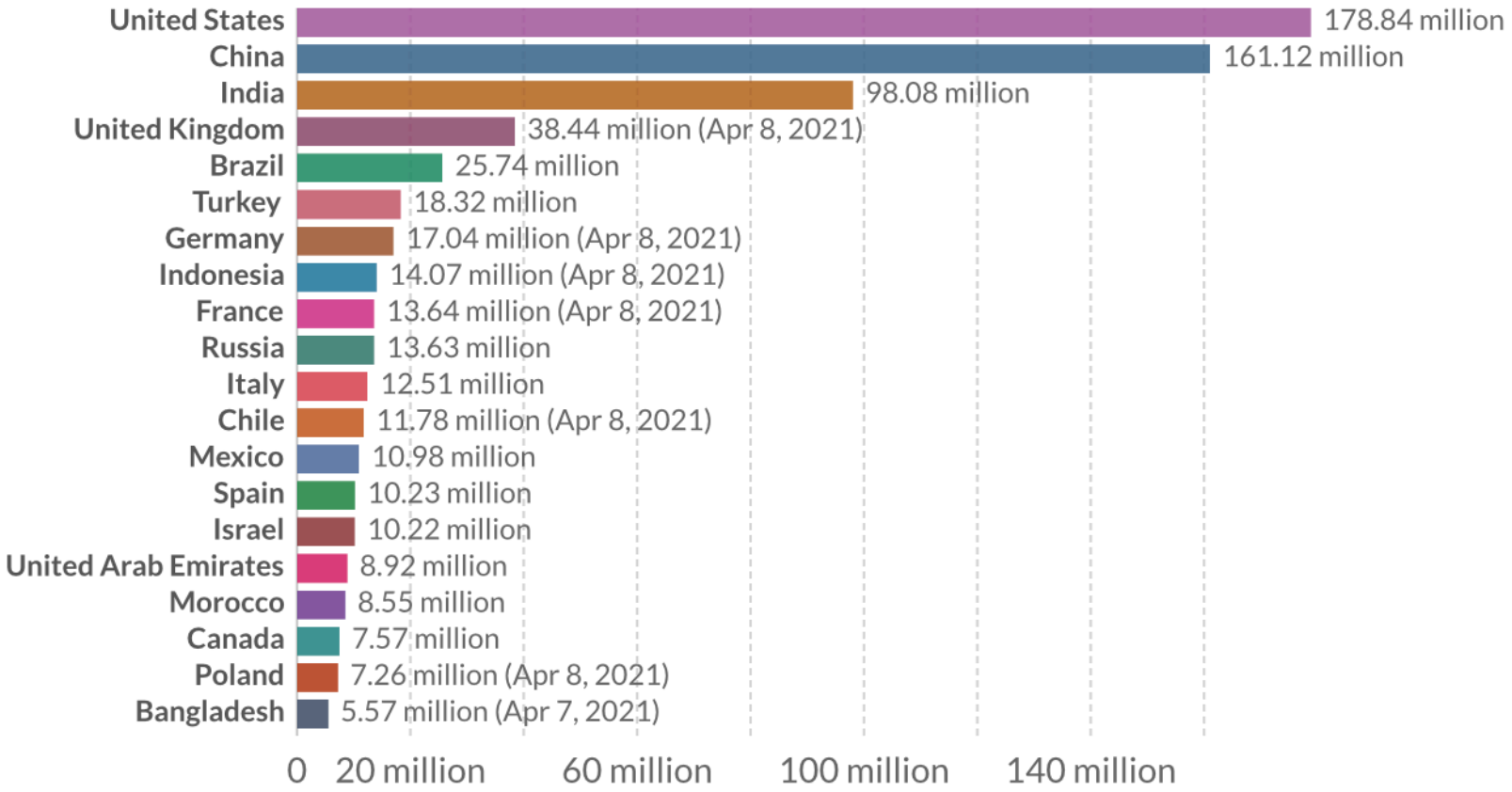
https://ourworldindata.org/covid-vaccinations (Apr 11, 2021)

COVID-19 vaccine doses administered, Apr 9, 2021

Total number of vaccination doses administered. This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).

Our World in Data

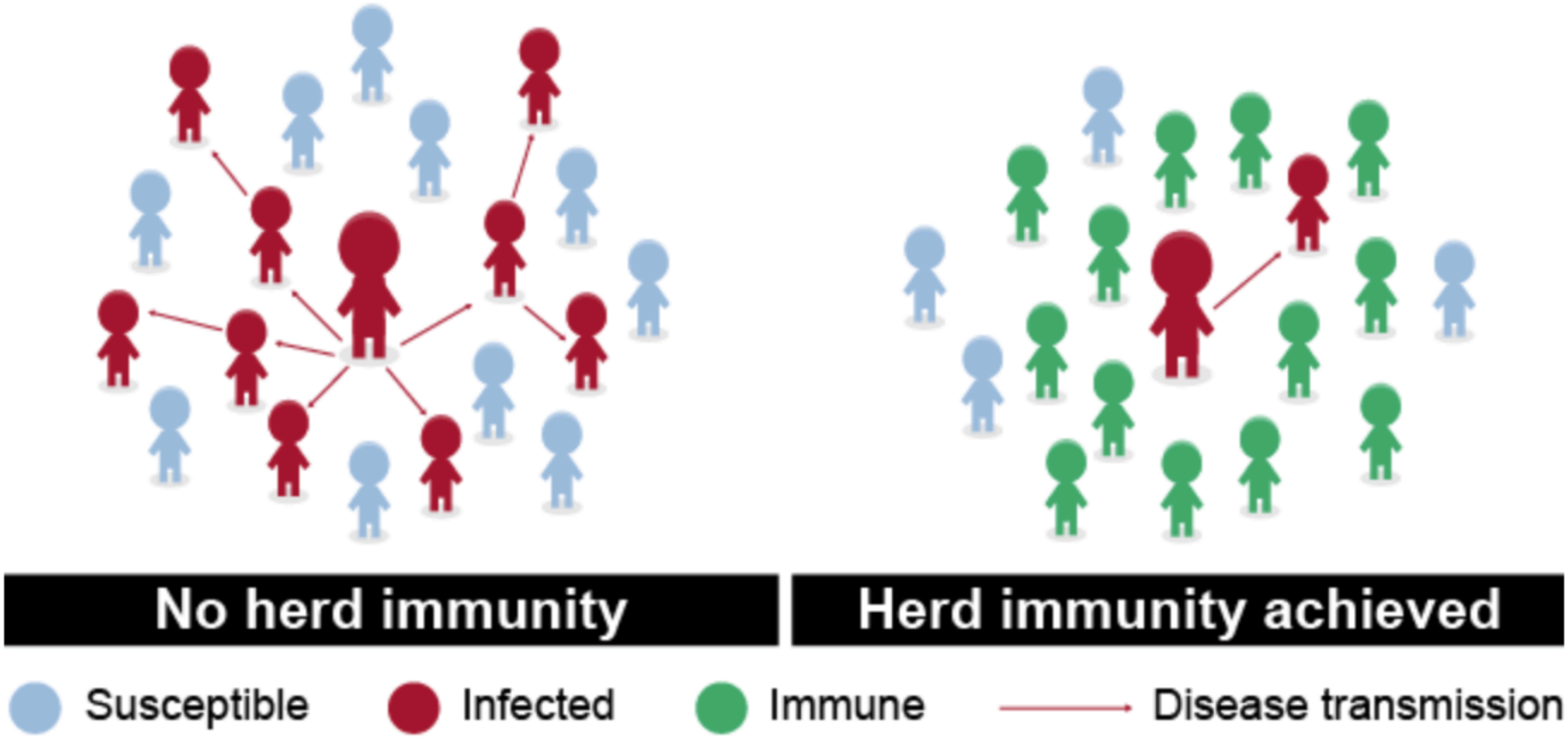
LINEAR LOG Add country



Source: Official data collated by Our World in Data – Last updated 10 April, 09:52 (London time)
OurWorldInData.org/coronavirus • CC BY

https://ourworldindata.org/covid-vaccinations (Apr 11, 2021)

Herd immunity can help slow or stop the spread of a disease

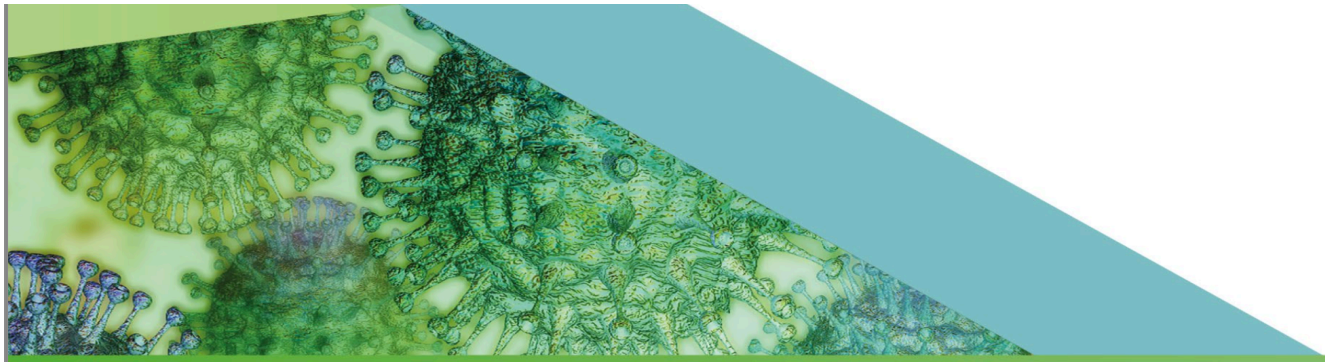


Source: GAO adaptation of NIH graphic. | GAO-20-646SP

https://www.gao.gov/products/gao-20-646sp

Herd immunity in COVID-19: caveats

- Duration of protection
- Emergence of virus mutants / variants
- Transmissibility of virus in people who are vaccinated (asymptomatic transmission)
- Use in children



ECDC TECHNICAL REPORT

Risk of SARS-CoV-2 transmission from newly-infected individuals with documented previous infection or vaccination

29 March 2021

The review of evidence on immunity and possibilities for transmission from infected, previously-vaccinated individuals to susceptible contacts found that:

- Direct evidence of the impact of vaccination on the risk of transmission is only available from one study, a large register-based household transmission study from Scotland. This study suggests that vaccination of a household member reduces the risk of infection in susceptible household members by at least 30%.
- There is evidence that vaccination significantly reduces viral load and symptomatic/asymptomatic infections in vaccinated individuals, which could translate into reduced transmission, although the vaccine efficacy varies by vaccine product and target group. In light of this fact, the total number of infections is expected to decrease significantly as vaccination coverage increases, provided that there is a match between the vaccine strains and the circulating virus strains. This will lead to decreased transmission overall.

https://www.ecdc.europa.eu/sites/default/files/documents/Risk-of-transmission-and-reinfection-of-SARS-CoV-2-following-vaccination.pdf

PFIZER-BIONTECH ANNOUNCE POSITIVE TOPLINE RESULTS OF PIVOTAL COVID-19 VACCINE STUDY IN ADOLESCENTS

Wednesday, March 31, 2021 - 06:45am

- *In participants aged 12-15 years old, BNT162b2 demonstrated 100% efficacy and robust antibody responses, exceeding those reported in trial of vaccinated 16-25 year old participants in an earlier analysis, and was well tolerated*
- *The companies plan to submit these data to the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA) as soon as possible to request expansion of the Emergency Use Authorization (EUA) and EU Conditional Marketing Authorization for BNT162b2*
- *The companies also provided an update on the Phase 1/2/3 study of BNT162b2 in children aged 6 months to 11 years*

NEW YORK & MAINZ, Germany--(BUSINESS WIRE)-- Pfizer Inc. (NYSE: PFE) and BioNTech SE (Nasdaq: BNTX) today announced that, in a Phase 3 trial in adolescents 12 to 15 years of age with or without prior evidence of SARS-CoV-2 infection, the Pfizer-BioNTech COVID-19 vaccine BNT162b2 demonstrated 100% efficacy and robust antibody responses, exceeding those recorded earlier in vaccinated participants aged 16 to 25 years old, and was well tolerated. These are topline results from a pivotal Phase 3 trial in 2,260 adolescents.

The trial enrolled 2,260 adolescents 12 to 15 years of age in the United States. In the trial, 18 cases of COVID-19 were observed in the placebo group (n=1,129) versus none in the vaccinated group (n=1,131). Vaccination with BNT162b2 elicited SARS-CoV-2–neutralizing antibody geometric mean titers (GMTs) of 1,239.5, demonstrating strong immunogenicity in a subset of adolescents one month after the second dose. This compares well (was non-inferior) to GMTs elicited by participants aged 16 to 25 years old (705.1 GMTs) in an earlier analysis. Further, BNT162b2 administration was well tolerated, with side effects generally consistent with those observed in participants 16 to 25 years of age.

https://www.pfizer.com/news/press-release/press-release-detail/pfizer-biontech-announce-positive-topline-results-pivotal

What does the future hold?

- What coverage rate may we attain? Shall we get herd immunity?
- Will we need future booster or re-vaccination?
- Will we get some other kinds of COVID-19 vaccines?
- How may we increase vaccination uptake?
- Will vaccination bring back normal living in our society?

Booster or re-vaccination?

- Duration of protection
- Emergence of virus mutants / variants

World Health Organization

Coronavirus disease (COVID-19): Vaccines

Will COVID-19 vaccines provide long-term protection?

Because COVID vaccines have only been developed in the past months, it's too early to know the duration of protection of COVID-19 vaccines. Research is ongoing to answer this question. However, it's encouraging that available data suggest that most people who recover from COVID-19 develop an immune response that provides at least some period of protection against reinfection – although we're still learning how strong this protection is, and how long it lasts.

https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)-vaccines?adgroupsurvey=%7Badgroupsurvey%7D&gclid=CjwKCAjwvMqDBhB8EiwA2iSmPP2VAW3ACn2hIH48JkjI5Mt_v8ptbLx0MbR3wJijF720eqba1rLM9hoCpY8QAvD_BwE

(Apr 11, 2021)

PFIZER AND BIONTECH CONFIRM HIGH EFFICACY AND NO SERIOUS SAFETY CONCERNS THROUGH UP TO SIX MONTHS FOLLOWING SECOND DOSE IN UPDATED TOPLINE ANALYSIS OF LANDMARK COVID-19 VACCINE STUDY

Thursday, April 01, 2021 - 06:45am

- *Analysis of 927 confirmed symptomatic cases of COVID-19 demonstrates BNT162b2 is highly effective with 91.3% vaccine efficacy observed against COVID-19, measured seven days through up to six months after the second dose*
- *Vaccine was 100% effective in preventing severe disease as defined by the U.S. Centers for Disease Control and Prevention and 95.3% effective in preventing severe disease as defined by the U.S. Food and Drug Administration*
- *Vaccine was 100% effective in preventing COVID-19 cases in South Africa, where the B.1.351 lineage is prevalent*
- *Vaccine safety now evaluated in more than 44,000 participants 16 years of age and older, with more than 12,000 vaccinated participants having at least six months follow-up after their second dose*
- *The companies plan to share these results with worldwide regulatory agencies soon*

https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-confirm-high-efficacy-and-no-serious

The NEW ENGLAND JOURNAL of MEDICINE

CORRESPONDENCE

Antibody Persistence through 6 Months after the Second Dose of mRNA-1273 Vaccine for Covid-19

TO THE EDITOR:

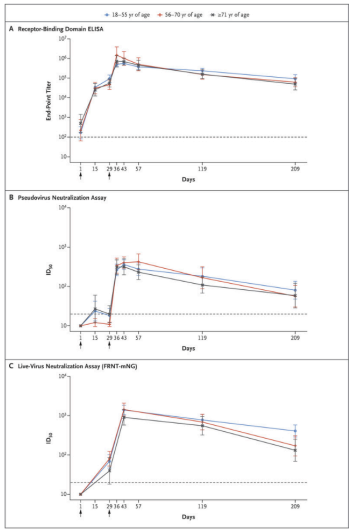
April 6, 2021
DOI: 10.1056/NEJMc2103916

TO THE EDITOR:

Interim results from a phase 3 trial of the Moderna mRNA-1273 severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccine indicated 94% efficacy in preventing coronavirus disease 2019 (Covid-19).[1] The durability of protection is currently unknown. We describe mRNA1273-elicited binding and neutralizing antibodies in 33 healthy adult participants in an ongoing phase 1 trial,[2-4] stratified according to age, at 180 days after the second dose of 100 μg (day 209).

Antibody activity remained high in all age groups at day 209. Binding antibodies, measured by means of an enzyme-linked immunosorbent assay against SARS-CoV-2 spike receptor–binding domain,[2] had geometric mean end-point titers (GMTs) of 92,451 (95% confidence interval [CI], 57,148 to 149,562) in participants 18 to 55 years of age, 62,424 (95% CI, 36,765 to 105,990) in those 56 to 70 years of age, and 49,373 (95% CI, 25,171 to 96,849) in those 71 years of age or older. Nearly all participants had detectable activity in a pseudovirus neutralization assay,[2] with 50% inhibitory dilution (ID_{50}) GMTs of 80 (95% CI, 40 to 135), 57 (95% CI, 30 to 106), and 59 (95% CI, 29 to 121), respectively. On the more sensitive live-virus focus-reduction neutralization mNeonGreen test,[4] all the participants had detectable activity, with ID_{50} GMTs of 406 (95% CI, 286 to 578), 171 (95% CI, 95 to 307), and 131 (95% CI, 69 to 251), respectively; these GMTs were lower in participants 56 to 70 years of age (P=0.02) and in those 71 years of age or older (P=0.004) than in those 18 to 55 years of age (Figure 1; also see the Supplementary Appendix, available with the full text of this letter at NEJM.org).

Figure 1.



Time Course of SARS-CoV-2 Antibody Binding and Neutralization Responses after mRNA-1273 Vaccination.

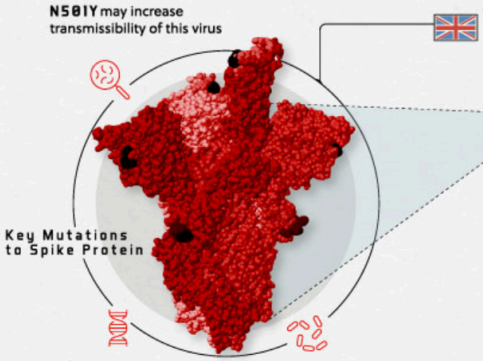
The estimated half-life of binding antibodies after day 43 for all the participants was 52 days (95% CI, 46 to 58) calculated with the use of an exponential decay model, which assumes a steady decay rate over time, and 109 days (95% CI, 92 to 136) calculated with the use of a power-law model (at day 119), which assumes that decay rates decrease over time. The neutralizing antibody half-life estimates in the two models were 69 days (95% CI, 61 to 76) and 173 days (95% CI, 144 to 225) for pseudovirus neutralization and 68 days (95% CI, 61 to 75) and 202 days (95% CI, 159 to 272) for live-virus neutralization. As measured by ΔAIC_c (change in Akaike information criterion, corrected for small sample size), the best fit for binding and neutralization were the exponential decay and power-law models, respectively (see the Supplementary Appendix). These results are consistent with published observations of convalescent patients with Covid-19 through 8 months after symptom onset.[5]

Although the antibody titers and assays that best correlate with vaccine efficacy are not currently known, antibodies that were elicited by mRNA-1273 persisted through 6 months after the second dose, as detected by three distinct serologic assays. Ongoing studies are monitoring immune responses beyond 6 months as well as determining the effect of a booster dose to extend the duration and breadth of activity against emerging viral variants. Our data show antibody persistence and thus support the use of this vaccine in addressing the Covid-19 pandemic.

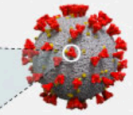
https://www.nejm.org/doi/full/10.1056/NEJMc2103916?query=featured_home

3 MAJOR VARIANTS OF CORONAVIRUS

If something's more contagious, it's generally less deadly—at least, that's the age-old theory in virology. However, the B.1.1.7 variant isn't following this general rule of thumb. Research suggests it's more lethal and more contagious than the original strain.



B.1.1.7 DISCOVERED IN UK



First identified ..... Sep 2020
Location ..... United Kingdom
First detected in USA ..... End of Dec 2020

WHAT YOU NEED TO KNOW ABOUT THIS VARIANT

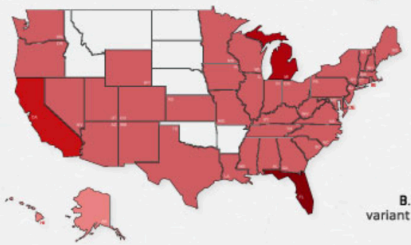
- Spreads 50% more easily and quickly
- Now detected in 94 countries and 46 States (932* cases)
- May be 35% more deadly than other variants
- Current vaccines work well against this new variant

*Figures as of Feb 28, 2021

Most of the COVID-19 vaccines focus on the spike protein. Therefore, spike protein mutations can have significant impacts on the virus' spread.

THE VARIANT'S WORLDWIDE SPREAD

Experts suspect the first case of B.1.1.7 originated in Kent, an English county south-east of London. From there, the variant quickly spread across the globe, with cases reported across Europe, Asia, and North America.



Reported Cases in U.S.
- 0
- 1 to 100
- 101 to 200
- 201 to 300
- 401 to 500

B.1.1.7 where the variant was detected.

THE VARIANT'S USA SPREAD

It is doubling every 10 days in the U.S.

Source: Pango Lineages by the Centre for Genomic Pathogen Surveillance in South Cambridgeshire
Center For Disease Control and Prevention - https://www.cdc.gov

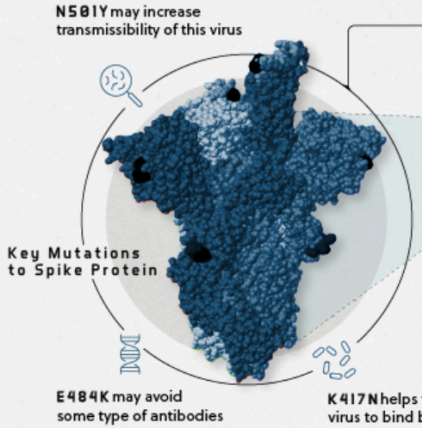
VISUAL CAPITALIST

/visualcapitalist @visualcap visualcapitalist.com

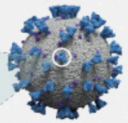
https://www.visualcapitalist.com/the-3-major-covid-19-variants/

3 MAJOR VARIANTS OF COVID-19

Preliminary research suggests that the B.1.351 variant may be resistant to existing vaccines. However, experts believe the current vaccines still provide protection against severe illness.



B.1.351 DISCOVERED IN SOUTH AFRICA



- First identified ..... Oct 2020
- Location ..... South Africa
- First detected in USA ..... Jan 2021

WHAT YOU NEED TO KNOW ABOUT THIS VARIANT

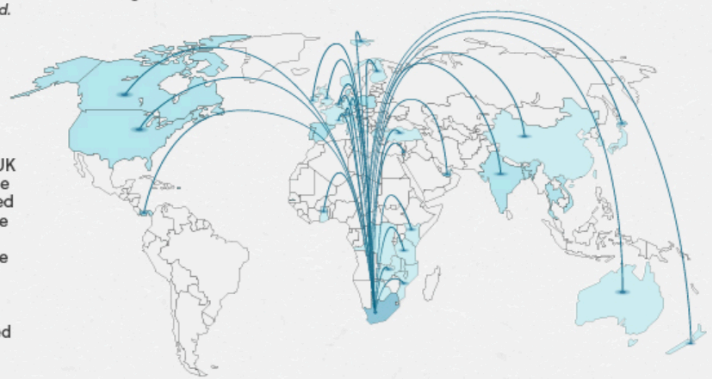
- It spreads more easily and quickly
- Now detected in 48 countries*
- Better at evading our immune system
- Possible reduction of vaccine effectiveness

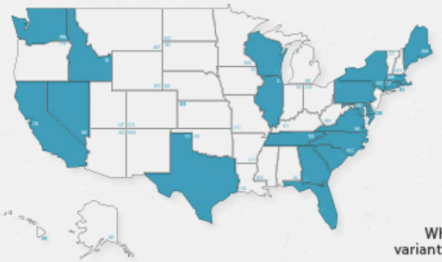
*Figures as of March 10, 2021

Most of the COVID-19 vaccines focus on the spike protein. Therefore, spike protein mutations can have significant impacts on the virus' spread.

THE VARIANT'S WORLDWIDE SPREAD

In December 2020, the UK reported that two people who had recently traveled to South Africa (SA) were infected with the new variant. By the end of the month, the strain was found in Switzerland, Australia, and Japan as well—and all cases linked back to SA.





Reported Cases in U.S.

- 0
- 1 to 100
- 101 to 200
- 201 to 300
- 401 to 500
- 601 to 700

Where the B.1.351 variant was detected.

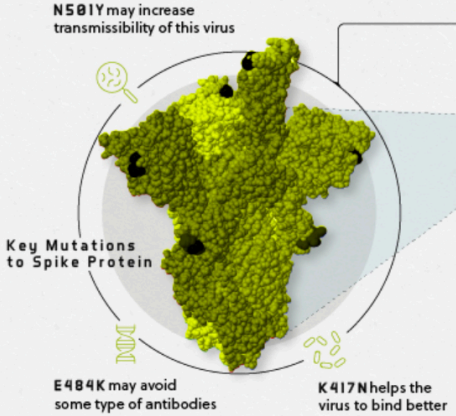
THE VARIANT'S USA SPREAD

+ Now detected in 21 states.

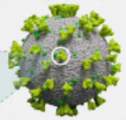
Source: Pango Lineages by the Centre for Genomic Pathogen Surveillance in South Cambridgeshire
Center For Disease Control and Prevention - https://www.cdc.gov

3 MAJOR VARIANTS OF COVID-19

Similar to the B.1.351 variant, experts are concerned that the P.1 variant could be resistant to existing vaccines. However, research is still in the early stages, and subject to additional information.



P.1 DISCOVERED IN BRAZIL



- First identified ..... Jan 2021
- Location ..... Detected in Japan in people who traveled to Brazil
- First detected in USA ..... Jan 2021

WHAT YOU NEED TO KNOW ABOUT THIS VARIANT

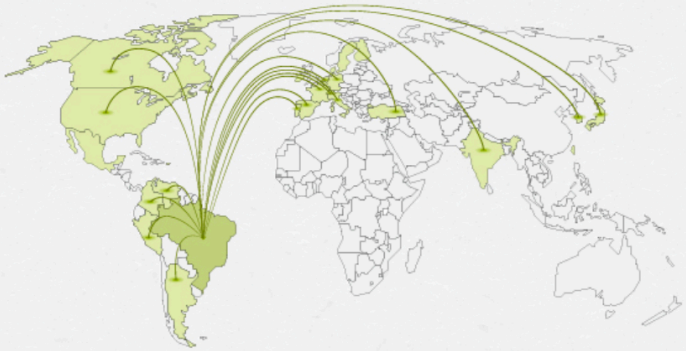
- Spreads more easily and quickly
- Now detected in 26 countries*
- Better at evading our immune system
- Possible reduction of vaccine effectiveness

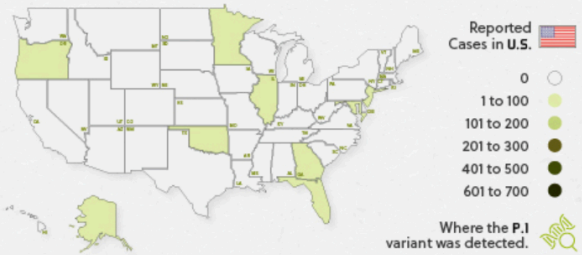
*Figures as of March 10, 2021

Most of the COVID-19 vaccines focus on the spike protein. Therefore, spike protein mutations can have significant impacts on the virus' spread.

THE VARIANT'S WORLDWIDE SPREAD

In January 2021, four cases of the P.1 variant were detected in Japan. The infected travelers had arrived from Brazil. That same month, cases of the P.1 variant were reported in Italy, Germany, and the U.S.





Reported Cases in U.S.

- 0
- 1 to 100
- 101 to 200
- 201 to 300
- 401 to 500
- 601 to 700

Where the P.1 variant was detected.

THE VARIANT'S USA SPREAD

- Now detected in 9 states.

Source: Pango Lineages by the Centre for Genomic Pathogen Surveillance in South Cambridgeshire
Center For Disease Control and Prevention - https://www.cdc.gov

衞生防護中心
Centre for Health Protection

Scientific Committee on Emerging and Zoonotic Diseases
and
Scientific Committee on Vaccine Preventable Diseases

Consensus Interim Recommendations on the Use of COVID-19 vaccines in Hong Kong
(As of March 18, 2021)

4. Emerging variants are constant threats to the protection conferred by COVID-19 vaccines. There were several variants circulating globally, including the variants first emerged in the United Kingdom (B.1.1.7), in the South Africa (B.1.351) and in Brazil (P.1). The meeting discussed the existing evidence on COVID-19 vaccine effectiveness against different variants.

5. In general, studies have shown that the existing vaccines works well against the non-variant. The effectiveness data against variants differ by vaccines. The BioNTech vaccine (BNT162b2) is effective against B.1.1.7 and P.1, but is less effective against B.1.351. There is currently limited efficacy data of CoronaVac vaccine against variants. The company is currently implementing a large scale study in Brazil and more efficacy data against variants will be available. The vaccine developed by AstraZeneca, in collaboration with the University of Oxford (AZD1222) is effective against B.1.1.7 but is ineffective against the B.1.351 variant.

What does the future hold?

- What coverage rate may we attain? Shall we get herd immunity?
- Will we need future booster or re-vaccination?
- Will we get some other kinds of COVID-19 vaccines?
- How may we increase vaccination uptake?
- Will vaccination bring back normal living in our society?

World Health Organization

Interim statement of the COVID-19 subcommittee of the WHO Global Advisory Committee on Vaccine Safety on AstraZeneca COVID-19 vaccine

7 April 2021 | Statement | Reading time: 2 min (510 words)

The COVID-19 subcommittee of the WHO Global Advisory Committee on Vaccine Safety (GACVS) has reviewed reports of rare cases of blood clots with low platelets following vaccination with the AstraZeneca COVID-19 vaccine (including Covishield) since their onset a few weeks ago.

At its most recent meeting on 7 April, 2021, the subcommittee reviewed latest information from the European Medicines Agency along with information from the United Kingdom's Medicines and other Health products Regulatory Agency (MHRA), and other Member States and noted the following:

- Based on current information, a causal relationship between the vaccine and the occurrence of blood clots with low platelets is considered plausible but is not confirmed. Specialised studies are needed to fully understand the potential relationship between vaccination and possible risk factors.
- The GACVS subcommittee will continue to gather and review further data, as it has done since the beginning of the COVID vaccine programme.
- It is important to note that whilst concerning, the events under assessment are very rare, with low numbers reported among the almost 200 million individuals who have received the AstraZeneca COVID-19 vaccine around the world.
- Rare adverse events following immunizations should be assessed against the risk of deaths from COVID-19 disease and the potential of the vaccines to prevent infections and reduce deaths due to diseases. In this context, it should be noted that as of today, at least 2.86 million people have died of COVID-19 disease worldwide.
- Side effects within two- or three-days following vaccination, the majority of which are mild and local in nature, are expected and common. However, individuals who experience any severe symptoms – such as shortness of breath, chest pain, leg swelling, persistent abdominal pain, neurological symptoms, such as severe and persistent headaches or blurred vision, tiny blood spots under the skin beyond the site of the injection - from around four to 20 days following vaccination, should seek urgent medical attention. Clinicians should be aware of relevant case definitions and clinical guidance for patients presenting thrombosis and thrombocytopaenia following COVID-19 vaccination. To this end, the GACVS subcommittee also suggested that a committee of clinical experts including haematologists and other specialists is convened, for advice on clinical diagnosis and case management.
- Active surveillance, including sentinel site / hospital case-based investigations should be considered, to further characterise these rare events. WHO has developed template protocols that countries could adapt for such studies. The GACVS will meet again next week to review additional data and will be issuing further recommendations as relevant

https://www.who.int/news/item/07-04-2021-interim-statement-of-the-covid-19-subcommittee-of-the-who-global-advisory-committee-on-vaccine-safety

Status of COVID-19 Vaccines within WHO EUL/PQ evaluation process

	Manufacturer	Name of Vaccine	NRA of Record	Platform	EOI accepted	Pre-submission meeting held	Dossier accepted for review*	Status of assessment**	Anticipated decision date***
1.	Pfizer BioNTech	BNT162b2/COMIRNATY Tozinameran (INN)	EMA	Nucleoside modified mNRA	✓	✓	✓	Finalized	31/12/20
2.	EU Nodes AstraZeneca / University of Oxford	AZD1222	Core – EMA Non-COVAX	Recombinant ChAdOx1 adenoviral vector encoding the Spike protein antigen of the SARS-CoV-2.	✓	✓	Accepted core data of AZ – non-Covax	Core data – now as donation for COVAX.	1st wk April 2021
							Data for Covax sites expected in April 2021 onwards	Awaited	April 2021 onwards
3.	SK BIO AstraZeneca / University of Oxford	AZD1222	MFDS KOREA	Recombinant ChAdOx1 adenoviral vector encoding the Spike protein antigen of the SARS-CoV-2.	✓	✓	✓	Finalized	15 Feb 2021
4.	**Serum Institute of India**	Covishield (ChAdOx1_nCoV-19)	DCGI	Recombinant ChAdOx1 adenoviral vector encoding the Spike protein antigen of the SARS-CoV-2.	✓	✓	✓	Finalized	15 Feb 2021
5.	Janssen Infectious Diseases & Vaccines	Ad26.COV2.S	EMA	Recombinant, replication-incompetent adenovirus type 26 (Ad26) vectored vaccine encoding the (SARS-CoV-2) Spike (S) protein	✓	✓	Core data (US +NL sites) ✓	Finalized	12 March 2021
							Additional sites awaited	Awaited	To be fixed after data submission
6.	Sinopharm / BIBP[1]	SARS-CoV-2 Vaccine (Vero Cell), Inactivated (InCoV)	NMPA	Inactivated, produced in Vero cells	✓	✓	✓	In progress	End April 2021
7.	sinovac	SARS-CoV-2 Vaccine (Vero Cell), Inactivated	NMPA	Inactivated, produced in Vero cells	✓	✓	✓	In progress	End April 2021
8.	moderna	mRNA-1273	EMA	mNRA-based vaccine encapsulated in lipid nanoparticle (LNP)	✓	✓	✓	In progress using the abridged procedure (EMA).	Mid. April 2021
9.	The Gamaleya National Center	Sputnik V	Russian NRA	Human Adenovirus Vector-based Covid-19 vaccine	Additional information submitted	Several meetings held.	"Rolling" submission of clinical and CMC data has started.	Additional data (Non-CLIN, CLIN, CMC) Required. Inspections in May and June 2021	Will be fixed after all data is submitted and inspections completed.
10.	康希诺生物 CanSinoBIO	Ad5-nCoV	NMPA	Recombinant Novel Coronavirus Vaccine (Adenovirus Type 5 Vector)	✓	✓	Rolling data starting April 2021		
11.	NOVAVAX		EMA	No pre-submission meeting yet.	Submitted EOI on 23 Feb	To be planned in April based on company request.			
12.	Vector State Research Centre of Virology and Biotechnology	EpiVacCorona	Russian NRA	Peptide antigen	Letter received not EOI. Reply sent on 15/01/2021				
13.	Zhifei Longcom, China	Recombinant Novel Coronavirus Vaccine（CHO Cell)	NMPA	Recombinant protein subunit	Response to 2nd EOI sent 29 Jan 2021. Additional information requested.				
14.	IMBCAMS, China	SARS-CoV-2 Vaccine, Inactivated (Vero Cell)	NMPA	Inactivated	Not accepted, still under initial development				
15.	Sinopharm / WIBP[2]	Inactivated SARS-CoV-2 Vaccine (Vero Cell)	NMPA	Inactivated, produced in Vero cells					
16.	Bharat Biotech, India	COVAXIN	DCGI	SARS-CoV-2 Vaccine, Inactivated (Vero Cell)	Requested meeting to discuss details of submission/timelines				

https://extranet.who.int/pqweb/sites/default/files/documents/Status_COVID_VAX_07April2021.pdf

What does the future hold?

- What coverage rate may we attain? Shall we get herd immunity?
- Will we need future booster or re-vaccination?
- Will we get some other kinds of COVID-19 vaccines?
- How may we increase vaccination uptake?
- Will vaccination bring back normal living in our society?

Major factors influencing uptake

- Perception of vaccine adverse effects
- Vaccine precautions (especially Coronavac)
- Program performance and publicity effectiveness
- Incentives

Adverse Events Following Immunization

Back

Cumulative no. of doses vaccinated and adverse events following immunization (AEFI) reported （up to 04 April）

CoronaVac (Sinovac)	
Cumulative number of doses of COVID-19 vaccine administered	About 404,100
Cumulative number of AEFI reports received	981 (0.24% of all administered)

Click to Download CSV data

Comirnaty (BioNTech)	
Cumulative number of doses of COVID-19 vaccine administered	About 152,000
Cumulative number of AEFI reports received	376 (0.25% of all administered)

https://www.covidvaccine.gov.hk/en/dashboard/safety/aefi (Apr 11, 2021)

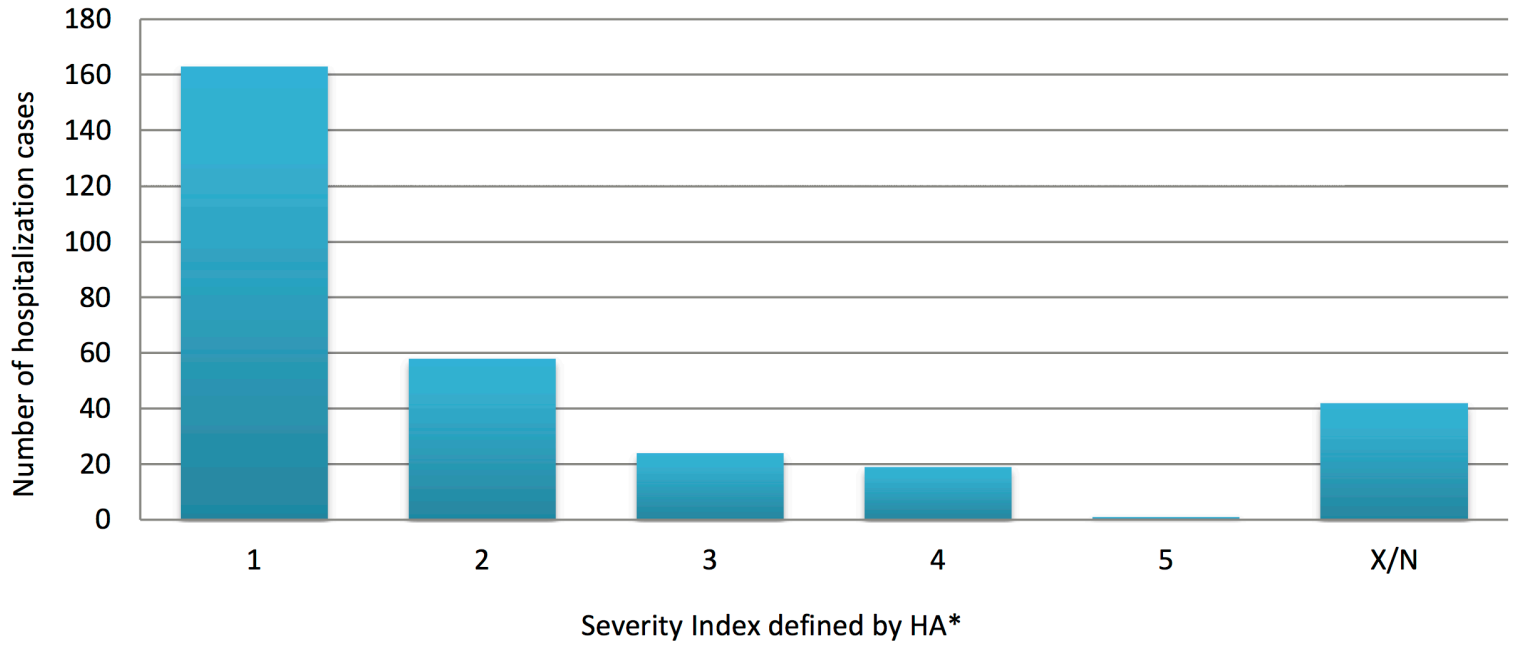
Safety Monitoring of COVID-19 Vaccines in Hong Kong

This report contains data of adverse event reports up to and including 4 April 2021

Contents

https://www.drugoffice.gov.hk/eps/do/en/doc/Safety_Monitoring_of_COVID-19_Vaccines_in_Hong_Kong.pdf

Figure 2. Hospitalization cases reported by Hospital Authority (HA)



* Severity index defined by HA:

1 = Incident occurred but no injury sustained.

2 = Minor injury.

3 = Temporary morbidity.

4 = Significant morbidity.

5 = Major permanent loss of function / disability

X/N = Not known or Not applicable

Based on the 157 AEFI reports associated with CoronaVac, the five most frequently reported events are:

Description of Events	Number of Events*
1. Dizziness	29
2. Chest pain	21
3. Palpitation	18
4. Rash	18
5. Headache	13

*One report may have more than one event.

Based on the 90 AEFI reports associated with Comirnaty, the five most frequently reported events are:

Description of Events	Number of Events*
1. Dizziness	15
2. Palpitation	10
3. Rash	9
4. Chest discomfort	9
5. Numbness	9

*One report may have more than one event.

	CoronaVac	Comirnaty	Total
Number of death case reports	13	2	15
Age range	55 – 80	59 – 66	55 – 80
Number of doses administered (up to 4 April 2021)	About 404,100	About 152,000	About 556,100
Age distribution of vaccinated people (up to 4 April 2021)	Mode: 60 – 69 Median: 50 – 59	Mode: 40 – 49 Median: 40 – 49	Mode: 60 – 69 Median: 50 – 59

Based on the clinical information and preliminary autopsy findings, these cases all died of cardiovascular disease. So far, the Expert Committee has concluded the causality assessment for three of the above death cases. Summary of the causality assessments for these cases are:

Causality assessment	Number of reports
Inconsistent with COVID-19 vaccination (i.e. no causal relationship)	3
Preliminary considered no direct association with COVID-19 vaccination*	12

* Based on medical history, clinical data, vaccination information and preliminary autopsy findings.

Baseline AEFI data

- Death
  - 15 reports (Feb 26 – Apr 4, 2021), aged 55-80y, all from cardiovascular diseases
  - Baseline comparison: average 691 deaths aged ≥ 55y from heart diseases during Feb 26 – Apr 4, 2017, 2018, 2019)

- Bell's palsy
  - 15 reports (Feb 26 to Apr 4, 2021)
  - Baseline comparison: average 159 cases aged ≥ 16y seen by HA (Feb 26 to Apr 4, 2018, 2019 and 2020)

明報新聞網

2021年3月8日 星期一 10:38AM

19°C

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要聞 | 港聞 | 經濟 | 娛樂 | 社評 | 觀點 | 中國 | 國際 | 教育 | 體育 | 副刊 | 英文 | 作家專欄 | 疫境前

熱門話題：新冠肺炎 · 三八婦女節 · 王毅 · 嘉強苑奪命火 · 林孝俊 · 吳敏兒 · 利物浦 · UA戲院結業 · 黑糖娘惹糕食譜 · 20

曾打科興 兩糖尿長者危殆 一接種5天心血管病發 一打針翌日現糖尿

下一篇

要聞

2021年3月8日星期一

曾打科興 兩糖尿長者危殆 一接種5天心血管病發 一打針翌日現糖尿併發症

讚好 44

明報新聞網

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主頁 | 每日明報 | 即時新聞 | 明報OL網 | 明報影片 | 明報

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熱門話題：兩會2021 · 王毅 · UA戲院結業 · 星光行潮庭 · 官涌體育館 · 嘉強苑奪命火 · 九龍公園杜鵑 · 武漢夜櫻 · 掃G

港聞

六旬漢打科興疫苗後亡 專家：與疫苗接種無直接關係 料心肌

2021年3月3日星期三

上一篇 下一篇

六旬漢打科興疫苗後亡　專家：與疫苗接種無直接關係　料心肌梗塞致死　疫苗計劃會繼續 (20:02)

讚好 382

東方日報 網頁 ▸電子報 ▸即時新聞 ▸東方新版意見箱

3月8日 (一) | 要聞港聞 | 兩岸國際 | 產經 | 娛樂 | 體育 | 馬經 | 波經 | 社

退針大增 政府密Ш

下一則

退針大增 政府密Ш

本港接連有人疑打科興疫苗後死亡，短短7日內便發生兩宗，令全城陷入信心危機，觸發「退針潮」進一步惡化。港府束手無策，日前突然煞停公布預約接種疫苗人數，即使傳媒查問亦僅獲當局回覆稱沒有補充，可謂欲蓋彌彰。政務司司長張建宗仍「死撐」，呼籲市民以「科學為本」看疫苗安全，相信專家意見，希望公眾釋除疑慮。有醫學界人士認為，市民的行動最能夠實際反映現況，當局掩耳盜鈴拒報數字，對形象不利的事掩人耳目，繼續以科學為本來說服市民，亦難挽狂瀾。

兩岸國際 | 產經 | 娛樂 | 體育 | 馬經 | 波經 | 社

接種疫苗 再多7人送院 80歲翁危殆

上一則 下一則

接種疫苗 再多7人送院 80歲翁危殆

【本報訊】衞生署昨公布，接獲醫院管理局呈報兩宗需轉介深切治療部報告。據悉，兩宗個案病人均曾接種科興新冠疫苗，首宗涉及一名80歲男子，他本身患有糖尿病、頸動脈粥樣硬化、高血壓及曾中風，於本月1日在元朗天暉路體育館接種疫苗，至本月6日感到胸痛，到明愛醫院急症室求醫，但對治療反應欠佳，同晚轉送深切治療部，初步診斷為急性冠狀動脈綜合症，現時情況危殆。據統計，迄今最少有22宗市民於接種新冠疫苗後感到不適的送院個案。

2 在使用「克爾來福」前，需要瞭解甚麼事項[1]

不應給予「克爾來福」

- 對「克爾來福」或其他滅活疫苗；或「克爾來福」疫苗中的任何成分（活性*或非活性成分*，或生產工序中使用的任何物質）有過敏史。
- 過往發生過疫苗嚴重過敏反應者（如急性過敏反應、血管神經性水腫、呼吸困難等）。
- 患有嚴重神經系統疾病者（如橫貫性脊髓炎、格林巴利綜合症、脱髓鞘疾病等）。
- 未控制的嚴重慢性病患者。
- 懷孕期或哺乳期婦女。

* 包括：滅活的新型冠狀病毒（CZ02株）、氫氧化鋁佐劑、磷酸氫二鈉十二水合物、磷酸二氫鈉一水合物、氯化鈉。

[1] 根據藥廠提供資料

注意事項

- 目前暫未獲得本疫苗的保護持久性數據，接種後仍需根據疫情防控需要採取必要的防護措施。
- 患有急性疾病、慢性疾病的急性發作期、嚴重慢性疾病、過敏體質和發熱者需慎用；必要時經醫生評估後延遲接種。
- 糖尿病患者或有驚厥、癲癇、腦病或精神疾病史；或有這些病症的家族史者需慎用。
- 患有血小板減少症或出血性疾病者，肌肉注射本疫苗可能會引起出血，需慎用。
- 尚未獲得本疫苗對免疫功能受損者(例如惡性腫瘤、腎病綜合症、愛滋病患者)的安全性和有效性數據，此類人士接種本疫苗應基於個人考慮。
- 注射免疫球蛋白者應至少相隔1個月以上方可接種本疫苗，以免影響免疫效果。
- 接種本疫苗後出現任何神經系統異常反應者，禁止再次使用。
- 與其它疫苗一樣，無法確保本疫苗對所有接種者均產生保護作用。
- 接種疫苗後，觀察三十分鐘。

育齡期婦女

在臨床試驗中接種「克爾來福」後意外妊娠的婦女中收集到的數據非常有限，尚不足以判斷接種本疫苗後可能導致發生異常妊娠情況的風險。

懷孕期或哺乳期女性

目前尚未獲得孕婦及哺乳期婦女使用「克爾來福」的臨床試驗數據。

Interim Guidance Notes
On Common Medical Diseases and COVID-19 Vaccination In Primary Care Settings

(As of 7 April, 2021)

Introduction

Individuals with chronic diseases and advanced age have increased risk of morbidity and mortality from COVID-19 infection[1]. The benefit of COVID-19 vaccination among those with stable clinical conditions generally exceeds the risk unless there is contraindication.

2. With the commencement of vaccination programme in Hong Kong and the intense surveillance and reporting of adverse events following immunization (AEFI), there is heightened public concern over vaccination in persons with chronic diseases of whom some serious AEFIs were reported. Moreover, the medical profession sees the need of clinical guidelines to facilitate their assessment and management of these patients for COVID-19 vaccination.

3. This interim guidance notes should be read together with the *Consensus Interim Recommendations on the Use of COVID-19 Vaccines in Hong Kong (As of January 7 2021)*[1], *Consensus Interim Recommendations on the Use of CoronaVac in Hong Kong (As of February 19 2021)* [2], and *Consensus Interim Recommendations on the Use of COVID-19 Vaccines in Hong Kong (As of March 18 2021)*[3] issued jointly by the Scientific Committee on Emerging and Zoonotic Diseases (SCEZD) and Scientific Committee on Vaccine Preventable Diseases (SCVPD) and the Expert Advisory Panel to Chief Executive.

4. This document is a living document which will be updated from time to time according to the latest development and continuous communication and consultation with relevant specialists, academic and professional organizations.

Interim Guidance Notes

5. This Interim Guidance Notes aim to assist primary care and relevant doctors on their assessment and optimization of patients with common medical diseases for CoronaVac vaccination. It must be emphasized that the information is based on expert opinion on the management of common clinical conditions.

6. Persons with contraindications for CoronaVac should not receive CoronaVac. Subject to the modification of an individual's condition for suitability of vaccination, health service providers shall exercise clinical judgement to decide the best timing for COVID-19 vaccination as below.

Do not allow vaccination, i.e. with contraindications	Persons with: • history of allergic reaction to CoronaVac or other inactivated vaccine, or any component of CoronaVac (active or inactive ingredients, or any material used in the process); or • previous severe allergic reactions to vaccine (e.g. acute anaphylaxis, angioedema, dyspnea, etc.), *unless advised by specialists in Immunology and Allergy*; or • severe neurological conditions (e.g. transverse myelitis, Guillain–Barré syndrome, demyelinating diseases, etc.); or • uncontrolled severe chronic diseases; or • pregnant and lactating women
To defer vaccination, until medical condition is in better control	Persons with: • severe chronic disease not under satisfactory control; or • acute/ unstable disease requiring treatment/ medical attention; or • undergoing treatment adjustment to better control the disease
To proceed to vaccination	Persons without the above situations* (including persons with **stable** chronic diseases **can** proceed to vaccination)

*This document and table aims to cover common medical conditions encountered in primary care settings. Please also refer to the vaccination fact sheet and package insert accessible via https://www.covidvaccine.gov.hk/pdf/CoronaVac_ENG_PI_brief.pdf.

7. Regarding management of some chronic diseases, health service providers could refer to local[4,5] and overseas references[6,7] in making clinical judgement. One of the local references is the Reference Frameworks[4] published by the Primary Healthcare Office at https://www.fhb.gov.hk/pho/main/frameworks.html?lang=2. For conditions requiring specialist care, reference can be made to the advice of respective professional associations (please refer to the Annex for details).


MIRROR
2018
THE FIRST MIRROR
LIVE CONCERT

What does the future hold?

- What coverage rate may we attain? Shall we get herd immunity?
- Will we need future booster or re-vaccination?
- Will we get some other kinds of COVID-19 vaccines?
- How may we increase vaccination uptake?
- Will vaccination bring back normal living in our society?

- Iceland
- Croatia
- Ecuador
- Guatemala
- Montenegro
- Seychelles
- Belize
- Georgia

https://www.cntraveler.com/story/these-countries-are-open-to-fully-vaccinated-travelers

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Tel: 02-557-6551, Fax: 02-557 6552
Email: thaiauh@emirates.net.ae

Announcement

Subject: Updated Guideline for foreign travelers to enter the Kingdom of Thailand from 1 April 2021

1. Reduced Quarantine Period

1.1 Travelers who **have completed the vaccination of the following vaccines no less than 14 days before departure** and holds the vaccination certificate are required to undergo 7-day quarantine and will be given COVID-19 PCR tests twice during quarantine:

(1) Pfizer BioNTech
(2) AstraZeneca
(3) Covidshield (Serum Institute of India)
(4) Johnson & Johnson
(5) Sinovac

1.2 Those who have not received the vaccine or have received other vaccines not listed in (1.1) such as Sinopharm and Sputnik V are required to undergo 10-day quarantine programme and will be given COVID-19 PCR tests twice during quarantine.

1.3 Only original vaccine certificate or printed online vaccination certificate must be presented to authorities at the Suvarnabhumi International Airport in Bangkok upon arrival.

2. Required Documents to enter the Kingdom of Thailand

2.1 Fit-to-Fly/ Fit-to-Travel Health Certificate is no longer required, yet PCR test is still required, with the validity of 72 hours prior to check-in at the airline counter.

2.2 Certificate of Entry (COE) is also to present at the check-in at the airline counter and can be applied through https://coethailand.mfa.go.th/ 5-7 days before departure.

2.3 All travelers who have completed the vaccination are encouraged to fill in detail about the vaccination during submission for the COE for the Embassy's information.

Royal Thai Embassy
Abu Dhabi
31 March 2021

IATA Launches Digital Pass for Covid-safe International Travel

The International Air Transport Association launches digital Travel Pass (photo: Getty Images)

By Danica Lo
January 21, 2021

The International Air Transport Association will pilot the travel pass program with Etihad and Emirates airlines

https://hk.asiatatler.com/life/iata-health-digital-passport

World Health Organization

Interim position paper: considerations regarding proof of COVID-19 vaccination for international travellers

5 February 2021 | COVID-19 Travel Advice

WHO position

At the present time, it is WHO's position that national authorities and conveyance operators should not introduce requirements of proof of COVID-19 vaccination for international travel as a condition for departure or entry, given that there are still critical unknowns regarding the efficacy of vaccination in reducing transmission. In addition, considering that there is limited availability of vaccines, preferential vaccination of travellers could result in inadequate supplies of vaccines for priority populations considered at high risk of severe COVID-19 disease. WHO also recommends that people who are vaccinated should not be exempt from complying with other travel risk-reduction measures.

The interim recommendations provide scientific considerations regarding the effectiveness of these two vaccines against COVID-19 and the population groups and settings in which they are recommended. The recommendations also list current research gaps for efficacy and protection. With respect to the use of these vaccines in international travellers, the SAGE concluded that WHO currently does not recommend COVID-19 vaccination of travellers unless they belong to a high-risk group (including older persons are those with underlying medical conditions) or in epidemiological settings identified in the WHO SAGE Prioritization Roadmap. The group added that with increasing vaccine supply, these recommendations will be revisited.

Currently, there is limited access to COVID-19 vaccines worldwide, particularly in low-income and lower middle-income countries. At present, 94% of countries that have started vaccinating their populations are in the high- or high-middle-income category. WHO has expressed concern that the inequitable distribution of COVID-19 vaccines could deepen already existing inequalities and introduce new ones.

https://www.who.int/news-room/articles-detail/interim-position-paper-considerations-regarding-proof-of-covid-19-vaccination-for-international-travellers

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

When You've Been Fully Vaccinated

How to Protect Yourself and Others

Updated Apr. 2, 2021 Languages Print

If You've Been Fully Vaccinated

You Can	You Shouldn't
Visit inside a home or private setting without a mask with other fully vaccinated people of any age	Visit indoors, without a mask, with people at increased risk for severe illness from COVID-19
Visit inside a home or private setting without a mask with one household of unvaccinated people who are not at risk for severe illness	Attend medium or large gatherings
Travel domestically without a pre- or post-travel test	
Travel domestically without quarantining after travel	
Travel internationally without a pre-travel test depending on destination	
Travel internationally without quarantining after travel	

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated.html

衞生防護中心
Centre for Health Protection

Scientific Committee on Emerging and Zoonotic Diseases
and
Scientific Committee on Vaccine Preventable Diseases

Consensus Interim Recommendations on the Use of COVID-19 vaccines in Hong Kong
(As of March 18, 2021)

Non-pharmaceutical interventions (NPIs) under the COVID-19 vaccination programme

7. Currently, there is some preliminary evidence on the effects of vaccination on preventing transmission and challenges posed by the emergence of COVID-19 variants.

8. The World Health Organization and European Centre for Disease Prevention and Control consider that proof of vaccination should not cause international travellers to be exempted from complying with other travel risk reduction measures.

9. Hong Kong has a very stringent testing and quarantine requirement for inbound travellers. From December 2020 till mid-March 2021, over 400 imported cases were reported in Hong Kong and about 4% were detected beyond 14 days of quarantine. Among these imported cases, variant strains were detected in over 90 cases, of which more than 60% were asymptomatic at the time of specimen collection. It is essential to maintain the current testing and quarantine measures.

10. The combination of NPIs with COVID-19 vaccination will allow for maximum protection against the virus. There is a need to continue public health strategies on NPIs, including social distancing, good hand hygiene and wearing a mask in public, to reduce the risk of transmission.

11. NPIs should continue to be followed by vaccinated individuals, as well as those who have not yet been vaccinated. Any changes to NPIs should be carefully monitored, but can be reviewed with increasing vaccination coverage.

https://www.chp.gov.hk/files/pdf/consensus_interim_recommendations_on_the_use_of_covid_19_vaccines_mar_18_21.pdf

Israel and Chile both led on Covid jabs, so why is one back in lockdown?

Analysis: contrasting national outcomes highlight how easily UK could blow its chances

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▲ A healthcare worker administering a dose of the Sinovac Biotech vaccine at Bicentenario Stadium in Santiago, Chile. Photograph: Esteban Félix/AP

As mass vaccination programmes take hold around the world, some countries have begun to get on top of the virus while others have continued to struggle. Two countries that have streaked ahead with immunisations are Israel and Chile, but as Israel edges back to a new normal, Chile has been plunged back into lockdown. Can the UK and other countries repeat Israel's success and avoid the setbacks of Chile?

https://www.theguardian.com/world/2021/apr/06/israel-and-chile-both-led-on-covid-jabs-so-why-is-one-back-in-lockdown