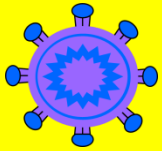
4 STRATEGI MENGHENTIKAN PANDEMI

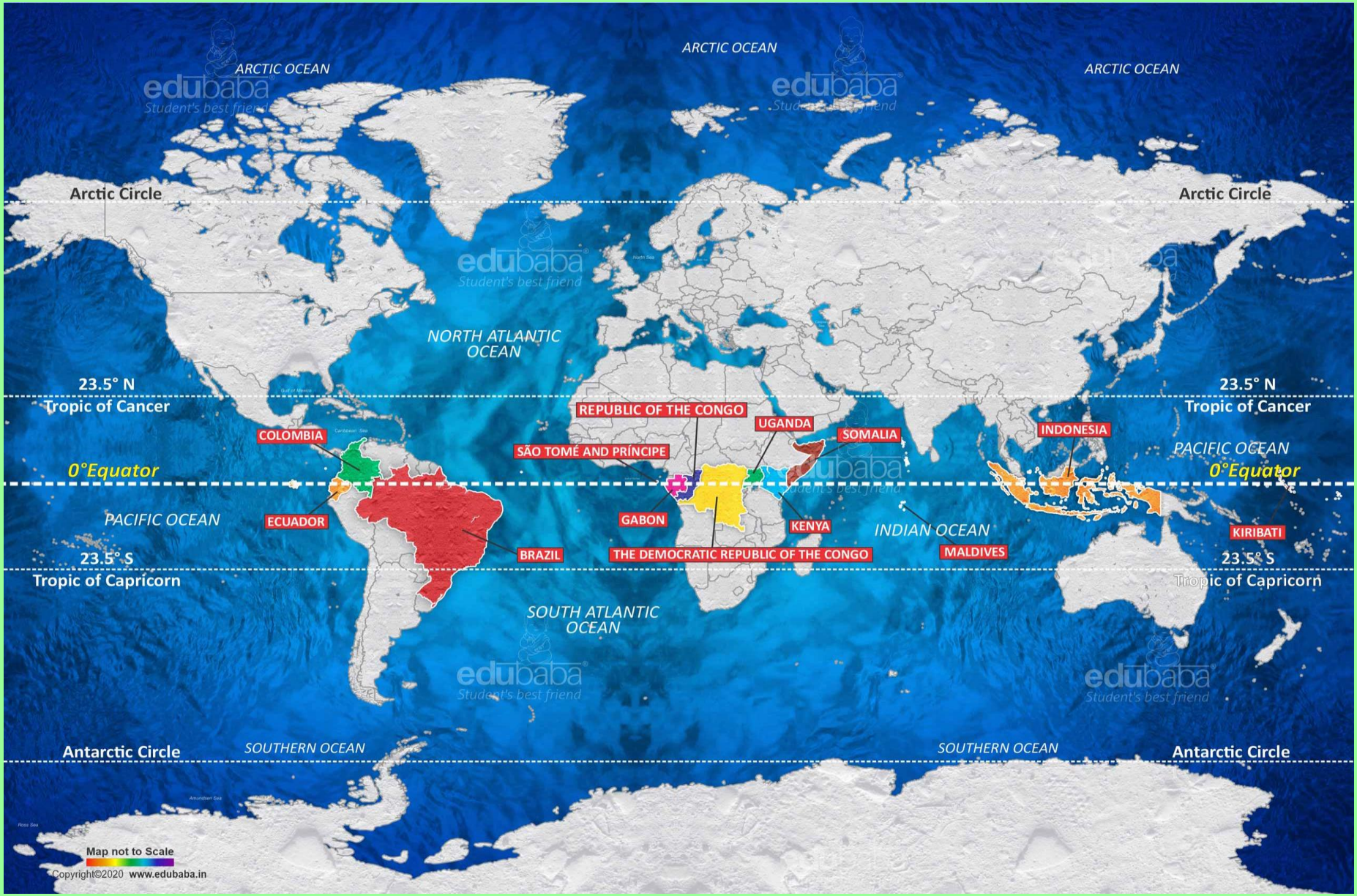
Moh Indro Cahyono



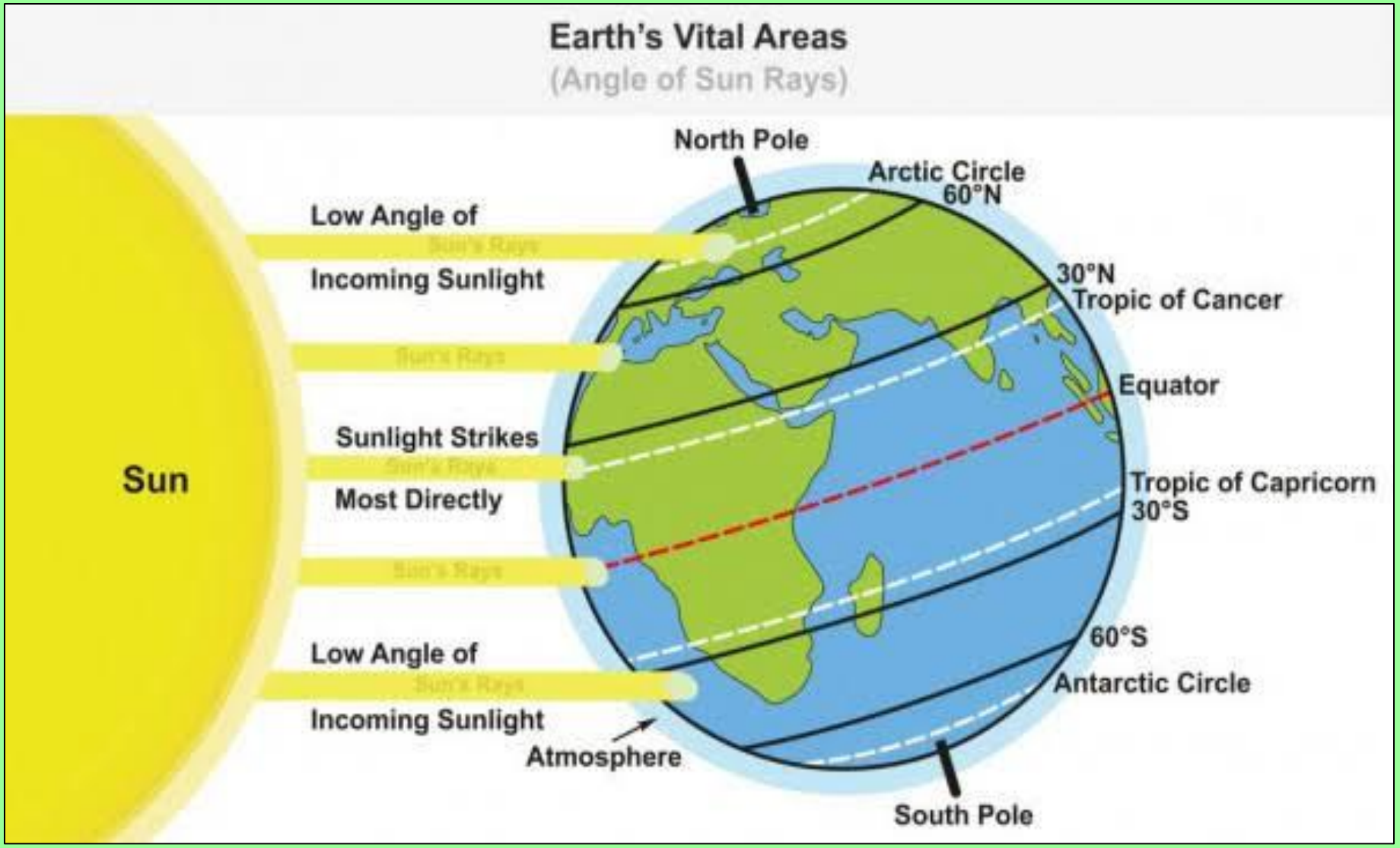
STRATEGI 1

LETAK GEOGRAFIS INDONESIA

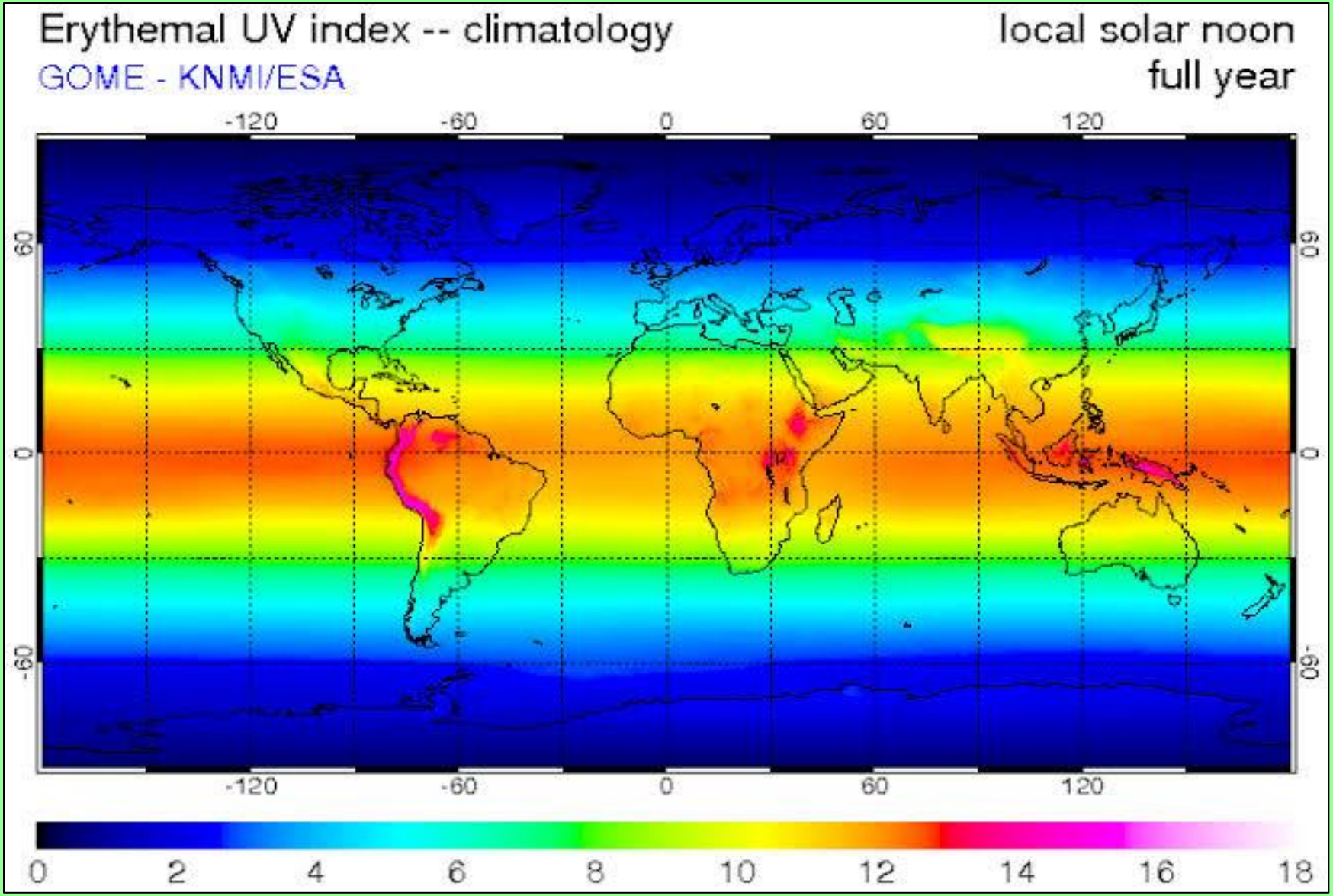
INDONESIA & GARIS KATULISTIWA (1)



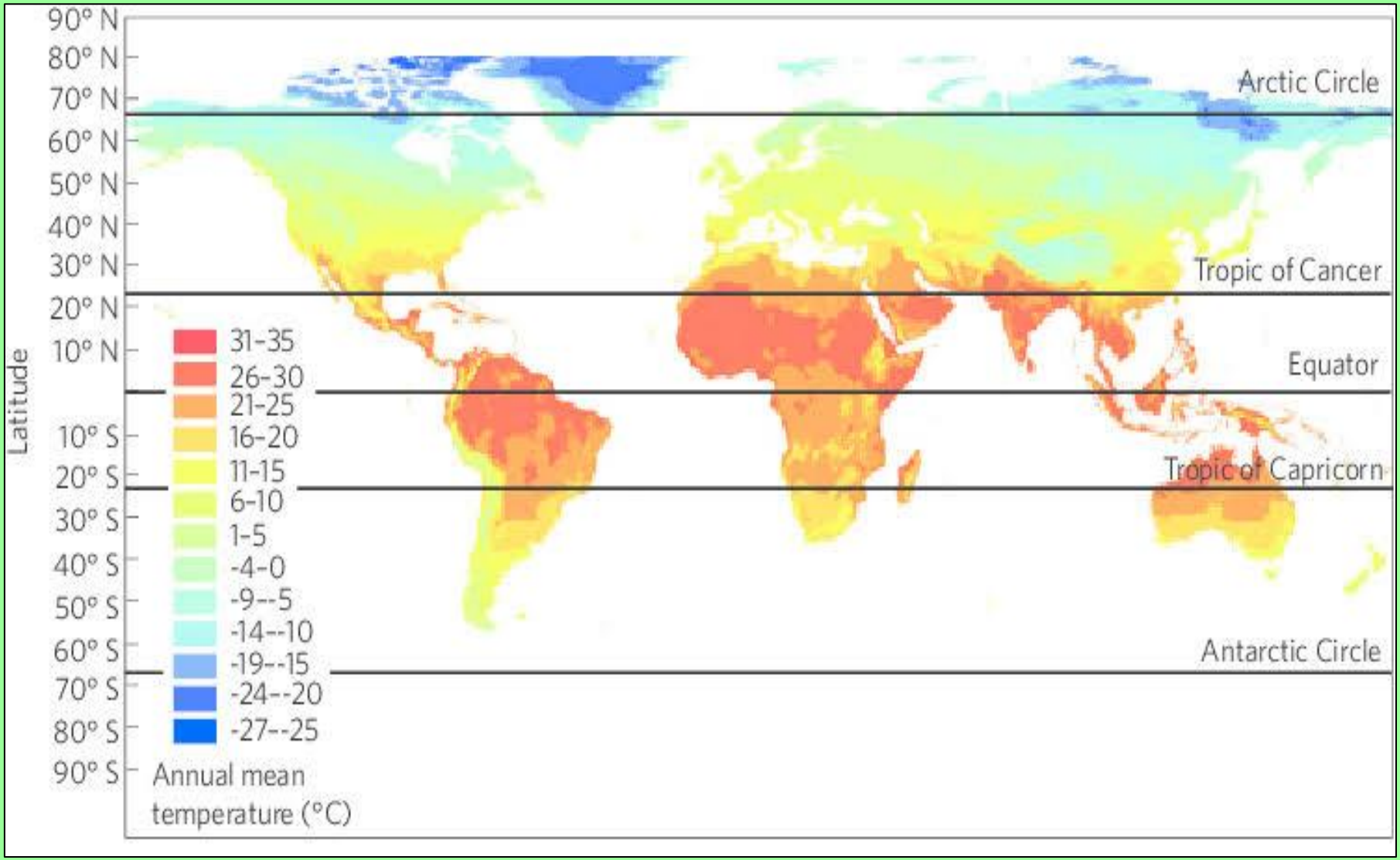
INDONESIA & GARIS KATULISTIWA (2)



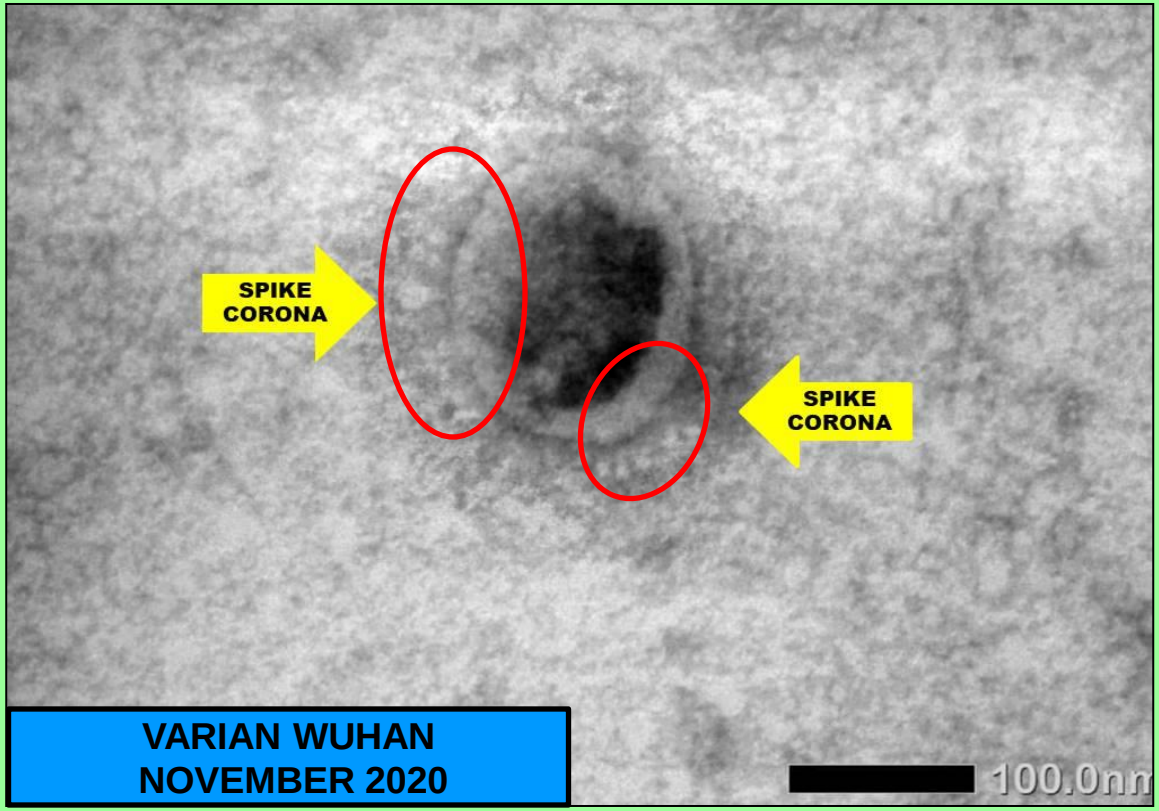
INDONESIA & GARIS KATULISTIWA (3)



INDONESIA & GARIS KATULISTIWA (4)



ISOLAT VIRUS CoViD19 INDONESIA



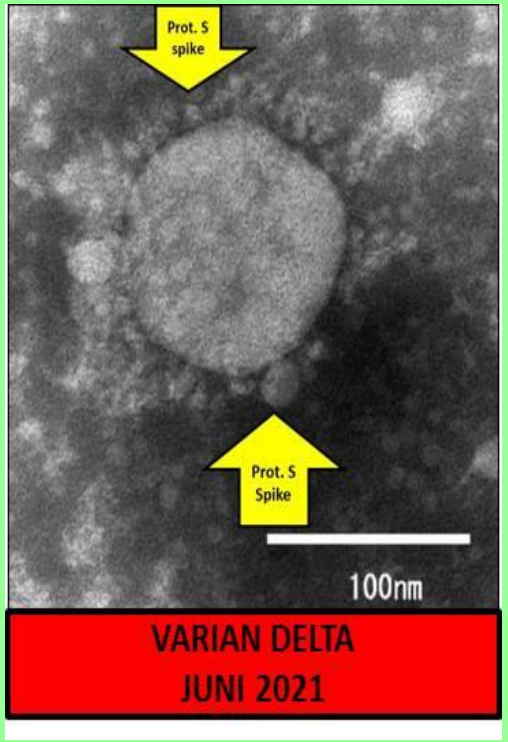
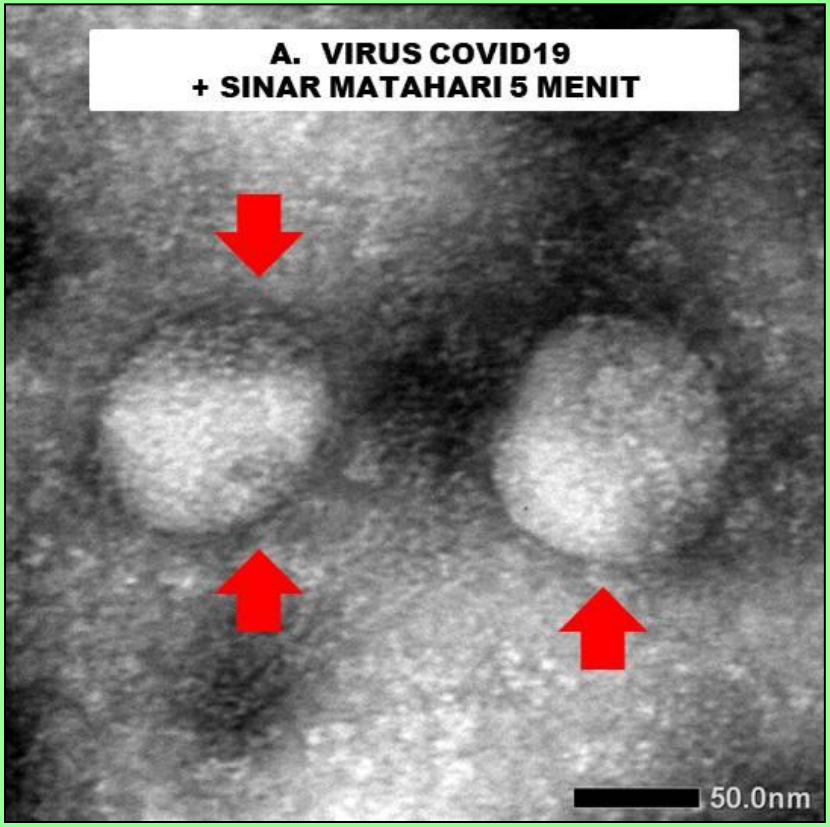


Foto virus SARS CoV2 pertama di Indonesia menggunakan Transmisible Elektron Mikroscope. Ukuran virus SARS CoV2 100 nm (1 nm = 1/10 juta cm)

KELEMAHAN VIRUS CoViD19 DI INDONESIA



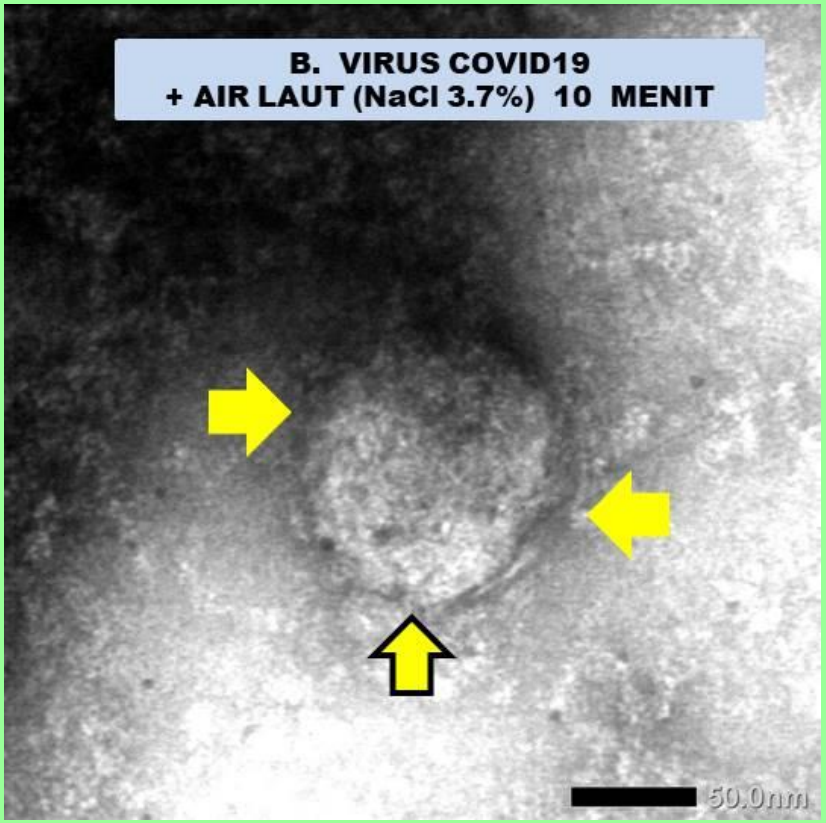
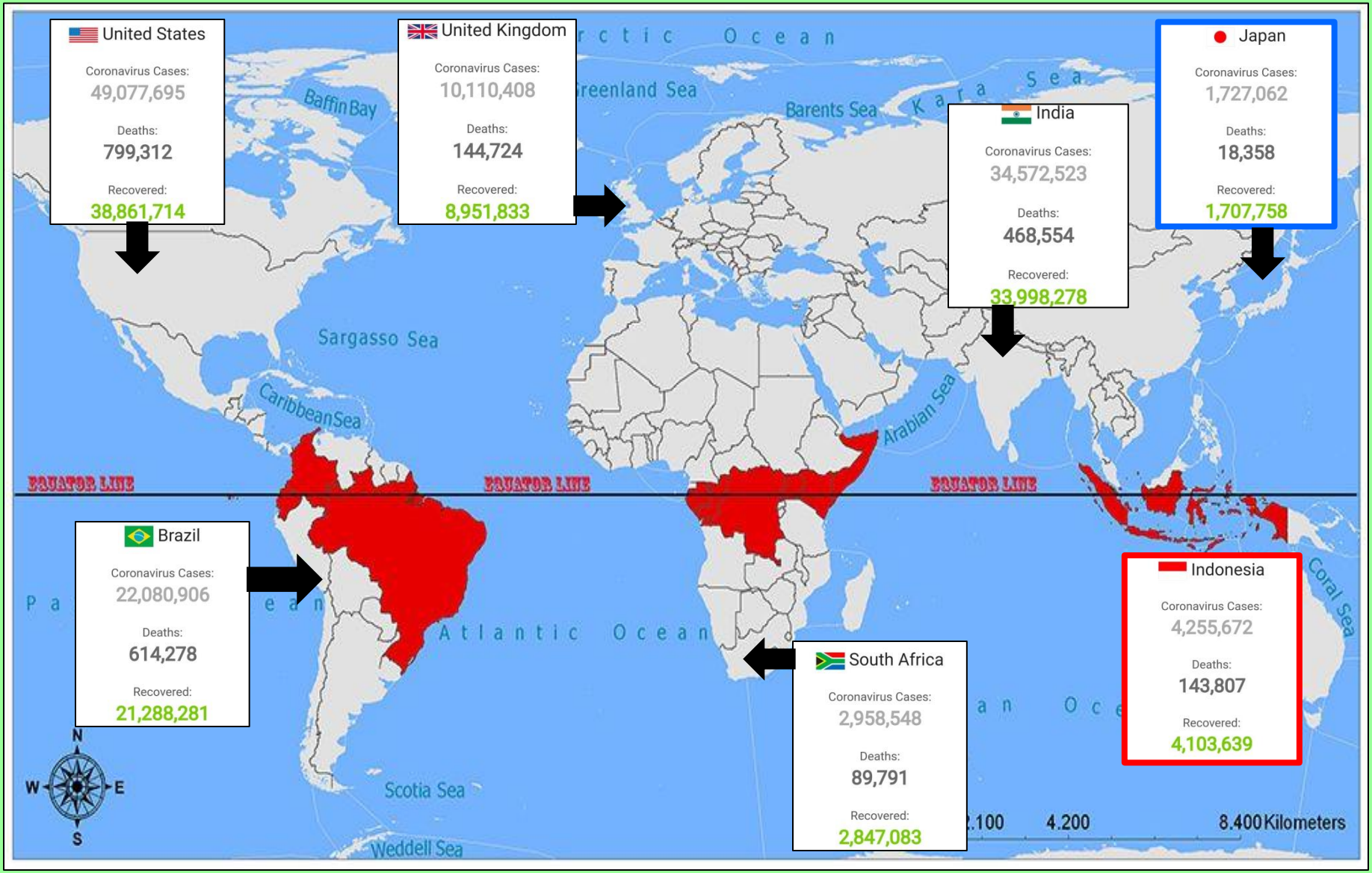
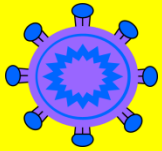


Foto Mikroskop Elektron kehancuran virus SARS CoV2 saat tereKspose sinar matahari selama 5 menit (protein S /spike hancur sehingga virus ini tidak bisa menempel ke reseptor) & kehancuran protein M (membran) + protein E (Envelope) saat direndam air laut selama 10 menit.

Virus terbuat dari protein & lemak sehingga SEMUA PELARUT LEMAK (sabun/deterjen/pembersih lantai/pemutih pakaian/cairan pencuci piring) dapat MENGHANCURKAN VIRUS.

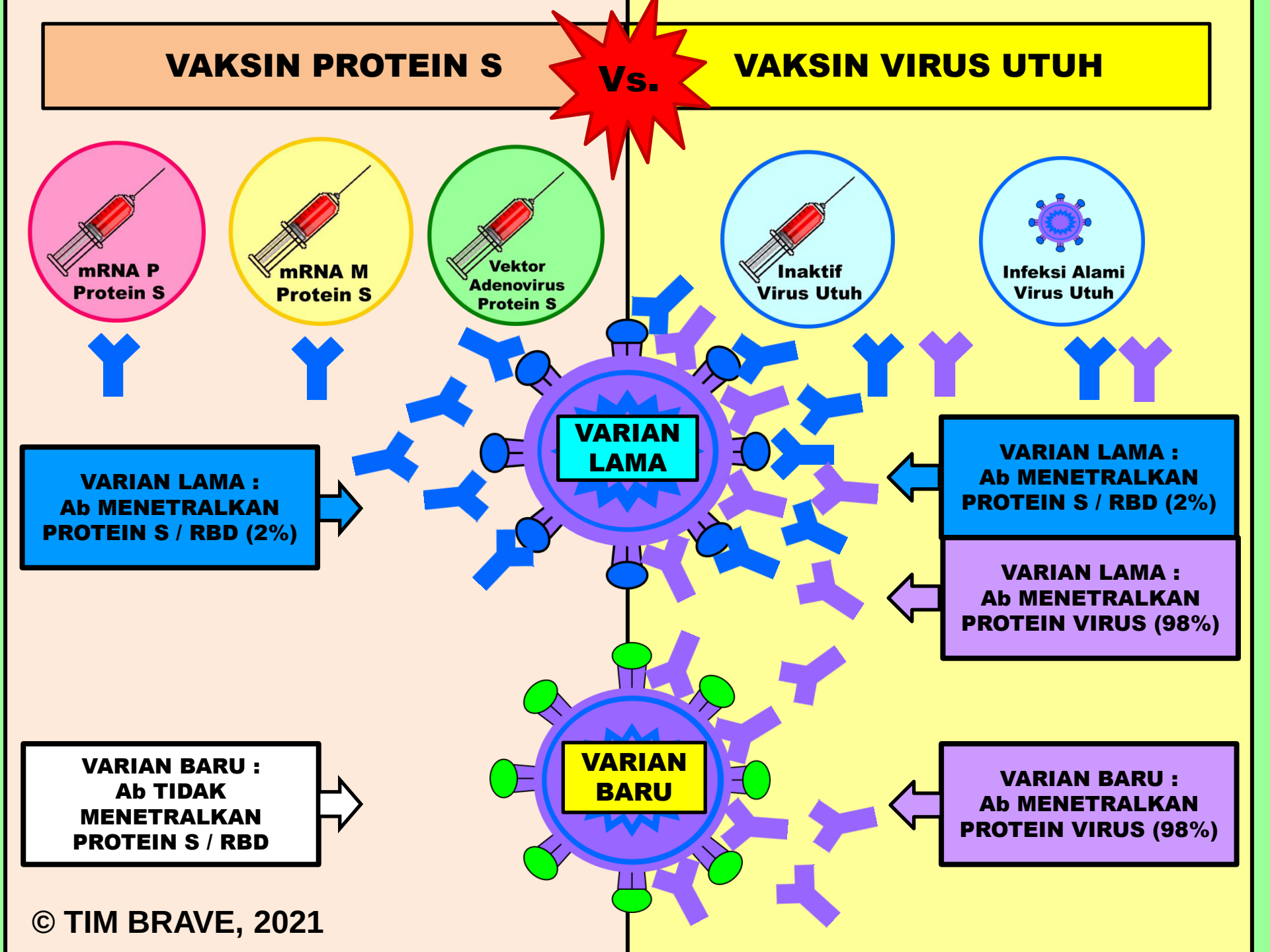
INDONESIA & GARIS KATULISTIWA (2)



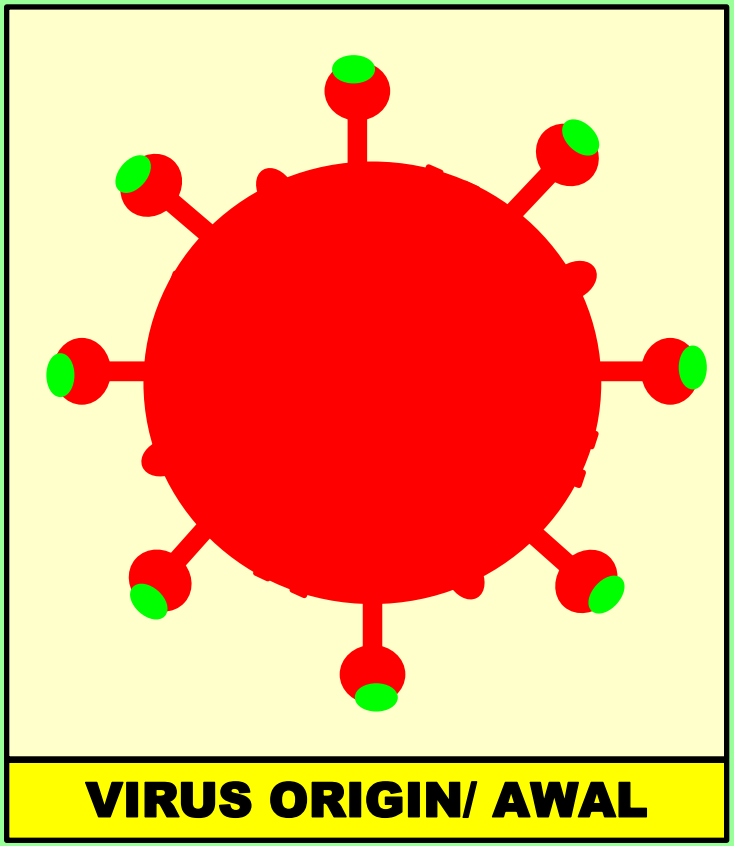


STRATEGI 2

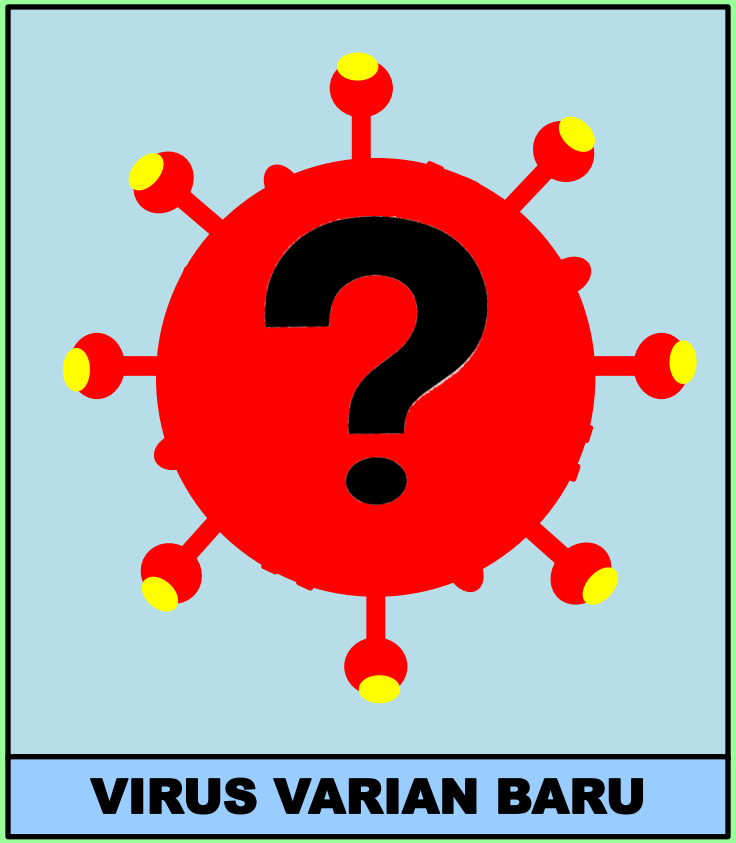
KEKEBALAN VIRUS UTUH



VAKSIN VIRUS UTUH & PROTEIN S-RBD



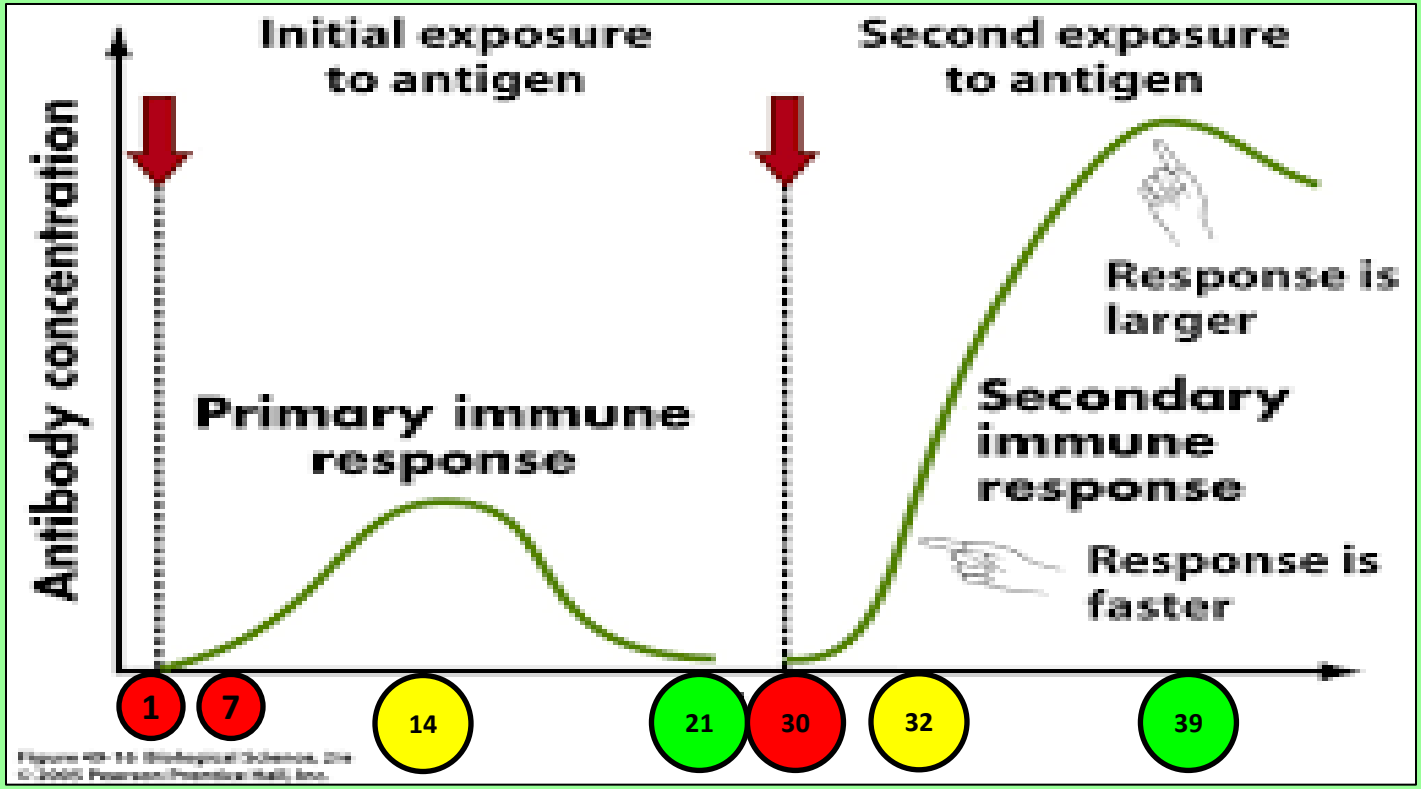
VIRUS ORIGIN/ AWAL



VIRUS VARIAN BARU

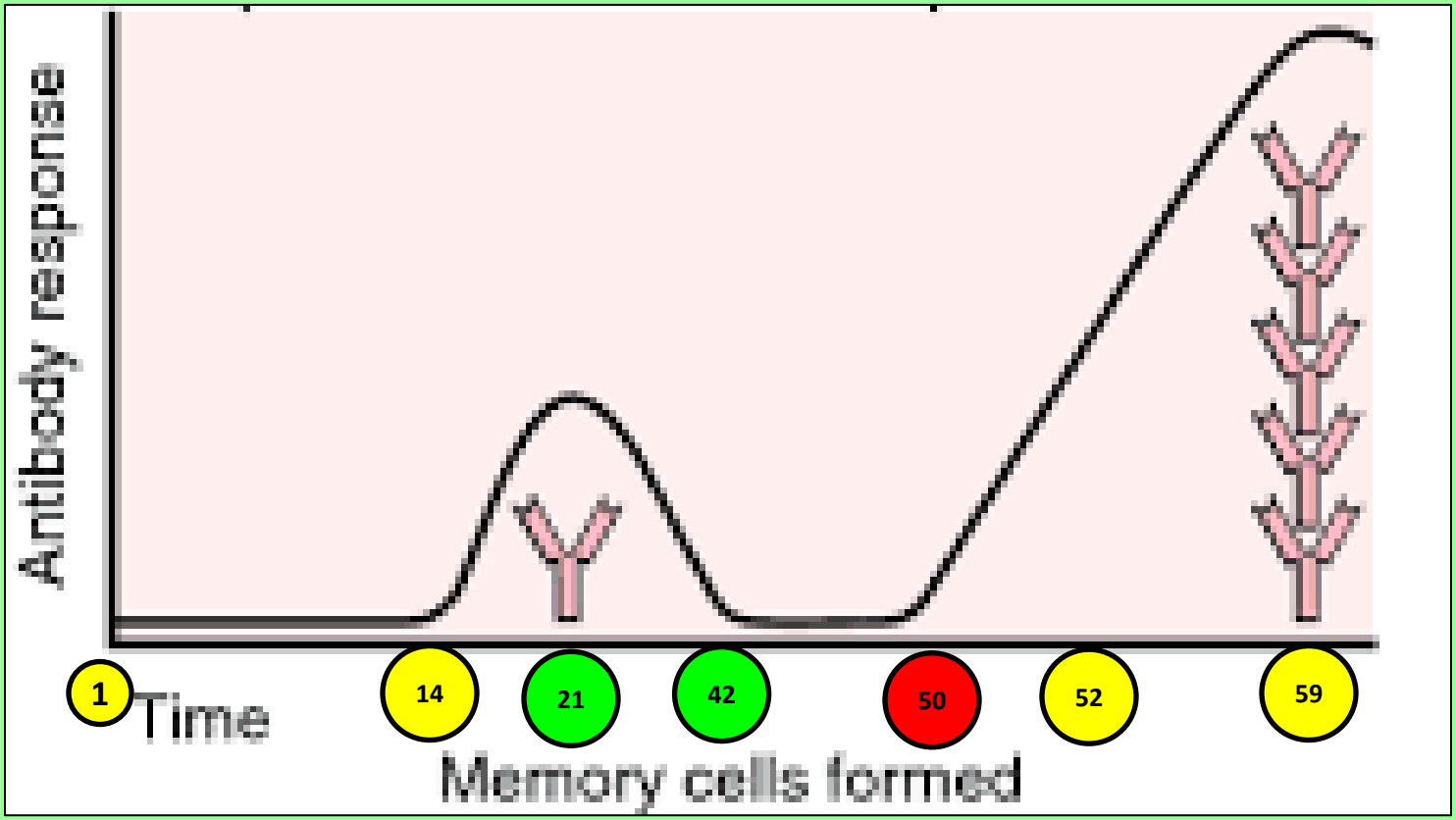
1. VAKSIN VIRUS UTUH MEMBUAT Ab VIRUS UTUH (HIJAU & MERAH) MENETRALKAN SELURUH VIRUS
2. VAKSIN PROTEIN S MEMBUAT Ab PROTEIN S (HIJAU SAJA)
3. Ab DIINGAT SEL MEMORY & DIKELUARKAN SAAT INFEKSI VIRUS UTUH AGAR KEBAL
4. VIRUS VARIAN BARU = 98% VIRUS SAMA (MERAH) YG BERMUTASI HANYA PROTEIN S (KUNING)
5. Ab VAKSIN VIRUS UTUH MENETRALKAN 98% VIRUS VARIAN BARU (MERAH)
6. Ab VAKSIN PROTEIN S (HIJAU) TIDAK MENETRALKAN VARIAN BARU (KUNING)

INGATAN SEL MEMORY HASIL INFEKSI ALAMI (SEMBUH = KEBAL)



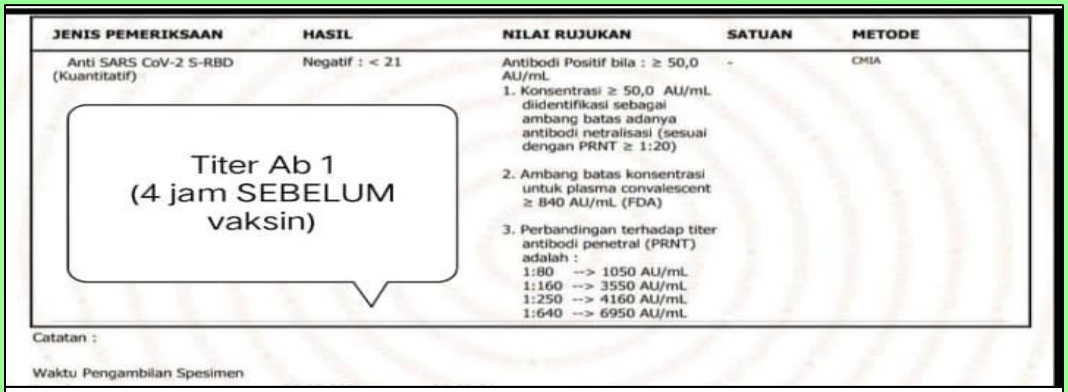
1. Infeksi virus dimulai dari demam (hari 1)
2. Tubuh akan mengalami sakit awal infeksi (hari 1-7 pasca demam)
3. Antibody BARU dikeluarkan saat hari 7 & terus maningkat maksimal sampai hari 14, disini tubuh akan mengalami lemas akibat energy tubuh dipakai utk memproduksi antibody.
4. Di hari 21 virus sudah habis & tubuh memiliki sel memory terhadap virus, shg saat infeksi kedua antibody akan keluar lebih cepat (1-2 hari) tanpa rasa sakit seperti infeksi awal.

REAKSI ANTIBODY VAKSIN MELAWAN VIRUS CoViD19 (VAKSIN VIRUS UTUH = KEBAL)



1. Vaksinasi virus inaktif (hari 1)
2. Antibody BARU dikeluarkan saat hari 14 & terus maningkat maksimal sampai hari 21, disini tubuh akan mengalami lemas akibat energy tubuh dipakai utk memproduksi antibody.
3. Di hari 42 virus sudah habis & tubuh memiliki sel memory terhadap virus, shg saat infeksi kedua antibody akan keluar lebih cepat (1-2 hari).

EVALUASI VAKSINASI : UJI TITER ANTIBODY (1)

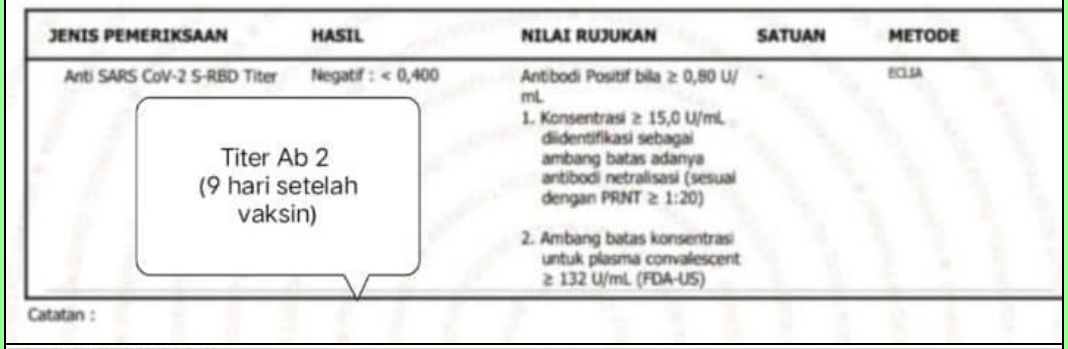


JENIS PEMERIKSAAN	HASIL	NILAI RUJUKAN	SATUAN	METODE
Anti SARS CoV-2 S-RBD (Kuantitatif)	Negatif : < 21	Antibodi Positif bila : ≥ 50,0 AU/mL 1. Konsentrasi ≥ 50,0 AU/mL diidentifikasi sebagai ambang batas adanya antibodi netralisasi (sesuai dengan PRNT ≥ 1:20) 2. Ambang batas konsentrasi untuk plasma convalescent ≥ 840 AU/mL (FDA) 3. Perbandingan terhadap titer antibodi penetral (PRNT) adalah : 1:80 --> 1050 AU/mL 1:160 --> 3550 AU/mL 1:250 --> 4160 AU/mL 1:640 --> 6950 AU/mL	-	CMIA

Titer Ab 1
(4 jam SEBELUM vaksin)

Catatan :

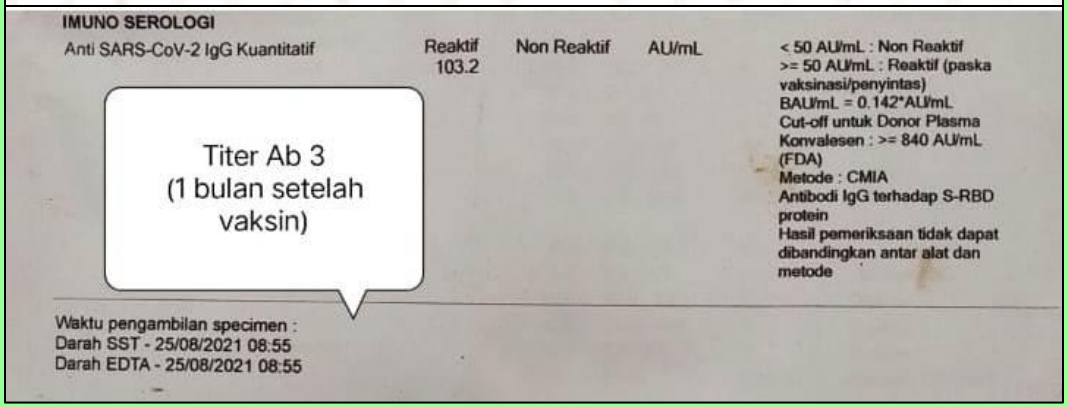
Waktu Pengambilan Spesimen



JENIS PEMERIKSAAN	HASIL	NILAI RUJUKAN	SATUAN	METODE
Anti SARS CoV-2 S-RBD Titer	Negatif : < 0,400	Antibodi Positif bila ≥ 0,80 U/mL 1. Konsentrasi ≥ 15,0 U/mL diidentifikasi sebagai ambang batas adanya antibodi netralisasi (sesuai dengan PRNT ≥ 1:20) 2. Ambang batas konsentrasi untuk plasma convalescent ≥ 132 U/mL (FDA-US)	-	ECLIA

Titer Ab 2
(9 hari setelah vaksin)

Catatan :



IMUNO SEROLOGI

Anti SARS-CoV-2 IgG Kuantitatif	Reaktif 103.2	Non Reaktif	AU/mL	< 50 AU/mL : Non Reaktif >= 50 AU/mL : Reaktif (paska vaksinasi/penyintas) BAU/mL = 0.142*AU/mL Cut-off untuk Donor Plasma Konvalesen : >= 840 AU/mL (FDA) Metode : CMIA Antibodi IgG terhadap S-RBD protein Hasil pemeriksaan tidak dapat dibandingkan antar alat dan metode

Titer Ab 3
(1 bulan setelah vaksin)

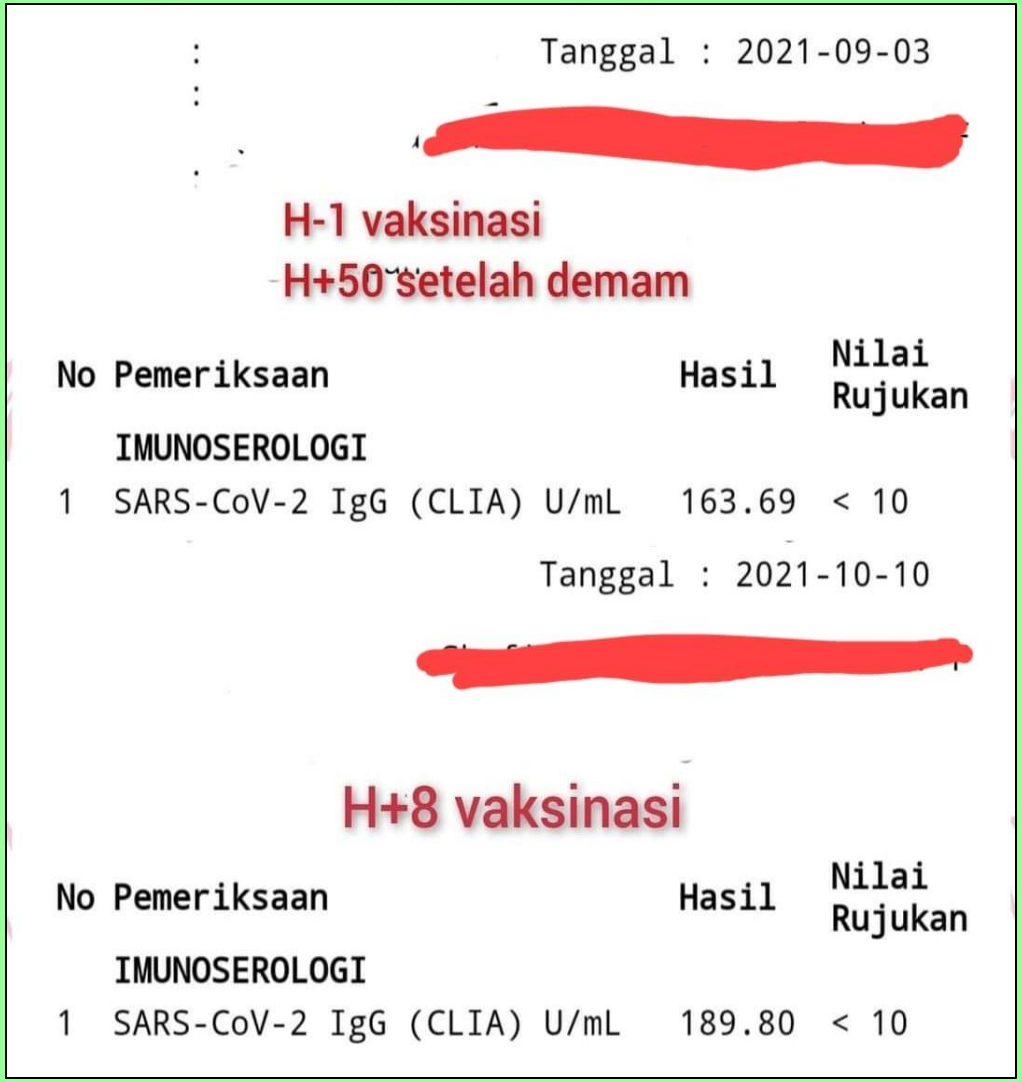
Waktu pengambilan specimen :
Darah SST - 25/08/2021 08:55
Darah EDTA - 25/08/2021 08:55

Titer Ab tidak ada (sebelum vaksin)

Titer Ab belum muncul (9 hari stl vaksin)

Titer Ab MUNCUL (48 hari stl vaksin)

EVALUASI KEKEBALAN : UJI TITER ANTIBODY (2)
PENGARUH KEKEBALAN ALAMI



: Tanggal : 2021-09-03
:
:

[redacted]

H-1 vaksinasi
H+50 setelah demam

No	Pemeriksaan	Hasil	Nilai Rujukan
	IMUNOSEROLOGI		
1	SARS-CoV-2 IgG (CLIA) U/mL	163.69	< 10

Tanggal : 2021-10-10

[redacted]

H+8 vaksinasi

No	Pemeriksaan	Hasil	Nilai Rujukan
	IMUNOSEROLOGI		
1	SARS-CoV-2 IgG (CLIA) U/mL	189.80	< 10

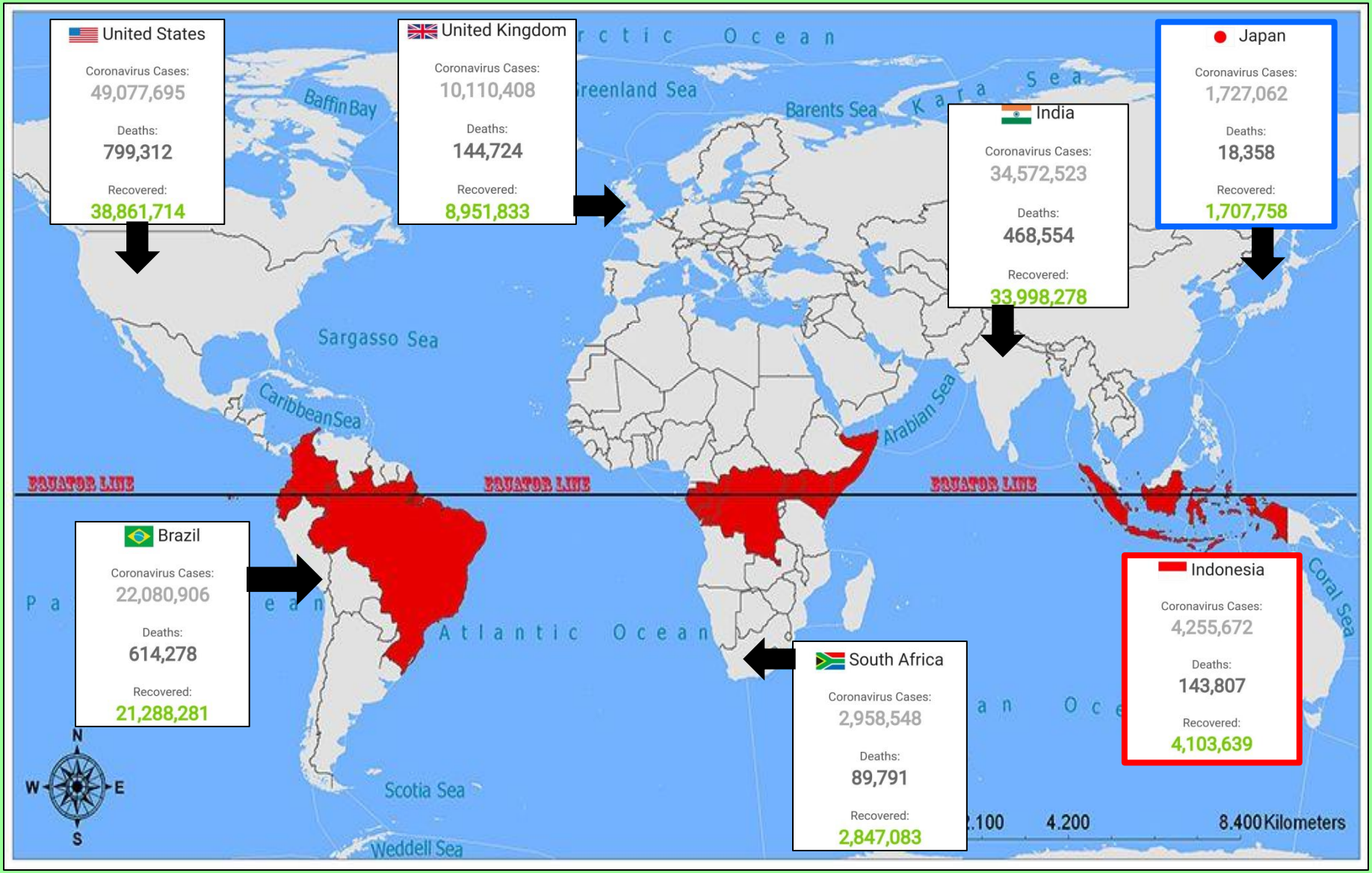
Titer Ab sudah ada (sebelum vaksin)

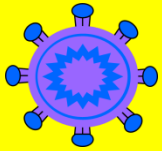
Titer Ab tetap ada (8 hari stl vaksin)

PLATFORM VAKSIN KOMERSIL DI INDONESIA

No.	Jenis vaksin	Netralisasi Ab terhadap virus CoViD19	Waktu Ab muncul (hari post vaksin)		Kandungan	Efek samping
			Awal	Puncak		
1	Virus utuh inaktif (Sinovac, Sinopharm, Coronavac Biofarma)	Seluruh protein virus	14	21	. Virus utuh inaktif (formaldehyde/beta propiolaktone 0.1%0 . Ajuvan (Aluminium Hidrokside)	. Rasa pegal & radang ringan di lokasi suntikan . Mengantuk & pusing . Lapar
2	Vektor Adenovirus (AstraZenica, Johnson & Johnson, Sputnik, Cansino)	Protein S saja	7	14	. Adenovirus mutant + protein S virus CoviD19 (ChAdoX-1S) . Aquabidest steril	. Demam 4 hari . Penggumpalan darah . Sesak nafas . Gangguan reproduksi
3	Vaksin mRNA (Moderna, Pfizer)	Protein S saja	3	7	. mRNA protein S . Nanopartikel lemak (+ protein CD, TLR, atau IL)	. Demam 3 hari . Nyeri tubuh . Gangguan jantung . Anemia
4	Virus hidup (Infeksi alami CoViD19 varian awal)	Seluruh protein virus	7	14	. Virus CoViD19 hidup	. Demam selama 3-4 hari . Anosmia . Lemas

INDONESIA & GARIS KATULISTIWA (2)



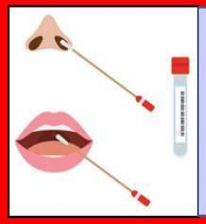


STRATEGI 3

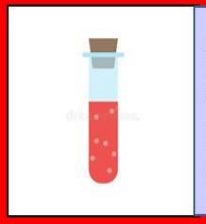
UJI PCR MENGGUNAKAN DAHAK

PEMILIHAN JENIS SAMPEL UJI PCR

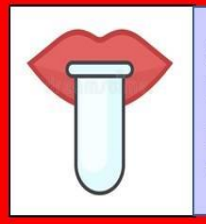
JENIS SAMPEL UNTUK UJI PCR



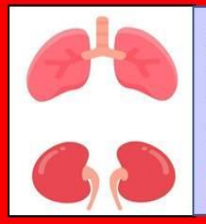
SAMPEL SWAB :
Digunakan untuk mendeteksi **paparan** virus dari lingkungan



SAMPEL DARAH :
Digunakan untuk mendeteksi **infeksi** virus dalam tubuh

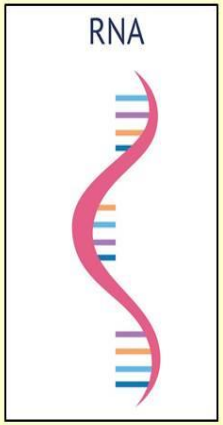


SAMPEL DAHAK :
Digunakan untuk mendeteksi **sebaran** virus dari dalam tubuh

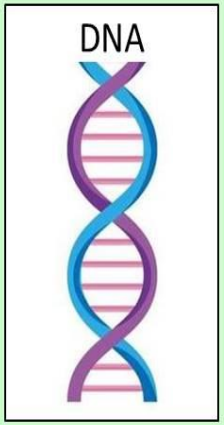


SAMPEL ORGAN :
Digunakan untuk mendeteksi virus **penyebab kematian**

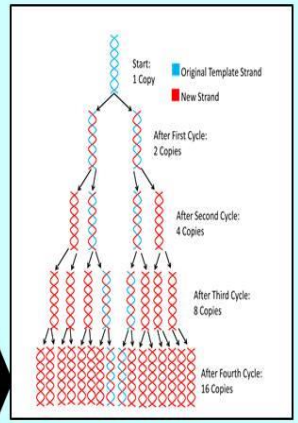
UJI DETEKSI PCR



Sampel uji (tergantung jenis pengambilan sampel) diekstraksi menjadi RNA.
Jenis pengambilan sampel menentukan hasil PCR



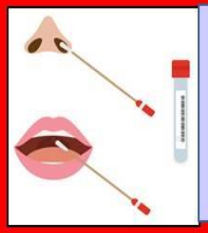
RNA sampel diubah menjadi DNA & ditempelkan PRIMER DETEKSI DNA



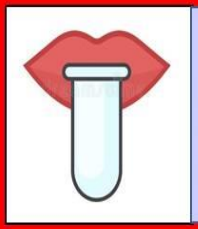
PRIMER DETEKSI DNA diperbanyak. Perbanyakan (CYCLE) dihitung sebagai nilai CT . Nilai CT dihitung untuk menentukan hasil positif atau negatif

PEMILIHAN SAMPEL UJI RAPID TEST

JENIS SAMPEL UNTUK UJI RAPID TEST VIRUS

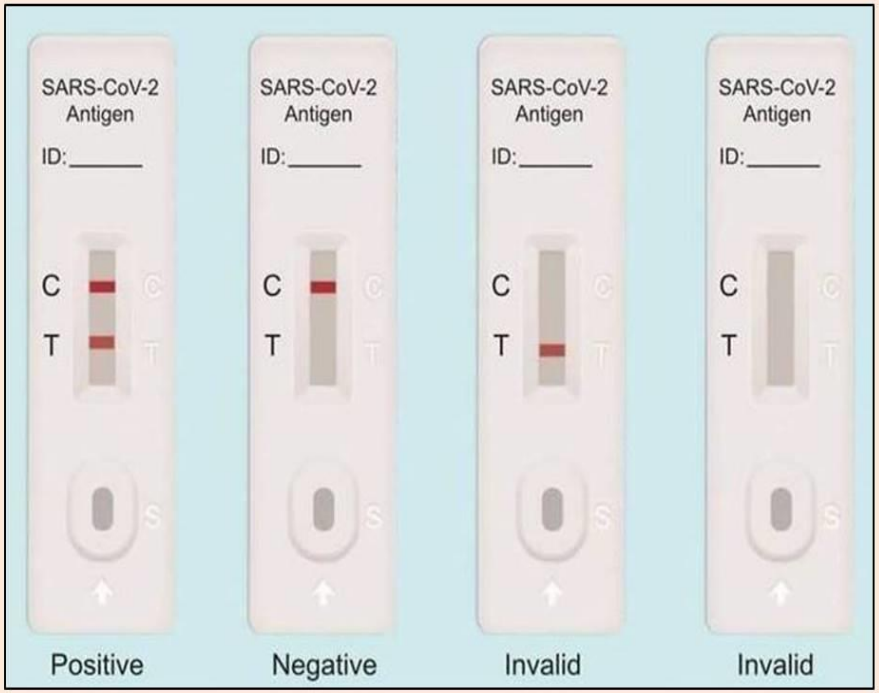


SAMPEL SWAB :
Digunakan untuk mendeteksi paparan virus dari lingkungan



SAMPEL DAHAK :
Digunakan untuk mendeteksi sebaran virus dari dalam tubuh

UJI RAPID TEST VIRUS

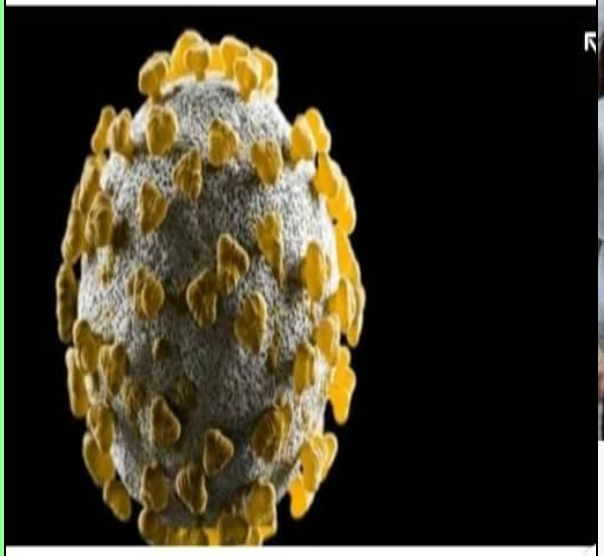


Sampel uji SWAB menunjukan tempelan virus saja TIDAK menunjukan sehat atau sakit. Sampel DAHAK menunjukan sebaran setelah sakit.
Jenis pengambilan sampel menentukan hasil RAPID TEST

Para Pakar Bingung, Virus Corona Varian Delta Tiba-tiba Hilang dari Jepang

Selasa, 23 November 2021 11:12

Editor: Seli Andin...



Home › Global

Covid-19 Varian Delta Tiba-tiba Hilang di Jepang, Apakah Bermutasi sampai Punah?

Jumat, 26 November 2021 | 17:00 WIB

Komentar

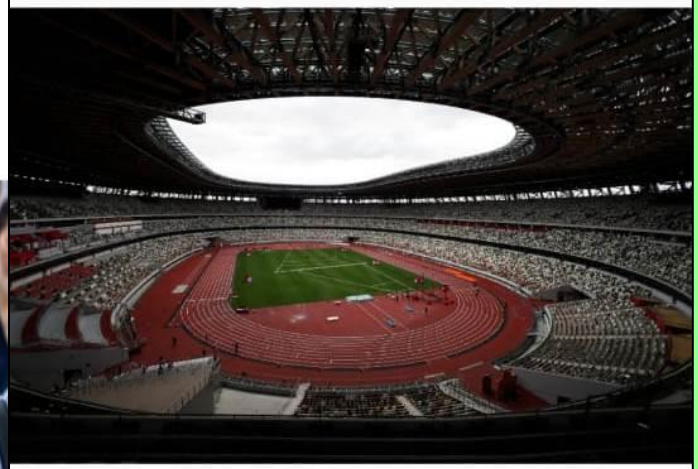
GETTY IMAGES via BBC INDONESIA

Ilustrasi Covid-19 di Jepang.

the japan times

SUMMER OLYMPICS

Tokyo Games workers to self-collect saliva samples for COVID-19 testing



National Stadium is seen during a Tokyo 2020 Paralympics athletics test event on May 11. | REUTERS

KYODO

SHARE May 21, 2021

Tokyo Olympic and Paralympic staff and workers, including those from overseas, will be required to regularly self-collect saliva samples for COVID-19 testing,

UJI RT-PCR MENGGUNAKAN SALIVA/DAHAK DI JEPANG (1)

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scientific reports

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OPEN

Saliva is more sensitive than nasopharyngeal or nasal swabs for diagnosis of asymptomatic and mild COVID-19 infection

Alvin Kuo Jing Teo[1], Yukti Choudhury[2], Iain Beehuat Tan[3,4,5], Chae Yin Cher[2], Shi Hao Chew[6], Zi Yi Wan[2], Lionel Tim Ee Cheng[7], Lynette Lin Ean Oon[8], Min Han Tan[2], Kian Sing Chan[8] & Li Yang Hsu[1,9]

We aimed to test the sensitivity of naso-oropharyngeal saliva and self-administered nasal (SN) swab compared to nasopharyngeal (NP) swab for COVID-19 testing in a large cohort of migrant workers in Singapore. We also tested the utility of next-generation sequencing (NGS) for diagnosis of COVID-19. Saliva, NP and SN swabs were collected from subjects who presented with acute respiratory infection, their asymptomatic roommates, and prior confirmed cases who were undergoing isolation at a community care facility in June 2020. All samples were tested using RT-PCR. SARS-CoV-2 amplicon-based NGS with phylogenetic analysis was done for 30 samples. We recruited 200 subjects, of which 91 and 46 were tested twice and thrice respectively. In total, 62.0%, 44.5%, and 37.7% of saliva, NP and SN samples were positive. Cycle threshold (Ct) values were lower during the earlier period of infection across all sample types. The percentage of test-positive saliva was higher than NP and SN swabs. We found a strong correlation between viral genome coverage by NGS and Ct values for SARS-CoV-2. Phylogenetic analyses revealed Clade O and lineage B.6 known to be circulating in Singapore. We found saliva to be a sensitive and viable sample for COVID-19 diagnosis.

UJI RT-PCR MENGGUNAKAN SALIVA/DAHAK DI JEPANG (2)

A novel strategy for SARS-CoV-2 mass screening with quantitative antigen testing of saliva: a diagnostic accuracy study

Isao Yokota, Peter Y Shane*, Kazufumi Okada, Yoko Unoki, Yichi Yang, Sumio Iwasaki, Shinichi Fujisawa, Mutsumi Nishida, Takanori Teshima*

Summary

Background Quantitative RT-PCR (RT-qPCR) of nasopharyngeal swab (NPS) samples for SARS-CoV-2 detection requires medical personnel and is time consuming, and thus is poorly suited to mass screening. In June, 2020, a chemiluminescent enzyme immunoassay (CLEIA; Lumipulse G SARS-CoV-2 Ag kit, Fujirebio, Tokyo, Japan) was developed that can detect SARS-CoV-2 nucleoproteins in NPS or saliva samples within 35 min. In this study, we assessed the utility of CLEIA in mass SARS-CoV-2 screening.

Methods We did a diagnostic accuracy study to develop a mass-screening strategy for salivary detection of SARS-CoV-2 by CLEIA, enrolling hospitalised patients with clinically confirmed COVID-19, close contacts identified at community health centres, and asymptomatic international arrivals at two airports, all based in Japan. All test participants were enrolled consecutively. We assessed the diagnostic accuracy of CLEIA compared with RT-qPCR, estimated according to concordance (Kendall's coefficient of concordance, *W*), and sensitivity (probability of CLEIA positivity given RT-qPCR positivity) and specificity (probability of CLEIA negativity given RT-qPCR negativity) for different antigen concentration cutoffs (0·19 pg/mL, 0·67 pg/mL, and 4·00 pg/mL; with samples considered positive if the antigen concentration was equal to or more than the cutoff and negative if it was less than the cutoff). We also assessed a two-step testing strategy post hoc with CLEIA as an initial test, using separate antigen cutoff values for test negativity and positivity from the predefined cutoff values. The proportion of intermediate results requiring secondary RT-qPCR was then quantified assuming prevalence values of RT-qPCR positivity in the overall tested population of 10%, 30%, and 50%.

Findings Self-collected saliva was obtained from 2056 participants between June 12 and Aug 6, 2020. Results of CLEIA and RT-qPCR were concordant in 2020 (98·2%) samples (Kendall's *W*=0·99). Test sensitivity was 85·4% (76 of 89 positive samples; 90% credible interval [CrI] 78·0–90·3) at the cutoff of 0·19 pg/mL; 76·4% (68 of 89; 68·2–82·8) at the cutoff of 0·67 pg/mL; and 52·8% (47 of 89; 44·1–61·3) at the cutoff of 4·0 pg/mL. Test specificity was 91·3% (1796 of 1967 negative samples; 90% CrI 90·2–92·3) at the cutoff of 0·19 pg/mL, 99·2% (1952 of 1967; 98·8–99·5) at the cutoff of 0·67 pg/mL, and 100·0% (1967 of 1967; 99·8–100·0) at the cutoff of 4·00 pg/mL. Using a two-step testing strategy with a CLEIA negativity cutoff of 0·19 pg/mL (to maximise sensitivity) and a CLEIA positivity cutoff of 4·00 pg/mL (to maximise specificity), the proportions of indeterminate results (ie, samples requiring secondary RT-qPCR) would be approximately 11% assuming a prevalence of RT-qPCR positivity of 10%, 16% assuming a prevalence of RT-qPCR positivity of 30%, and 21% assuming a prevalence of RT-qPCR positivity of 50%.

Interpretation CLEIA testing of self-collected saliva is simple and provides results quickly, and is thus suitable for mass testing. To improve accuracy, we propose a two-step screening strategy with an initial CLEIA test followed by confirmatory RT-qPCR for intermediate concentrations, varying positive and negative thresholds depending on local prevalence. Implementation of this strategy has expedited sample processing at Japanese airports since July, 2020, and might apply to other large-scale mass screening initiatives.

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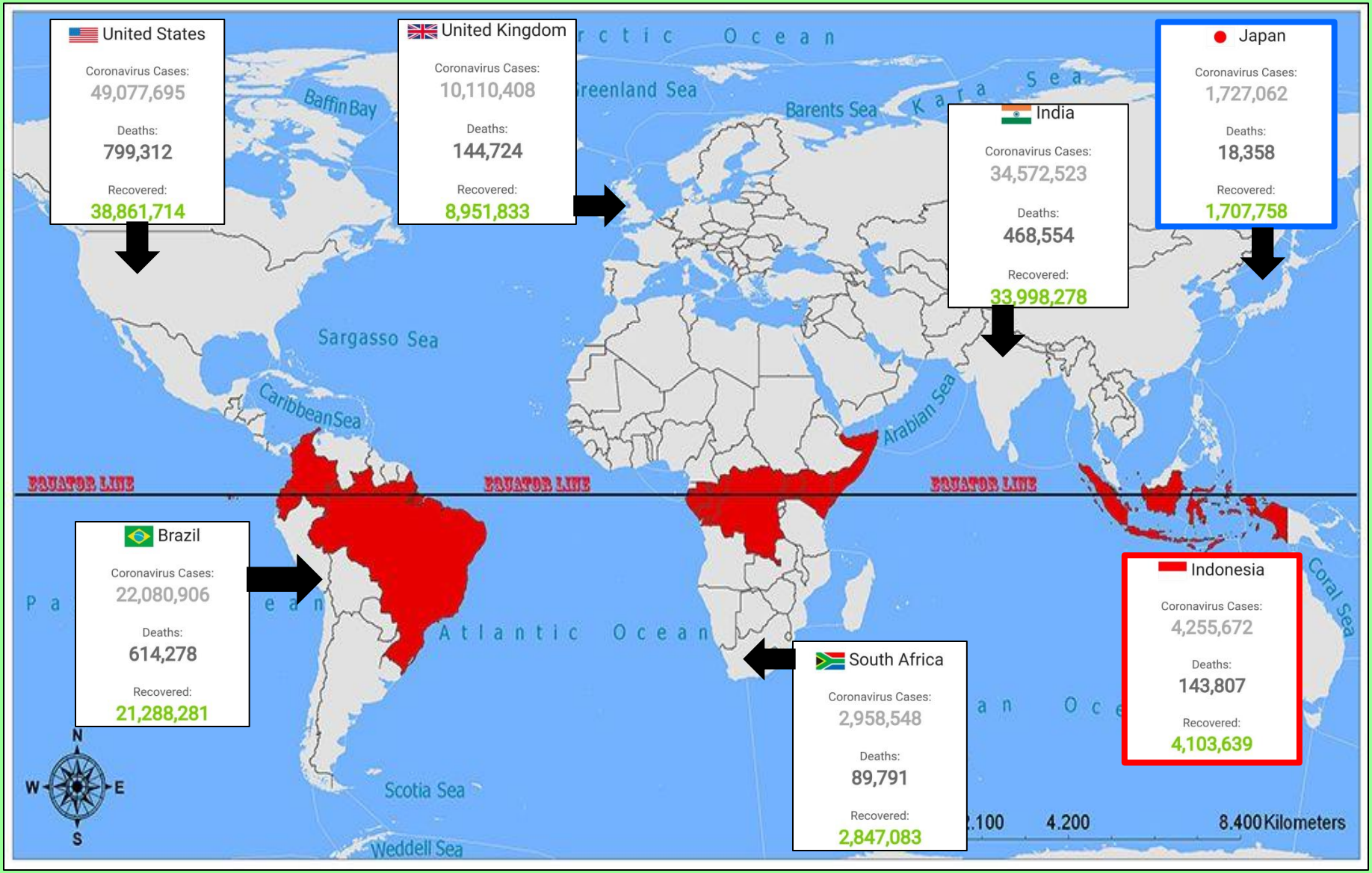
INDONESIA & GARIS KATULISTIWA (2)



UJI RT-PCR MENGGUNAKAN SALIVA/DAHAK DI JEPANG (5)

WORLD / COUNTRIES / JAPAN

Last updated: November 27, 2021, 04:33 GMT

Japan

Coronavirus Cases:

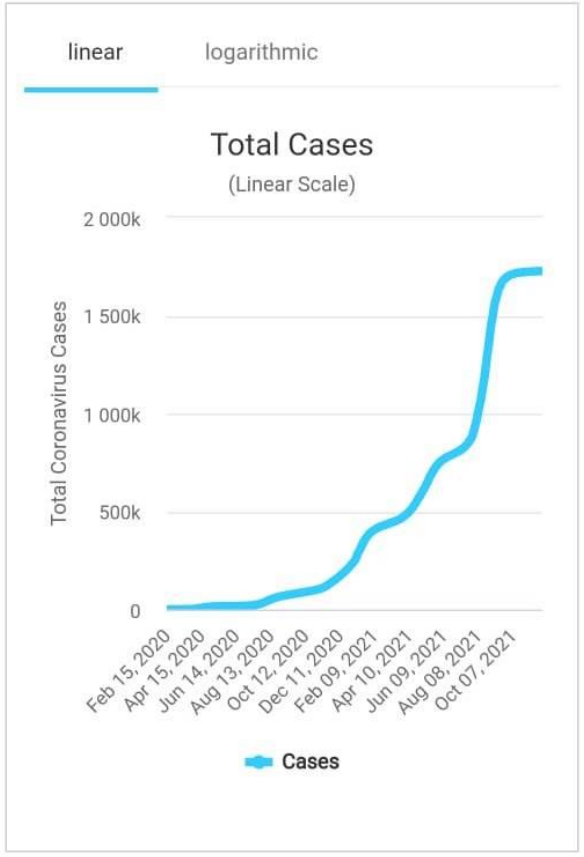
1,726,823

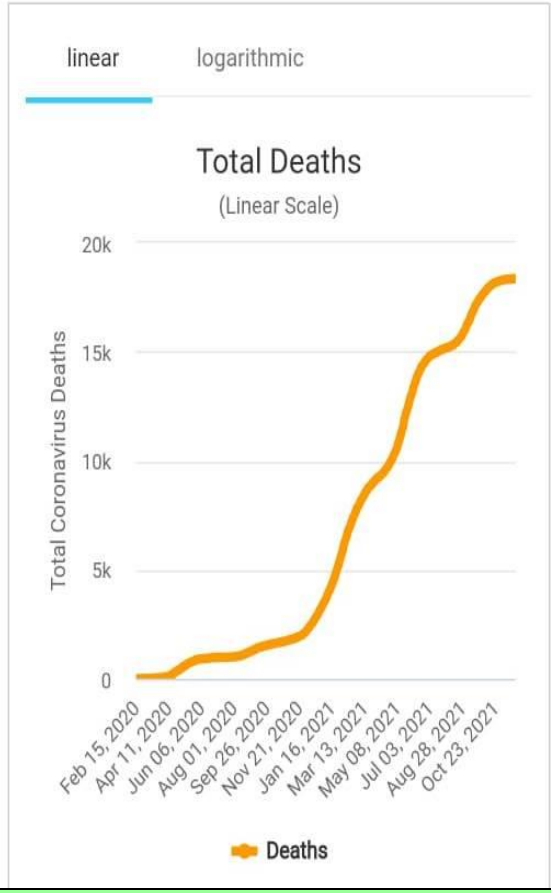
Deaths:

18,353

Recovered:

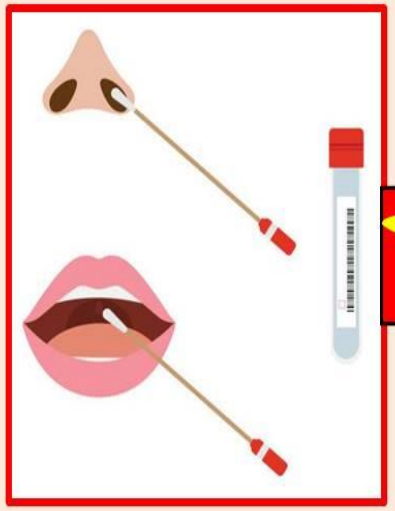
1,707,419

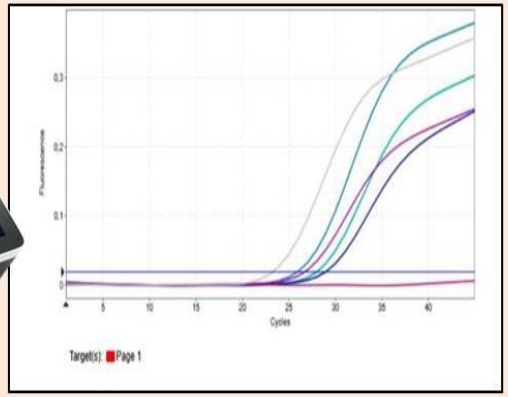


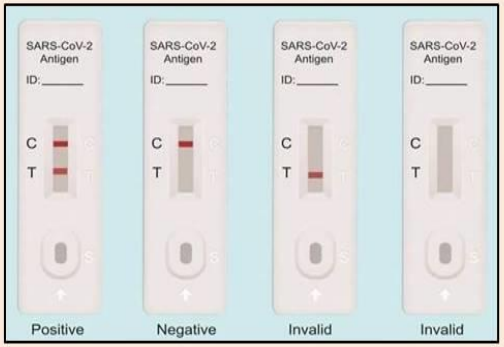


MENCEGAH GELOMBANG KETIGA DENGAN EVALUASI PENGAMBILAN SAMPEL

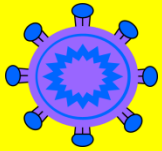
KESIMPULAN







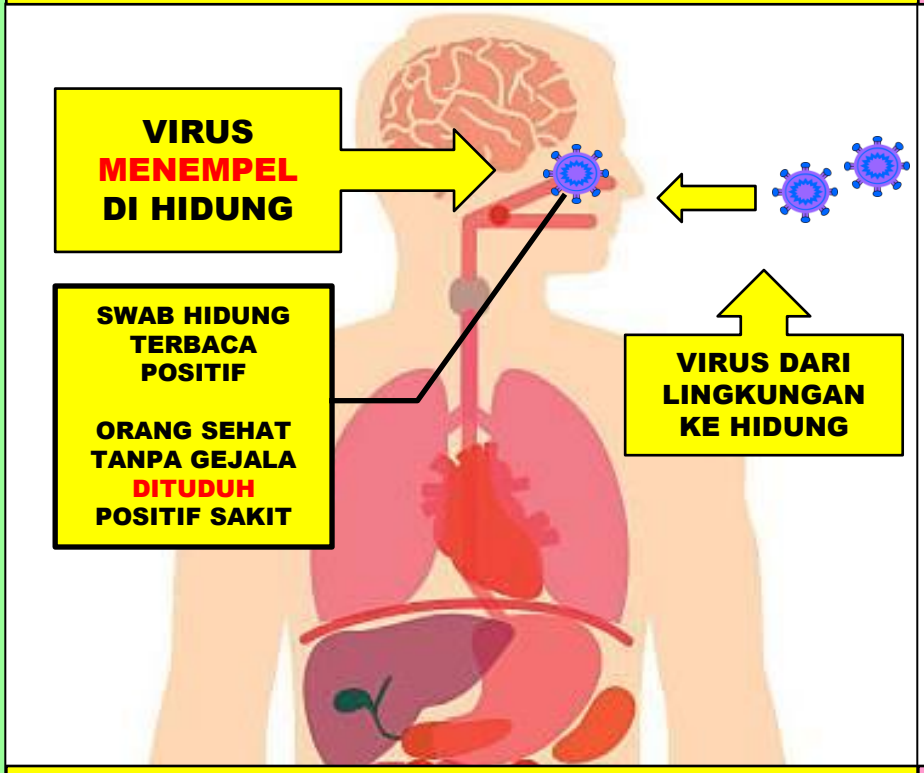
1. Sampel uji SWAB HANYA menunjukan tempelan virus / paparan saja.
2. Sampel SWAB TIDAK menunjukan sehat atau sakit.
3. Pengambilan sampel dilakukan untuk menegakkan diagnosa penyakit.
4. Pengambilan sampel HANYA untuk orang SAKIT, BUKAN untuk oranag SEHAT.
5. Jenis pengambilan sampel menentukan hasil UJI pcr & RAPID TEST



STRATEGI 4

EDUKASI PUBLIK

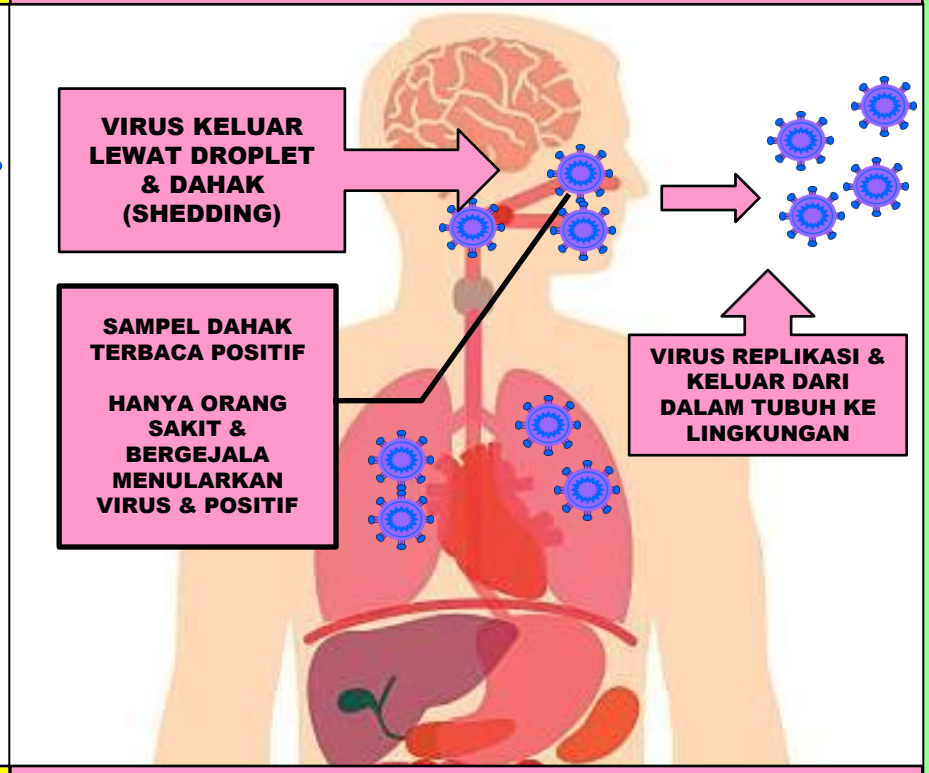
TERPAPAR / CONTRACTED



SOLUSI MENGATASI PAPARAN :

1. **RUTIN CUCI HIDUNG & KUMUR AIR GARAM NON YODIUM 1% ATAU NaCl 0.9% UNTUK MELEPAS VIRUS DI RONGGA HIDUNG & MULUT**
2. **CUCI HIDUNG & KUMUR AIR GARAM MELEPAS VIRUS DI RONGGA HIDUNG & MULUT UNTUK MENCEGAH INFEKSI BUKAN MENGOBATI INFEKSI**

TERINFEKSI / INFECTED



SOLUSI MENGATASI INFEKSI :

1. **KONSUMSI RAMUAN 131 (1 RUAS JAHE + 3 BATANG SERAI + 1 RUAS LENGKUAS DIREBUS 10 MENIT) SETIAP PAGI & SORE SELAMA 2 MINGGU UNTUK MENGHAMBAT REPLIKASI VIRUS**
2. **MINUM VIT E SEHARI SEBUTIR SELAMA 2 MINGGU UNTUK MENINGKATKAN PRODUKSI ANTIBODY MELAWAN VIRUS**

SOLUSI UJI DIAGNOSTIK :

1. **UJI DIAGNOSTIK PCR & RAPID TEST HANYA UNTUK YANG SAKIT - BUKAN YANG SEHAT**
2. **SAMPEL DAHAK UNTUK UJI PCR & RAPID TEST – BUKAN SWAB HIDUNG**

PROTOKOL SEHAT RAKYAT

Respon rakyat menangani, mengatasi, & mencegah paran & INFEKSI virus CoViD19 secara nyata di lingkungan

PRINSIP DASAR
PROTOKOL SEHAT RAKYAT

PAPARAN
MELEPAS IKATAN VIRUS DI MUKOSA HIDUNG & MULUT =
MENCEGAH INFEKSI DENGAN CUCI HIDUNG & KUMUR GARAM NON YODIUM 1%

INFEKSI
MENAIKAN PRODUKSI ANTIBODY = VIT E & MADU
MENURUNKAN JUMLAH VIRUS = RAMUAN 131

PASCA INFEKSI
MEMBERSIHKAN SISA VIRUS DI MUKOSA HIDUNG & MULUT DENGAN CUCI HIDUNG & KUMUR AIR GARAM NON YODIUM 1%

SELALU BELAJAR & MANDIRI

SOLUSI MUDAH, MURAH, & MANDIRI UNTUK RAKYAT

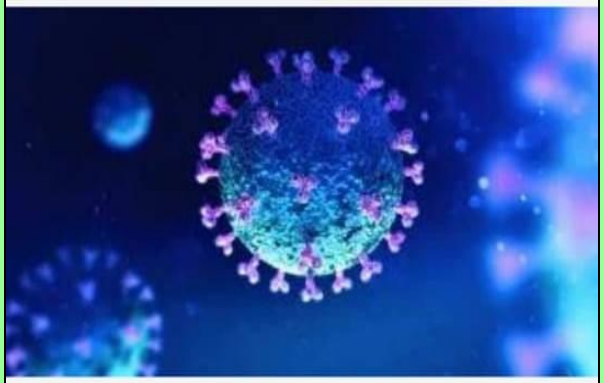
SEBARAN INFORMASI MEDIA 28 NOVEMBER 2021
OMICRON 500% LEBIH MENULAR ?

KOMPAS TV
INDEPENDEN | TERPERCAYA

KOMPASTV > NASIONAL > UPDATE CORONA

Epidemiolog: Varian Baru Covid-19 Omicron 500 Persen Lebih Cepat Menular dari Virus Awal

Update corona | 28 November 2021 | 14:58 WIB



Ilustrasi mikroskopis virus corona. Para ilmuwan di Afrika Selatan mengumumkan hari Kamis, (25/11/2021) mereka mendeteksi varian baru Covid-19 dengan banyak mutasi (Sumber: France24)

Tribunnews.com

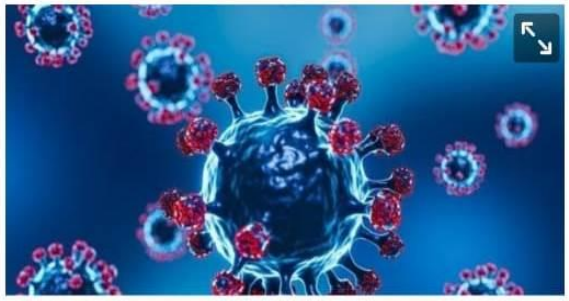
Home > Nasional > Umum

Virus Corona

Epidemiolog Sebut Varian Baru Covid-19 Omicron 500 Persen Lebih Menular Dibanding Virus Corona Awal

Senin, 29 November 2021 05:25 WIB

Penulis: Shella La...
Editor: Tiara Shel...



Corona Varian Omicron 500 Persen Lebih Menular, WHO Sebut Mengkhawatirkan

Minggu, 28 November 2021 | 07:25 WIB

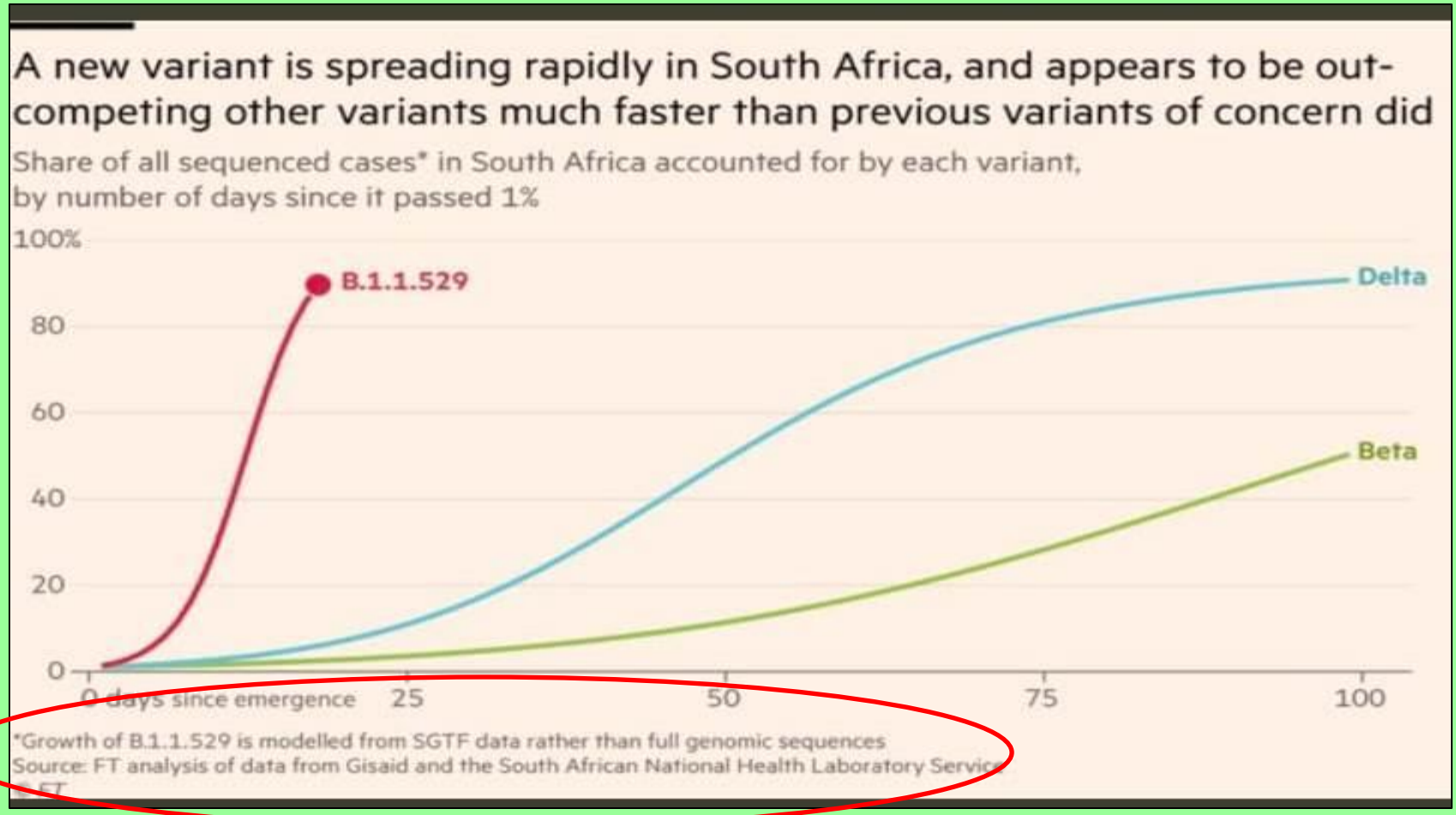
Komentar

SHUTTERSTOCK/Lightspring

Ilustrasi varian baru virus corona ditemukan di Botswana, Afrika Selatan. Ilmuwan setempat memperingatkan varian baru Covid-19 yang disebut B.1.1.529 dapat menghindari kekebalan dan berpotensi meningkatkan penularan. Varian Omicron ini telah dilaporkan ke WHO, dan menunjukkan penyebaran sangat cepat di Afrika Selatan.

Penulis: **Farid Assifa** | Editor: Farid Assifa

DATA AWAL 500% PENULARAN VARIAN OMICRON

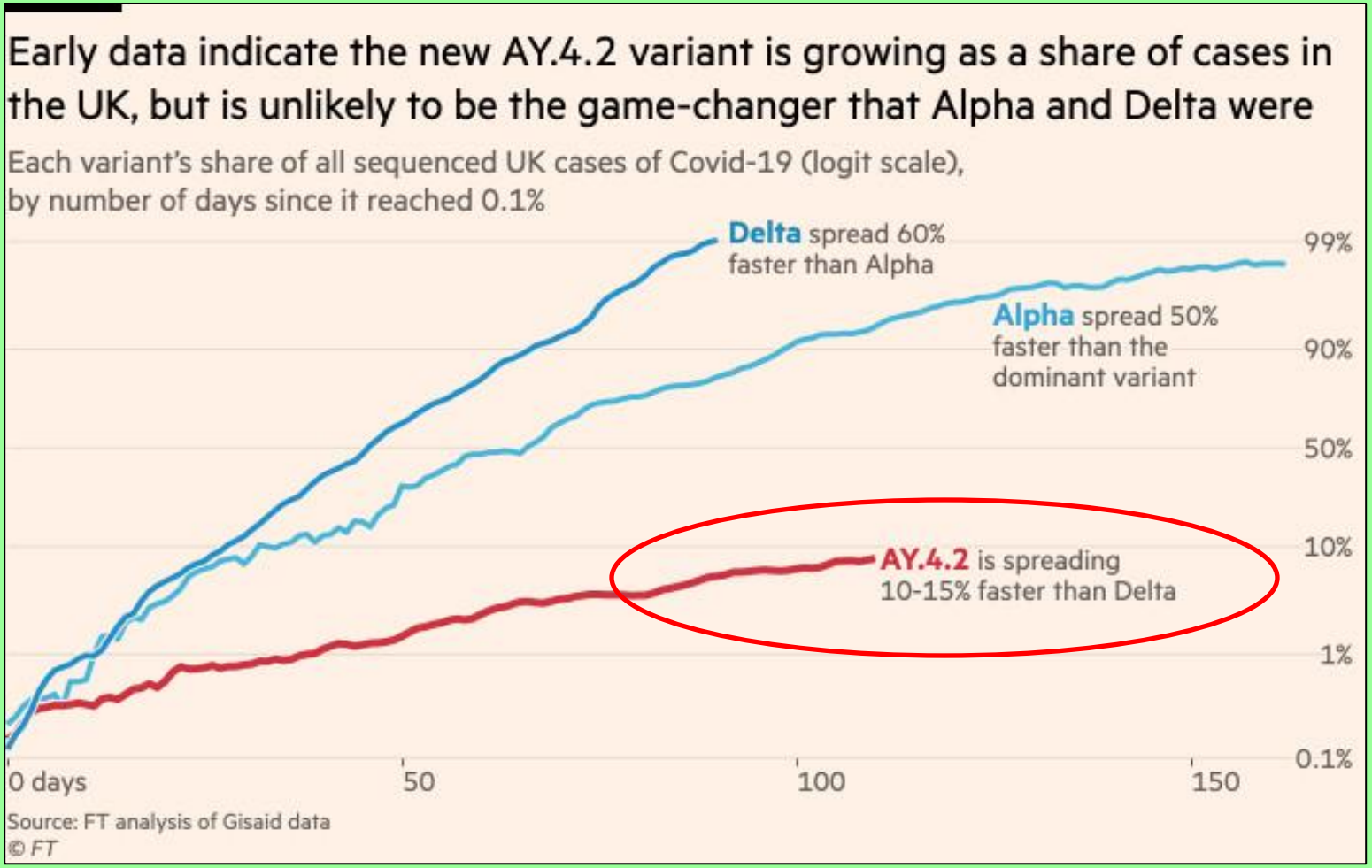


- **Pertumbuhan varian B.1.1.529 500% LEBIH CEPAT BERDASARKAN MODEL PERKIRAAN dari data SGTF bukan dari data sequence seluruh genome & bukan dari data fakta kenyataan.**

- **Sumber : Analisa data FT dari GISAID & Pelayanan Kesehatan Nasional Afrika Selatan.**

**** SGTF (Spike Gene Total Failure), FT (Fault Tree)**

DATA AWAL VARIAN AY.4.2 DELTA PLUS
15% LEBIH CEPAT MENYEBAR DARI DELTA



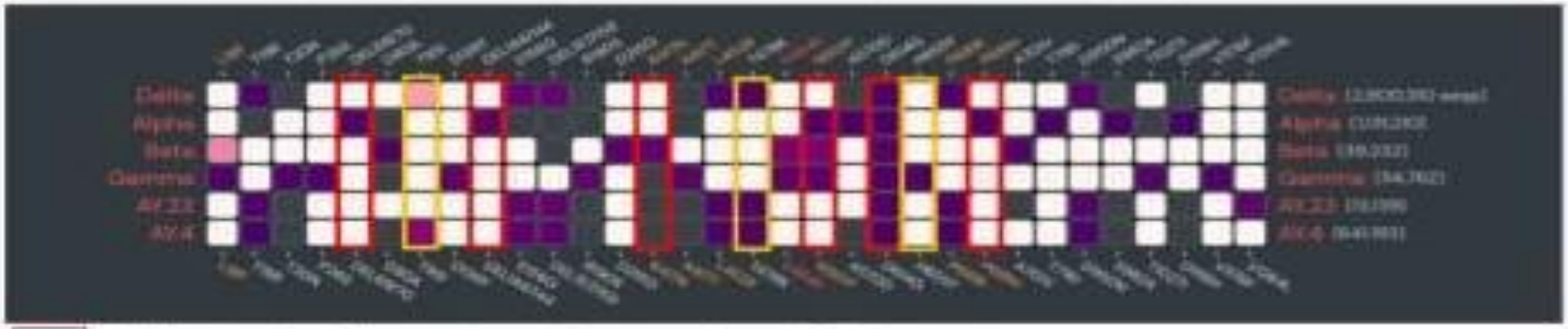
- **Perbedaan antara text & gambar grafik yang menunjukan justru AY.4.2 menyebar LEBIH LAMBAT dibandingkan varian DELTA & ALFA.**

**** SGTF (Spike Gene Total Failure), FT (Fault Tree)**

KETIDAK JELASAN DATA VARIAN OMICRON

Omicron mengkombinasi mutasi yang sebelumnya dimiliki oleh VOC lain

Peningkatan transmisi penularan, penurunan kemampuan netralisasi antibodi. Namun tidak ada bukti dalam peningkatan keparahan, terutama pada individu yang telah divaksin



Bukti kuat meningkatkan penularan, atau menurunkan netralisasi
Belum cukup bukti, namun memiliki potensi menimbulkan perubahan karakter virus

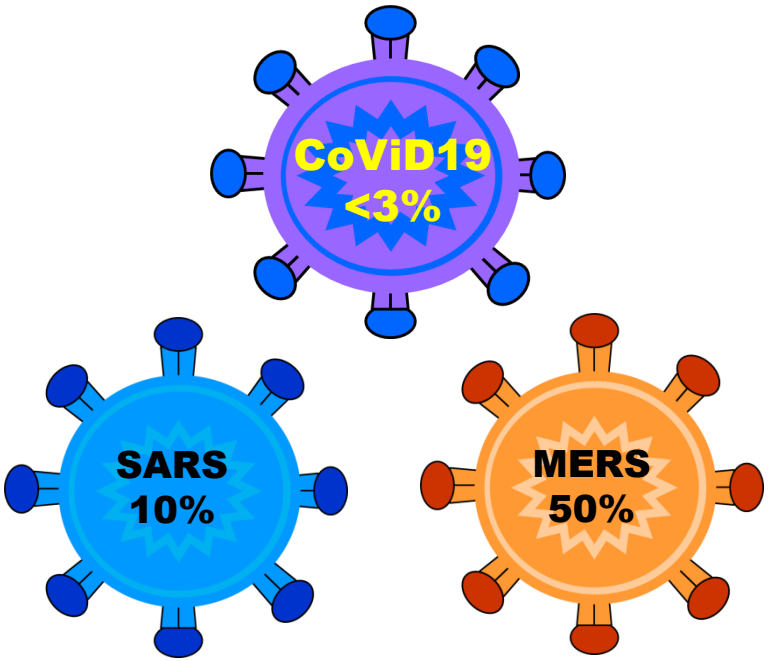
Tingkat Keparahan	*Preliminary* informasi dari Afrika Selatan menunjukkan **tidak ada perbedaan gejala** dan mirip dengan varian lain. Beberapa individu diketahui tidak bergejala.
Transmisi penularan	Kemungkinan **lebih cepat menular** dibanding varian delta dan re-infeksi
Escape immunity	Beberapa mutasi di protein Spike menunjukkan efek yang signifikan terhadap **penurunan kemampuan antibodi dalam menetralisasi virus.** Efek resistensi terhadap vaksinasi belum diketahui

Source : (Outbreak.info ; GISAID; ECDC Threat assessment brief); Xie, X. 2021. NatMed ; Harvey W. 2021. Nature Reviews Microbiology; Liu,Y.2021 Nature ; Huang, H. 2021. Cell Death & Differentiation; Zuckermann, 2021. Vaccine

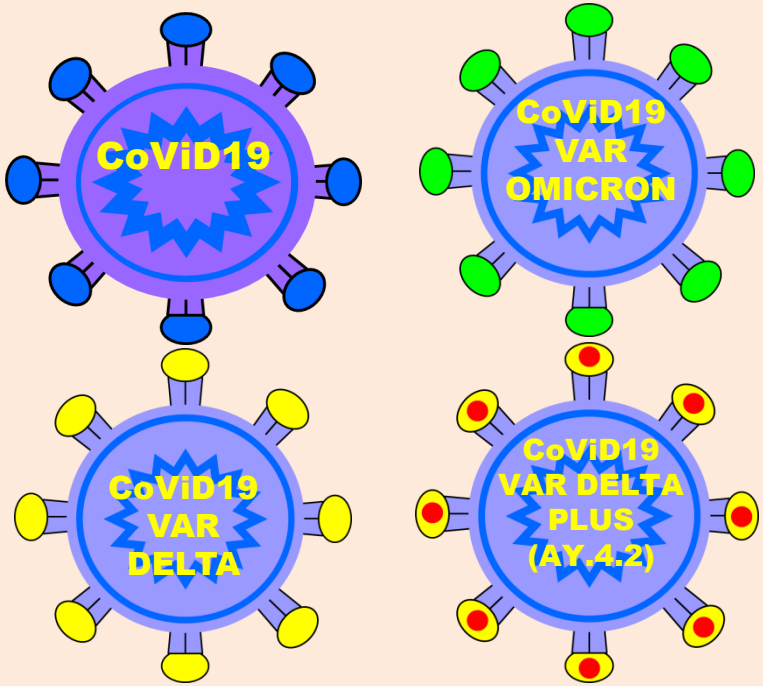
Antibody yang mengalami penurunan netralisasi virus HANYA ANTIBODY PROTEIN S-RBD SAJA

PERBEDAAN STRAIN & VARIAN

STRAIN : PERBEDAAN PROTEIN M,E & N MENUNJUKAN SIFAT VIRUS YANG BERBEDA. TINGKAT KEMATIAN MERS 50%, SARS 10%, & CoViD19 <3%. SIFAT STRAIN TETAP & TIDAK BERUBAH



VARIAN : PERUBAHAAN PROTEIN S PADA STRAIN YANG SAMA – CoViD19 (TANPA PERUBAHAN PROTEIN M,E, & N) SIFAT MASIH SAMA DENGAN 97% KESEMBUHAN



KESIMPULAN AKHIR

4 STRATEGI MENGATASI PANDEMI :

1. STRATEGI GEOGRAFIS – INDONESIA DIUNTUNGKAN DENGAN POSISI NEGARA DI GARIS KATULISTIWA

2. STRATEGI VAKSINASI – MENGGUNAKAN VAKSIN BERBASIS VIRUS UTUH & MENGUKUR RESPON ANTIBODY NASIONAL UNTUK MENGECEK HERD IMMUNITY

3. STRATEGI UJI DIAGNOSTIK – MELAKUKAN PENGAMBILAN SAMPEL DARI DAHAK UNTUK UJI PCR & HANYA MENGUJI ORANG YANG SAKIT / BERGEJALA

4. STATEGI EDUKASI – MEMBERIKAN EDUKASI PUBLIK TENTANG PENANGANAN PAPARAN & INFEKSI VIRUS + PEMAHAMAN VARIAN VIRUS (DENGAN BAHASA PUBLIK)

“Logika mengalahkan kepanikan, Pengetahuan mengalahkan ketakutan”

- Moh Indro Cahyono, 2020