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

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The main functions of TAG-CO-VAC

As an advisory body to WHO

• make recommendations to WHO on the methods to assess the impact of VOCs on vaccines

• provide interpretation of available evidence on the effect of VOCs on vaccines, including but not limited to vaccine effectiveness

• recommend to WHO, for each COVID-19 vaccine platform, adaptations (if any) needed so that vaccines continue to safely provide WHO-recommended levels of protection against VOCs.

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

• The evolution of SARS-CoV-2 could substantially impact the COVID-19 pandemic and may require adaptations of the currently available countermeasures.

• Adjustment of vaccine composition may be needed to optimize the performance of COVID-19 vaccines due to the emergence of variants of concern (VOCs) infecting humans.

• The regular production and review of the available evidence is critical to assess the impact of VOCs on countermeasures, issue timely recommendations on potential modifications and identify needs for further research and investigations.
• WHO periodically organizes consultations with an independent group of experts, the Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC), to review the evidence and analyse the implications of emerging VOCs on the performance of COVID-19 vaccines.

• TAG-CO-VAC may recommend to WHO adaptations of vaccine composition from a global public health perspective and guided by the principles of equitable access.
Information sharing and cross reporting among WHO expert committees

For comprehensive review and a well-coordinated response to the pandemic situation and post-pandemic control of COVID-19, TAG-CO-VAC will share information with other WHO Expert Committees including:

**Expert Committee on Biological Standardization (ECBS)**
- provides recommendations and guidelines for the manufacturing, licensing and control of blood products and related in vitro diagnostic tests, biotechnology products and vaccines along with the establishment of WHO Biological Reference Materials.

**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.

**Strategic and Technical Advisory Group for Infectious Hazards (STAG-IH)**
- provides independent advice and analysis to WHO Health Emergencies Programme on the infectious hazards that may pose a potential threat to global health security.

**Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE)**
- 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.
COVID-19 advisory group landscape

Strong, multidisciplinary mechanism of external experts for evidence-based decision making

**Aim:** Monitor & assess SARS-CoV-2 variants and evaluate their impact on countermeasures, including vaccines, therapeutics, diagnostics or effectiveness of public health and social measures.

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**Virus Monitoring & surveillance**

**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

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**Vaccine**

**Research, evidence & assessment**

**R&D Blueprint for epidemics**
- COVID-19 Vaccines Research Expert Group
  - Assesses the impact of Variants of Concern on current COVID-19 vaccines
  - Determines whether changes to vaccine composition are needed

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**Vaccine implementation**

**Policy**

**SAGE**
- Recommends policies and strategies on vaccine use and immunization programmes through evidence-based assessment

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# TAG-CO-VAC Members

**Chair**

**Professor Kanta Subbarao**  
Director of the WHO Collaborating Centre for Reference and Research on Influenza and Professor, Department of Microbiology and Immunology

**Professor Cheryl Cohen**  
Professor in epidemiology at the University of the Witwatersrand and Head of the Centre for Respiratory Disease and Meningitis at the National Institute for Communicable Diseases

**Professor John Peter Figueroa**  
Professor of Public Health, Epidemiology and HIV/AIDS at the University of the West Indies

**Professor Thomas Fleming**  
Professor, member of the Scientific Steering Committee for the WHO Solidarity COVID-19 Vaccines Trial.

**Professor David Goldblatt**  
Professor of Vaccinology and Immunology and Head of the Immunobiology Section at the Great Ormond Street Institute of Child Health

**Professor Priya Abraham**  
Director of Indian Council of Medical Research

**Professor Paul Fine**  
Professor of Communicable Disease Epidemiology

**Dr. Hideki Hasegawa**  
Director of the WHO Collaborating Centre for Reference and Research on Influenza, Japan

**Vice-Chair**

**Dr David Wentworth**  
Chief of the Virology, Surveillance, and Diagnostics Branch (V908) of the Influenza Division at the U.S. Centers for Disease Control and Prevention (CDC)

**Professor Elizabeth Miller**  
Professor in Infectious Disease Epidemiology at the London School of Hygiene and a visiting professor at the Sackler School of Public Health at Tel Aviv University

**Professor Samba Sow**  
Professor of Medicine, Directeur général, Centre pour la mise au point de vaccins du Mali, Centre National d’Appui à la Lutte contre la Maladie, Djicoroni para Bamako, Mali

**Dr Oyewale Tomori**  
Member of the Global Virome Project Leadership Board

**Dr Youchun Wang**  
Chief scientist at the National Institute for Food and Drug Control (NIFDC) of China

**Professor Raina MacIntyre**  
Head of Biosecurity Research Program in Kirby Institute

**Dr Sergio Nishioka**  
Technical Adviser for Capacity Building and Clinical Evaluation of COVID-19 vaccines

**Dr Amadou Alpha Sall**  
Director of Institut Pasteur de Dakar and WHO Collaborating Center for Arboviruses and Viral Hemorrhagic Fevers, Senegal
Subgroups

- Framework development: describes the decision-making process of TAG-CO-VAC and the data requirements
- Composition selection: assesses immunogenicity and cross protection data to inform any proposed update to vaccine composition

Proposals from subgroups are then brought to the full Membership of TAG-CO-VAC for review and endorsement.

WHO facilitates direct exchanges between TAG-CO-VAC and other WHO advisory groups, regulatory authorities, and COVID-19 vaccine manufacturers.
Key messages

• Indicates **protection against severe disease and death is more likely to be preserved** than protection against infection by current COVID-19 vaccines for the Omicron variant.

• Urges the world to **accelerate broader access to primary vaccination**, particularly for groups at greater risk.

• Calls for the development of COVID-19 vaccines that have high impact on prevention of **infection and transmission**, in addition to protection against severe disease and death.

• Specifies until such vaccines are available and as the virus continues to evolve, **the composition of current COVID-19 vaccines may need to be updated** to ensure WHO-recommended levels of protection.

Options to consider

- **monovalent vaccine** that elicits an immune response against the predominant circulating variant(s), although this option faces the challenge of the rapid emergence of SARS-CoV-2 variants and the time needed to develop a modified or new vaccine;

- **multivalent vaccine** containing antigens from different SARS-CoV-2 VOCs;

- **pan SARS-CoV-2 vaccine**: a more sustainable long-term option that would effectively be variant-proof.
In the context of Omicron variant, the TAG-CO-VAC highlighted the substantial uncertainties around the evolution of SARS-CoV-2, the challenges linked to updating COVID-19 vaccines and the paucity of data on variant-specific vaccines.

Key messages

- Continues to review available data to **optimize vaccine mediated protection** against prevalent circulating Variants of Concern
- Strongly supports **urgent and broad access to current COVID-19 vaccines for primary series and booster doses**, particularly for groups at risk of developing severe disease
- Continues to encourage COVID-19 vaccine manufacturers to generate and provide data to WHO on **performance of current and variant-specific COVID-19 vaccines**