REPORT OF THE INDEPENDENT REVIEW COMMITTEE TO THE GAVI ALLIANCE ON THE REVIEW OF APPLICATIONS

29 November – 8 December 2023

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Nov 2023List of acronyms

CCE	Cold-chain equipment
CCEOP	Cold-chain equipment optimization platform
CHW	Community health worker
cIP	Comprehensive Improvement Plan(s)
COVID-19	Coronavirus disease 2019
CSO	Civil society organization
EAF	Equity Accelerator Fund
EPI	Expanded Programme on Immunization
EVM	Effective Vaccine Management
FCA	Fragile and conflict-affected
GTFCC	Global Taks Force on Cholera Control
HPV	Human Papillomavirus
HSS	Health Systems Strengthening
ILR	Ice-lined refrigerator
IPV2	Inactivate Polio Vaccine 2nd dose
IRC	Independent Review Committee
ITU	Innovation Top-up
KAP	Knowledge, Attitude, Practices
MAC	Multi-Age Cohort
MCV	Measles-containing vaccine
MICs	Middle-income country support
NITAG	National Immunization Technical Advisory Group
NVS	New and underused vaccine support
OCV	Oral Cholera vaccine
Ops	Operational support
PAMI	Priority area(s) for multi-sectoral interventions
PCCS	Post-campaign coverage survey
PCV	Pneumococcal conjugate vaccine
RI	Routine immunisation
RVV	Rotavirus vaccine
SAGE	Strategic Advisory Group of Experts on Immunization
SDD	Solar direct drive refrigerator
SIA	Supplementary Immunization Activity
SOP	Standard operating procedures
TOC	Theory of change
VIG	Vaccine introduction grant
WUENIC	WHO and UNICEF estimates of national immunization coverage

1. Executive Summary

The Gavi Independent Review Committee (IRC) met virtually from 29 November to 8 December 2023. A total of 20 countries from five World Health Organization (WHO) regions (12 from African Region, 4 from Eastern Mediterranean Region, 2 from European Region, 1 from South-East Asian, and 1 from Western Pacific Region) submitted 25 applications for Gavi support. There were 15 applications for new and underused vaccine support (i.e. 3 for HPV, 2 for Malaria vaccine, 2 for Oral Cholera Vaccine (OCV), 1 for Pneumococcal Conjugate Vaccine (PCV), 1 for Rotavirus vaccine (RVV), and 6 for Measles/Measles-Rubella (M/MR) support), 2 for Cold Chain Equipment Optimization Platform (CCEOP), 5 for Equity Accelerator Fund (EAF), 2 for middle-income countries support (MICs), and 1 for Innovation Top-up (ITU) support. Previously conducted remote reviews, finalized at the time of the meeting, were for 6 countries from 2 WHO regions (5 from African and 1 from Eastern Mediterranean Region) and included 3 full-portfolio planning applications with a total of 11 funding requests, 1 IPV2 introduction grant request, and 2 cholera diagnostics support requests. Detail on requests from countries and review outcomes are presented below (Tables 1a, 1b, 1c, 1d, and 1e).

A total of 25 IRC members with a wide range of expertise, organized in 4 small review groups, participated in the meeting (see Annex 1 for list of members). Four cross-cutting IRC reviewers conducted financial and budget reviews of NVS applications excluding malaria, and EAF requests excluding 2 core standard country requests, while three cross-cutters reviewed supply chain, logistics, and waste management for NVS applications excluding malaria. Across the small review groups the IRC focussed on the following specific tasks: a) individual review of assigned funding requests and supporting documentation which included virtual meetings with country EPI managers, country teams and core technical partners for select applications (i.e. M/MR, OCV, EAF and ITU requests); b) production of country-specific review reports with accompanying recommendations provided to the Secretariat; and c) joint development of a thematic report per small review and cross-cutter groups with recommendations to Gavi and Alliance partners for improvement of funding requests, strengthening of national immunization programmes, and processes related to Gavi policies and governance. During this meeting, Gavi Secretariat piloted some overall structure and process changes, and specific review process changes for M/MR applications. Review modalities included an independent desk review of each application by the designated reviewers, clarification of identified IRC concerns by email or in virtual meetings, and focused discussion within small review groups working in parallel, without full committee engagement or further plenary discussion.

Results

Of a total of 39 funding requests, IRC reviewers recommended only 3 for re-review (i.e. Mozambique OCV, Benin HPV, and Rwanda EAF requests), and of 36 applications recommended for approval, 3 were partial/adjusted approvals (i.e. reduction of requested age range for MR campaign down to 9-59 months for Mozambique and Zambia applications, and approval of a measles follow-up campaign instead of the requested MR introduction with catch-up for Guinea Bissau).

2. Review methods and processes

Methods

Gavi Secretariat introduced some modifications to the meeting structure with objectives to focus the review group discussions and to increase the engagement with country teams, in order to achieve better understanding of IRC recommendations and subsequent follow up.

The meeting agenda, the initial allocation of countries for review, and the country applications with supporting documentation were shared on 17 November 2023, after which the independent reviews by the IRC members could commence. Four small review groups with assigned Chairs were established: Group 1 for review of HPV, OCV, Malaria, Rota and PCV support requests chaired by the IRC Vice Chair Dr Benjamin Nkowane, Group 2 for review of M/MR applications chaired by the IRC Chair Professor Rose Leke, Group 3 for MICs and CCEOP, and Group 4 for EAF and ITU, both chaired by Dr Bolanle Oyeledun.

A number of process and technical briefings and updates were provided to the IRC reviewers: a briefing on changes of IRC processes on 20 November 2023, technical briefings on CSO and local partner engagement, Rotavirus vaccine and PCV, malaria vaccine, and HPV vaccine on 21 November 2023, and finally M/MR, OCV and cholera diagnostics updates on 27 November 2023.

All planned exchanges between IRC reviewers and country teams took place with the support of the FD&R team. For M/MR applications it included a prepared dialogue between country EPI teams and the IRC. IRC reviewers provided their questions in writing to the Secretariat which then shared the questions with the respective countries. This served as a basis for preparation of discussions which took place on 28-29 November 2023. In addition, the countries provided responses in writing which facilitated their consideration and inclusion in the IRC review. IRC commends the continued efforts of the Secretariat to support and further improve the process of this important exchange.

Small review group meetings took place in parallel over a period from 28 November to 6 December 2023. The reviewers were focusing only on applications assigned to their group and following the prescribed group discussion format with stricter time keeping supported by the Secretariat. This modification aimed to ensure higher attention to issues requiring additional peer input and adherence to time schedule. All issues requiring resolutions were solved within the small review group, without full committee engagement. Recommendations for one application (i.e. Guinea Bissau request for MR catch-up campaign and rubella introduction, initially reviewed on 1 December 2023) were re-discussed by the IRC in a short, closed session on 6 December 2023 to review current technical and Gavi guidelines and ensure internal consistency of IRC recommendations.

Review process

Each country proposal was reviewed independently by a primary and a secondary reviewer, each preparing an individual report for their designated application. One financial reviewer and one reviewer specialized in vaccine supply chain and waste management conducted a review of relevant cross-cutting issues in each application where this was required. Gavi did not require an in-depth finance review for any malaria vaccine support requests or for 2 EAF applications of countries categorized as core standard countries. The country reports were individually presented and recommendations discussed within each small review

group. The Gavi Secretariat and Alliance partners provided information and clarifications on country-specific issues and context as needed. For each application, action points, issues to be addressed, and recommendations of either approval or re-review were agreed based on the consensus reached within the small review group. The primary reviewers consolidated their reports with those from secondary and cross-cutting reviewers in line with discussion outcomes, including decisions and recommendations. Reports were finalized after editing, fact and consistency checks, and quality review.

For this review meeting, the structure of the M/MR review template and reporting process were revised by the Secretariat. The overview of the proposal (i.e. strengths, weaknesses, risks, mitigating strategies, lessons learned, comments for consideration) was moved to the beginning of the report to provide an overall perspective. For specific detailed findings there is a pre-determined guardrail type (i.e. critical, moderately critical, not critical) and a proposed selection of findings' categorization (i.e. meets criteria, partially meets criteria, does not meet criteria, more information required, exemption provided), which can guide the recommendation decision while ensuring review efficiency. These changes were designed to facilitate more focused discussion, targeting identified complex aspects of the application to allow for understanding, agreement, and clearly formulated and actionable recommendations.

Reviews of FPP proposals started before the IRC meeting and were conducted independently from the small group review streams. While the individual country reports and recommendations were not presented to the full IRC, the issues identified by reviewers for each proposal were summarized and included in the debriefing presentation.

Criteria for review

Review of the applications was guided by IRC Terms of Reference and key criteria in line with Gavi's mission. This did not change from recent review windows, and includes meeting application requirements and principles of Gavi support, along with contribution to achieving Gavi mission and strategy: justification for the proposed activities, soundness of approach, country readiness, feasibility of plans, contribution to systems strengthening, programmatic and financial sustainability, value for money, and public health benefits of the investment. The IRC continues to strictly adhere to the guidelines to ensure the integrity, consistency and transparency of funding decisions. In addition, IRC continues to assess the extent to which countries focus on identifying and vaccinating zero-dose children in their applications and how resources will support this.

Decisions

There were two decision categories: 1) recommendation for approval with action points to address the identified issues, and 2) recommendation for re-review with outstanding issues and action points to be addressed by country during revision of application, prior to a new submission to the IRC.

Key review outcomes

The main outcomes per country application are summarized according to the small review groups in Tables 1a, 1b, 1c, and 1d. Table 1e includes outcomes of remote reviews initiated prior to the meeting and finalized outside of small group work. In total, IRC reviewers recommended for approval 36 of 39 applications, which includes 3 applications recommended for partial/adjusted approval. IRC notes with

pleasure continued improvement of the quality of proposals and commends the efforts of countries and Gavi Secretariat and Alliance support.

Table 1a: Country category, request, and review outcome of IRC Group 1 (HPV, Malaria, OCV, PCV, Rota)

Country segment	Country	Support request	Recommendation outcome
Core priority	Cote d'Ivoire	Malaria	Approval
Core standard	Tajikistan	HPV	Approval
Core priority	Mozambique	OCV	Re-review
Core priority	Bangladesh	OCV	Approval
Core priority	Guinea	Malaria	Approval
Core standard	Burundi	HPV	Approval
Fragile and conflict	Chad	PCV, RVV	Approval
Core standard	Benin	HPV	Re-review

Table 1b: Country category, request, and review outcome of IRC Group 2 (M/MR)

Country segment	Country	Support request	Recommendation outcome
Core priority	Guinea Bissau	MR 1st and 2nd dose with catch-up campaign	Approval for Measles follow-up SIA (9-59 months)
Core standard	Kyrgyzstan	MR follow-up campaign 9-84 months	Approval
Core priority	Guinea	Measles follow-up campaign 9-59 months	Approval
Core priority	Zambia	MR follow-up campaign 9-108 months	Approval (age-range 9-59 months)
Core priority	Mozambique	MR follow-up additional doses with extended age range up to 9 years	Approval for additional doses (9-59 months)
High impact	Nigeria	Measles follow-up campaign 9-59 months	Approval

Table 1c: Country category, request, and review outcome of IRC Group 3 (MICs and CCEOP)

Country segment	Country	Support request	Recommendation outcome
Fragile and conflict	Benin	CCEOP	Approval
MICs	Vietnam	MICs (TI)	Approval
MICs	Iran	MICs (VC: Rota, PCV)	Approval

Fragile and conflict	CAR	CCEOP	Approval

Table 1d: Country category, request, and review outcome of IRC Group 4 (EAF and ITU)

Country segment	Country	Support request	Recommendation outcome
Fragile and conflict	Afghanistan	EAF	Approval
Core standard	Lesotho	EAF	Approval
Fragile and conflict	Sudan	EAF	Approval
Fragile and conflict	Yemen	EAF, ITU	Approval
Core standard	Rwanda	EAF	Re-review

Table 1e: Remote review outcomes

Application type	Country	Support request	Recommendation outcome
FPP	Mauritania	HSS, EAF, TCA, CCEOP	Approval
FPP	Cameroun	HSS, EAF	Approval
FPP	Somalia	HSS, EAF, PCV, Rota, CCEOP	Approval
Switch	Zambia	IPV2	Approval
Cholera diagnostics	Uganda	Cholera diagnostics	Approval
Cholera diagnostics	Nigeria	Cholera diagnostics	Approval

Gavi Senior Management, Secretariat, and Alliance partners debriefing and closing session

The debriefing of the Gavi and Alliance partners was held on 8 December 2023. The IRC Chair, Prof. Rose Leke provided the summary of the meeting organization and key recommendation outcomes. Focal points for various thematic areas presented important issues observed, and respective recommendations. The thematic areas included HPV, Measles/Rubella, Malaria, Rota, PCV and OCV, Gender, MICs, ITU, Fragility, Supply chain and waste management, and budget and sustainability. The topics and issues for these thematic areas were limited to each respective small working group. The presentation was followed by comments, questions, and responses, contributing to a rich discussion of IRC, Gavi management, Secretariat, and technical partner representatives. Some comments made by technical partners who, expressing a disagreement with one IRC recommendation overstepped boundaries of respectful communication among peers, and posed a concern, as they imply undue and unwarranted pressure and intimidation of the committee. However, IRC remains consistent in fulfilling its mandate in the best interest of countries and Gavi, and welcomes the announced efforts of the Secretariat for closer collaboration with technical partners.

3. Key Findings and Recommendations

Group 1: New and underused vaccine support (NVS) and campaigns – HPV, Malaria, Rota and PCV, OCV

HPV applications

Three countries submitted applications for HPV introduction support, Benin, Burundi and Tajikistan. Good practice observed by the reviewers relates to countries generally considering the critical importance of broad community engagement, given the potentially sensitive nature of HPV vaccination and cervical cancer.

Issue 01: Missed-dose monitoring, critical for single dose HPV schedules, and relevant COVID-19 experience are insufficiently described in applications.

Countries made good use of lessons learned from prior HPV demonstration projects, but not from COVID-19 vaccine experiences that might also be relevant. These relate to experience in organizing campaigns and reaching older age groups like young adolescents. Reviewers noted that there may be insufficient attention to monitoring mechanisms to ensure girls missed in multi-age cohort (MAC) campaigns are followed up or get a second opportunity for vaccination. This was not sufficiently described in applications and is critical, particularly for single-dose schedules.

Recommendation:

- Gavi to consider (re)emphasizing the importance of monitoring missed girls and including relevant lessons learned from COVID-19 vaccination in HPV applications.

Issue 02: Countries do not explicitly consider HPV vaccine supply availability in scheduling national launches.

With regard to national-level mitigation for ongoing global supply constraints, reviewers were unclear as to whether there was insufficient communication between Gavi and countries about these constraints or whether applicant countries were aware but not considering and addressing global constraints in planning. Timing of vaccine supply remains a problem for HPV at least for this round, and was not explicitly considered by any of the applicants in scheduling national launches.

Recommendation:

- Gavi to keep HPV funding applicants updated on global vaccine supply expectations and ensure vaccine supply considerations in scheduling national launches.

Malaria applications

There were two applications for Malaria RTS,S vaccine introduction support: from Guinea and from Côte d'Ivoire. Funds requested amounted to about US$340,000. Both applications were approved, and some specific issues were observed.

Issue 03: Potential operational challenges not adequately considered in planning

Introduction of the Malaria vaccine involves multiple and often additional immunization sessions beyond the established visits per national schedules. However, countries that applied for the malaria vaccine

introduction have not adequately considered some potential operational challenges associated with these new vaccination sessions. Notably, insufficient attention has been given to issues such as impact on staff workload and requirement for multiple visits to healthcare facilities. Failing to consider and adequately address these challenges could pose a threat to adherence to the recommended four doses and may have a negative effect on access to routine immunization. Additionally, it might contribute to an increase in parental reluctance towards vaccination.

Recommendation:

- Gavi and partners to encourage countries to provide considered strategies to mitigate the operational challenges of malaria vaccine introduction in the proposal.

Issue 04: Insufficient collaboration on communication strategy between EPI and Malaria programmes

Due to the high prevalence and mortality rates associated with malaria in applicant countries, there is considerable anticipation for high demand for the malaria vaccine in these countries. Strengthening communication strategy surrounding malaria vaccination has the potential to capitalize on community interest in the Malaria vaccine. This, in turn, can strengthen routine immunization programs and bolster the uptake of existing malaria preventive measures. Unfortunately, in both applications there was a lack of evidence of collaboration between the Malaria and Expanded Program on Immunization (EPI) programs on communication strategy, missing an opportunity to synergize efforts in this crucial area.

Recommendation:

- Gavi and partners to encourage collaboration across Malaria and EPI programs in all areas covered by the work plan, including a joint communication strategy for malaria vaccine introduction.

Issue 05: RTS,S coverage targets inconsistent with routine immunization performance

Coverage targets set for malaria vaccination are ambitious and seldom consistent with country DTP3 and MCV1 coverage. In the example of Guinea, the vaccine coverage estimated for all malaria vaccine doses in 2024 and 2025 is 60%, with no drop-out anticipated. However, DTP3 coverage (WUENIC) has been at 47% since 2015, and 13% DTP3/MCV1 drop-out and 17% MCV1/MCV2 drop-out is reported. While referring to this data, the application does not align with it or offer a rationale for this expectation to perform better with the malaria vaccine. In the current context, it does not appear realistic to assume no dropouts between the RTS.S doses and across two years for which the support is requested.

Recommendation:

- Gavi and partners to continue encouraging countries to triangulate best available country data in defining realistic coverage targets.

PCV and Rota, and OCV applications

There was one application for rotavirus vaccine and PCV introduction support from Chad, and two applications for OCV campaigns from Mozambique and Bangladesh. The applications from Chad and

Bangladesh were approved, but for Mozambique a re-review of outstanding issues was requested. The following issues were observed.

Issue 06: Lack of integration of plans for PCV and rotavirus vaccines with programs for the prevention and control of diarrhoea and pneumonia.

Chad's requests for Gavi support for PCV and rotavirus vaccine introduction were presented separately (i.e. as two applications), and not as a part of an integrated programme. PCV and rotavirus vaccination should be considered as one component of prevention and control programs respectively for diarrhoea and pneumonia among children under five years of age. Countries should integrate the planning, delivery, and monitoring of PCV and rotavirus vaccination, cross-linking them with existing maternal and child-health programmes.

Recommendation:

- Gavi to encourage countries applying for the introduction of rotavirus vaccine, pneumococcal conjugate vaccine, or both, to have an integrated plan for prevention and control of diarrhoea and pneumonia among children under 5 years of age and present this as part of their application.

Issue 07: High demand for OCV with an over-emphasis on reactive OCV campaigns likely to outstrip global supply of vaccine.

The high demand for OCV continues to outstrip global supply. This is due to the resurgence of cholera in many countries while only limited improvements in safe water and sanitation have been documented in high cholera burden areas. The access to the OCV stockpile is managed through two mechanisms and two different institutions for reactive or preventive use, both with Gavi support, with no effective coordination mechanism between the two channels. This results in an incentive for countries to use the easiest mechanism, i.e. emergency reactive campaigns. By achieving better coordination between the two approaches to vaccine use, allocation can be better tailored to reduce the cholera burden. However, reactive campaigns are known to often have lower coverage than preventive campaigns, they currently only provide a single dose with shorter protection duration, and often arrive well after the acute high-risk period. Preventive campaigns have a better impact and allow for better demand forecasting and healthier vaccine market dynamics. The current situation puts country trust in OCV and overall market shaping at stake and poses a threat to staying on course for the 2030 Roadmap to End Cholera.

Recommendations:

- Gavi and partners to urgently establish better coordination between stockpile mechanisms and overall agreement for allocation of OCV.
- Gavi and partners to further develop support from the Global Task Force on Cholera Control (GTFCC)/Country Support Platform to assist countries to develop national Cholera Control and multi-year vaccination plans.
- Gavi to encourage GTFCC and WHO to provide clear guidance for countries on how to balance reactive and preventive use of OCV, both in times of short vaccine supply and beyond.

Issue 08: Difficulties in selecting geographic targets for OCV

Guidance on selection of priority areas for multi-sectoral interventions (PAMI) relies on epidemiologic indicators (e.g. incidence of disease and death and persistence) but also has many subjective elements, which can lead to sub-optimal ad hoc classification. While epidemiologic data may be impacted by weak surveillance systems and limited diagnostic capacity, new rapid diagnostic test support and GTFCC surveillance recommendations may help improve this in the future.

Recommendation:

· Gavi and partners to provide technical assistance to countries to ensure that PAMI selection, and especially those targeted for preventive vaccination, appropriately matches cholera risk.

Issue 09: Lack of guidance on how to use OCV beyond single campaign

IRC reviewers note that currently there are no clear recommendations from WHO Strategic Advisory Group of Experts on Immunization (SAGE) on how frequently to revaccinate with OCV, and what to do after single-dose reactive campaigns to ensure longer term protection. There is also a lack of clarity whether countries should plan for re-vaccination in a single application.

Recommendations:

- Gavi Alliance partners (WHO SAGE and GTFCC) to re-review evidence and issue clearer guidance on re-vaccination with OCV.
- Gavi to clarify to countries on whether re-vaccination in a single application is acceptable.

Group 2: New and underused vaccine support (NVS) and campaigns – Measles and Rubella vaccines

The IRC Group 2 reviewed applications for MCV support: two applications for measles follow-up campaigns, from Nigeria and Guinea; one application for measles and rubella catch-up campaign with rubella introduction from Guinea Bissau; and three applications for MR follow-up campaigns from Kyrgyzstan, Zambia and Mozambique. Funds requested amounted to about US$ 23 million. Three applications from Kyrgyzstan, Nigeria and Guinea were approved as requested. Three remaining applications were approved with amendments as follows: requests for a wider age-range MR follow-up campaign for Zambia (9 months to 10 years) and Mozambique (9 months to 9 years) were approved for the standard follow-up age range (9 to 59 months), and for Guinea Bissau instead of the requested MR catch-up campaign with rubella introduction, a standard measles follow-up campaign (9 to 59 months) was recommended and approved. While countries continue to improve their analyses of measles epidemiology using subnational data and, increasingly so, data from outbreaks, the need for a clear methodology for analysis of zero-dose children persists along with the need to reach previously unreached children with appropriate differentiated strategies. Other issues were also observed as follows.

Issue 10: Current timelines from application to grant disbursement and logistics for vaccine availability in-country do not allow for timely preventive measles SIAs.

While measles outbreak definitions vary among countries and, keeping in mind uncertainties associated with reporting from country surveillance systems, WHO reports a worrying increasing trend of reported measles cases. By the end of August 2023, the provisional number of measles cases reported to WHO had surpassed the total number reported by that month in 2022. In this context and with persisting sub-optimal MCV coverage despite commitment to routine immunization strengthening, high-quality preventive campaigns remain of utmost importance to avoid large and disruptive measles outbreaks. IRC is well aware of the need and importance to conduct campaigns in a timely manner, however, a closer look at even a high-level timeline of the Gavi application-to-disbursement process provides concern as it cannot accommodate for timely preparation and implementation of preventive MCV campaigns, although the time needed for IRC review takes up to only 5% of that time. Currently, the time required from country application preparation to IRC approval, Gavi disbursement of funds, and arrival of vaccines in the country could surpass 2 years. Considering that WHO recommended frequency of campaigns is between 2 and 4 years for countries with <80% MCV coverage as most at risk for large measles outbreaks, along with the time needed for the planning and preparation of campaigns in country, it is not possible to achieve the necessary timeliness of preventive campaign implementation and to avoid outbreaks. At the same time, there are no funding opportunities or rapid response funds for preventive SIAs during an outbreak.

Recommendations:

- Gavi and partners to consider alternative mechanisms of providing vaccines in countries to expedite campaign implementation as quickly as possible (e.g. stockpiling option).
- Gavi and technical partners to consider developing a rapid response fund for preventive SIAs that enables expedited disbursement for countries at risk of imminent outbreaks.

Issue 11: NITAG often not sufficiently involved throughout the application process to ensure technical relevance

The IRC has repeatedly emphasized the importance of NITAGs and has generally observed better quality applications in rounds in which the documentation proving NITAG engagement with application development was provided. However, NITAG do not always appear to have been adequately consulted or involved in proposal development and endorsement, and IRC is concerned that the local independent knowledge present in countries is not being used to best advantage. For example, in Zambia application, in which wide age-range for follow-up campaign was requested, there were no NITAG meeting minutes or record of technical review and discussion, only an undated recommendation note was provided. Similarly, Mozambique mentions in its plan of action that the NITAG was consulted about the age-range extension for the MCV follow-up campaign, but provided no evidence to support that claim. The IRC reiterates that the NITAG engagement is particularly important for more complex decisions, e.g. on expanded age groups for measles SIAs or introduction of new vaccines into routine immunization programme. In addition, NITAG can help situate programme requests in the context of the country's overall national immunization strategy.

Recommendations:

- Gavi to request NITAG endorsement for all MCV SIA applications from countries where NITAGs are established and functional.

• Gavi to reinforce the requirement for NITAG endorsement of all new vaccine introduction applications, to help ensure technical and programmatic relevance within overall national immunization strategy, and country-level buy-in.

Issue 12: Limited accountability for implementing proposed activities to strengthen routine immunization during campaign preparation and implementation.

Most countries do not provide an accountability framework for activities included in their plans of action, as this has not been a Gavi requirement for SIA support requests. A commendable example in this round is that of Nigeria which has provided a clear accountability framework per SIA thematic areas. However, the area of routine immunization strengthening does not make part of the proposed accountability framework although the RI strengthening activities are included in the plan, which will ultimately make it unclear if the proposed activities will be adequately implemented.

Recommendation:

• Gavi to require countries to include an accountability framework in their SIA plans of action including routine immunization strengthening alongside other SIA critical activities.

Issue 13: Missed opportunities to capture data stratified by previous RI doses during campaigns

The IRC has repeatedly emphasized that MCV SIAs will have the greatest impact if they are able to reach those children not previously reached through routine immunization services. Although recommendation and technical guidance for recording SIA vaccinations stratified by prior routine immunization dose exists, it is proposed as optional given the potential impact on resource requirements (i.e. time, personnel, recording materials, budget). Among the country applicants in this round, Nigeria plans to record SIA doses administered to children who were previously missed by the routine programme. While there is no doubt that the country would benefit from recording previous measles doses received in RI, it has not specifically considered that collecting this data during the campaign is intensive in terms of planning, preparation, and operationalization.

Recommendations:

• Gavi and technical partners to support countries to include data on previous measles doses received though RI in post-campaign coverage surveys, and to make the analysis of these data mandatory.

• Gavi and partners to encourage and support countries to evaluate the feasibility of checking and recording prior measles doses during campaigns.

Group 3: MICs and CCEOP applications

Middle-income country support (MICs)

Issue 14: Some countries with limited or no previous engagement with Gavi may insufficiently articulate key expected elements in MICs applications.

Iran was a new review of a never-eligible country requesting US$ 14,053,896 in one-time vaccine catalytic funding to introduce pneumococcal conjugate and rotavirus vaccines into routine, to allow time for national vaccine production to be put into place. Weaknesses included limited consideration of gender equity, limited consideration of un/under-immunised children who were not Afghan refugees, and no explicit engagement of civil society in vaccination governance and planning. While the Iran proposal was generally of a very good standard, it is worth noting that geopolitical issues beyond its control (e.g. US sanction regime) will challenge operationalisation and sustainability.

Recommendation:

- Gavi to further clarify expectations for MICs applications in terms of engagement with gender, civil society, and partners including good practice examples and TA suggestions as appropriate.

Issue 15: Specific elaboration of partner capacities including initial mapping of priority activities and geographies required in applications for targeted intervention (TI) support, may be insufficiently articulated by applicants.

Vietnam, a formerly-eligible country, applied for MICs in the amount of US$6,434,082 over a 2-year period. As Vietnam seeks to build a resilient and sustainable health system, one objective focuses on securing vaccines and operational costs for the national immunisation programme, including planning, vaccine management, and dissemination of grant implementation lessons. Vietnam presented capability statements of implementation partners but overlooked linking technical partners to activities to address vaccination back-sliding and un/under-immunised children. Equity and gender issues were not described and consequently no gender responsive strategies were included. Implementation partner accountability was not discussed and no national partners or CSOs were included.

Recommendation:

- Gavi to consider requesting MICs TI applicants to elaborate on how partner capabilities link to specific interventions and activities and to map out implementers against prioritised geographies to ensure complementarity and programme efficiency.

CCEOP

Issue 16: Countries tend to plan their CCE procurement from other sources without following their comprehensive plans nor engaging with Gavi and all Alliance technical partners on exact CCE requests based on actual demand (needs), specific health facilities locations, and available electrical infrastructure.

There were 3 CCEOP applications from Somalia, Benin, and CAR. All were approved. The IRC noted Benin's good practices in cold chain logistics, decommissioning, and updated and budgeted rehabilitation plans. In contrast, CAR, being a fragile and conflict country but with multiple CCE procurement streams, still needs coordinated support from Gavi and partners to ensure that all procurement plans of cold-chain equipment (CCE) are discussed to avoid fragmentation, asymmetric information, and purchase of

inadequate CCE (i.e. solar versus electric). Solar CCE should be strongly recommended for countries with limited or unstable grids.

Recommendations:

- Gavi and partners to support fragile and conflict countries with multiple CCE procurement streams to coordinate CCE demand/supply planning, procurement, and delivery, according to updated operational deployment plans (ODPs).
- Gavi and partners to consider prioritizing solar CCE (e.g. SDDs) instead of ILRs in fragile and conflict countries with unstable electrical grids and fragile electric infrastructure.

Group 4: Equity Accelerator Fund (EAF) and Innovation Top-Up applications

EAF applications: fragility issues and supportive strategies in fragile and conflict-affected countries

Of five countries applying for EAF, three are categorized as fragile and conflict-affected (i.e. Afghanistan, Sudan, Yemen) and all were recommended for approval. The issues below refer to these three countries, and do not necessarily apply to other countries from the same F&C segment which applied for different support and were reviewed in other groups.

Issue 17: Fragile and conflict-affected (FCA) countries lack updated guidelines to include humanitarian emergency response, accountability and integration follow-through, and data security risk management.

FCA countries included minimal consideration of health-seeking behaviours during humanitarian crises in their demand generation and community engagement plans (e.g. Afghanistan, Yemen). For example, available in-country information - including from Afghanistan's KAP study - were not used to describe gender barriers or in designing strategies to promote healthcare-seeking behaviour. Accountability and integration of interventions between programmes (e.g. polio, nutrition) are mentioned but with limited activities reflecting them. Countries expressed challenges with data quality, including lack of human resources to collect data and need for capacity development.

Increasing use of technology (e.g. AI-assisted supervision, DHIS2 advancement in Yemen and Afghanistan) may help in accessing remote and insecure areas. While commendable, data safety and security as well as country ownership of software licenses should be considered.

Sudan's EAF application was completed before the conflict, and its status-change highlights the importance of flexibility within Gavi guidance on risk appetite and FCA countries to accommodate these rapid changes (e.g. highly fluid, low absorption capacity, displaced health workers, limited implementation).

Recommendations:

- Gavi to consider developing a data safety and security framework that helps ensure applicant countries protect their service providers and users, and to encourage countries to invest in software licenses that are affordable and domiciled within government control.

• Gavi to consider working with technical partners to establish rapid notification and response mechanisms for FCA countries that can update the activities that are feasible in given geographic areas and expand guidelines to include humanitarian principles and health staff security.

ITU applications

Issue 18: A broad interpretation of current innovation top-up definition leading to proposed investments that are not considered innovative

Yemen was the only country applying for an Innovation Top Up (ITU) grant of US$ 1,600,000 to procure air incinerators for waste management, departing from burn and bury waste management practices. While potentially useful, this is not innovative as it simply proposes purchasing standard fit-for-purpose equipment. Procurement included PPE, indicating that for this equipment to be operational, the country will depend on Gavi providing operational costs.

While the ITU guidelines are broad, with innovation defined by Gavi as the 'use of practices, products or services that help accelerate countries' progress in leaving no one behind with immunization', countries tend to interpret this even more broadly. In Yemen, ITU funding was interpreted as such to procure technology rather than to make innovative interventions in terms of social, system or process innovations using these resources.

Recommendations:

• Gavi to consider defining innovation more explicitly in terms of the approaches or activities that are considered innovative, providing illustrative examples and good practices, and ensuring that Gavi ITU funds are used catalytically.
• Gavi to request from countries to submit proof of concept to determine how the innovation will be scaled up or how the innovation will impact the health system.

Cross-cutting topic: Gender issues

Issue 19: While most applications mention gender-related barriers, gender analysis remains insufficiently used in applications, in translating existing country information on gender into evidenced gender responsive or transformative strategies.

Identifying and analysing gender-related issues, especially barriers to immunisation, is important for developing gender responsive or transformative strategies. The following findings relate to EAF, MICs and Malaria applications.

Several countries (e.g. Afghanistan, Lesotho, Yemen, Sudan, Rwanda) mentioned gender disparities or gender-related barriers in applications, but this was not used to develop gender responsive or transformative interventions. Some countries applying for MICs and Malaria (e.g. Guinea, Ivory Coast) did not consider gender barriers of sufficient importance to be included in applications. Yemen and Lesotho

mentioned gender-based violence as a barrier, but no related strategies were included. Rwanda and Sudan cited their national gender-related policies, but did not apply them in the design of activities to ease cultural barriers to vaccination (e.g. increasing female health staff or inclusion of female community health workers) .

Most countries did not use gender analyses to develop relevant strategies or interventions in submitted workplans or budgets. It appears that most applicants make limited use of existing in-country gender research to strengthen their applications.

Recommendations:

- Gavi and partners to ensure countries include gender responsive or transformative interventions in all proposals, based on available evidence, and include them in workplan and budget.
- Gavi and partners to provide examples of how to develop gender responsive or gender transformative strategies and interventions to strengthen immunisation.
- Gavi and partners to encourage countries to promote female health staff and women CHWs to improve access to health service and empower women.

Cross-cutting topic: Cold chain readiness, preparedness, and waste management

Limited to applications reviewed in Groups 1 and 2 (NVS and campaigns), there is a notable improvement in supply chain and waste management readiness.

Issue 20: Countries still lack comprehensive improvement plans and time-bound corrective actions following EVM assessments.

All countries provided updated EVM assessment records, yet, as a recurring issue, comprehensive improvement plans (cIP) for some countries (Mozambique, Kyrgyzstan) still lacked specific timelines for corrective and preventive actions. In general, all the reviewed countries had sufficient storage capacity. Benin exhibits commendable practice as the government put together an excellent decommissioning plan of CCE accompanied with a detailed budget. Some coordination gaps in CCE planning with Gavi Alliance partners (CAR, Mozambique) were noted, however, the countries were encouraged to improve information sharing and regular coordination about CCE needs, along with operational deployment plans. Another recurrent challenge is the need for more Human Resources for Supply Chain (HR4SC), especially in the CAR, where partners agreed to bridge the gap by conducting tailored training in supply chain management.

Recommendations:

- Gavi and partners to support countries and ensure that timely development and update of comprehensive improvement plans (cIPs) are submitted to Gavi on time and with time-specific corrective actions.

Issue 21: Lack of waste management standard operating procedures (SOP) and updated national waste management policies

Immunisation activities continue to increase the volume of immunisation waste and ensuring that countries have acceptable waste management procedures remains essential. Nevertheless, some countries need adequate waste management systems and still lack waste management Standard Operating Procedures (SOPs). This is the case in Somalia, CAR and Mozambique. Benin again provided an excellent example of an integrated compendium of waste management SOPs covering the entire health sector, including immunisation.

Recommendations:

- Gavi and partners to support countries in establishing and updating their national waste management policies and SOPs in alignment with WHO recommendations, and in ensuring updated rosters of available incinerators and their operational status.

Cross-cutting topic: Budget, financial management and sustainability

Overview and quality of budget information

Financial crosscutters reviewed fifteen applications from 14 countries with a total budget of US$ 149,305,743 out of which Gavi funding accounted for US$ 140,053,606 (94%), Government funding for US$ 1,720,649.59 (1%), Technical Partners funding for US$ 5,310,319 (4%) and other funding for US$ 2,221.168.28 (1%). These applications consisted of two OCV, three HPV, one PCV, three EAF and six M/MR applications and were reviewed in groups 1, 2 and 4. The figures below show the percentages of overall budget by funding source and budgets by country and funding source.

Figure 1: Overall budget by funding source

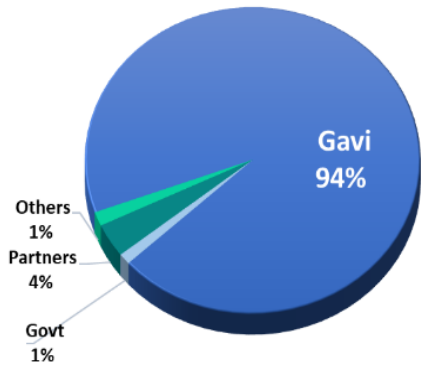
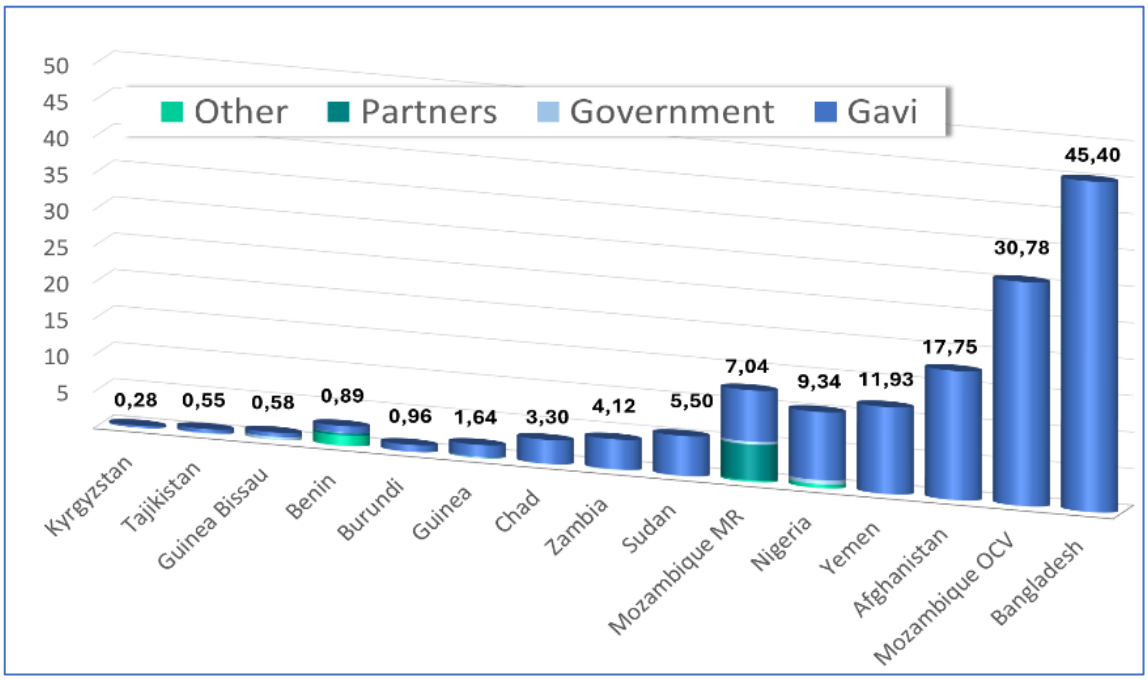


Figure 2: Budgets by country and by funding source



Overall, the quality of budgets presented for review in this round was satisfactory and commendable. The IRC observed several good budgets with clear assumptions and good linkage with the POA – especially for Burundi (HPV), Guinea (HPV), Guinea Bissau (MR), and Afghanistan (EAF). Pre-screening done by Gavi Secretariat and technical support provided to countries surely helped to achieve that.

The new template for MR reviews used for six countries (Guinea Bissau, Kyrgyzstan, Guinea, Zambia, Mozambique, and Nigeria) facilitated the review process and provided a higher precision in reporting.

In general, countries used Gavi budget templates properly and provided adequate calculation details. Some countries presented too many detailed tabs which obstructed efficient budget analysis. For example, Nigeria (MR catch-up campaign) presented a budget with more than 40 detailed tabs, and Zambia a budget with more than 30 tabs. Chad (Rota VIG & PCV Catch-up and VIG) also had this issue. The IRC observed that some countries like Tajikistan (HPV Ops), Yemen (EAF + ITU) and Bangladesh (OCV) had incorrect aggregation by cost inputs, therefore not allowing for correct budget analysis.

Misalignment with plans of action was limited but some countries still posed some issues: for example, Sudan EAF showed different PIRI targets while Mozambique (OCV) and Vietnam (MICS) showed discrepancy in the total number of vehicles to be used in campaigns. Guinea's (MR OPC) plan of action presented an inconsistent number of teams with the budget while for Guinea-Bissau (MR OPC), the micro-planning activities and some demand generation activities described in the plan of action were not budgeted.

Issue 22: Despite the overall good quality of budgets reviewed, some countries faced incorrect aggregation by cost inputs, misalignment with PoA, and/or presented a budget with too many details that prevented appropriate budget analysis.

Recommendations:

- Gavi Secretariat to continue with good pre-screening practises and provide technical support to country applications.
- Gavi Secretariat to further refine and improve the new MR review report template by adding tables for non-material issues.
- Gavi Secretariat to ensure that budgets are adequately aggregated during pre-screening based on the budget eligibility guide.
- Gavi to continue efforts to ensure that budgets are aligned to the minimum presentation standards during the pre-screening exercise.
- Gavi and partners to share the list of common mistakes with countries to promote best practices during the process of budget preparation.

High share of budget allocated to events which raises value-for-money concerns

One of the major trends observed during the analysis of the budgets was the high share of budget allocated to events. The consequence is the inflation of HR costs due to large number of "DSA related activities" like trainings, workshops, and meetings. Countries tend to budget for a high number of activities, to include large number of participants, or to inflate the number of days and frequency of events. This was observed in Benin's (HPV) application with high cost of events not described neither in the application, nor in the budget assumptions; in Tajikistan (HPV) where 79% of the OPS grant was event-related; and in Cameroon (EAF) with a high volume of DSA-related activities (events, trainings, meetings).

Issue 23: The rationale of the number of events and the number of participants to these events are not correctly described in the application nor in the budget assumption.

Recommendations:

- Gavi and partners to ensure that plans of action include enough assumptions and justifications on events (targets, frequency, etc).
- Gavi and partners to continue advocating for integrated and/or remote trainings.

High human resources (HR) and HR-related costs

HR-related costs (i.e. per diem and transport allowances) represented the highest share of the budgets reviewed. In Benin (HPV) they accounted for 93% for OPS and 60,5% for VIG, in Yemen (EAF) 78%, in Kyrgyzstan (MR) 69%, and in Nigeria (MR) 68%.

Other issues were observed due to low workload estimates for vaccinator teams against standards. For example, the workload for Sudan (EAF) was 60 children/day/vaccinator for outreach while the standard is 75-100, and 40 children/day/vaccinator for rural mobile teams while the standard is 50-75. For Kyrgyzstan

(MR) the workload was 100 for fixed teams, which is at the lower limit of standard 100-150, 51 for fixed outreach which is less than standard 75-100, and 85 for mobile teams, also less than the standard of 100.

Other countries like Nigeria made no differentiation between rural and urban workloads in calculations, and one workload was used for all strategies. The number of supervisors was sometimes calculated outside of the guideline and standards. This was observed for Guinea Bissau (MR) where supervisor numbers were higher than standard in mobile teams (1 supervisor per 1.2 team), and for Guinea (MR) and Kyrgyzstan (MR): 1 supervisor per 2/2.55 vaccination teams.

Issue 24: Countries still apply the workloads in their plans of action and budgets assumptions that do not comply with WHO guidelines and standards.

Recommendations:

- Gavi to continue pre-screening efforts to ensure that plans of action and budget assumptions on workloads are aligned with WHO guidelines.
- Gavi and partners to request strong justification from countries if the workloads are below the standards.

Potential duplication or lack of integration with other supports

During this review, the IRC observed several examples of potential duplications or lack of integration of activities between the budgets presented this round or with other ongoing Gavi supports. For example, Cameroon (EAF) presented several activities related to supervision that can be integrated while Guinea Bissau (MR) budget included some duplications between the OPC and VIG budgets, especially for Communication tools (banners) and trainings. Also, Afghanistan presented some mass media items amounting to US$535,690 which may have duplication with different TV and radio budget items included under the ongoing HSS 4.

As in the previous round, the IRC observed several examples of allocations of expenses that usually should be funded by another Gavi funding stream, like for Mozambique (OCV) where the proposed purchase of 33 vehicles for US$2M should be HSS. In Nigeria (MR): a software training (US$454k) was planned in a SIA while it is more likely to be an HSS activity. The Yemen application (EAF + ITU) is unclear about the innovativeness of the ITU activities, and the proposed activities should be funded through HSS.

Issue 25: Countries used different funding streams for activities that overlap with other streams.

Recommendations:

- Gavi to ensure that the activities planned are reasonable and are aligned with other Gavi interventions.
- Gavi to provide a list of all ongoing support to the IRC.

Structural barriers to efficiency and sustainability

Most applications reviewed in this round consisted of individual grants, which prevented IRC reviewers to get a comprehensive overview of the funding landscape of the immunization program in each recipient country. Therefore, the IRC reviewers could assess neither the allocative efficiency of the immunization portfolio nor the integration of services and activities (e.g. trainings, supervision, communication

campaigns, reviews, etc.) within the countries' immunization program and broader health sector. More generally, except for some full program portfolio reviews, the multiplication of siloed proposals corresponding to Gavi's various instruments is likely to create unnecessary cross-programmatic inefficiencies, which jeopardizes sustainability.

Issue 26: Gavi support is scattered between various instruments which tend to be planned for, implemented, and monitored in silo, creating unnecessary cross-programmatic inefficiencies and jeopardizing sustainability, while preventing the IRC from assessing the allocative efficiency of Gavi grants.

Recommendations:

- Gavi and partners to encourage integration of grants into full portfolio reviews, enabling the IRC to appraise allocative efficiency.
- Gavi to foster cross-programmatic efficiency analyses.

Insufficient planning and preparation for transition

Gavi Eligibility and Transition Policy is based on thresholds depending on the country's Gross National Income (GNI). It defines the transition pathway through which Gavi support is phased out when countries reach higher GNI per capita following three phases: initial self-financing, preparatory transition and accelerated transition. In addition to increasing co-financing and phasing out from certain support instruments, it is expected from countries preparing for transition to have a plan/pathway to transition out of Gavi support and to dedicate Gavi support to strategic priorities in terms of health system strengthening. However, such planning is not always done appropriately or implementation is lagging. In this November review, the IRC observed that despite being in a preparatory transition phase, Cameroon HSS/FPP grant dedicated 25% of its budget (totalling US$6,976,106) to operating recurrent costs (e.g. internet connection, microplanning, supply chain transportation and review meetings).

Issue 27: Gavi Eligibility and Transition Policy is loosely applied regarding transition planning.

Recommendation:

- Gavi to systematically support transition planning at an early stage and monitor its implementation.

Full Portfolio Planning (FPP)

IRC reviewed three FPP applications: Somalia (about US$60.2 million), Mauritania (about US$5.8 million), and Cameroon with re-submitted HSS and EAF components (about US$38 million). All proposals were approved.

Key findings

Across the three applications, the IRC notes effective engagement of stakeholders in the planning process and budget allocations, and efforts of coordination of partners supporting the national EPI program. Also, in all countries, budget considerations were made to respect the proportion of allocation to CSOs. There is a strong awareness of gender barriers to improve access in the Mauritania FPP application, data

integration, and leverage of community health workers (CHWs). Somalia provided a non-mandatory TOC showing flexibility in budget matters and utilising the gender analysis from the World Bank's investment case for the Somali health sector report (EPHS). Somalia also combined PVC and Rota VIGs, showing willingness to integrate activities, capturing synergies to avoid duplication of activities and costs. There was a notable improvement in the narrative of Cameroun application which addressed the requests from the previous IRC review, though without extending it to the workplan and related budget (i.e. still remaining heavy on per diems, salaries, workshops, and transport/vehicles). While FPP should provide an opportunity to address system and equity issues, investments in system strengthening are insufficient or lacking. This can include strategically addressing the lack of HR, improving the health information system in terms of quality of data, analysis, digitalization, and pooling data on equity for analysis that can inform the FPP. These strategic investments are crucial in the initial transition phase, particularly in countries like Cameroun. The IRC reviewers also noted the tendency to interchangeably use EAF and HSS funds (e.g. Somalia), and that the lack of details on support received by other partners/donors persists. The following issues are noted.

Issue 28: FPP remains an assembled collection of various application components prepared separately, often lacking integration with overall strategies and budget.

Recommendation:

- Gavi and partners to support countries in applying a strategic and integrated planning approach when preparing for FPP applications.

Issue 29: Insufficient investments in system strengthening and lack of use of data on equity that can inform the FPP, particularly crucial for countries in the initial transition phase.

Recommendation:

- Gavi and partners to support countries to ensure inclusion in proposals of HSS investments reflecting effective strategies to address HR needs, data quality and use, and equity and gender barriers, and to translate them into workplan as concrete activities and interventions.

Issue 30: Issues addressed in the narrative of the FPP applications previously recommended for re-review are not reflected in the workplan and budget.

Recommendation:

- Gavi and partners to support the re-review process, to ensure the alignment of strategic vision with a concrete action plan and budget.

Issue 31: Interchangeable use of EAF and HSS funds and persisting lack of details on support provided by various partners

Recommendation:

- Gavi and partners to ensure during the application development that EAF and HSS-related activities are clearly differentiated in the budget and allocated according to funding guidelines, and that investments

reflect integrated strategies and activities that address needs for HR, capacity building, data quality improvement, and equity and gender concerns in the specific application type.

- Gavi and partners to ensure that information related to resource mapping is well reflected in the application, including in joint planning and budgets.

4. Conclusions

During November/December 2023 virtual IRC meeting, of 39 applications (25 reviewed in small review groups, and 14 in previously started remote reviews), 36 (92%) were approved, of which 3 (8%) with amendments. Some structure and process changes, notably for NVS measles applications were piloted. The direct exchanges prior to review between IRC reviewers and countries expanded and included along with MCV request applicants also those of OCV, EAF and ITU support. This practice continues to provide opportunities for engagement and clarifications necessary for the IRC reviewers to complete the review.

The IRC notes continued improvement of applications. There is a notable improvement of quality of budgets, with clear assumptions and good linkages. Similar is for supply chain and waste management readiness, although countries still lack waste management SOPs and updated national policies. As for gender, while gender barriers are more often mentioned, countries still need detailed gender analyses to be able to translate the existing data into robust gender responsive and transformative strategies. IRC notes an increased consideration of broad community engagement in HPV applications as a good practice and emphasizes the need to explicitly consider timing of vaccine supply in the light of global vaccine supply expectations. For PCV and RVV applications, the IRC highlights the global recommendation for integrated planning, delivery, and monitoring of PCV and rotavirus vaccination, with cross-linkages with existing maternal and child-health programmes. With high demand for OCV, the IRC calls for urgent enhanced coordination between the existing stockpile mechanisms so that the allocation can be better tailored to reduce cholera burden. The IRC notes with concern an increasing trend of measles cases, acknowledging the need for timely preventive campaigns. As current timelines from application to grant disbursement and campaign implementation do not accommodate for timely SIAs risking large and disruptive measles outbreaks in countries, IRC calls for funding opportunities or rapid response funds for preventive SIAs early on during an outbreak. The IRC welcomes the MICs applications and notes that the countries with limited or no previous engagement with Gavi may insufficiently articulate key expected elements for applications and supports sharing good practice examples and technical assistance suggestions as appropriate. Similarly for ITU requests, illustrative examples and good practices along with clearer definition of innovation are warranted, to ensure that the ITU funds are used catalytically. Finally, the IRC notes that for applications prepared in relative peace from fragile and conflict countries that are prone to sudden security status changes, there is an urgent need for updated Gavi guidelines to accommodate for the risk appetite and the war dynamics with all its disruptive consequences.

5. Acknowledgments

The IRC would like to thank the Gavi Executive Team for their continued support of its work and the FDR team for the organization of the meeting.

The IRC also thanks the Gavi Secretariat, SCMs, VPs, HSIS and PFM team members for their continued important inputs during pre-review screenings and clarifications on country-level perspectives during review sessions.

The IRC also acknowledges the contribution of the Alliance partners in support of country applications and participation in sessions during the deliberations of the IRC.

Annex 1: IRC members participating in the November/December 2023 meeting

#	Name	Nationality	Profession/Specialization	Sex	Review language	Expertise
1	Beatriz Ayala-Öström	UK, Sweden, Mexico	Independent consultant	F	EN, SP, PT	Health system strengthening, supply chain management, pandemic preparedness
2	Andrew Azman	USA	Associate Scientist, Department of Epidemiology, Johns Hopkins University	M	EN, FR	Epidemiology, outbreak response, cholera
3	Sabine Beckmann	Germany	Independent consultant	F	EN, FR	HSS, public health policy advisor, gender & equity, conflict and fragile settings, vaccination campaigns
4	Blaise Bikandou	Congo, France	Independent consultant	M	EN, FR	HSS, project/programme management, preparedness and response, vaccine preventable diseases, epidemiology
5	Aleksandra Caric	Croatia	Independent consultant	F	EN, FR	Measles, AEFI surveillance and vaccine safety, programme management, primary health care
6	Alima Essoh	Cote d'Ivoire	Independent consultant	F	EN, FR	Global health program implementation, policy development, HPV, Health sector governance
7	Natasha Howard	Canada, UK	Associate Professor, NUS School of Public Health and LSHTM	F	EN, FR, SP, AR	Immunisation service delivery, health policy, HPV, measles, malaria, COVID-19, EAF, FER settings
8	Jean-Rostand Kamga	Côte d'Ivoire	JRK Management & Governance, Partner	M	EN, FR	Financial and budget analysis, audits, project assessment
9	Henry Katamba	Uganda	National Facilitator, GF at the Ministry of Health in Uganda	M	EN	Epidemiology, M&E of health projects, health research and advisory
10	Landry Kaucley	Benin	Director of Logistics, National Agency for Vaccination and Primary Health Care, Benin	M	EN, FR	Immunization supply chain management, routine immunization, epidemiology and disease surveillance, mass campaign management and health economics
11	Wassim Khrouf	Tunisia	Auditing and Consulting Worldwide, Partner	M	EN, FR	Financial and budget analysis, audits, project assessment
12	Dominique Legros	France	Independent consultant	M	EN, FR	Epidemiology of infectious diseases in developing countries, surveillance and early warning systems, vaccinology, operational research, management of outbreaks and of complex emergencies
13	**Rose Leke – IRC CHAIR**	Cameroun	Emeritus Professor of Immunology and Parasitology, University of Yaoundé, Cameroun	F	EN, FR	Malaria, Global Health, HSS, training of the next generation of scientists
14	Viviana Mangiaterra	Italy	Associate Professor, SDA School of Management, Bocconi University, Milan	F	EN, FR	HSS, Maternal and Child Health, Malaria, HIV and TB
15	Anne McArthur	UK, USA	Independent consultant	F	EN, FR	HPV, Immunization system strengthening, community engagement

16	Pierre-Corneille Namahoro	Rwanda	Director of Public Health, Global Supply Chain & HSS, Fascinans Ltd.	M	EN, FR	HSS, Supply Chain Management and Cold-Chain Logistics
17	Jean-Paul Nkaba Paolo	DRC	Independent supply chain consultant	M	EN, FR	Supply Chain Management and Cold-Chain Logistics
18	Villyen Nkengafac Motaze	Cameroun	Associate Professor of Epidemiology, Medicine Usage in South Africa (MUSA), Noth West University, South Africa	M	EN, FR	Vaccinology, epidemiology, systematic reviews, evidence0based practice
19	Benjamin Nkowane - VICE CHAIR	Zambia	Independent consultant	M	EN, FR	Measles epidemiology, mass vaccination campaigns, technical support for field operations in risk areas
20	Arome Ogijo	Nigeria	Financial Controller ACP Brussels, Belgium	M	EN	Strategic Financial and Budget Management Specialist
21	Bola Oyeledun	Nigeria	Chief Executive Officer at Centre for Integrated Health Programs (CIHP), Nigeria	F	EN	HSS, MNCH, immunisation, adolescent reproductive health & HPV, programme assessment and evaluations
22	Elisabeth Paul	Belgium	Associate Professor, Health Policies & Systems, Brussels, Belgium	F	EN, FR	HSS, Financial and Budget analysis, Health Financing Strategies
23	Gavin Surgey	South Africa	Radbound University Medical Centre	M	EN	Financial and Budget analysis, Health Economics, Health Financing Strategies, Program M&E
24	Vivien Tsu	USA	Clinical Professor, University of Washington, Seattle	F	EN, FR	Epidemiology, New Public Health Interventions, Women's Reproductive Health, HPV, JE
25	Erika Wichro	Austria	Independent consultant	F	EN, FR	Emergency settings, outbreak response, HSS, polio, Ebola, measles, COVID-19, surveillance, epidemiology