World Health Organization

Highlights from the Meeting of the Strategic Advisory Group of Experts (SAGE) on Immunization
9-12 March 2026

(The full report will be published in the Weekly Epidemiological Record on 29 May 2026, and only the wording of the full report should be considered final.)

Session 1

Report from the Department of Immunization, Vaccines, and Biologicals.

- The report provided an overview of the current global context in which immunization programmes operate, highlighting achievements, emerging challenges, and priorities for sustaining progress and shaping the future of immunization programmes in a rapidly evolving global health context.
- Within this wider context, global health is entering a new strategic period, particularly in immunization.
- There has been a remarkable expansion and an increase in the maturity of immunization programmes over the past five decades, with over 80% of countries now delivering vaccines across the life-course against at least 10 of the 14 diseases with WHO recommendations for all immunization programmes[1].
- In this context, the increase in the number and functionality of national immunization technical advisory groups (NITAGs) have played an important role in supporting national programmes in making informed choices and dealing with the increasing policy and programmatic complexity.
- Delivery of vaccines will require schedule optimization, targeted delivery of vaccines against some diseases, and an intentional move towards vaccination campaign optimization through targeted and integrated approaches.
- Emerging challenges for the future include uncertain funding for vaccine research and development, and misinformation and distorted information that erodes public trust in vaccines. Protecting trust and countering misinformation will be a central focus in 2026.
- SAGE will continue to play a crucial role in providing transparent, and timely evidence-based recommendations, and in strengthening collaboration with regional and national advisory

[1] There are 14 vaccine-preventable diseases (VPDs) with WHO recommendations for all immunization programmes: COVID-19, diphtheria, *Haemophilus influenzae* type b (Hib), hepatitis B, human papillomavirus (HPV), measles, pertussis, pneumococcus, poliomyelitis, respiratory syncytial virus (RSV), rotavirus, rubella, seasonal influenza and tetanus.

bodies to guide countries in navigating complex policy decisions in resource-constrained environments.

Report from Gavi, the Vaccine Alliance (Gavi)

- Gavi has entered its 2026–2030 strategic phase (Gavi 6.0) in a challenging global health context marked by fiscal constraints, misinformation affecting vaccine confidence, and increasing operational complexity.
- The 2025 replenishment raised US$10 billion but left a US$2 billion shortfall, prompting programme recalibration and organizational reforms, including reductions in its secretariat workforce and operating expenditures.
- A new country operating model will simplify grant processes and introduce country vaccine budget envelopes, requiring countries to prioritize among vaccine investments within fixed budgets.
- The Vaccine Portfolio Optimisation and Prioritisation (VPOP) process will support countries in making strategic trade-offs across vaccine introductions, vaccination campaigns, and strengthening routine immunization programmes.
- Continued expansion of typhoid conjugate vaccine (TCV) introduction and support for potential future vaccines such as tuberculosis and dengue will require close coordination between Gavi, WHO, and partner agencies in a constrained funding context.

Reports from the WHO Regional Offices

- The regional reports reflected the diversity of immunization programme challenges across countries and on the innovative approaches being used to address them.
- As evidence-based decision-making becomes increasingly complex for country programmes, NITAGs play a critical role in helping shape national decisions on immunization schedules and vaccine introductions. A variety of approaches are being used to strengthen the capacity of NITAGs to fulfil their demanding role, such as standardized processes for making evidence-based recommendations, tools on prioritization and cost-efficiency, and coordinating mechanisms to support peer-learning, exchange and networking.
- Chronically weak health systems and immunity gaps, compounded by the backsliding during the COVID-19 pandemic, has exposed the fragility of immunization systems and resulted in an increased risk of vaccine-preventable disease outbreaks, such as diphtheria in some countries in the African Region.
- The challenge of ensuring an adequate response to such outbreaks is further compounded in humanitarian emergencies, where speed and integration is critical. Lessons learned from addressing these challenges, including through the institutionalization of catch-up policies, have important implications for strengthening routine immunization delivery and sustainably closing historical immunity gaps.

Session 2

Immunization Agenda 2030 (IA2030) and the Future of Immunization

- The session focused on the recommendation in the IA2030 Mid-Term Review to reform its governance structures, specifically with reference to SAGE's role during the second half of the decade.
- SAGE expressed overall satisfaction with its current engagement model, noting that it enables strategic input to IA2030 priorities while preserving SAGE's independence and its primary policy-advisory mandate.
- Members were briefed on progress in developing a 2050 vision for the long-term "Future of Immunization" and invited to provide feedback on the scenarios to inform its development.
- SAGE stressed that the scenarios to inform the development of the vision for the Future of Immunization must be viewed through the lens of different audiences, and should be dynamic rather than static, reflecting rapid changes in the global health context. SAGE requested updates as the work progressed.

Session 3

Vaccine Portfolio Optimization and Prioritization (VPOP)

- VPOP promotes a country-owned, evidence-informed process for countries to maximize the health impact of their immunization programmes within available resources, adapted to their own context, recognizing the current financial pressures and difficult trade-off decisions**.**
- Experiences shared by Ethiopia, Iran, and Mozambique highlighted the importance of a strong collaboration between the national immunization programmes and the NITAG, with involvement of key stakeholders. SAGE noted the challenges related to local data availability and evidence review and called on partners to coordinate support to countries.
- SAGE highlighted the important role of NITAGs as independent technical advisory groups in the VPOP process, leveraging existing support structures, such as the Global NITAG Network and other established regional networks, and the need to ensure sustainability and independence of these structures.
- SAGE expressed concern about the insufficient funding of NITAGs at a time when strong national immunization policy guidance is critically needed in the context of VPOP.
- SAGE recommended close monitoring of countries' decisions to understand any impact on immunization programmes at the national and regional levels.

Session 4

Typhoid vaccines

- Typhoid fever is estimated to cause about 6 million cases and 72 000 deaths worldwide.
- An updated review of global epidemiological data on the age distribution of typhoid fever indicated that the peak age of laboratory-confirmed cases in endemic settings is in children

aged 5–9 years, although there is also significant burden in children aged 2-4 years in the high and very high incidence settings.

- Longer-term follow-up data indicate varying patterns of waning of protection following a single dose of TCV in different disease incidence settings, with evidence of waning in settings with very high incidence of typhoid fever; evidence of waning is more evident in infants and children vaccinated <2 years of age.
- SAGE recommended the introduction of TCV in countries or settings with a high or very high incidence of typhoid fever[2] or a high burden of antimicrobial resistant *S.* Typhi[3]. Countries may also consider introducing TCV in settings with a medium incidence of typhoid fever and where there is a high case fatality ratio.
- SAGE further recommended that countries consider introducing a booster dose around 5 years of age in settings with very high typhoid incidence for children who received a primary TCV dose at 9–24 months of age. In other incidence settings where the primary dose of TCV is administered before 24 months of age, a booster dose may be considered if any evidence of waning protection is observed among vaccinated cohorts, especially in areas with a high case fatality ratio or high prevalence of antimicrobial resistance.

Session 5

COVID-19 vaccines

- While the global burden of severe COVID-19 has declined due to widespread immunity from vaccination and prior infection, the disease continues to cause morbidity and mortality, particularly among groups at high risk of severe COVID-19.
- SAGE recommended that countries should consider COVID-19 vaccination based on local epidemiology, population characteristics, access to COVID-19 vaccines, cost-effectiveness, acceptability, and programmatic feasibility.
- Countries should consider routine COVID-19 vaccination of groups at highest risk of severe COVID-19 disease:
    - Oldest adults; older adults with significant comorbidities or severe obesity; residents in care and long-term care facilities; and individuals aged ≥ 6 months who are moderately or severely immunocompromised. For these groups, whether unvaccinated or previously vaccinated (last dose more than 6 months ago), SAGE recommended at least one dose per year, preferably two, administered six months

[2] Typhoid fever incidence is classified as follows:

- Very high incidence: ≥500 cases per 100,000 population per year
- High incidence: 100 to <500 cases per 100,000 population per year
- Medium incidence: 10–<100 cases per 100,000 population per year
- Low incidence: <10 cases per 100,000 population per year

These classifications are based on the estimated incidence of typhoid fever after appropriate adjustments for blood culture sensitivity, testing practices, and healthcare-seeking behaviour. They should not be applied to crude, unadjusted typhoid incidence rates from national disease registries based on laboratory-confirmed cases. In settings where typhoid incidence data are unavailable, countries may draw inferences about probable incidence and severity using alternative data. Vaccination is estimated to be cost-effective in medium incidence settings with case fatality ratio ≥ 0.5% in community-based studies where ambulatory cases are included.

[3]The burden of antimicrobial resistance (AMR) in typhoid reflects the extent to which circulating *S.* Typhi organisms are resistant to antimicrobial agents that are currently available, and in routine use locally. In such cases resistance to these antimicrobial agents constrains effective case management and increasing reliance on alternative, parenteral, more costly, or last-resort therapies and may negatively affect clinical outcomes.

apart, due to the waning of protection against severe COVID-19 disease by six months after the last dose. The number of doses per year (one or two) should also consider cost-effectiveness and programmatic feasibility.

- Countries may consider routine COVID-19 vaccination of additional groups based on the local context, cost-effectiveness, and programmatic feasibility:
    - Older adults without significant comorbidities or severe obesity; adults (not included in the older adult category), adolescents, and children with significant comorbidities or severe obesity; and health workers and other care providers. For these groups, whether unvaccinated or previously vaccinated (last dose more than 6 months ago), SAGE recommended at least one dose per year.
    - For pregnant persons, whether unvaccinated or previously vaccinated (last dose more than 6 months ago), one COVID-19 vaccine dose during each pregnancy, at any stage, though ideally during the second trimester. The aim is to optimize protection against severe COVID-19 for the pregnant person, prevent adverse pregnancy outcomes, and protect the infant during the first months of life.
    - Previously unvaccinated healthy children aged 6–23 months only if significant burden is documented in this age group; revaccination is not routinely recommended.
- These recommendations will guide the development of a WHO COVID-19 vaccines Position Paper, planned for publication in 2026.

Session 6

Poliomyelitis

- SAGE expressed concern over ongoing WPV1 transmission in Pakistan and Afghanistan, and the disruptions affecting the shipment and laboratory analysis of stool and environmental samples from Afghanistan.
- Concern was also expressed about persistent detection of circulating vaccine-derived poliovirus type 2 (cVDPV2) in several African countries, while noting declining detection in wastewater samples in Europe; the need to strengthen routine immunization coverage and reach zero-dose children to reduce the transmission of cVDPV2 was emphasized.
- SAGE reaffirmed its support for the safe cessation of bivalent oral poliovirus vaccine (bOPV) from routine immunization programmes and urged the development of contingency options in case eradication timelines are further delayed.
- In bOPV-using countries that have introduced three doses of IPV in the first year of life, SAGE recommended that the number of bOPV doses in the routine immunization programme may be reduced from three to two, provided the country is at low risk of poliovirus importation and spread. This combined schedule will sustain mucosal immunity.