LAST UPDATE: 25 FEBRUARY 2021

CORONAVIRUS
UPDATE
74

Addressing the challenges of SARS-CoV-2 variants for public health

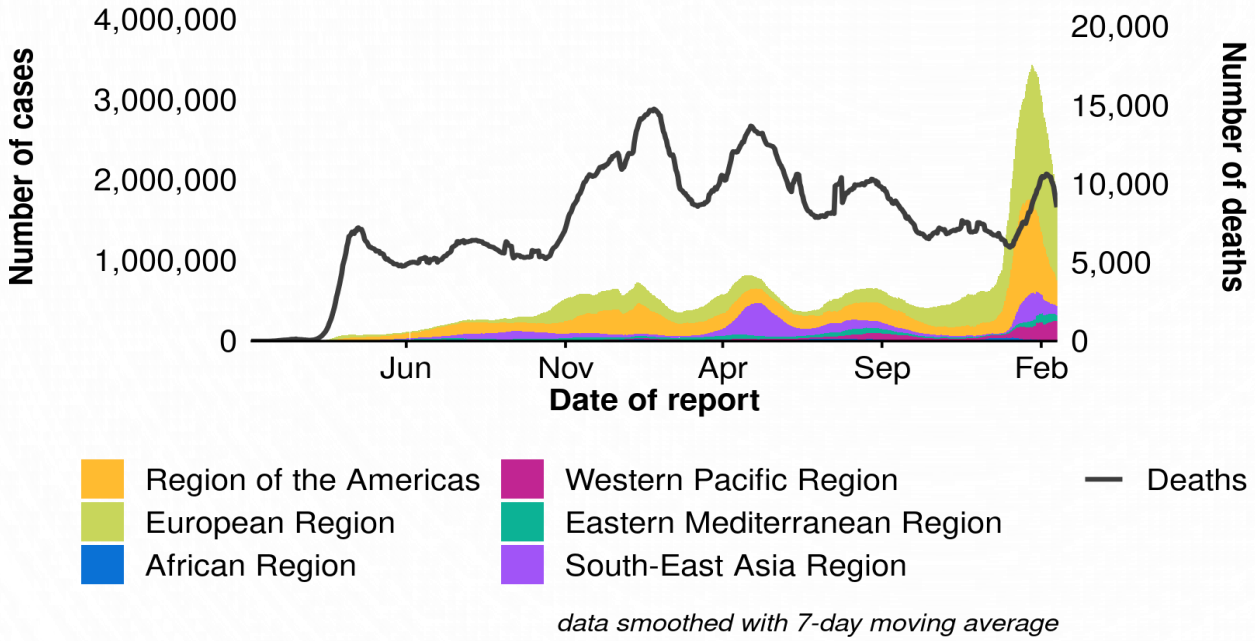
THE LATEST ON THE COVID-19 GLOBAL SITUATION &
DECISION MAKING FOR RESPONSE TO SARS-CoV-2 VARIANTS

World Health Organization | EPI•WiN | infodemic MANAGEMENT

Current global situation

CASES REPORTED TO WHO AS OF 24 FEBRUARY 2022

- **Cases: > 428 million**
- **Deaths: > 5.9 million**



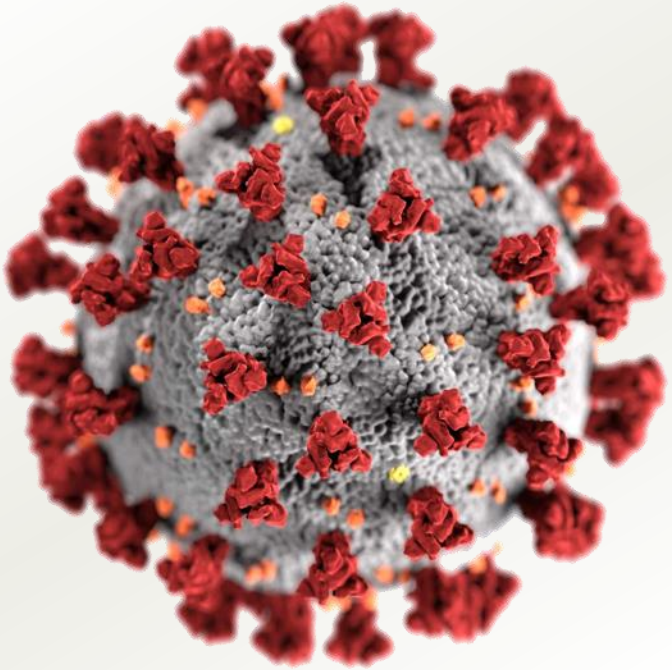
CHECK OUT THE LATEST GLOBAL SITUATION

WHO Coronavirus Disease (COVID-19) Dashboard

** Data are incomplete for the current week. Cases depicted by bars; deaths depicted by line*

Virus evolution may impact public health interventions

- The more the virus circulates, the more the virus will evolve
- Sometimes, some changes may affect
  - **transmissibility**
  - **severity**
  - **ability to evade the immune response**
- Variants may have an impact on public health interventions such as diagnostics, vaccines and treatments
- Thus, it is necessary to closely monitor, detect, assess and classify the evolution of SARS-Cov-2 and have actionable mechanisms in place



Risk monitoring framework for SARS-CoV-2

- As the virus mutates, the variants may impact public health interventions
- WHO has a comprehensive approach in place for
  - **monitoring of variants**
  - **assessment of the impact of variants of concern** (VOCs) on COVID-19 vaccines; and
  - **providing recommendations on vaccine use** and implementation
- This aims at strengthening the SARS-CoV-2 risk monitoring framework for variants
  - by accelerating collaboration and
  - harmonizing research to answer critical unknowns about specific mutations and variants

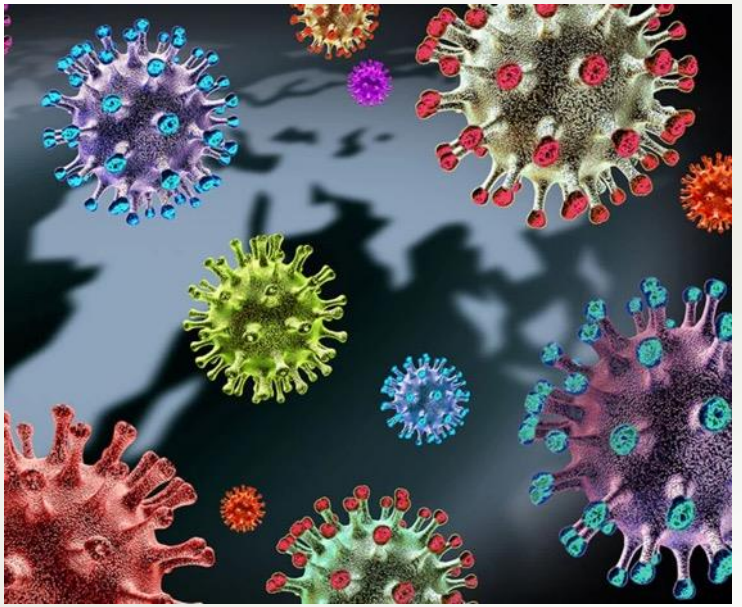
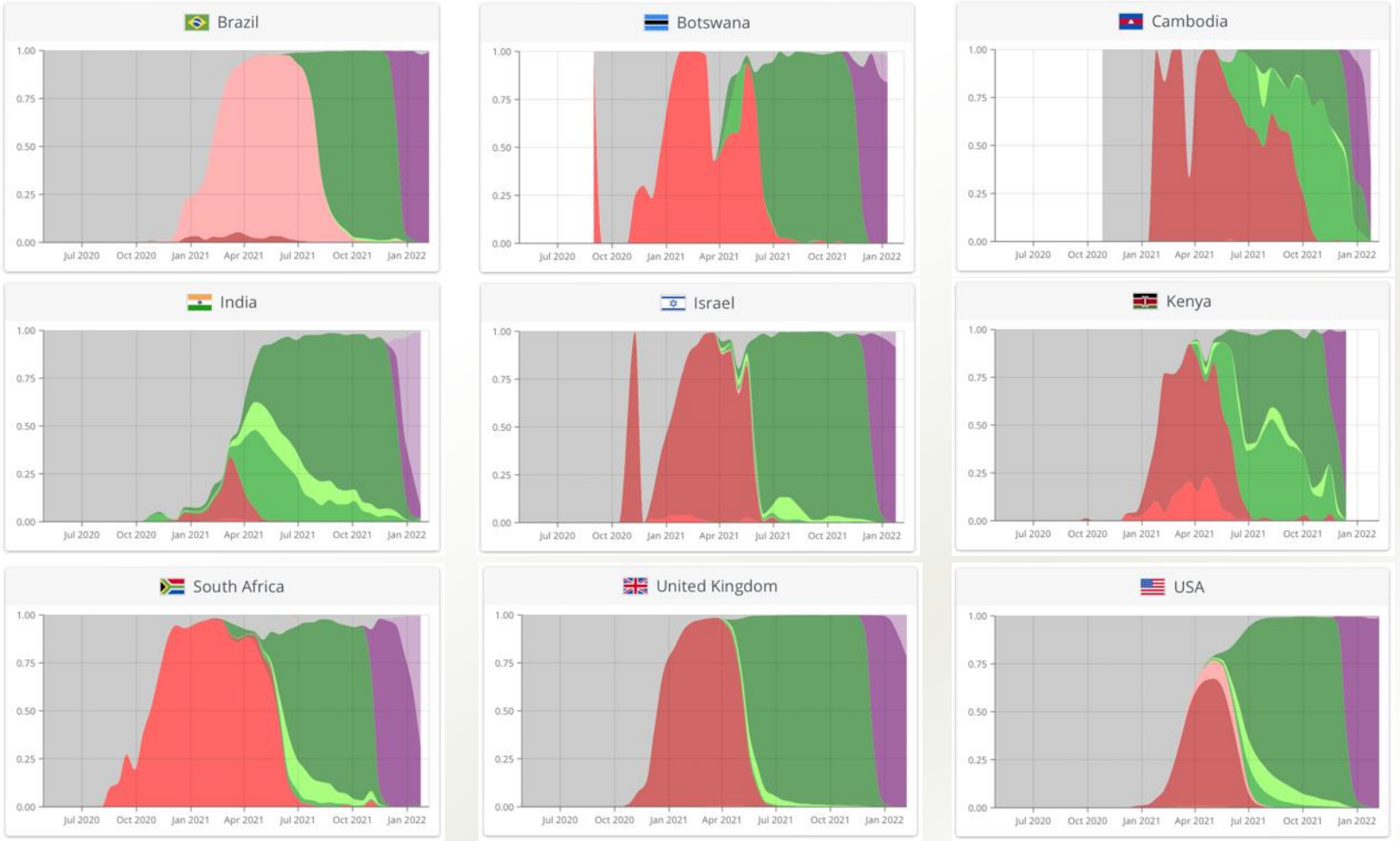


Image: PAHO

Although based on the original wild-type strain of SARS-CoV-2,
the current COVID-19 vaccines are still effective in reducing severe disease, hospitalizations, and death
among people infected with variants of concern (VOCs) including Omicron and Delta

Different variants predominate in different places and times



Source: https://covariants.org/per-country

SARS-CoV-2 variants of interest and variants of concern

The Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE) advises WHO on variants of interest (VOIs) and variants of concern (VOCs)

SARS-CoV-2 variant of interest (VOI)

- **A variant with genetic changes that are predicted or known to affect virus characteristics** such as transmissibility, disease severity, immune escape, diagnostic or therapeutic escape; AND
- **Causes community transmission or multiple COVID-19 cases/clusters** in multiple countries with increasing relative prevalence or other epidemiological impacts to suggest an emerging risk to global public health

SARS-CoV-2 variant of concern (VOC)

- **Meets the definition of a VOI** and, through a comparative assessment, has been associated with one or more of the following changes at a degree of global public health significance:

➢ **Increase in transmissibility** or detrimental change in COVID-19 epidemiology; OR
➢ **Increase in virulence** or change in clinical disease presentation; OR
➢ **Decrease in effectiveness of public health and social measures** or available diagnostics, vaccines, therapeutics

SARS-CoV-2 variants of interest and variants of concern

- Many variants of SARS-CoV-2 have emerged over time
- Currently 5 designated VOC and 2 designated VOI are circulating

Table. Currently designated variants of concern (VOCs)

WHO label	Pango lineage	GISAID clade	Nextstrain clade	Additional amino acid changes monitored	Earliest documented samples	Data of designation
Alpha	B.1.1.7	GRY	20I (V1)	+S:484K +S:452R	United Kingdom, Sep-2020	18-Dec-2020
Beta	B.1.351	GH/501Y.V2	20H (V2)	+S:L18F	South Africa, May-2020	18-Dec-2021
Gamma	P.1	GR/501Y.V3	20J (V3)	+S:681H	Brazil, Nov-2020	11-Jan-2021
Delta	B.1.617.2	G/478K.V1	21A, 21I, 21J	+S:417N +S:484K	India, Oct-2020	VOI: 4-Apr-2021 VOC: 11-May 2021
Omicron*	B.1.1.529	GR/484A	21K	-	Multiple countries, Nov-2021	VUM: 24-Nov-2021 VOC: 26-Nov-2021

Source: https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/

A three-pronged global approach to monitor and assess SARS-CoV-2 variants

WHO has established a strong, multidisciplinary mechanism of external experts for evidence-based decision making on SARS-CoV-2 and its variants

Fig. Three-pronged global approach

Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE)

- Determines which variants warrant further investigations
- Assesses whether variants alter
  - transmission or disease characteristics or
  - impact vaccines, therapeutics, diagnostics or
  - effectiveness of public health and social measures

Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)

- Assesses the impact of variants of concern on current COVID-19 vaccines
- Determines whether changes to vaccine composition are needed

R&D blueprint for epidemics

- COVID-19 Vaccines Research Expert Group

Strategic Advisory Group of Experts on Immunization (SAGE)

- Advises on vaccine use and implementation

Role of Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE)

Track, monitor and evaluate

- **Independent Group of experts that advises WHO on the following:**
  - Strengthening mechanisms to identify and prioritize potential relevant mutations of SARS-CoV-2, including the strengthening of global capacity to assess SARS-CoV- 2 variants
  - Assessing impact of SARS-CoV-2 variants on transmissibility, clinical presentation, disease severity, diagnostics and therapeutics
  - Providing regular and updated recommendations to WHO on the global characterization of SARS-CoV-2 VOIs and VOCs and the classification of VOCs
  - Developing mitigation strategies to reduce the negative effects of SARS-CoV-2 variants

Key questions addressed by TAG-VE

- How data on variants of concern (VOCs) and evidence of their impact on public health interventions are being generated
- Based on current VOC data and evidence, what decisions policymakers need to make with respect to COVID-19 prevention and control
- How global decision-making processes can be further clarified and strengthened

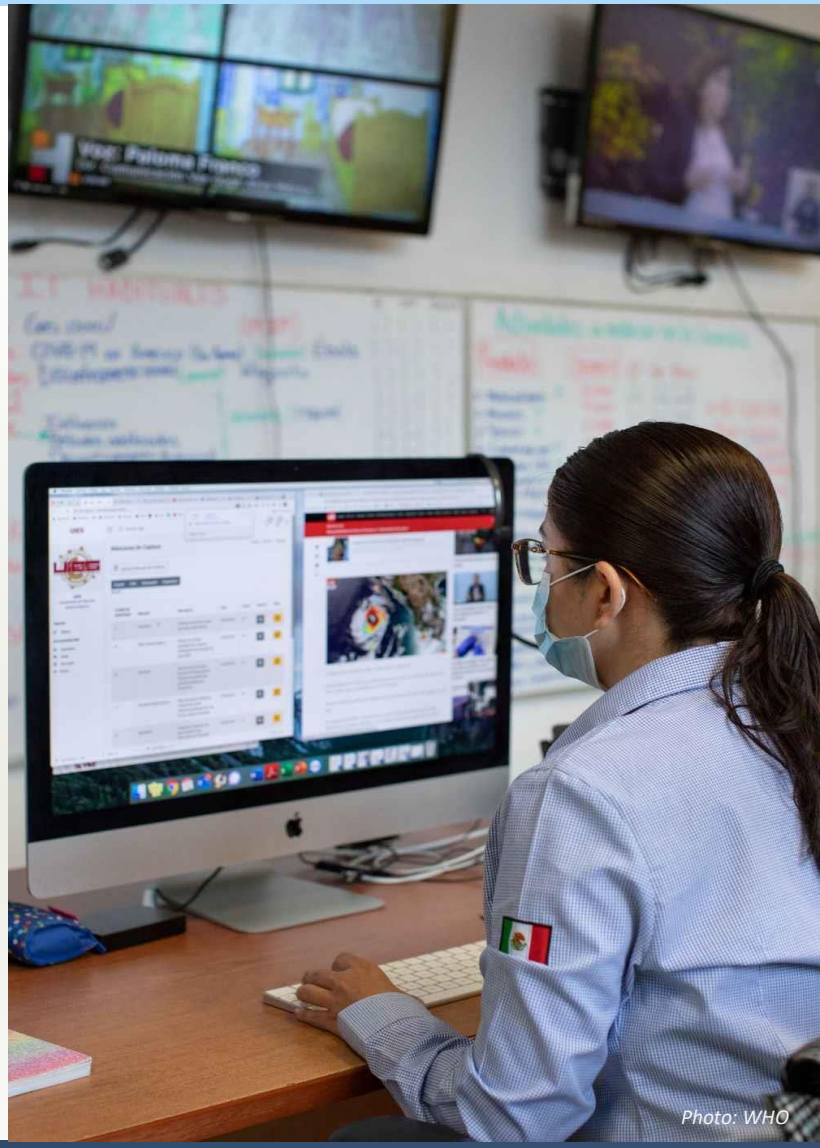


Photo: WHO

Role of the Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)

Assess impact

- Goal of this body is to ensure COVID-19 vaccines continue to safely provide WHO-recommended levels of protection against VOCs
- **TAG-CO-VAC leads on the following:**
  - Review and interpretation of available evidence on how VOCs impact the efficacy and effectiveness of COVID-19 vaccines
  - Identification of needs for further research and investigations; and
  - Issuing of timely recommendations on potential modifications to vaccine composition

Key questions addressed by TAG-CO-VAC

- With what we know about circulating VOCs, should the current vaccine with the ancestral strain continue to be used (in particular to reduce severe disease, hospitalization and death)?
- What features of a VOC would prompt consideration of a vaccine composition change?
- What specific strain should be recommended?

Photo: WHO

Role of the Strategic Advisory Group of Experts on Immunization (SAGE)

Policy for vaccine use

- SAGE is charged with advising WHO on overall global vaccination policies and strategies, ranging from vaccines and technology, research and development, to delivery of immunization and its linkages with other health interventions
- SAGE issues guidance and strategies on the programmatic use of authorized COVID-19 vaccines with particular attention to public health needs in low and middle income countries
- **Other key roles include:**
  - Provide recommendations on the use of vaccines against COVID-19 and revise/update recommendations as new data emerges
  - Provide guidance on the prioritization of vaccination in situations of limited supply, access or delivery constraints
  - Provide guidance on vaccination schedules, including booster vaccination and administration of heterologous vaccines
  - Provide other guidance needed by countries for programmatic use of vaccines
  - Highlight data gaps and priorities for research to make policy more robust

Key questions addressed by SAGE

- SAGE issues evidence-based recommendations that follow WHO's standards for policy development
- Main questions addressed in SAGE's evidence review include:
  - **Benefits & harms of the intervention:** GRADed evidence on the efficacy and safety of vaccination in different age groups and populations
  - **Values & preferences:** evidence on the desired vaccine effect and acceptability by populations
  - **Resource use:** implementation-related questions and resources considerations for programmes including cost-effectiveness
  - **Equity:** contribution to increasing equity in vaccination, and potential obstacles
  - **Acceptability:** in particular in relation to the use of the vaccine in certain populations
  - **Feasibility:** logistic and other product-related requirements for deployment, and considerations to reach target populations

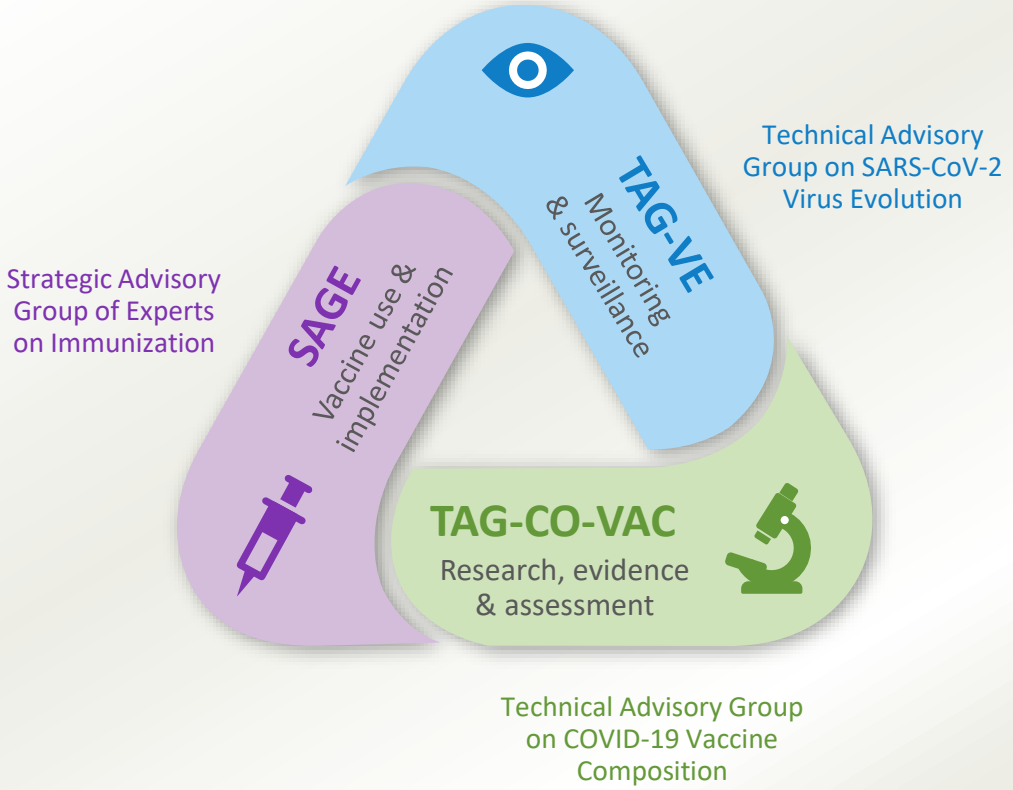

Photo: WHO

Advantages of the three-pronged mechanism

The recommendations of the advisory bodies will be used to inform WHO on global, regional and national COVID-19 prevention and control strategies

- A comprehensive and coordinated approach supports sound decision-making processes for a global response to the COVID-19 pandemic
- Absence of a global framework could lead to adoption of decisions based on either local circulation of variants or specific interests of private entities
- The three key decision-making bodies work in synergy
- WHO is collaborating with key partners for collection and interpretation of data and information

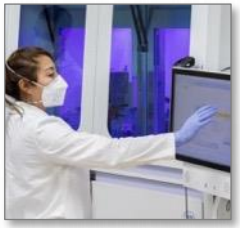
Fig. Three key technical decision-making bodies have a coordinated approach



Summary

- Viruses evolve and variants are natural
- Need to monitor variants to better adapt our response
- WHO has established a robust mechanism to monitor and assess evolution of variants and their impact on vaccines and public health measures
- Each body that is part of this mechanism answers key questions for a strong, quick and appropriate response
- This enables a comprehensive and coordinated approach for global decision making for COVID-19

Additional resources



- [Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE)]

https://www.who.int/groups/technical-advisory-group-on-sars-cov-2-virus-evolution

The Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE) is an independent group of experts that periodically monitors and evaluates the evolution of SARS-CoV-2 and assess if specific mutations and combinations of mutations alter the behaviour of the virus.

- [Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)]

https://www.who.int/groups/technical-advisory-group-on-covid-19-vaccine-composition-(tag-co-vac)

The Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC) is an independent group of experts that periodically reviews the evidence and analyses the implications of emerging VOCs on the performance of COVID-19 vaccines.

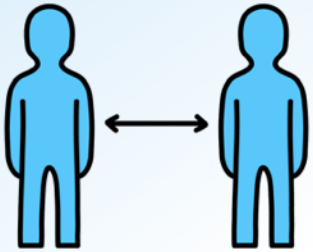
- [Strategic Advisory Group of Experts on Immunization (SAGE) Strategic Advisory Group of Experts on Immunization]

https://www.who.int/groups/strategic-advisory-group-of-experts-on-immunization

The Strategic Advisory Group of Experts on Immunization (SAGE) is charged with advising WHO on overall global policies and strategies, ranging from vaccines and technology, research and development, to delivery of immunization and its linkages with other health interventions.

COVID-19 protective measures

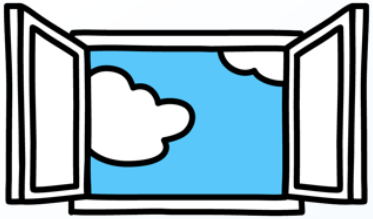
Protect yourself & others



Keep your distance

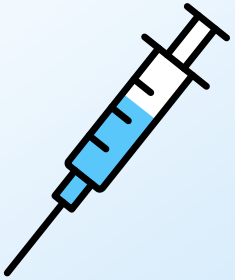
Wash your hands frequently

Cough & sneeze into your elbow



Ventilate or open windows

Wear a mask



Get vaccinated when it is your turn

EPI•WiN

infodemic
MANAGEMENT

www.who.int/epi-win