



**World Health
Organization**

**Department of Immunization,
Vaccines and Biologicals (IVB)**

SAGE
meeting

**Strategic Advisory Group of Experts
on Immunization
4-7 April 2022**

**Virtual meeting, WHO
Geneva, Switzerland**

This document can be found online after the meeting at the following link:

https://www.who.int/news-room/events/detail/2022/04/05/default-calendar/sage_meeting_april_2022

This interactive pdf contains all background documents for the corresponding meeting of the Strategic Advisory Group of Experts (SAGE) on Immunization.

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Navigation is done via the interactive table of content page. Each session landing page contains links to the executive summary and all background documents (tagged as either essential or additional). All session documents open as new tabs in the Adobe reader (pdf attachments).

Tip: Avoid opening more than 6-8 tabs at a time to preserve navigability.

Notes:

(1) This document functions only in a limited mode on hand-held devices. See “How to Guide”.

(2) Presentations from the meeting will be made available once the meeting has concluded at the above link and through an additional interactive PDF.

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World Health Organization

Meeting of the Strategic Advisory Group of Experts (SAGE) on Immunization
4-7 April 2022
Virtual Meeting
Final Agenda

Day 1: Monday, 4 April 2022

Time	Session	Purpose of session, target outcomes and questions for SAGE	Duration
10:00	Closed SAGE meeting	Preparation of the sessions of the day.	1h
11:00	Break	Break	15 min.
11:15	Opening and welcome – introduction of participants	Opening of the Plenary by IVB Director .	15 min.
11:30	Global and Regional Reports – Session 1 Report from the Director of IVB. K. O'BRIEN, WHO. 20 min. Update from Gavi. M. TUFET, GAVI. 10 min. Reports from the Regions – including impact of the COVID-19 pandemic and COVID-19 vaccination on immunization services. WHO. 1h Discussion. 1h	FOR INFORMATION	2h 30 min.
14:00	Break	Break	30 min.
14:30	IA2030 deep dive: catch-up vaccination – Session 2 Impact of COVID-19 pandemic on childhood/adolescent immunization coverage and equity. N. MACDONALD and F. OLAYINKA, SAGE members. 10 min. Country presentation 1. TBC. 10 min. Country presentation 2. TBC. 10 min. Opportunities and strategies for immunization recovery, resiliency building, and strengthening. WHO (tbc). 15 min. Discussion. 65 min.	FOR RECOMMENDATION This session will discuss the importance and need to urgently recover immunization programmes, build their resiliency, and strengthen for the long term. SAGE will be asked to review and consider for endorsement the importance for countries to develop and implement strategies to urgently bridge immunity gaps, recover immunization programmes, and build resiliency against future disruptions and health system strains. SAGE is also asked to provide input and endorse “Guiding Principles for recovering, building resiliency, and strengthening of immunization in 2022 and beyond” .	1h 50 min.
16:20	End of the day		

Day 2: Tuesday 5 April 2022

Time	Session	Purpose of session, target outcomes and questions for SAGE	Duration
10:00	Closed SAGE meeting	Preparation of the sessions of the day. Recap of day 1. Other important discussion items.	1h
11:00	Break	Break	15 min.
11:15	Hepatitis A – Session 3	FOR RECOMMENDATION	2h
	<p>Introduction of the session, objectives and critical questions R. AGGARWAL, SAGE member and WG chair. 5 min.</p> <p>Overview on disease, global epidemiology and available vaccine products hepatitis A disease. K. MELLOU, SAGE Hepatitis A WG member. 10 min.</p> <p>Main outcomes of the systematic review of evidence. N. WALSH, J. TORRES, WHO secretariat – contractors. 20 min.</p> <p>Presentation of the GRADE/ ETR tables. N. NELSON. SAGE Hepatitis A WG member. 10 min.</p> <p>Question and answers Discussion by SAGE members. 25 min.</p> <p>Draft recommendations. R. AGGARWAL, SAGE member and WG chair. 15 min.</p> <p>Discussion by SAGE. 30 min.</p> <p>Wrap up. R. AGGARWAL, SAGE member. 5 min.</p>	<p>The purpose of this session is to update the SAGE recommendations on the use of hepatitis A vaccine (2012 Vaccine position paper). This update will be based on :</p> <ul style="list-style-type: none"> - the accrued data on the global prevalence and burden of disease caused by hepatitis A virus infection, including outbreaks since 2012. - the review of latest available data on efficacy, effectiveness, duration of protection, schedules, safety, and cost-effectiveness of internationally available hepatitis A vaccines, considering all dosing and schedules in particular single dose schedules of inactivated vaccine. <p>The outcome will be a 2022 update of the Hepatitis A vaccine position paper.</p>	
13:15	Break	Break	30 min.
13:45	COVID-19 vaccines – Session 4		2h 30 min.
	<p>Introduction. H. NOHYNEK, SAGE member. 5 min.</p> <p><i>Vaccine product specific recommendations: Cansino</i></p> <p>Company presentation. Cansino. 20 min. Questions and answers. 15 min.</p> <p>Evidence review. 20 min.</p> <p>Presentation of draft recommendations including discussion. 30 min.</p> <p><i>Infection and vaccination induced immunity</i></p> <p>Immunological findings. (tbc). 15 min.</p> <p>Findings from Mathematical modelling. (tbc). 15 min.</p> <p>Discussion. 30 min.</p>	<p>FOR RECOMMENDATION</p> <p>FOR DISCUSSION</p>	
16:15	End of the day		

Day 3: Wednesday 6 April 2022

Time	Session	Purpose of session, target outcomes and questions for SAGE	Duration
10:00	Closed SAGE meeting	Preparation of the sessions of the day. Recap of day 2. Other important discussion items.	1h
11:00	Break	Break	15 min.
11:15	Typhoid update – Session 5	FOR INFORMATION	1h 30 min.
	<p>Introduction and framing. K. MULHOLLAND, SAGE member. 5 min.</p> <p>Updates on global burden and AMR. J. CRUMP, U. of Otago. 10 min.</p> <p>TCV evidence emerging from TyVAC and other studies (incl data on efficacy/effectiveness, immunogenicity, safety, co-admin, use in special populations). K. NEUZIL, SAGE member. 25 min.</p> <p>Discussion. 15 min.</p> <p>Update on TCV pipeline and emerging evidence on single dose vs. primary + booster doses. M. CAREY, U. of Cambridge. 10 min.</p> <p>Overview of country demand and uptake, operational lessons from early TCV introduction. J. WALDORF, WHO. 10 min.</p> <p>Discussion. 15 min.</p>	<p>Update on new evidence from prequalified typhoid conjugate vaccines (TCVs) and late-stage vaccine candidates on vaccine efficacy and effectiveness, immunogenicity and safety; data from special populations; data from older age groups; tolerability and non-interference in immune responses with routine EPI vaccines.</p> <p>The Secretariat does not expect that the data available will support revised TCV policy recommendations at this time. However, SAGE is being requested to make a statement in its report on the new evidence from prequalified TCVs (particularly on vaccine efficacy), to inform country decision making for ongoing TCV introductions.</p>	
12:30	Break	Break	30 min.
13:30	HPV – Session 6	FOR RECOMMENDATION	2h 30 min
	<p>Agenda</p> <p>Session introduction and key questions. R AGGARWAL. SAGE member and WG chair. 5 min.</p> <p>Update on progress of HPV vaccine introduction and reaching the 2030 target of 90% coverage. P. BLOEM, WHO. 7 min.</p> <p>Global market study on HPV vaccines, 2022 Update. T. CERNUSHI, WHO. 8 min.</p> <p>Evidence on single-dose HPV vaccine schedules to inform decision making on reduced schedules. L. MARKOVITZ, SAGE WG member. 10 min</p> <p>Systematic review of evidence on HPV vaccine. N. HENSCHKE, Cochrane Response. 10 min.</p> <p>Modelling evidence on the impact of 1-dose strategies. M. BRISSON, Laval University. 10 min.</p> <p>Discussion on the evidence. 30 min.</p> <p>Conclusions and proposed recommendations by SAGE Working Group. R AGGARWAL, SAGE member and WG chair. 10 min.</p> <p>Discussion on the recommendations. 30 min.</p>	<p>Present SAGE with updated evidence on single dose HPV vaccination schedule, and modelling of impact of HPV immunization schedules and strategies in the context of supply constraint.</p> <p>SAGE is requested to consider the following questions:</p> <ul style="list-style-type: none"> • What is the current HPV vaccine uptake and what are the main barriers for access to HPV vaccines? • What does current evidence show on the immunogenicity and efficacy of a single dose of HPV vaccine and different intervals between the first and second doses of HPV vaccine? And what are the risks of bias of these studies? • What are the potential demand scenarios and the supply of HPV vaccines (short and mid-term outlook) and what could the enhanced HPV vaccine supply allocation be? • In light of the above conclusions and evidence, how should HPV vaccine introduction be prioritized with respect to impact and feasibility? 	
16:00	End of the day		

Day 4: Thursday 7 April 2022

Time	Session	Purpose of session, target outcomes and questions for SAGE	Duration
10:00	Closed SAGE meeting	Preparation of the sessions of the day. Recap of day 3. Other important discussion items.	1h
11:00	Break	Break	15 min.
11:15	Polio – Session 7 Session overview by Ilesh Jani 5 min. Update from the Global Polio Eradication Initiative. A. O'LEARY, WHO. 10 min. Questions: 15 min. OPV Cessation Planning. O. MACH, WHO. 10 min. Questions: 10 min. Update on nOPV2: assessment of safety data and initial field efficacy evaluation. G. MACKLIN, A. BANDYOPADHYAY, WHO/BMGF. 15 min. Questions: 10 min. Report from SAGE Polio Working Group including remarks on OPV2 use in the European Region. I. JANI, SAGE Member. 10 min. Discussion: 20 min.	FOR RECOMMENDATION SAGE will be informed on the current status of the polio eradication program and of the implementation of the new polio eradication strategy. SAGE will be updated on the updated safety data, and initial field efficacy evaluation of nOPV2. SAGE will be asked to review and consider for endorsement: <ul style="list-style-type: none"> • WG's recommendation on initial planning for OPV cessation • WG's recommendation on literature review on use of OPV2 vaccines 	1h 45 min.
13:00	End of SAGE Plenary meeting		
13:00	Break	Break	30 min.
13:30	Closed SAGE session	Meeting wrap up.	2h
15:30	End of final closed meeting		

SESSION 1: GLOBAL AND REGIONAL REPORTS

EXECUTIVE SUMMARY	
1.0	Executive summary: Global and regional reports

BACKGROUND DOCUMENTS (essential)	
-	None

BACKGROUND DOCUMENTS (additional)	
1.1	21st meeting of the European Technical Advisory Group of Experts on Immunization (ETAGE). Nov. 2021
1.2	Twelfth meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group. Aug. 2021
1.3	Global Advisory Committee on Vaccine Safety, 17 September 2021
1.4	Main outcomes of the meeting of the WHO Expert Committee on Biological Standardization held from 18 to 22 October 2021
1.5	ECBS. Evaluation of the quality, safety and efficacy of messenger RNA vaccines for the prevention of infectious diseases: regulatory considerations. Oct. 2021
1.6	ECBS. Recommendations to assure the quality, safety and efficacy of live attenuated yellow fever vaccines. Amendment to Annex 5 of WHO Technical Report Series, No. 978. Oct. 2021

SESSION 2: IA2030

EXECUTIVE SUMMARY	
2.0	Executive Summary: IA2030

BACKGROUND DOCUMENTS (essential)	
2.1	Guiding Principles. <i>Document not yet available at the time of finalisation of the Yellow book. It will be shared separately when ready.</i>

BACKGROUND DOCUMENTS (additional)	
2.2	Leave no one behind: guidance for planning and implementing catch-up vaccination. Geneva: World Health Organization; 2021.
2.3	From Double Shock to Double Recovery : Implications and Options for Health Financing in the Time of COVID-19. Washington DC: World Bank; 2021.
2.4	Shet A, Carr K, Danovaro-Holliday MC, Sodha SV, Prosperi C, Wunderlich J, Wonodi C, Reynolds H, Mirza I, Gacic-Dobo M, O'Brien KL, Lindstrand A. Impact of the SARS-CoV-2 pandemic on routine immunisation services: evidence of disruption and recovery from 170 countries and territories. <i>The Lancet Global Health</i> . 2021: https://doi.org/10.1016/S2214-109X(21)00512-X .
2.5	Muhoza, P, Danovaro-Holliday MC, Diallo MS, Murphy P, Sodha SV, Requejo, JH, Wallace, AS. Routine Vaccination Coverage — Worldwide, 2020. <i>MMWR - Morbidity & Mortality Weekly Report</i> . 2021: 70(43):1495-1500.
2.6	Toh ZQ, Russell FM, Garland SM, Mulholland EK, Patton G, Licciardi PV. Human Papillomavirus Vaccination After COVID-19. <i>JNCI Cancer Spectrum</i> . 2021 Mar 2;5(2): pkab011.
2.7	WHO Table on Recommendations for Interrupted or Delayed Routine Immunization - Summary of WHO Position Papers

SESSION 3: HEPATITIS A

EXECUTIVE SUMMARY	
3.0	Executive Summary: Hepatitis A

BACKGROUND DOCUMENTS (essential)	
3.1	Background document for the SAGE April 2022 session on Hepatitis A vaccines
3.2	Annexes: Grade and ETR tables

BACKGROUND DOCUMENTS (additional)	
3.3	Hepatitis A childhood and adolescent vaccination: a systematic review of the effectiveness, immunogenicity, impact, safety and cost effectiveness of pediatric vaccines

SESSION 4: COVID-19 VACCINES

EXECUTIVE SUMMARY	
4.0	Executive Summary: Covid-19 vaccines

BACKGROUND DOCUMENTS (essential)	
4.1	-

BACKGROUND DOCUMENTS (additional)	
4.3	-

Please note that due to the rapidly evolving situation, the material for the Covid-19 vaccine session will be shared separately at short notice.

SESSION 5: TYPHOID

EXECUTIVE SUMMARY	
5.0	Executive Summary: Typhoid

BACKGROUND DOCUMENTS (essential)	
5.1	Background document: Typhoid update
5.2	Appendices

BACKGROUND DOCUMENTS (additional)	
-	

SESSION 6: HPV

EXECUTIVE SUMMARY	
6.0	Executive Summary: HPV

BACKGROUND DOCUMENTS (essential)	
6.1	HPV WG Report to SAGE, including Evidence to recommendation table as an annex

BACKGROUND DOCUMENTS (additional)	
6.2	Systematic review of one dose of HPV vaccine

SESSION 7: POLIO

EXECUTIVE SUMMARY	
7.0	Executive Summary: Polio

BACKGROUND DOCUMENTS (essential)	
7.1	Report from polio SAGE WG meeting
7.2	Report from the meeting of GACVS sub-committee on nOPV2 safety

BACKGROUND DOCUMENTS (additional)	
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