CONSIDERATIONS FOR VACCINATION PROGRAMS AND INTRODUCING NEW VACCINES: LOW- AND MIDDLE-INCOME SETTINGS

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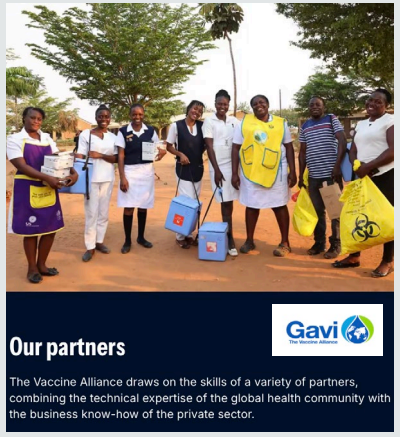
WHO, UNICEF AND GAVI: WITHOUT THEM ?

- Back to the 1990s – deaths, diseases and vaccines
- Vaccination requires standardisation and centralization, especially for disease transmission interruption

How many U5 deaths?

Why the NYT reference?



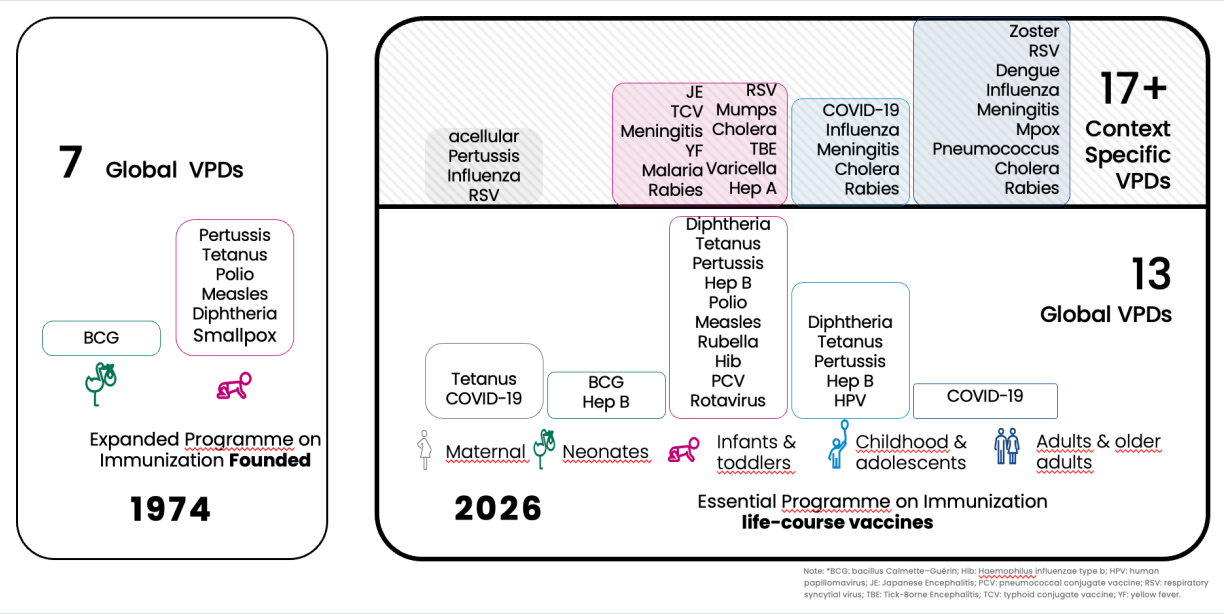


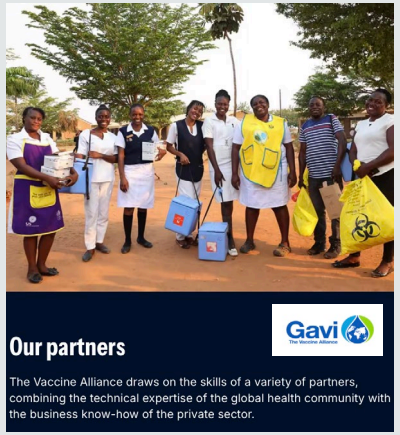




WHO, UNICEF AND GAVI: WITHOUT THEM ?

- Back to the 1990s – deaths, diseases and vaccines
- Vaccination requires standardisation and centralization, especially for disease transmission interruption
- Immunization programs have become more complex – more antigens, more age groups
- LMICs require appropriate and affordable products, even when market forces do not drive their development
- PAHO (pre-dates WHO) revolving fund and Unicef Supply Division provide transparency and purchasing power
- WHO provides normative guidance and country support
- Gavi for new vaccines from 1999, then increasingly program and operations support. Key inputs from Gates Foundation and others









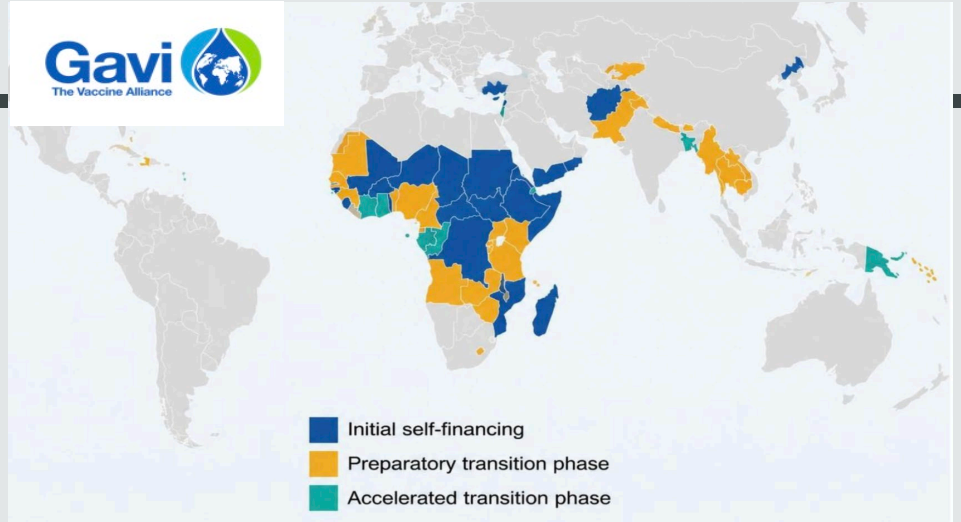
THE SHOCKS OF 2025

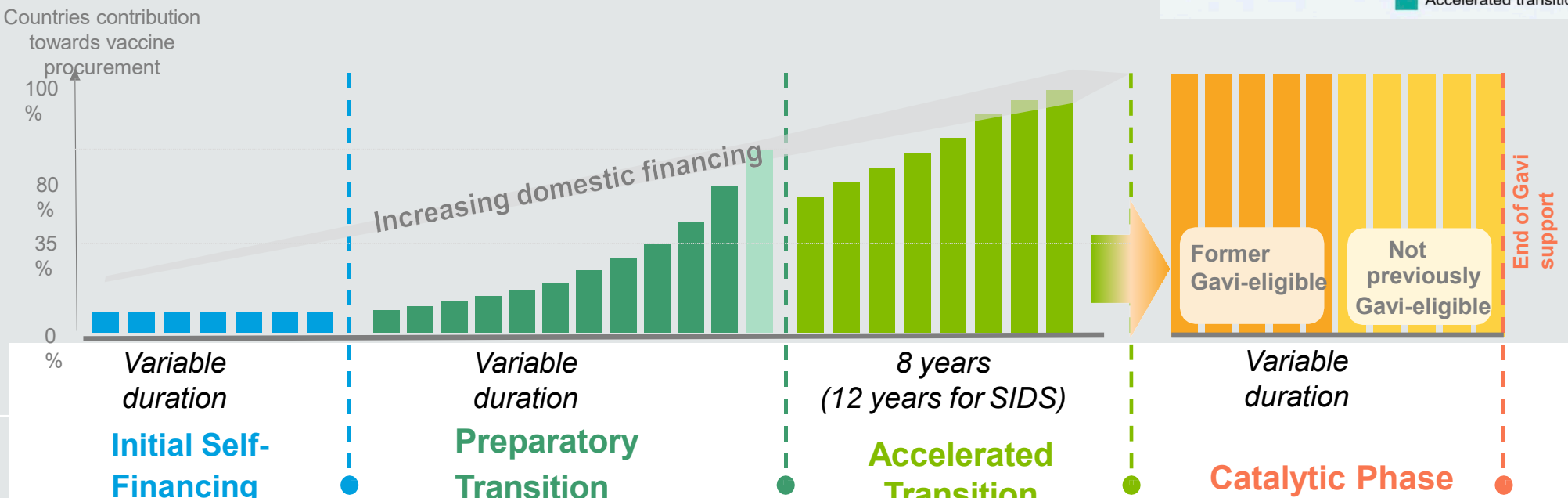
- WHO IVB and country staff reductions – fewer at HQ, although SAGE preserved
- Unicef budget reductions and staff movement
- Around 30% reduction in Gavi fundraising at a time they were already transitioning
- “Country centricity” means more co-financing, and greater demands on NITAGs and other country program elements



GAVI 6.0 TRANSITIONS 1: COUNTRIES CONTRIBUTE MORE

Projected Increase in Co-financing:
From 16% of vaccine costs in 5.0 to 24% in 6.0





But eligibility is eased slightly

GAVI 6.0 TRANSITIONS 2: VACCINE BUDGETS AND VACCINES STRATIFIED

- Country vaccine procurement budgets capped
  - Total funds limited for the first time (previously all Gavi-supported vaccines could be introduced, with Gavi providing both vaccine and a *per capita* introduction support, based on scientific case)
  - Most countries are seeing around 2/3 of previous $s available for procurement from 2026 or later
- Vaccines categorised by "guaranteed" vs "discretionary"
  - for the first time – pitting vaccine against vaccine (in the way MICs have always had to do)

1. Guaranteed programmes	2. Discretionary programmes
Pentavalent	Malaria
Pneumococcal Conjugate (PCV) + Catch up	Yellow fever campaigns
Rotavirus	Japanese Encephalitis (JE) + catch up campaigns
Measles/ Measles Rubella (M/MR) + Catch up, follow up	Typhoid (TCV) + catch up campaigns
Human papillomavirus (HPV) + MACs	Cholera (OCV) campaigns
Inactivated Polio (IPV)	Meningococcal (Men A/MMCV) + catch up campaigns
Hexavalent	Rabies
Yellow Fever routine only	DTP-containing boosters
Hepatitis B Birth dose	Respiratory Syncytial Virus (RSV)

Rationale for guaranteed programmes: Prioritisation of programmes with the highest value for money (health impact and cost per life saved), global relevance (e.g. polio agenda), continuity of support, and inter-country equity

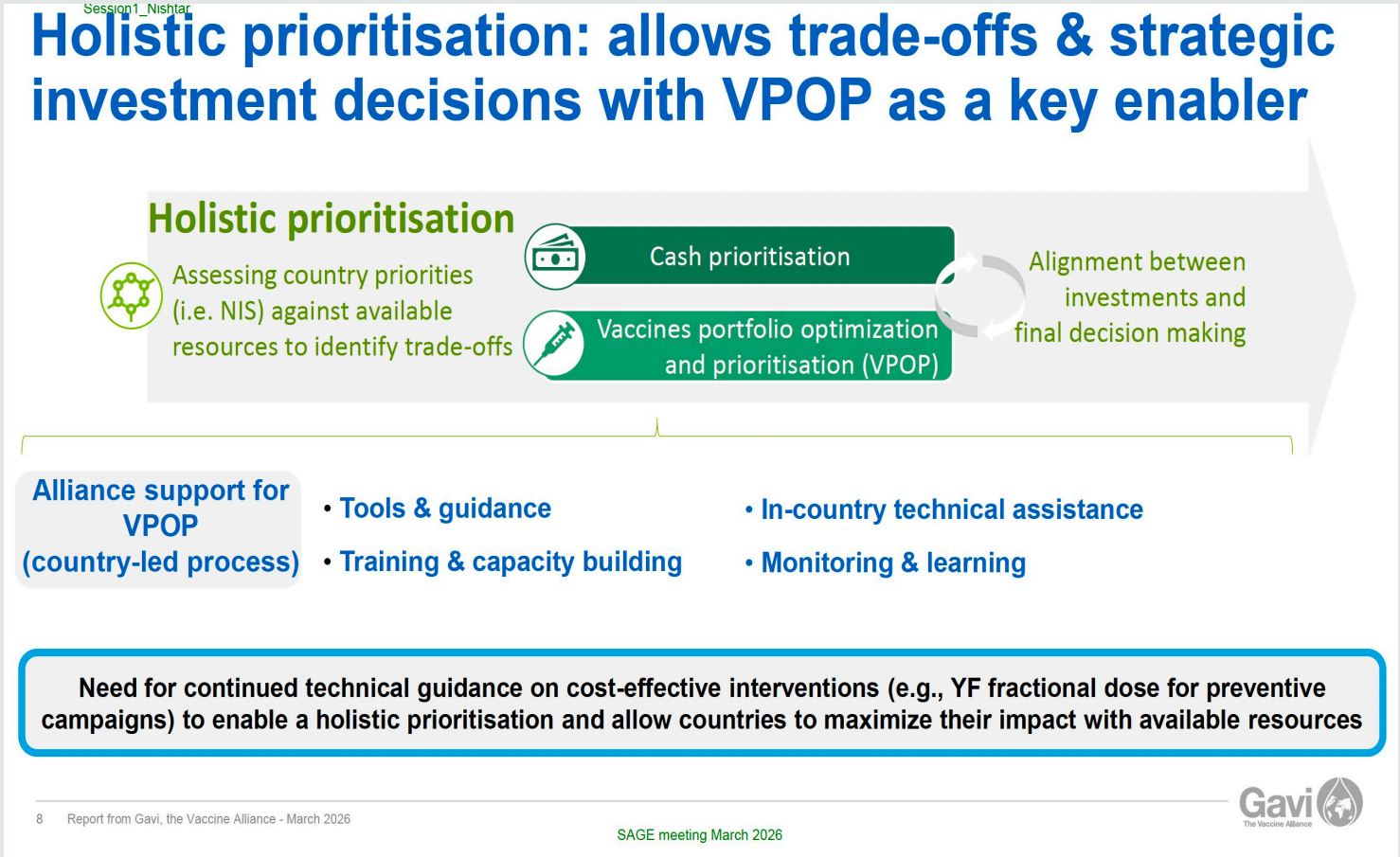
GAVI 6.0 TRANSITIONS 3: SINGLE CASH ENVELOPE, AND HOLISTIC PLANS TO PRIORITISE AND OPTIMISE LIMITED BUDGETS

For the 50+ countries receiving significant funding under Gavi 6.0, Gavi simplified **eight** funding windows *(eg for cold chain, operational support, new vaccine introductions, "zero dose" responses and equity, special HPVV, etc under Gavi 5.0 and COVID-19 for 5.1)* down to just **one** holistic cash envelope.

Does that sound like a good idea to you?

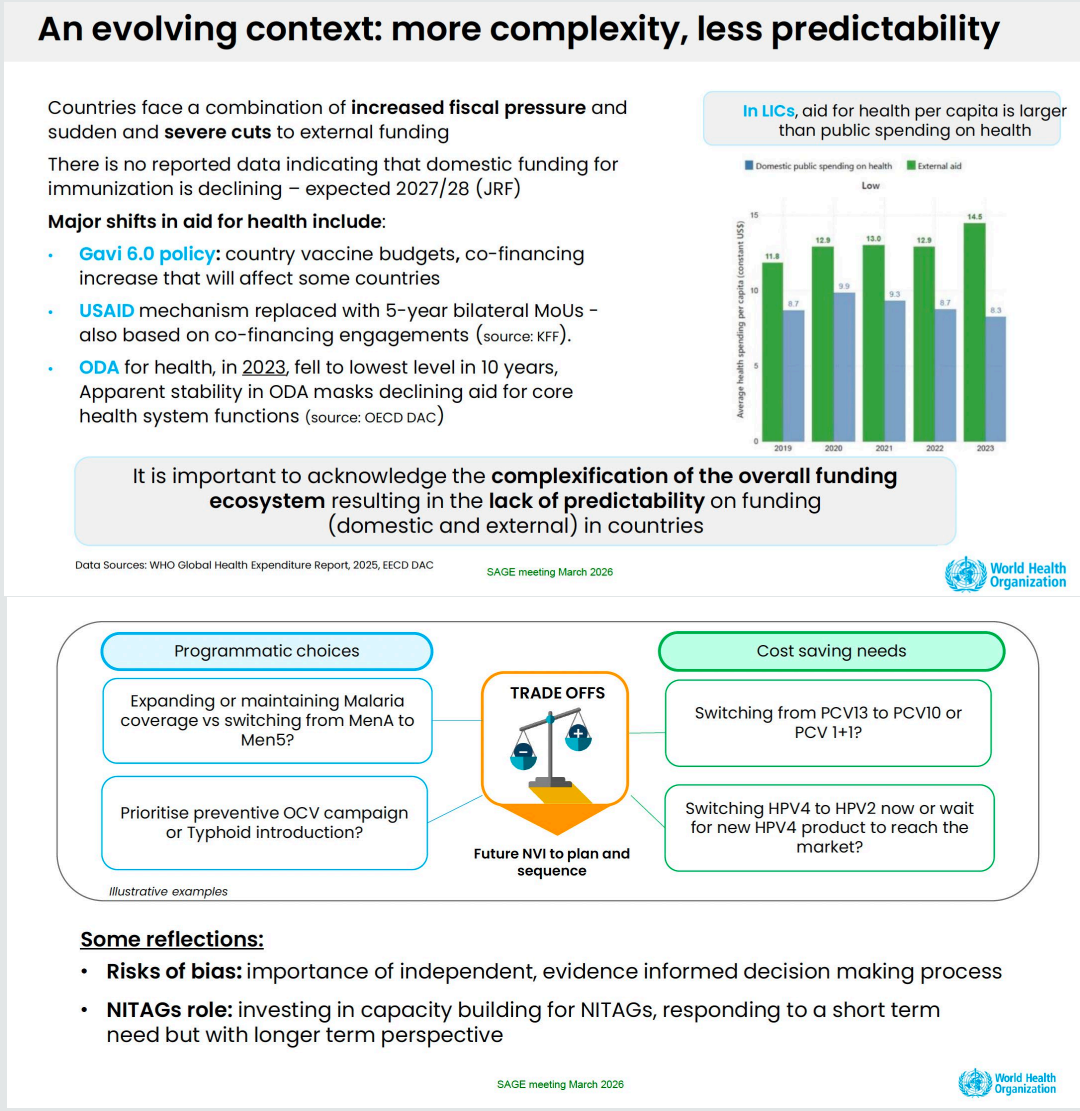
GAVI 6.0 TRANSITIONS 3: SINGLE CASH ENVELOPE, AND HOLISTIC PLANS TO PRIORITISE AND OPTIMISE LIMITED BUDGETS

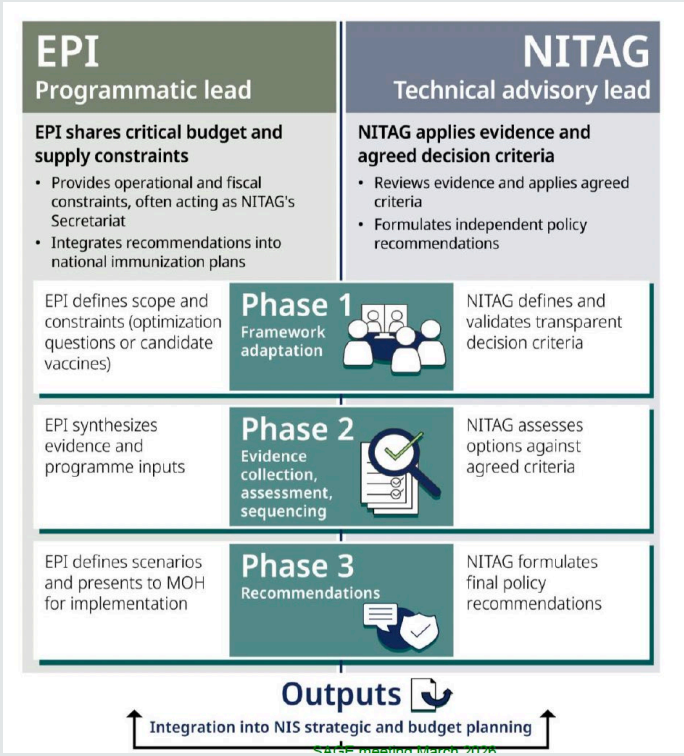
- Holistic plans are more complex and the stakes with Gavi are higher – so the need for external technical support is greater
- Gavi 6.0 has meanwhile reduced direct funding for TA partners, leaving this up to governments to prioritise in the one “simpler” cash envelope
- The first experiences of doing **prioritisation** with LICs for Gavi plans show this to be complex, complicated and beyond many EPI and NITAG capacity. Support needed here as well.



VPOP – WHO VIEW, AND DEMANDS ON NITAGS

- Both prioritization and optimization are rational responses to the current environment
- WHO prioritisation tools evolved from history of health prioritisation tools (CAPACITI, PRIORITI, now NVI-PST) and remain complicated
- Stretch capacity of EPI and NITAGs even in MICs
- At a time when WHO technical support is spread thinner, there is a clear need for other regional partners, and for peer-learning and peer-support





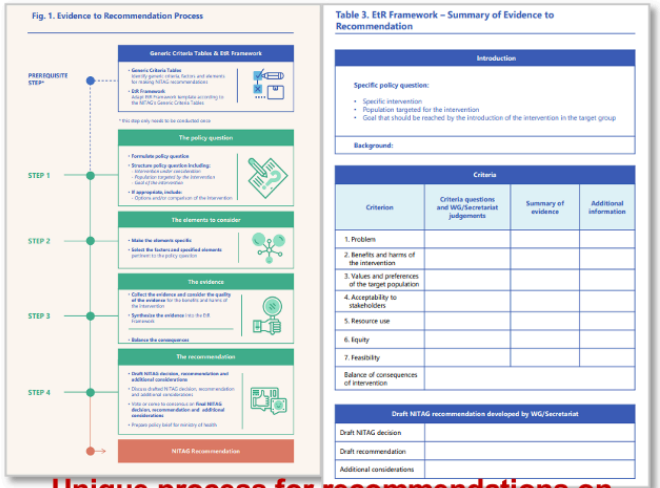
WHO AND GNN TOOLS AND GUIDANCE

https://www.nitag-resource.org/

For MICs wishing to invest more in VPOP, and for all LICs, the GNN resource is good entry point to tools

Evidence to Recommendations

Evidence-to-Recommendations (EtR) is a standardized process recommended by WHO and used by NITAGs to move from a general policy question to a specific recommendation using the best available evidence. It is based on a list of criteria representing aspects that need to be incorporated when considering introduction of an intervention (new vaccine, new schedule, new product, etc.)

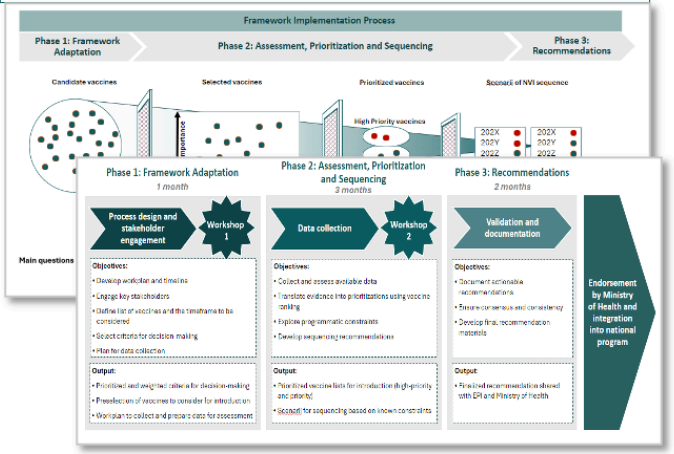


Unique process for recommendations on whether an intervention should be implemented

VPOP Toolkit

NVI-PST

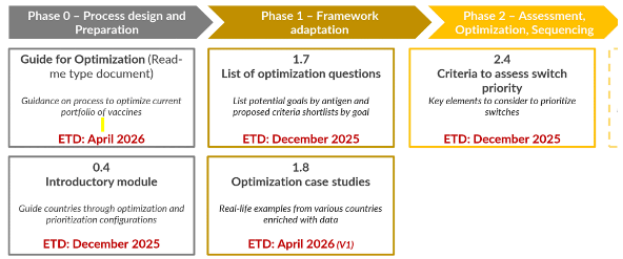
NVI-PST is a proven MCDA-based NITAG/EPI-driven framework supporting the prioritization of new vaccine introductions. It leverages a simple, evidence-based and comprehensive approach to support the preparation of NVI sequencing scenarios based on a pre-hierarchized list of potential criteria.



Optimization module

Adapting the framework to support countries decision making on optimization





Slide adapted from J Fihrman presentation to GNN Nov 2025

PRIORITISATION IN PRACTICE

Prioritisation of new vaccines

- Starts with disease burden and cost-benefit, in terms of
  - Lives saved,
  - Outbreak disruptions averted,
  - Eradication/elimination goals
- Also depends on what is available – Gavi menu

1. Guaranteed programmes	2. Discretionary programmes
Pentavalent	Malaria
Pneumococcal Conjugate (PCV) + Catch up	Yellow fever campaigns
Rotavirus	Japanese Encephalitis (JE) + catch up campaigns
Measles/ Measles Rubella (M/MR) + Catch up, follow up	Typhoid (TCV) + catch up campaigns
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Hepatitis B Birth dose	Respiratory Syncytial Virus (RSV)

Rationale for guaranteed programmes: Prioritisation of programmes with the highest value for money (health impact and cost per life saved), global relevance (e.g. polio agenda), continuity of support, and inter-country equity

Existing:

- Pentavalent (DTP, HIB, HepB), polio, BCG, measles-rubella

Polio vaccines

Possibly new

- Pneumococcal
- HPV
- Malaria
- Dengue
- Japanese encephalitis
- Yellow fever
- Cholera
- RSV
- Rotavirus
- Meningitis

PRIORITISATION IN PRACTICE

Prioritisation of new vaccines

- Starts with disease burden and cost-benefit, in terms of
  - Lives saved,
  - Outbreak disruptions averted,
  - Eradication/elimination goals
- Also depends on what is available –
  - Gavi menu for LIC/LMIC may not differ that much for other MICs
- The Gavi/WHO VPOP tool can help, but MICs will want to simplify the process considerably
- Using the process to engage professional and community stakeholders may be the most important aspect

One simple generic list

- Second dose of MR-containing (mostly done)
  - mostly introduced, but still needs higher coverage (“optimisation”)
- HPV vaccine
  - next most powerful in terms of lives saved
- Second and third doses of IPV
  - preferably via hexavalent, but don’t wait for that
  - critical to get off OPV as soon as possible
- Epidemiologically dependent
  - Malaria
  - Dengue (coming soon via Gavi too)
  - Japanese encephalitis
  - Yellow fever
  - Cholera (supply permitting)
- Pneumococcal updates (or via optimisation)
- Maternal RSV
- Rotavirus
- Prepare programmatically for new TB vaccines
  - coming via Gavi and ? Gates Foundation

OPTIMISATION IN PRACTICE

- Must first link to current EPI program review practices
- Use the opportunity to optimise reach (eg for MR2) as well as optimise resource use
- Think systems and service delivery (see later), as well as vaccines
- Emphasise stakeholder engagement, especially when it comes to life-course vaccines like HPV
- Current tool very new, but looks somewhat more practical – some examples below

1 Start from current portfolio

List all vaccines currently in use

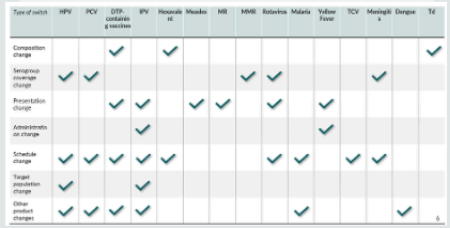
- Note formulations (valency, presentation, schedule, target group)

2 Use the List of Optimization questions document as benchmark

Go vaccine by vaccine

- For each, check the list of possible optimization questions
- Also review expected feasibility and benefits for each question

Use the List of optimization questions



3 Filter for relevance

For optimization questions, filter before Workshop 1:

- Which questions apply to your portfolio?
- (for GAVI countries, which are recommended)
- Which are most feasible?
- Which are strategic priorities (coverage, etc.)?

Filter to prepare a short (20 max) list of optimization questions



Use the optimization questions factsheets

4 Select optimization questions

Select a limited number of optimization questions

- Propose the filtered list of questions to the joint NITAG + EPI audience
- Present key / summarized aspects of each optimization question
- (Ideally) Organize a vote on optimization questions to support discussions

Collectively select a maximum of 3 questions to work on

Slide adapted from J Fihrman presentation to GNN Nov 2025

LIST OPTIMIZATION QUESTIONS BY VACCINE (from survey of LICs and LMICs)

Type of switch	HPV	PCV	DTP-containing vaccines	IPV	Hexa-valent	Measles	MR	MMR	Rotavirus	Malaria	Yellow Fever	TCV	Meningitis	Dengue	Td
Composition change			✓		✓										✓
Serogroup coverage change	✓	✓						✓	✓				✓		
Presentation change			✓	✓		✓	✓		✓		✓				
Administration change				✓							✓				
Schedule change	✓	✓	✓	✓	✓				✓	✓		✓	✓		
Target population change	✓			✓											
Other product changes	✓	✓	✓	✓						✓				✓	

Slide adapted from J Fihrman presentation to GNN Nov 2025

EXAMPLE FOR HPV VACCINE – NOTE THE FEASIBILITY LINE

Dengue	DTP	Hexa	IPV	**HPV**	Malaria	MCV	Men	PCV	Rota	TCV	Tetanus	YF

Type of question	**Serogroup coverage**	**Serogroup coverage**	**Schedule**	**Schedule**	**Target population**	**Target population**	**Product**
Details	Switch to higher valency (4 or 9)	Switch to lower valency (2 or 4)	Change from 2 doses to 1 dose	Add booster doses	Change from girls only to girls and boys	Extend eligibility to older age group	Change product
Implementation	**Easy**	**Easy**	**Average**	**Complex**	**Very complex**	**Very complex**	**Very easy**
Case studies	Yes	Yes	Yes	Yes	Yes	Yes	No
GAVI applicability	N/A	Recommended	Recommended	N/A	N/A	N/A	Recommended
Expected benefits							
Cost-saving		✓	✓				✓
Coverage & equity			✓		✓	✓	
CCE/supply			✓				✓
Wastage reduct.				*Minor*	*Minor*		
Market availability		✓	✓				✓
Disease control	✓			✓	✓	✓	
Patient experience			✓				
HR experience			✓				

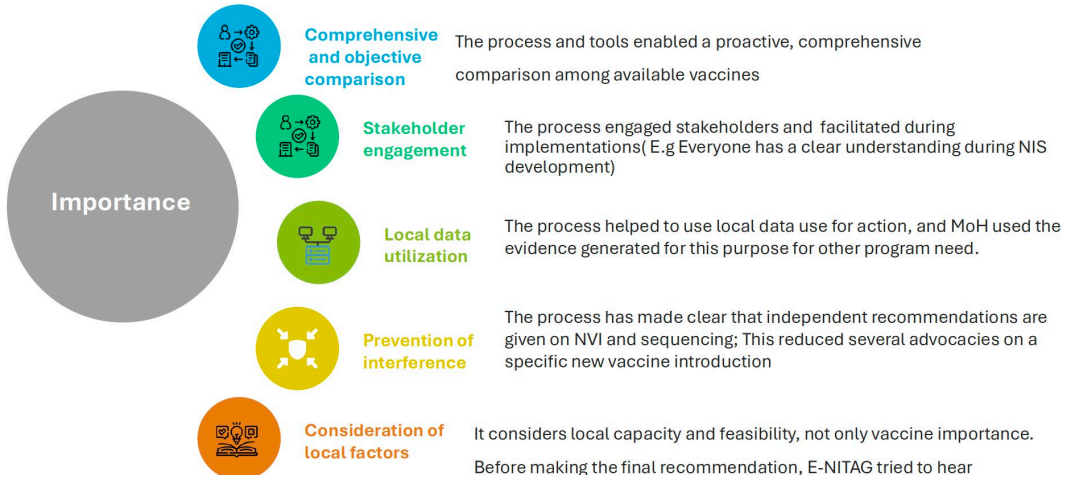
Slide adapted from J Fihrman presentation to GNN Nov 2025

ETHIOPIA EXAMPLE PRESENTED AT SAGE

How Vaccine Introduction Decisions Made?

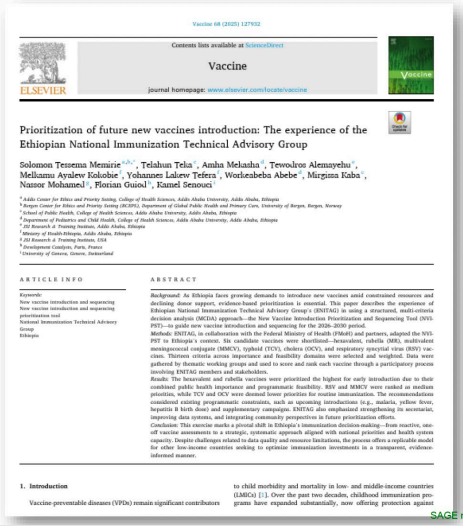
- The Ministry of Health leads the NVI decisions with the engagement of all key stakeholders
- E-NITAG, established in 2016, provides evidence-based technical recommendations
- Since its establishment, E-NITAG has made more than 16 recommendations
- Almost all of the recommendations from E-NITAG informed decision-making
- There were also some cases, such as the YF vaccine introduction, in which E-NITAG recommendations were not translated into action due to budget and other computing priorities
- Previous experience showed that NITAG reviews and provides technical recommendations upon request from the MoH through the EPI manager(E-NITAG secretariat)
- Recently, E-NITAG has started producing recommendations proactively(NVI prioritization exercise)
- Based on the recent independent WHO external evaluation, E-NITAG scored 87% and continues to function consistently

Importance of the vaccine prioritization and sequencing for Ethiopia



Lessons and way forwards

- Institutionalize regular NVI prioritization and sequencing exercise
- Improve data sharing among key actors to ensure the NVI prioritization exercise generates credible evidence
- Advocate for a comprehensive integrated tool for NVI prioritization and VPOP for holistic decision-making
- Conduct a full VPOP review to inform optimization of the Ethiopia immunization program and look for possibilities to combine with the 2025 prioritized new vaccines for a full view and understanding
- NITAG to work based on the ToR given to ensure the independence of the process and promote strong country leadership in decision-making
- MOH/EPI will continue engaging during the VPOP exercise and remain committed to considering the E-NITAG recommendations as one of the major inputs for decision-making.


Vaccine 68 (2025) 127932

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

Prioritization of future new vaccines introduction: The experience of the Ethiopian National Immunization Technical Advisory Group

Solomon Tessema Memirie, Telahun Tela, Amha Mekasha, Tewodros Alemayehu, Melkamu Ayalew Kolkebo, Yohannes Lalew Tefera, Workzebeba Abebe, Mirgissa Kaba, Nazar Mohamed, Florian Guiol, Kamel Senouci

ARTICLE INFO

ABSTRACT

1. Introduction

For further Reading

Please scan here

Or use the Link below

https://www.sciencedirect.com/science/article/pii/S0264410X25012290?via%3Dihub

MOZAMIBIQUE OPTIMISATION EXAMPLE PRESENTED AT SAGE

Optimization process: 7 questions were pre-selected by EPI for discussion with NITAG

	Vaccine	Optimization question	Main objective
1	Hexavalent	Switch from 4-dose hexavalent to 3-dose + DTP booster	Budget impact
2	HPV	Switch to lower valency	Budget impact
3	HPV	Change product	Budget impact
4	IPV	Switch from Penta+IPV to Hexavalent	Program performance improvement
5	MCV	Switch from 10-dose vial to 5-dose vial	Coverage improvement
6	PCV	Switch to lower valency	Budget impact
7	PCV	Change from 3+0 doses to 1+1 doses	Budget impact

SAGE meeting March 2026

If you want to know which three questions they decided to take further, then:

1. Go to https://www.who.int/groups/strategic-advisory-group-of-experts-on-immunization/meetings
2. Choose link to March 2026 meeting
3. Download the "Greenbook" of presentations
4. Open in Adobe Acrobat
5. Use the Table of Contents to navigate to the Mozambique presentation

PROGRAMMATIC EVIDENCE, ESPECIALLY ON CHANGES TO SERVICE DELIVERY IS CRITICAL

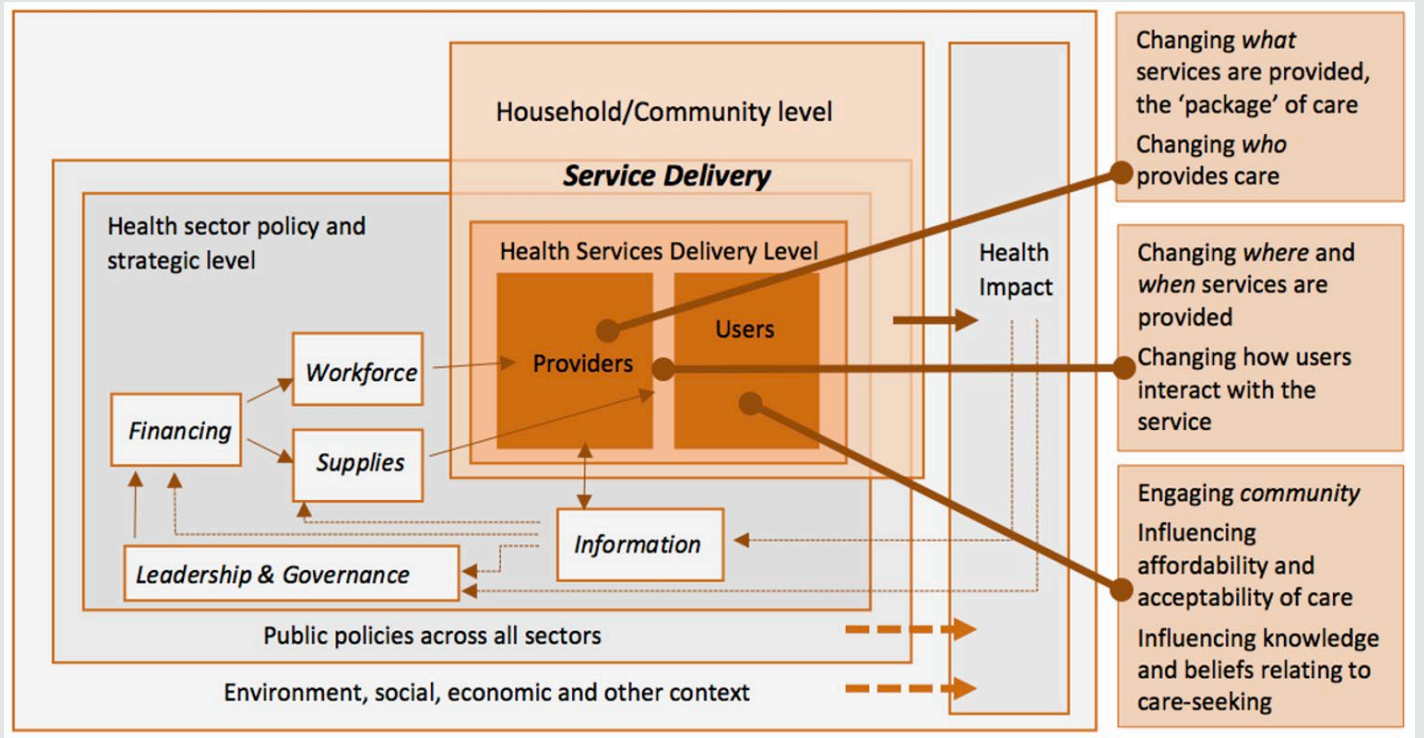
Programmatic evidence, from either good evaluations or implementation research

One way to shed new light is to

1. Put the provider-client interaction at the centre,
2. Identify ways to optimise service delivery to improve both client access/experience, and/or staff satisfaction, and/or program efficiency (preferably al three)
3. Then characterise the system supports (supplies, staffing etc) needed to support the optimisation

Recall the key elements of service delivery:

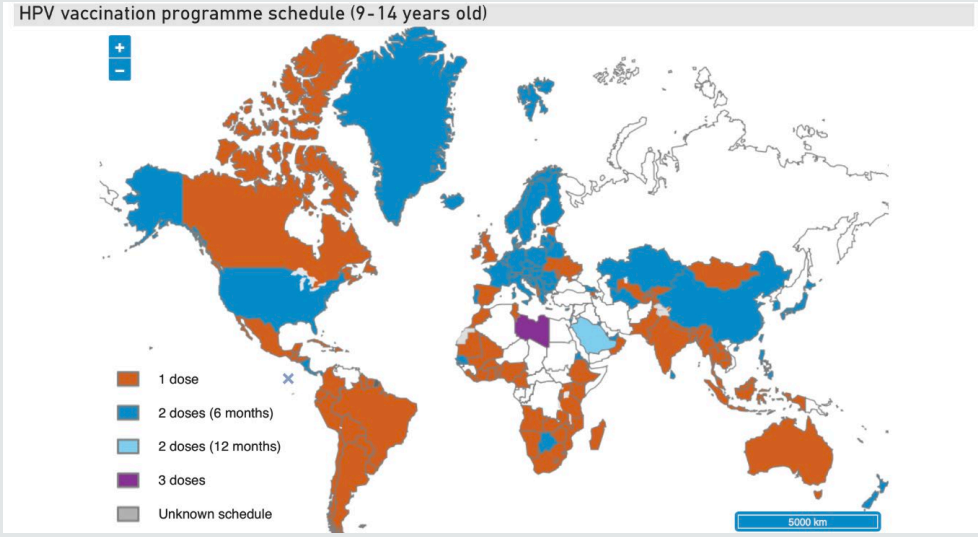
- **Who** provides the service (trained, gender, trusted)
- **Where** the service is provided (clinic, community, school)
- **When** – time (hour, day etc) and frequency (on-demand, weekly, monthly, yearly)
- **What** package is provided (eg vaccines alone, or plus)
- **How** – the quality of the service, safety, communicative



Integrated approaches to immunisation and other health services for maternal, newborn and child health in resource-constrained settings. Morgan C, 2020, University of Melbourne.
Graphic adapted from **Willey** *et al,* Effectiveness of interventions to strengthen national health service delivery on coverage, access, quality and equity in the use of health services in low and lower middle income countries. EPPI-Centre, Social Science Research Unit, University of London.; 2013. No.:2116 and **Hanson** *et al* Expanding access to priority health interventions: a framework for understanding the constraints to scaling-up. Journal of International Development 2003.15(1):1-14

SOME EXAMPLES OF SERVICE DELIVERY ANALYSIS FOR OPTIMISATION

- HPV vaccine
  - Many case studies and IR examining **where** vaccination is optimally provided
  - Some examining **when** in terms of cadence, eg monthly visits to schools in a catchment (Tanzania) or six-montly (Rwanda)
  - Enabled by adoption of **single-dose** schedule optimisations
- Maternal RSV vaccine
  - Comparison in Kenya and Bangladesh on **who** provides (ANC vs EPI) and **where**
  - Options in **how** to strengthen quality of ANC while assessing readiness for vaccine introduction
- New TB vaccines
  - Likely need access to late adolescence and early adulthood, and to those at highest risk (as it is a clinical benefit vaccine)
  - Raises questions of **who** is best provider, **where** and **when** clients prefer access, and **how** to provide quality care around vaccination
- The **what** in terms of package of care, and what non-vaccine interventions are integrated is a critical question for all these, as it is for any life-course vaccine.

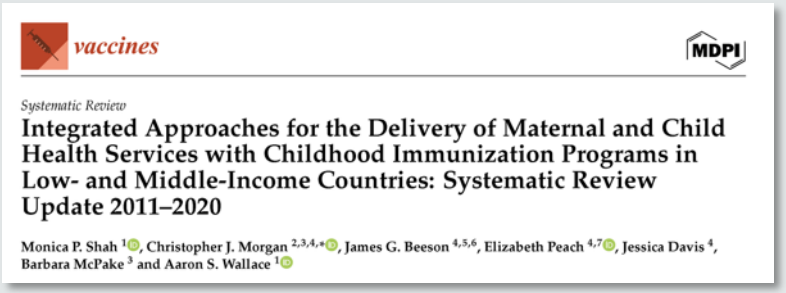


THE POTENTIAL OF MORE INTEGRATED SERVICES, U5

Does integrating other services with immunization work in majority world countries? If so, how, for who, and why?

THE POTENTIAL OF MORE INTEGRATED SERVICES, U5

- Updated an earlier review:
  - https://doi.org/10.1093/infdis/jir778
- Including
  - only studies that explicitly tested a service delivery innovation,
  - 44 publications from 34 studies (29 in Africa), from 16,000+
- Multiple integration strategies used, most often:
  - co-location of linked services (65%),
  - extra services by immunization staff (41%), and/or
  - extra information or counseling by immunization staff (41%)
- Outcomes varied
  - MNCH linked service benefited in 76%
  - Immunization benefited in 55%, was neutral in 35%
  - Examples where integrating services did not prove beneficial
- Implementation was crucial



https://doi.org/10.3390/vaccines12121313

Linked services included:

- Family planning (PPFP)
- HIV (diagnosis, treatment)
- Malaria (nets, IPTi, SMC)
- *Less often*
  - **Nutrition**
  - **WASH**
  - **PHC mixes**

Table 5: qualitative summary of outcomes

A = extra services by immunization staff

B = extra information or counseling by immunization staff

C= co-location of services

E= extra information by non-immunization staff

				Qualitative Summary [1] of the Effect of Integrated Service Delivery											
					Immunization Outcome [2,3]						Linked MCH Service Outcome [2,3]				
Study	Country	EPI Platform	Linked Health Service(s)	NOT MEASURED	NEG	M-NEG	STATIC	M-POS	POS	NOT MEASURED	NEG	M-NEG	STATIC	M-POS	POS
Goodson 2012 & Kulkarni 2010 [25,26]	Madagascar	Campaign—mixed	Malaria						A C						A C
Birukila 2017 [23]	Nigeria	Campaign—mixed	PHC						C	C					
Habib 2017 [26]	Pakistan	Campaign—mixed	Nutrition, PHC						B C	B C					
Balasubramaniam 2018 [31]	India	Routine—outreach	FP				B							B	
Cooper 2015 [32]	Liberia	Routine—facility	FP				B C								B C
Dulli 2016 [34]	Rwanda	Routine—facility	FP				B C								B C
Vance 2014 [37]	Ghana, Zambia	Routine—facility	FP	B C									B C		
Cooper 2020 [33]	Malawi	Routine- mixed	FP					A C E							A C E
Nelson 2019 [36]	Liberia	Routine—facility	FP				B C E								B C E
Yugbare Belemsaga 2018 [38]	Burkina Faso	Routine—facility	FP				A B C						A B C		
Odafe 2020 [45]	Nigeria	Routine—facility	HIV	C							C				
Ong'ech 2012 [46]	Kenya	Routine—facility	HIV						C						C
McCollum 2012 [44]	Malawi	Routine—facility	HIV	B C											B C
Goodson 2013 &Wallace 2014 [42,43]	Tanzania	Routine—facility	HIV			A B C				A B C					
Wang 2015 [48]	Zambia	Routine—facility	HIV				A B C								A B C
Bojang 2011 [49]	Gambia	Routine—outreach	Malaria		A						A				
Dicko 2011 [50]	Mali	Routine—facility	Malaria						A						A
Schellenberg 2011 & Willey 2011 [54,55]	Tanzania	Routine—facility	Malaria				A								A
Patouillard 2011 [52]	Ghana	Routine—outreach	Malaria	A B									A B		
Monterrosa 2013 [60]	Mexico	Routine—mixed	Nutrition	B											B
Oladeji 2019 [61]	South Sudan	Routine—mixed	Nutrition						C E	C E					
Briere 2012& Ryman 2012 [62,63]	Kenya	Routine—facility	WASH						A B C						A B C
Bawa 2019 [21]	Nigeria	Routine—mobile	Malaria, PHC, Nutrition, WASH						C						C
Edmond 2020 [22]	Afghanistan	Routine—mobile	Nutrition, PHC						C					C	
Hodges 2015 [25]	Sierra Leone	Routine—facility	FP, Nutrition					C E							C E

https://doi.org/10.3390/vaccines12121313

IMPLEMENTATION CONSIDERATIONS DETERMINED SUCCESS

- Careful matching of target populations
- Right model for the extra service
  - Eg: vaccinators more able to give ”simple” additional services than provide treatment or counseling
- Ensuring support from policy, logistics, and information systems,
- Adequate training and support of staff to avoid overload,
- Clear client communication
  - On the rationale for integration and
  - To address community concerns, like need for privacy, or avoidance of stigma

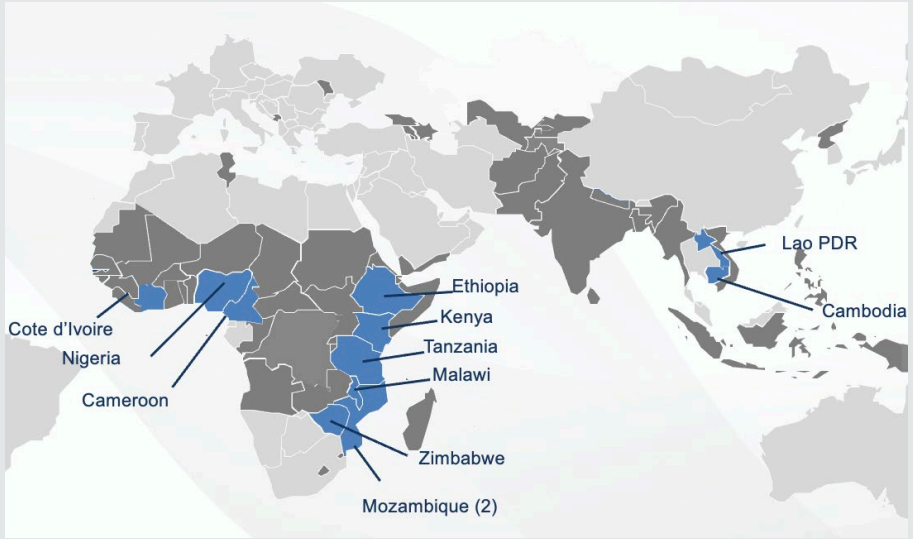
Category	Processes, Enablers, and Barriers Affecting Service Integration	References
Policy and governance topics	Consistency of leadership support	[25,26,28,34,37,48]
	Governments and donors seeking efficiency amidst multiple priorities	[23,33]
	Reducing financial access barriers to the integration of other primary healthcare services with immunization	[23,33,38–40]
Design of integrated service delivery	Optimize co-location of additional staff, especially if extra tasks require more time (e.g., counseling) or skills	[32,33,36,37,61]
	Ensure good matches in terms of of cadence, target groups, and types of services (e.g., preventive rather than curative services may more amenable to integration with immunization)	[38–40,44]
	Ensure additional service requirements do not compromise uptake or quality	[41–43]
	Use integration as an opportunity to provide services to areas/populations that are difficult to reach	[20,21,23,25,26,61]
Human resources for health	Managing workload and time demands for extra tasks	[22,29,36–40,49–53,56,57,60,62,63]
	Additional and skilled staff may be needed (e.g., counseling)	[20–22,28,35–40,44,49,52]
	Motivation and empowerment of healthcare staff to provide expanded care, which healthcare workers generally perceive as better in quality and responsiveness	[32,33,36,48,50,51]
	Training that is (a) harmonized for vaccinators and for providers of linked health service; (b) includes client communications/mobilization; and (c) includes integration processes and tools	[20,21,23,24,27,29,32–34,36–40,45,46,49–51,54–56,61–63]
	Involving community-based health workers to support integrated service delivery	[20,21,24,33,44–46,48,49,52,61–63]
	Ensuring that staff are willing to collaborate in providing additional services	[37–40]
Management, logistics, and costs	Coordinated program planning across program managers and between staff	[32,33,44,48,49]
	Consistency of supplies (particularly for linked service) and coordinated logistics	[20,21,30,32,35,36,46,48–52,56,57,62,63]
	Efficiency may lower costs of integrated service	[27,34,38–40,52,62,63]
	Integrating professional staff may increase costs	[49]
	Ensuring infrastructure is supportive (e.g., privacy)	[29,32,35,36,42,43]
Operational tools, reporting and recording	Consolidation of information systems and reporting, including home-based records	[20,21,31–34,36,56,57]
	Ensuring time for documentation of extra services	[36,56,57]
	Job aids and other tools to support implementation of linked service and referral between programs	[29,31–34,36–40,45,57]
Community and client topics	Promote care seeking, with perceptions of integrated services as more responsive and client-focused	[23,24,27,28,31,36,49–51,57,61–63]
	Ensuring stigma/sensitivity does not hamper uptake	[23,32–36,41–43,46,58,59]
	Ensuring family time and travel costs do not increase	[22,38–43,46,62,63]
	Account for need to involve spouse in care decisions	[32,35,41]
	Ensuring integrated services address common barriers to uptake	[22,27,28,32–36,38–44,46,61–63]
	Ensuring multiple channels of communication on integrated health services	[25,26,33,38–40]

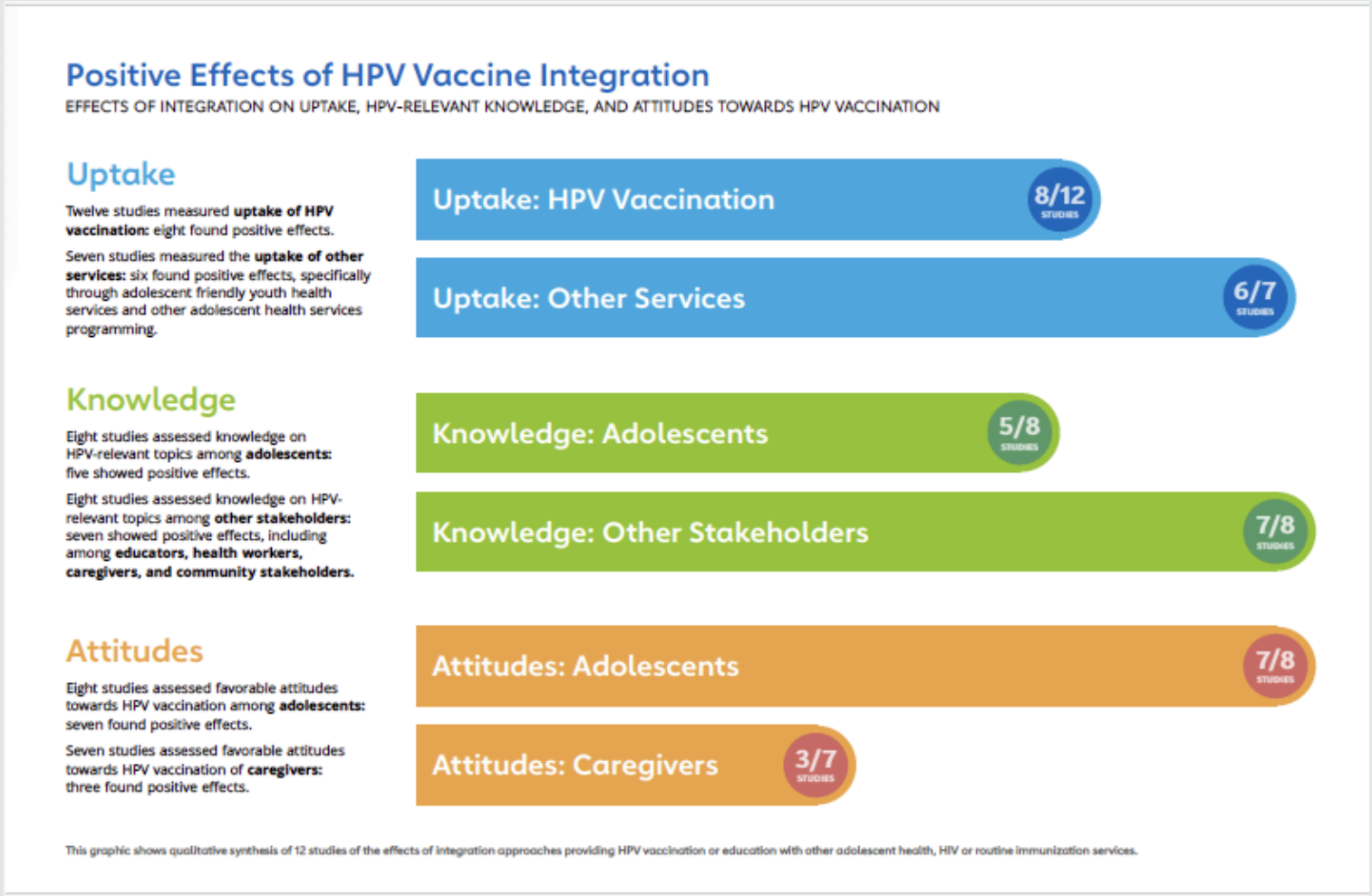
https://doi.org/10.3390/vaccines12121313

THE POTENTIAL OF MORE INTEGRATED SERVICES, HPV

12 studies in 11 countries of integrating HPV vaccination with other adolescent health services, including:

- Adolescent services, health screening or SRH
- Youth SRH education
- HIV services
- Family planning clinics
- PHC services
- Broader school health services





FUTURE OF IMMUNIZATION - A FORESIGHT EXERCISE IN "FUTURE THINKING"

When pushed to choose just **two**, which did the group settle on?

Unicef/WHO workshop,

Faciliator: Copenhagen Institute for Future Studies

High impact issues:

ISSUE 1: **FRAGMENTATION OF TRUST AND AUTHORITY**

ISSUE 2: **SHIFTING FINACIAL ARCHITECTURE**

ISSUE 3: **VACCINE DELIVERY AND ADMINISTRATION**

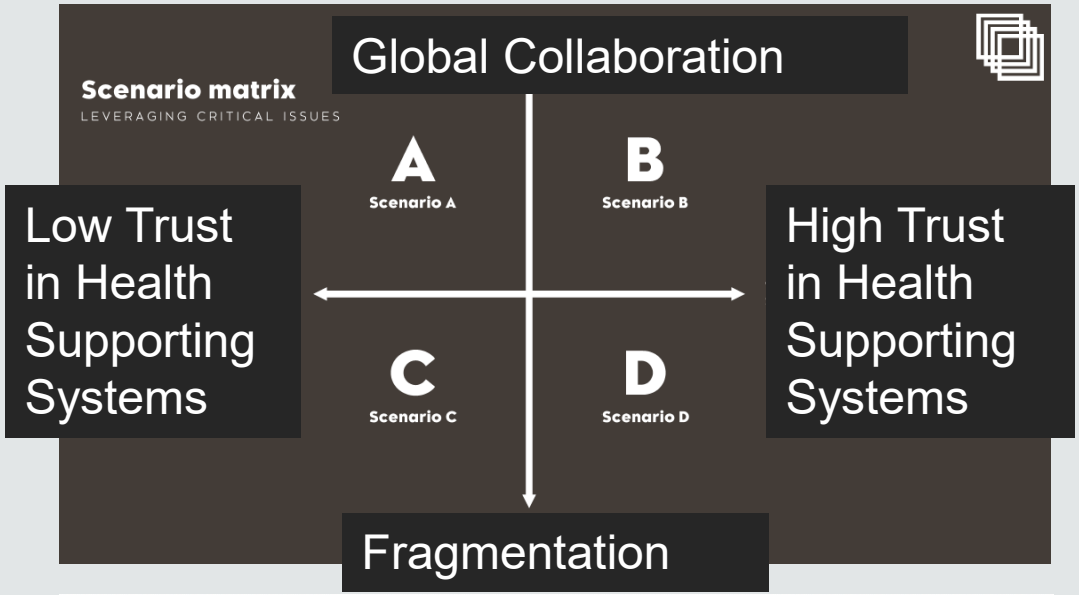
ISSUE 4: **NEXT GENERATION AND PERSONALISED VACCINES**

ISSUE 5: **GEOPOLITICAL POWER SHIFTS**

Consolidated Uncertainties

FUTURE ISSUE	UNCERTAINTY	POLARITIES
	How will public trust in scientific evidence, expert institutions, and information ecosystems evolve toward 2050?	High trust and validated information ecosystems ⟷ Low trust and fragmented information ecosystems
	How will the degree and structure of international collaboration and associated financing models evolve toward 2050?	Strong multilateralism and aligned global agendas ⟷ Fragmentation, nationalism, and uneven financing pathways
	How will advances in vaccine platforms, manufacturing, and delivery systems shape equitable access and affordability by 2050?	Simple, locally adaptable, and integrated immunization systems ⟷ Complex, centralized, and health-worker–intensive immunization systems

FORESIGHT PROCESS REFINED CHOICES TO THE **TOP TWO AXES OF UNCERTAINTY** DETERMINING THE FUTURE OF IMMUNIZATION – LOOKING AHEAD TO 2050



Phase 2: Foresight Analysis

Four Scenarios Developed

Scenario A:
Low Trust & High Collaboration

Public **trust erodes** as **misinformation** spreads and influencers replace institutions. Governments **cooperate pragmatically** on shared risks, while **immunization polarizes** identities, leaving a persuadable "confused middle."

Scenario B:
High Trust & High Collaboration

High trust and global cooperation drive **equitable, science-led innovation**. Regional manufacturing and personalization advance progress, but **disadvantaged groups remain vulnerable** to neglect, complacency, and power imbalances.

Scenario C:
Low Trust & Fragmentation

A fragmented, nationalist world fueled by **misinformation undermines trust and coordination**. Climate impacts worsen, outbreaks spread unchecked, and innovation narrows to localized biosecurity interests.

Scenario D:
High Trust & Fragmentation

National priorities dominate as countries trust domestic science over global systems. **Inequities grow**, technology transfer becomes transactional, climate-affected populations are neglected, and **outbreaks increase** regionally.

Strategic actions

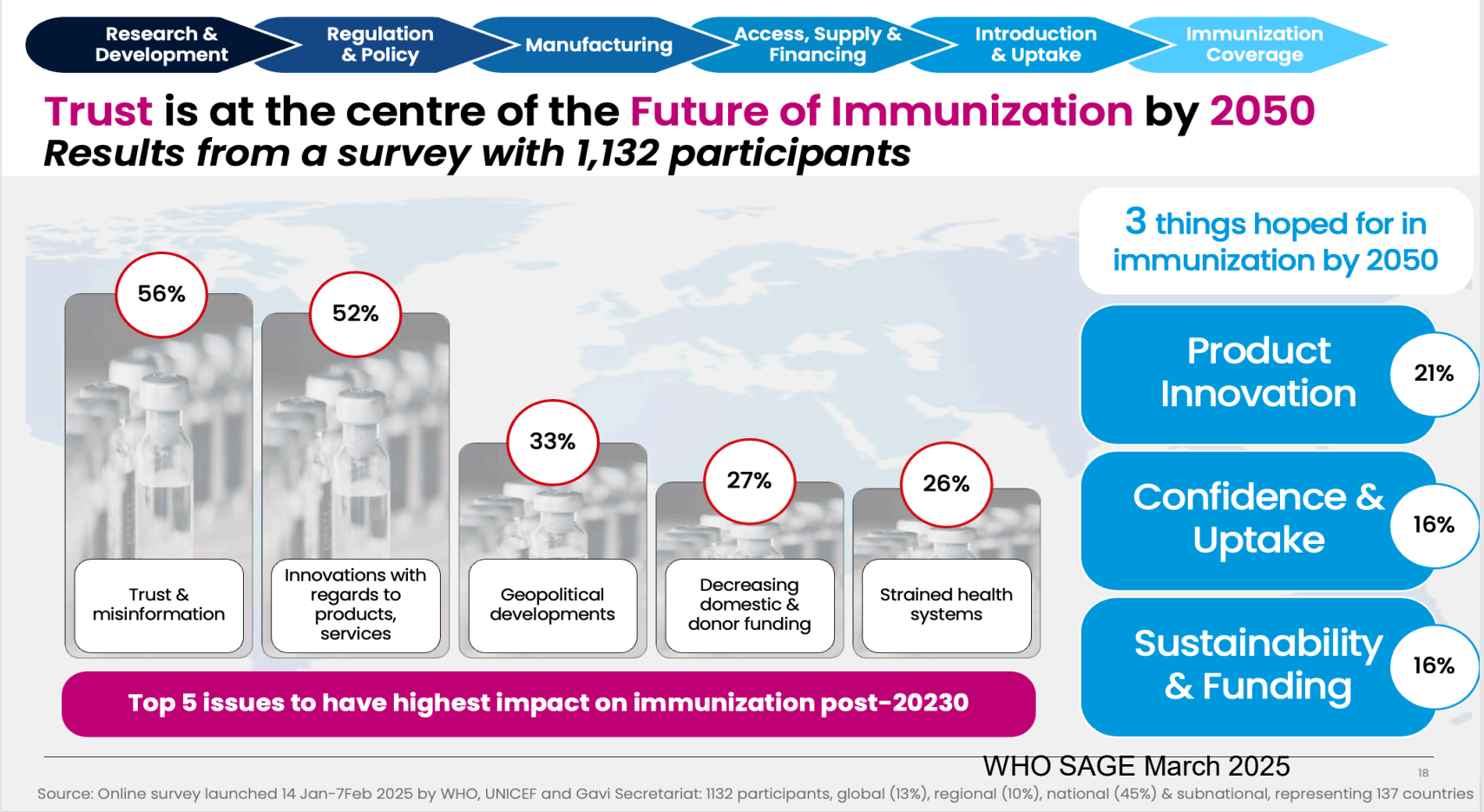
Under uncertainty there are three categories of strategic actions:

- **"No regret moves."** These are measures that strengthen immunisation outcomes and health system resilience across all plausible futures. They deliver clear public value regardless of how the context evolves and can be implemented immediately with confidence.
- **"Options."** These are investments or initiatives that expand the community's ability to respond effectively to a range of emerging futures. They may not be needed in every scenario, but they create flexibility—allowing stakeholders to scale up, pause, adapt, or discontinue efforts as evidence and conditions change.
- **"Big bets."** These are major, forward-looking decisions in which the global health community mobilises substantial resources based on a shared conviction about how the future may unfold. They carry higher risk and limited reversibility, and therefore require strong collective alignment and governance before moving ahead.

ULTIMATELY,

Future of Immunization group's critical themes:

- **Trust** and confidence
- **Equity** and access
- **Cooperation**
- **Manufacture** and supply
- **Financing**, especially. ring-fenced budgets;
- Conflict, climate, and fragility "**polycrises**"
- **Data**, for surveillance, equity and accountability
- **Innovation**, including AI



Trust, Cooperation, Political Commitment, Financing

THANK YOU

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