World Health Organization

Meeting of the Advisory Committee on Immunization and Vaccines-related Implementation Research (IVIR-AC)

Microsoft Teams
Geneva, Switzerland
13 to 16 February 2023

Agenda

Background reading materials available at:
SharePoint page - IVIR-AC Meeting - 13 to 16 February 2023

Chair: Walt Orenstein

13 February				
Duration	**Title**	**Content**	**Purpose**	**Proposed speaker**
12:00 - 12:05 5’	Opening of Meeting	• Update on global strategies and issues of relevance to WHO	For information	K O’Brien, Director, Department of Immunization, Vaccines and Biologicals
12:05 - 12:15 10’	Introduction/	• Administrative issues • Objectives of IVIR-AC meeting and outline of the 1st day		P Lambach W Orenstein, Chair

	Objectives of the meeting			
COVID-19 vaccine impact modelling				
12:15 - 12:25 10’	Background	• Priority questions of the WHO SAGE WG on COVID-19 vaccines currently include (a full list is provided in the background material) o Shifting vaccination priorities with high infection-derived immunity, o Cost-effectiveness of COVID-19 vaccines (compared to other vaccines) and o Impact of VoC (Variants of Concern) on vaccination priorities o How to include COVID-19 vaccines in routine immunization programmes • This session serves to discuss WHO-supported modelling efforts that have been made in follow-up to the last IVIR-AC meeting’s session on COVID-19 vaccine modelling • Three research groups have been funded and will present their progress and plans	For discussion	S Flasche, A Wilder-Smith, Y Sim,
12:25 - 12:45 20’	A flexible immunity model-based framework for evaluation of likely impacts of emerging variants and vaccines	• At this phase of the COVID-19 pandemic, population immune landscapes are becoming increasingly disparate in relation to recency of infection waves, predominant variant exposures and implementation (targeting, uptake, timing) of primary and booster vaccine programs. We use an agent-based model that tracks individual level immunity over time to simulate plausible scenarios in ‘older’ and ‘younger’ populations to assess the impact on disease burden and cost-effectiveness of a modest but plausible (~10% population coverage) booster vaccine program in relation to ‘early’ or ‘late’ emergence of a partial immune escape variant; • Given consistent age-dependency of severe disease risk, our outputs support elder-targeted strategies as most likely to be cost-effective (or		J McVernon

		even cost saving) across a broad range of uncertainties, although absolute benefits (and willingness to pay) vary by season and setting. Feedback from IVIR-AC is requested on the following questions: • We assume that even in populations with low primary vaccine uptake, elders will have been immunised first and are thus eligible for boosters. Are there specific primary vaccine approaches that should be explored in these age groups if primary uptake was low? • At present we vary coverage of the primary series between 20 and 80%, but fix booster uptake at around 10% of the total population (targeted variously to older or younger ages, or randomly). Is higher recurring coverage considered achievable or worth exploring? • We are presently preparing outputs to compare 6 monthly immunisation of 'high risk' with a single campaign delivered over 3 months. Are there other feasible implementation scenarios that should be considered?		

12:45-13:05
20'
	Prioritising vaccine deployment with high infection-derived immunity	• COVID-19 vaccination priorities are likely to change in settings with high infection-derived immunity compared to earlier in the pandemic; we are using mathematical modelling to investigate how vaccine deployment should be prioritised
		• Presentation of results from a global model of SARS-CoV-2 transmission and vaccination that are used to explore how vaccines should be prioritised now that there is a background of high infection-derived immunity
		• Feedback from IVIR-AC is requested on the following questions:
		  ○ Overall: How should vaccines be prioritised both locally and globally now that there has been a substantial amount of transmission (i.e. significant infection-derived immunity)?
		  ○ What are the current highest relevance questions that the model should be adapted to answer?
				R Thompson,
				S Moore
				I Bouros

		• Q&A (clarifications)		

13:05-13:25
20’
	Disentangling the impact of natural immunity and vaccination in a rapidly evolving pandemic	• Assess how immunological history (prior infection and/or vaccination) and ongoing evolution influences optimal vaccine policy based on severity of infection and mortality
		• Assess how immune imprinting (e.g., variant specific history) and specific cross reactions between COVID-19 serotypes influences optimal vaccine policy·
		• Feedback from IVIR-AC is requested on the following questions:
		  ○ What current policy questions could this model be adapted to answer?
		  ○ To what extent are country-specific simulations beneficial compared to more general models with sensitivity on key parameters (i.e., level of prior infection)?
		• Q&A (clarifications)
				A Kraay,
				P Martinez Vargas

13:25 – 13:45 20’	Q&A and Discussion	Expectations to IVIR-AC: • To provide feedback on each group’s work and their plans • To provide the SAGE Working Group on COVID-19 vaccines with key messages related to the priority questions		V Pitzer, S Silal, S Flasche
13:45-13:50	Break			
Dengue disease impact and cost-effectiveness: Optimizing public health impact				
13:50 – 14:00 10’	Rationale and Background	• Following completion of TAK003`s Phase 3 trials, this vaccine is currently undergoing evidence review in preparation of policy issuance in Q4 2023	For decision	A Wilder-Smith
14:00-14:15 15’	Technical presentation	Presentation: • Takeda dengue dynamic model structure & key modelling parameters		R Hanley, J Shen

		• Application of Takeda dengue dynamic model in Thailand - Disease impact of TAK003 & scenarios for optimal disease impact reduction		
14:15 – 14:35 20’	Q&A and Discussion	Questions to IVIR-AC: • Provide advice on the suitability and appropriateness of the cohort optimization approach for routine and routine + catch-up scenarios for maximum disease reduction • Provide feedback on dengue archetype analysis for maximum disease reduction and usefulness for WHO to help guide country /region specific programs		P Luz, J Wu, S Sillal
Dengue disease impact and cost-effectiveness: Benefit-risk assessments				
14:35 – 14:50	Information request from SAGE	Efficacy data and the negative efficacy data for serotypes 3 and 4. • Epidemiological understanding of the serotype specific burden and force of infection, as well as the disease severity pyramid for the different serotypes in primary and secondary infection • Interpreting the trial results • Scenarios	For information	A Wilder Smith
14:50 – 15:10	Q&A and Discussion	Questions to IVIR-AC 1. What are the estimates of population-level and individual-level benefit/risk over 10 and 20 years, stratified by age of recipient, serostatus of recipient and by average transmission intensity in a setting? Note: Transmission intensity is best quantified by average force of infection, though average seroprevalence in a specific age group (e.g. 11-year-olds) can be used as a proxy. A range of year-by-year serotype dominance scenarios should be examined, informed by surveillance data from a range of settings, as well as a range of vaccine efficacy (or lack of) by serotype and serostatus and serotype specific infectivity and disease severity.		P Luz, J Wu, S Sillal

		2. What is the cost-benefit of vaccination programmes without pre-vaccination screening, or by pre-vaccination screening dependent upon seroprevalence in a specific age group (e.g. pre-vaccination screening in low seroprevalence settings, and no pre-vaccination screening in high seroprevalence settings). 3. What is the threshold seroprevalence for pre-vaccination screening by when such an effort becomes either cost-effective or has the most favorable benefit-risk ratio.		
15:10 - 15:15 10’	Wrap up	• Summarize day’s findings and request any follow up from WHO Secretariat/IVIR-AC FPs for closed session	For information	W Orenstein, Chair

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14 February				
12:00 - 12:05 5’	Introduction	• Recap of previous day and objectives for the day	For information	W Orenstein, Chair
MNTE validation methods for assessments in conflict areas				
12:05 – 12:10 5’	Background	• Countries that have completed the implementation of their activities request WHO and UNICEF to independently verify elimination through the lot quality assurance-cluster sampling (LQA-CS) survey method • In the 12 countries that are yet to eliminate maternal and neonatal tetanus, the poorest performing districts are most likely to be those with conflicts and other access constraining factors. The existing LQA-CS survey method and tools do not take into consideration, community access related challenges. • A WHO-led MNTE Expert Group proposes to the IVIR-AC for decision on alternative options for validating MNTE in conflict affected areas in the 12 countries that are yet to eliminate MNT • Identifying the most appropriate option for validating MNTE in conflict areas will help refine elimination M&E and accelerate the global goal of eliminating MNT by 2025	For information	N Yusuf
12:10 – 12:25 15’	Technical presentation	• Description of MNTE validation methods for assessments in conflict areas developed by a MNTE Expert Working Group		F Gasse, M Deming

12:25 – 12:45
20’
	Q&A and Discussion	• IVIR-AC discusses presentation, clarifies on content and acknowledges main issues
		• Questions to IVIRAC:
		  • Do you consider the two options proposed by the MNTE Expert Group appropriate to address the challenges to MNTE assessment in conflict affected areas?
		  • Do you consider one of the proposed options more appropriate than the other?
				HH Farooqui,
				D Lyimo,
				W Orenstein

12:45-13:00	Tea break			
Estimating the value of vaccines in preventing antimicrobial resistance				
13:00 - 13:10 10’	Background	• Introduction to the WHO programme on the role of vaccines in reducing AMR ***Background reading materials****: see Sharepoint*	For decision	M Hasso-Agopsowicz
13:10 - 13:30 20’	Technical presentation 1	• The value of vaccines in reducing health burden associated with drug-resistant infections		K Abbas C Kim
13:30 - 13:50 20’	Technical presentation 2	• The value of vaccines in reducing antibiotic use		N Davies
13:50 - 14:20 20’	Technical presentation 3	• The value of vaccines in reducing economic burden associated with drug-resistant infections		N Naylor
14:20 - 14:50 30’	Q&A and discussion to inform IVIR-AC recommendations	• IVIR-AC discusses presentation, clarifies on content and acknowledges main issues Questions to IVIR-AC • Does IVIR-AC agree that the presented analyses are technically appropriate to inform prioritisation of development and use of vaccines in reducing AMR? • Does IVIR-AC agree with the draft recommendations to be included in the report on the value of vaccines in reducing AMR? • What are IVIR-AC's suggestions for ensuring that the value of vaccines in reducing AMR is systematically incorporated into policy decisions?		V Pitzer, HH Farooqui, P Luz, X Wang
14:50 - 15:00 10’	Wrap up	• Summarize day’s findings and request any follow up from WHO Secretariat/IVIR-AC FPs for closed session	For information	W Orenstein, Chair

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15 February				
12:00 - 12:05 5’	Introduction	• Recap of previous day and objectives for the day	For information	W Orenstein, Chair
Vaccine impact modelling				
12:05 - 12:15 10’	Background	• The Vaccine Impact Modelling Consortium (VIMC) is a multinational collaboration of many research groups funded by Gavi, the Vaccine Alliance, the Wellcome trust and the Bill & Melinda Gates Foundation (BMGF). • In collaboration with VIMC, WHO IVB generated IA2030 vaccine impact estimates in 2021 which have served as the Impact Goal Indicator 1.1 “Number of future deaths averted through immunization” as part of the IA2030 Monitoring & Evaluation framework. • WHO IVB is strengthening its collaboration with VIMC to address other key priority questions for the Immunization Agenda 2030. • Due to the complementary nature of ongoing work on vaccine impact modelling, we would like to present a combined session for vaccine impact modelling. This session will consist of a main presentation from VIMC and a short update from the IA2030 vaccine impact estimates project team.	For information	Y Sim

12:15 – 12:35
20’
	Vaccine Impact Modelling Consortium (VIMC)	• Three aims of VIMC analysis on impact of COVID-19 related disruptions for immunization are to model vaccine impact estimates (deaths, cases and DALYs averted) that show:
		  ○ Where the 2020-2021 disruption has left us
		  ○ What can be done to recoup losses in coverage
		  ○ What could be achieved if we met aspirational goals (with and without disruption)
		• ***Background reading materials****: see Sharepoint*
				K Gaythorpe

12:35-12:45 10’	IA2030 vaccine impact estimates	• WHO’s IA2030 vaccine impact estimates project team proposes a plan to generate estimates of future deaths averted through vaccination against Polio and Influenza from 2021-2030. • ***Background reading materials****: see Sharepoint*		A Carter

12:45-13:05
20’
	Q&A and Discussion	• IVIR-AC is asked to:
		  ○ (VIMC) Review and provide feedback on the final results from the analysis on the impact of COVID-19 disruptions for immunization particularly around communicating results
		  ○ (IA2030) Review updates on the proposed approaches to generating vaccine impact estimates on the incidence and health burden of Polio and influenza
		• IVIR-AC discusses presentation, clarifies on content and acknowledges main issues
				J Wu, P Luz, S Kim

13:05-13:15	Tea break			
Typhoid Conjugate Vaccine Micro Array Patches (TCV-MAP) FVVA				
13:15 - 13:20 5’	Background	• Overview of TCV-MAP FVVA - As part of the VIPS Alliance roadmap on vaccine MAPs, the TCV-MAP FVVA was initiated in 2022 to evaluate the potential broad socio-economic and public health impact of MAPs for TCV delivery from the perspective of countries (including LMICs), funders and industry • The FVVA will also inform potential future investments in the development of TCV-MAPs and be a model to develop a methodology that could be replicated for other vaccine product delivery innovations	For information	G Giersing
13:20 - 13:35 15’	Technical presentation TCV-MAP FVVA – Review of Quantitative Methodology	• Overview of quantitative analyses within the TCV-MAP FVVA • Presentation of equity analysis methodology and potential data sources		M Antillon

		Background reading materials: See SharePoint TCV-MAP FVVA background slides including overview of quantitative analyses		
13:35 - 13:55 20’	Q&A and Discussion	• Is the approach described sufficiently informative to assess the potential impact of TCV-MAPs on health equity? • Does this analysis address the issues the global health community is most interested in when assessing the potential equity impact of vaccine innovations? • Are there other data sources that could be leveraged to provide inputs for the analysis? • Are there similar analyses in the grey literature that could be shared to inform this analysis?		V Pitzer, D Lyimo, J Leask
13:55 - 14:05 10’	Wrap up	• Summarize day’s findings and request any follow up from WHO Secretariat/IVIR-AC FPs for closed session	For information	W Orenstein
14:05 - 14:10 05’	Closing of meeting	• Follow up to meeting and next steps	For information	P Lambach

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Closed session: IVIR-AC members only	
12:00 - 16:00	**IVIR-AC reporting/recommendations**