



Capacity Strengthening for EPI Prioritization

NITAG/EPI Workshops

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Statement of Credit

This material was produced by the Vx Program Optimization & NVI Prioritization TA (CHOICES 2.0) and may be used freely. CHOICES 2.0, funded by the Gates Foundation, is a visionary project designed to provide technical assistance to countries' decision-making processes to systematically review and improve vaccine program prioritization and optimization to meet their immunization program needs. This project is implemented by JSI with support from Development Catalysts, George Mason University, the Task Force for Global Health.



Background

Prioritizing new vaccine introductions and changes to existing programs is hardly new for low- and middle-income countries (LMICs), particularly since the inception of Gavi and the acceleration of new vaccines entering the market. At their core, prioritization decisions rest with National Immunization Technical Advisory Groups (NITAGs) and national immunization program officials, sometimes with a degree of external input or support. Alongside national immunization agendas, prioritization decisions are shaped by global scientific and implementation partners (i.e., WHO, UNICEF), funders (i.e., Gavi, philanthropic donor organizations, bilateral funding agencies), suppliers (i.e., vaccine manufacturers), technical partners (i.e., NGOs, CSOs), and advocates.

For countries eligible for Gavi support, these decisions are now integrated into five-year national immunization strategy planning and forecasting, with countries to forecast their vaccine introductions, switches, and some campaigns as part of a package rather than individually. Effective and comprehensive prioritization and sequencing discussions are even more essential in the new Gavi 6.0 phase as countries weigh how best to use new guaranteed funding structures (for current vaccines in the portfolio and core vaccines not yet introduced) and discretionary country vaccine budgets, particularly for newer vaccines not part of the core/guaranteed portfolio. These tradeoffs and timelines make it all the more important that NITAGs and EPI leadership can outline selection criteria and evidence to shape decisions, identify priority antigens for consideration, and sequence new vaccine introductions and switches in the context of constrained external co-financing.

Vaccine Prioritization Tools and Techniques

Countries may take their own approaches to prioritize new vaccines and other program activities, both within the Expanded Program on Immunization (EPI) and alongside other non-vaccine programs. Several tools, guidelines, and approaches have been crafted for various contexts to help facilitate the increasingly complicated decisions on selecting and sequencing new vaccine decisions. Among these tools, CHOICES focused on refining and applying the New Vaccine Introduction Prioritization and Sequencing Tool (NVI-PST) in Gavi-eligible countries and supporting its use in non-Gavi countries.

New Vaccine Introduction Prioritization and Sequencing Tool (NVI-PST)

The NVI-PST is a multi-stage, multi-criteria methodology to systematize vaccine prioritization decisions. It was developed in 2023–2024 and piloted in Niger and DRC, before being shaped into a toolkit and applied in a range of countries as a facilitated or independent approach.

[NVI-PST guidance and methodology](#)

[NVI-PST virtual training toolkit](#)

[VPOP optimization toolkit](#)

NVI-PST builds upon decades of vaccine decision-making approaches and tools, including the ones listed below. Countries may be familiar with these resources and have used or adapted them for previous prioritization and optimization decision-making. Additional tools, such as [Horizon](#), are being developed and rolled out as well.

CAPACITI Decision Support Tool

The CAPACITI tool, a predecessor to the NVI-PST, is a multi-stage, multi-criteria methodology and tool developed by WHO to provide a framework for prioritization decisions. It was piloted in the WHO's Africa Region and used to support decision-making in multiple countries.

[CAPACITI approach and resources](#)

TRIVAC

The TriVac model, built by the London School of Tropical Medicine and Hygiene, focused on streamlining cost-effectiveness assessments for new vaccines.

[TRIVAC methods and applications](#)

ProVac, UNIVAC, and COSTVAC

ProVac, an initiative of the Pan American Health Organization, sought to support countries in making decisions for pneumococcal, rotavirus, human papillomavirus, influenza, and other vaccines.

[About ProVac](#)

[ProVac Toolkit](#) (including UNIVAC and COSTVAC access)

PriorityVax

Developed by the Sabin Vaccine Institute, PriorityVax aimed to support countries in vaccine decision-making and was used to examine the EPI portfolio in Uganda, (pneumococcal conjugate vaccines (PCV) selection in Papua New Guinea, and COVID-19 vaccines in several settings, among other uses.

[About PriorityVax](#)

Broader decision support resources

[Evidence-to-Recommendation Training - Facilitator Toolkit](#)

[Global NITAG Network Resource Library](#)

[TechNet-21 Resource Hub: Vaccine Switch and Portfolio Optimization](#)

[PATH Vaccine Cost Calculators](#)

Please note: some of these tools are regularly updated, while others are static. These tools have different objectives related to country decision-making.

Convening Prioritization Workshops

CHOICES 2.0 focused on the NVI-PST, which leverages multiple stages of evidence gathering, priority setting, deliberation, and sequencing, with several components conducted during live convenings of NITAG members and EPI leadership. To sensitize country teams about prioritization tools like the NVI-PST and support their appropriate use in prioritization decision-making, CHOICES 2.0 engaged key partners in two primary workshop approaches: direct country engagement in prioritization workshops, and country sensitization through simulated decision processes.

We conducted a series of in-person and virtual workshops with Gavi-eligible countries that requested engagement or agreed to participate upon invitation from CHOICES 2.0 leadership. CHOICES 2.0 and our partners worked with four new countries through these workshops, building off the experiences of two countries supported during the previous CHOICES phase 1.0. The workshops filled a dual role: they convened national immunization decision-making bodies to prioritize and sequence new vaccine introductions and switches systematically, and they provided a platform for iterative feedback and learning on the NVI-PST to support its refinement.

While not the focus of this brief, we also coordinated with the WHO Eastern Mediterranean Regional Office (EMRO) and Global NITAG Network (GNN) to convene additional workshops introducing the NVI-PST through simulations of the decision-making process and equipping country stakeholders to apply the tool in their own contexts.

Workshop Objective

The workshops aimed to support countries in generating a prioritization and sequencing scenario for new vaccine introductions over an agreed timeline and build internal capacity to replicate prioritization exercises in future years, using the NVI-PST or similar approaches. The NVI-PST approach, while extensive, is designed to be scalable to a country's preferences and capacity.

Participants and Facilitators

Prioritization workshops hinged on active participation from a quorum of NITAG members and, as much as possible, were led or co-led by the NITAG chairperson to foster buy-in and sustainability. EPI officials, often in their NITAG secretariat role, also participated in workshops to varying degrees to ensure MOH buy-in, provide integral knowledge related to the current EPI program, and support NITAG discussions. Beyond these official channels, workshop participation was at the discretion of NITAG and EPI leadership, and some included representatives from other ministries, WHO or UNICEF country offices, EPI core technical or implementation partners, and professional associations.

NVI-PST facilitators can be NITAG chairs or designees, NVI-PST technical advisors, or trained technical partners. In all cases, a dedicated facilitator who can guide participants through the NVI-PST process is essential.

In some settings with relatively mature or robust immunization decision-making processes and experienced NITAG members, NITAG and EPI led the process with no external involvement. In these cases, the NITAG chair or a designee facilitated the workshops. Otherwise, workshops used a blended approach, with NVI-PST developers and/or CHOICES/CHOICES 2.0 team members (or other partners) providing remote support, engaging in select sessions, and/or co-facilitating the workshops. In these cases, facilitators were often in-person, with a virtual facilitator participating in key parts of the workshop.

Coordination

The NVI-PST approach is designed to take approximately six months but can be adapted to shorter timeframes as needed. Most countries convene one virtual session at launch and two in-person workshops to address specific steps in the process.

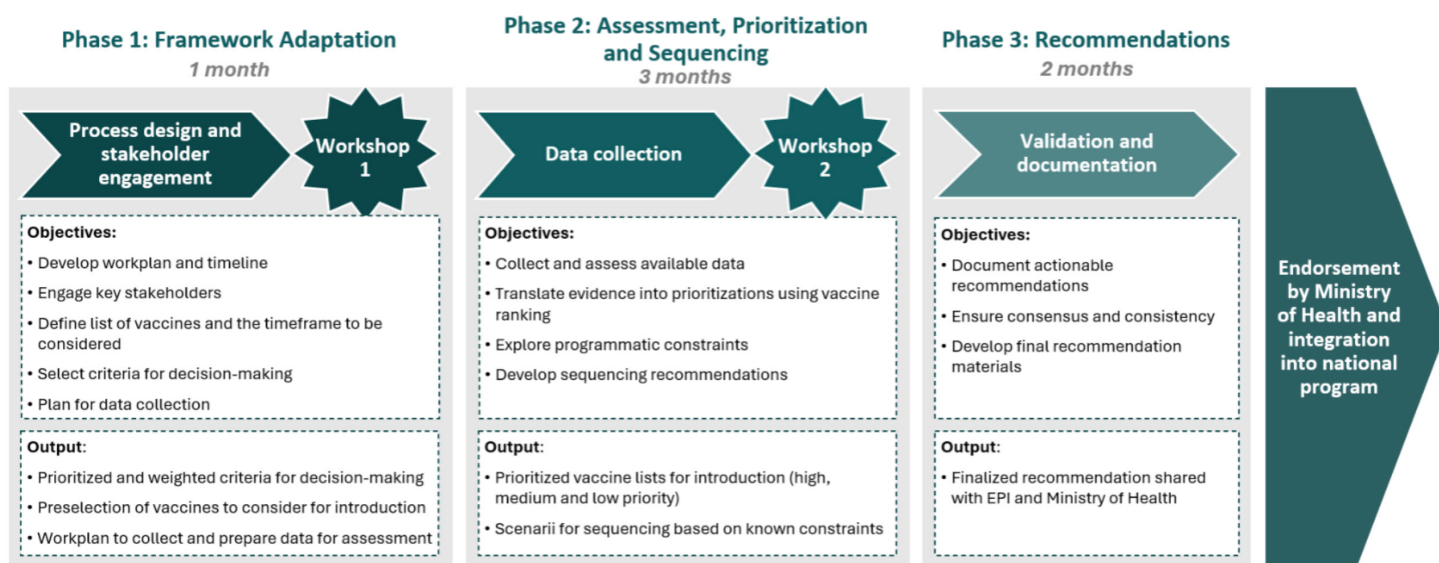


Figure 1. NVI-PST timeline. The NVI-PST process generally involves three phases, inclusive of two workshops, and is conducted over approximately 6 months. (Source: <https://www.nitag-resource.org/resources/new-vaccine-introduction-prioritization-and-sequencing-toolkit-nvi-pst>)

Approach and Methodology

Prioritization Methodologies

The **NVI-PST** is designed specifically to guide a country's prioritization and sequencing of new vaccine introductions for a defined future period of time through a structured decision-making process. The framework is not intended to replace existing vaccine introduction recommendation tools, but to provide an additional tool to support prioritization and sequencing of multiple vaccines over a defined future period of time, usually five years to align with National Immunization Strategy (NIS) five-year timelines.

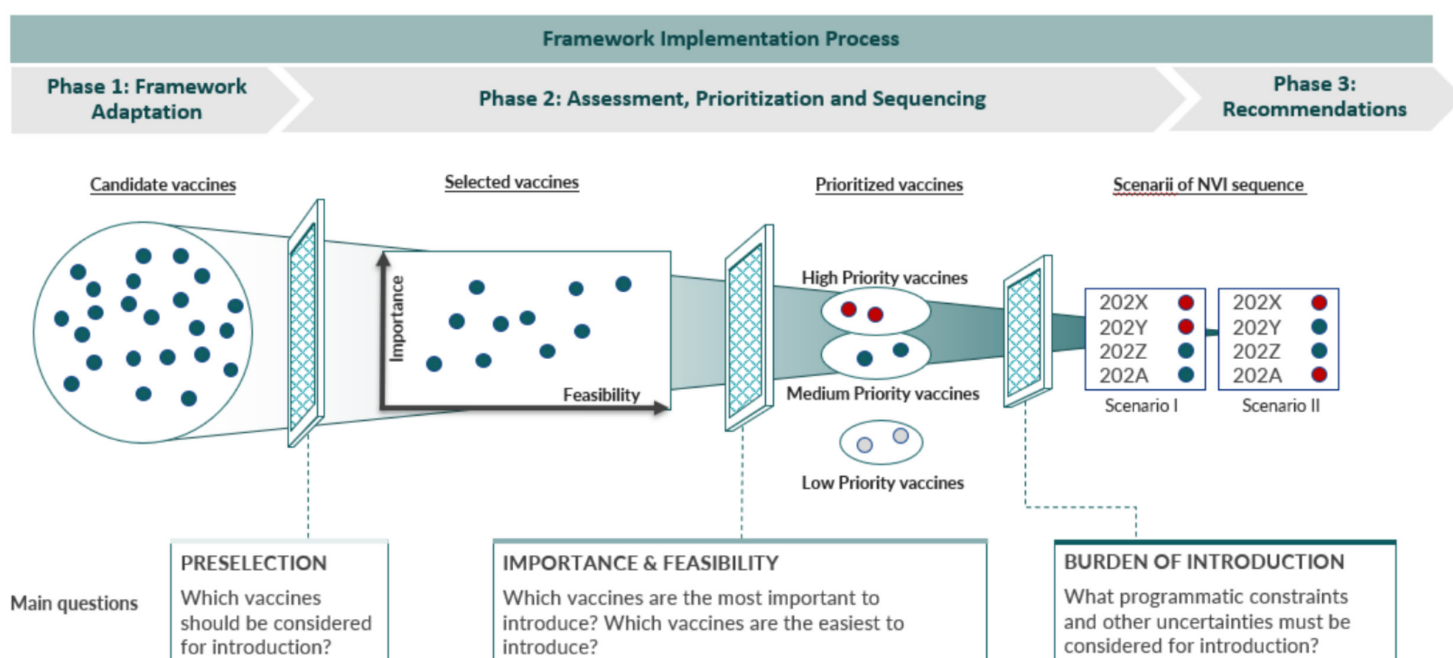


Figure 2. NVI-PST Process. Each NVI-PST phase facilitates NITAG and EPI teams in systematically identifying and screening priority vaccine decisions, ultimately reaching a small subset to sequence for the target time period. (Source: <https://www.nitag-resource.org/resources/new-vaccine-introduction-prioritization-and-sequencing-toolkit-nvi-pst>)

Other prioritization methodologies, including internal approaches established by countries, follow similar structures and have been piloted and implemented in a range of settings. Generally, participants agree upon parameters and scope, review and apply evidence using a range of scoring and weighting, and deliberate outcomes to generate the prioritization list.

Workshop Content

The NVI-PST approach highlights the importance of NITAGs meeting to deliberate on each step in the process and incorporate robust and iterative feedback from multiple voices across criteria and antigens. Workshops, supported by internal resourcing or external technical assistance, provided both a concrete staging of the multi-phase decision process and a forum to resolve issues with the approach, reveal existing evidence not previously examined, and share alternate perspectives. In countries where the NVI-PST was implemented with CHOICES/CHOICES 2.0 support, countries held two workshops over the period to establish criteria, review data, and deliberate on prioritization and sequencing.

Workshops provide a platform for facilitated discussions on key steps in the NVI-PST process, and countries have used them to explore options for new vaccine decisions either in alignment with or separately from the NIS approach. Moving forward, to align with Gavi 6.0 guidelines, these workshops will closely coordinate with NIS processes to facilitate multi-year planning and, for eligible countries, Gavi procedures.

To introduce the NVI-PST approach and facilitate its use, workshops focused on six core topics:

1. Understanding the NVI-PST and how to apply it for prioritization decisions
2. Shortlisting vaccines (from current and anticipated options) in a selected time period, typically five years
3. Selecting and weighting decision criteria (from a provided list of indicators and other information)
4. Outlining data gathering needs and expectations, including acceptable sources and participant responsibilities
5. Examining evidence by selected criteria and antigens and navigating data quality and availability challenges
6. Reviewing and deliberating PST outputs and agreeing on final sequencing recommendations

Data gathering and synthesis, an essential part of the NVI-PST process, was generally conducted between the first and second workshops, frequently in separate working group sessions convened outside of the main workshops. Inadequate data collection between workshops would inhibit progress on prioritization and sequencing, and some countries relied on external support and technical assistance, including from national partners and institutes, to compile relevant and appropriate evidence for each selected criterion and vaccine. Country teams frequently formed working groups to focus on select criteria or antigens, building out the evidence matrix over a period of approximately one month between workshops. Group decision-making, often through voting and ranking, was a critical aspect throughout the workshops. These group decision-making processes allowed for rich and robust discussions, giving workshop participants the opportunity to better understand the evidence available to support their decisions.

Spotlight: Prioritization Support Case Studies

How countries incorporate prioritization tools and methodologies can vary based on a number of factors, and the support requested can be tailored to a country’s context and needs.

Workshop Approach	Description	Case Study
Independent	Country adapts and applies the NVI-PST (or similar approach) internally, including facilitation, data collection, funding, and other components of the process.	Iran <i>Gavi eligibility:</i> Iran is an upper-middle-income country and is in Gavi’s Catalytic phase, as a never-eligible country (as of July 2025). Background: Iran was introduced to the NVI-PST approach at the September 2024 NVI prioritization exercise and NITAG secretariat capacity building workshop in Tunisia (WHO EMRO). The NITAG sought to adapt and apply the NVI-PST framework, agreeing to focus on the five years from 2025-2030. The process was largely implemented internally, with CHOICES engagement through the NVI-PST workshop in Tunisia but no separate technical assistance on applying and adapting the framework. Participation: Participation centered on NITAG members and workshops convened with the School of Public Health, Tehran University of Medical Sciences. Other partners, including EPI, WHO EMRO, and WHO country offices, were cited as providing technical or other support. Process: Iran’s NITAG launched the prioritization exercise with an online session and survey and followed the timelines and stages (including two workshops) outlined in the NVI-PST framework. Participants voted through an online survey link. Outcomes: The NITAG examined 17 criteria across seven prioritized vaccines (HPV, influenza for high-risk groups, hexavalent, pneumococcal for high-risk groups, acellular pertussis-containing vaccines, RSV, varicella). Two vaccines were identified as high priority (HPV, PCV-risk groups); ultimately, the NITAG recommended introducing four new vaccines over the five-year period: HPV (2026), Tdap or PCV for high-risk groups (2027), PCV for high-risk groups or Tdap (2028), and influenza for high-risk groups (2030). This recommendation factored in expected private insurance payment/coverage for PCV and influenza vaccines. Areas for Improvement: <i>Participation:</i> Ensuring successive participation across workshops was challenging, as participants had limited availability. To accommodate schedules, the workshop could be shortened and pre-workshop tasks transferred to non-NITAG members. <i>Criteria:</i> Participants struggled with the number of criteria to choose from; a shorter list of criteria could be provided. Additionally, the process of ranking vaccines by each criterion is challenging; for example, a combination vaccine may not be comparable with a single antigen vaccine, or when a shortlist of vaccines places multiple options at the same rank is another challenge.

Workshop Approach	Description	Case Study
		Next Steps: Revisit sequencing every two years, and conduct a full prioritization exercise every five years. Lessons Learned: More established NITAGs may feasibly conduct NVI-PST workshops. Participants noted the NVI-PST workshops and process were complex and time-consuming, burdening already busy NITAG members and agendas. Iran sought to alleviate these pressures by allocating more of the process to the secretariat and program team (rather than NITAG). This may be an effective strategy in similar settings and requires preemptively strengthening complementary capacity among program teams (i.e., using Excel for data collection and sharing). More Information: Fotouhi A, Younesian S, Mousavi SM, et al Application of the WHO new vaccine introduction prioritisation and sequencing framework to guide evidence-based vaccine introduction decisions in Iran, 2025–2030 BMJ Open 2026;16:e115580. https://bmjopen.bmj.com/content/16/4/e115580
Remote	Country adapts and applies the NVI-PST (or similar approach) with substantive remote/virtual support from CHOICES or another international or local technical assistance partner to help facilitate, collect data, or implement other components.	Uganda Gavi Eligibility: Uganda is a low-income country and is in Gavi’s Initial Self-Financing phase. Background: Members of the CHOICES team provided remote support to the Uganda National Immunization Technical Advisory Group (UNITAG) secretariat to develop a prioritization and sequencing plan for 2026–2030. The CHOICES TA partner, Development Catalysts, prepared the content for each workshop and provided virtual facilitation support for both workshops. Participants: Multiple organizations participated in the workshops, including representatives from the Uganda National Immunization Technical Advisory Group (UNITAG), Uganda EPI, Uganda MOH, WHO, and PATH. Process: The UNITAG facilitated the two workshops, with support from Development Catalysts, and the UNITAG secretariat led evidence collection. Members were split into working groups to use the NVI-PST tool. Outcome: Using 15 criteria from the NVI-PST (eight essential, five significant, and two other), Uganda stratified the priority vaccines into three groups: high priority (hexavalent, multivalent meningococcal conjugate vaccine), medium priority (DTP booster, typhoid conjugate vaccine), and low priority (cholera-preventive, seasonal influenza). The workshop participants drafted two sequencing scenarios, establishing an order of introductions while considering uncertainties around funding and vaccine availability. Participants drafted additional recommendations, suggesting complementary studies to increase evidence on the burden of disease (typhoid and influenza), community perception (hexavalent), and cost-benefit ratios. Areas for Improvement: <i>Participation:</i> Ensuring successive participation across workshops was challenging, as participants’ availability was limited. To accommodate schedules, the second workshop was split into two sessions.

Workshop Approach	Description	Case Study
		• <i>Vaccine options overview:</i> Not all participants were familiar with the potential vaccine options. Providing brief overviews of the potential options at the beginning of the workshop would be useful. • <i>Weighting criteria:</i> Participants had difficulty adjusting their preconceived ideas based on the data presented to them on a specific criterion. To avoid this, using composite indicators as summaries could also help reconcile criteria. • <i>Time:</i> The workshops are time-intensive, which could lead to fatigue and decreased productivity. Identifying other options, for example, breaking up the workshops, to ensure people stay engaged and have time for adequate discussion is necessary. Lessons Learned: The remote support worked relatively well for Uganda, primarily due to three reasons: 1) a strong and independent NITAG secretariat; 2) strong stakeholder involvement in data collection; and 3) strong NITAG leadership.
Comprehensive	Country adapts and applies the NVI-PST (or similar approach) with direct, extensive support from CHOICES or another technical assistance partner, who supports coordination and preparation, facilitates workshops, supports data collection and reporting, and contributes significantly to other process stages.	Tanzania Gavi Eligibility: Tanzania is a lower-middle-income country and is in Gavi's Preparatory Transition phase. Background: Tanzania implemented the NVI-PST process with direct, comprehensive support from the CHOICES 2.0 team. Like many countries, the Tanzania Immunization Technical Advisory Group (TITAG) agreed to focus their prioritization and sequencing process on a five-year period. Before the NVI-PST discussions, Tanzania had undergone a number of relatively recent vaccine switches but had not introduced a new vaccine in the last five years. Participants: In addition to the TITAG, workshops included the TITAG secretariat and IVD (EPI) program personnel, as well as CHOICES team members. Representatives from WHO and UNICEF were actively engaged throughout the process but did not participate in the workshops. Process: The TITAG convened two two-day in-person workshops with direct support from CHOICES. To support data collection and synthesis, four working groups were created to align with the pre-existing TITAG working groups and leadership. CHOICES provided funding to convene the initial workshops, as well as a third workshop to finalize the report and recommendations, and provided ad hoc coordination support to the TITAG secretariat in partnership with IVD (i.e., agenda shaping, participant identification). Outcome: The TITAG prioritized seven vaccines for sequencing: RSV, MMR (introducing the mumps component to the existing MR program), hepatitis B for adults, hepatitis B birth dose, malaria, multivalent meningococcal conjugate vaccine, and typhoid conjugate vaccine. Their analysis and deliberations examined 15 criteria (eight essential, five significant, and two other) for these vaccines. The TITAG identified Hepatitis B birth dose (HepB-BD) and Hepatitis B vaccine for adults as high-priority candidates for introduction within the next five years. The chosen vaccines are important for their potential to reduce disease burden, prevent long-term complications such as chronic liver disease and hepatocellular carcinoma, and contribute to national and global hepatitis elimination targets, yielding substantial public health impacts.

Workshop Approach	Description	Case Study
		Areas for Improvement: • <i>Pre-workshop surveys:</i> Suboptimal completion of the pre-workshop survey on priority criteria and vaccines skewed some results. Ensuring all participants complete the survey before the workshop begins is essential. Time could be allotted at the start of the first workshop to support this if necessary, but this will require additional time to be added overall. • <i>Optimization:</i> Several questions were raised around compulsory vaccine switches and how to triangulate optimization decisions with WHO guidance. As optimization is an evolving conversation and heavily influenced by WHO and Gavi guidance and framing, these decisions were postponed to be integrated after the TITAG could appropriately review and deliberate without delaying NIS processes. • <i>Supply:</i> Countries' ability to communicate directly with manufacturers during the prioritization and sequencing exercise was raised several times, including questions about specific data or information and about compulsory optimization/switches. More clarity and transparency from Gavi, UNICEF, and WHO will be important. • <i>Data quality and availability:</i> Participants raised concerns about the ability to evaluate criteria without adequate data, including missing or partial data. Some data was refined at the last minute, including the morning of the workshop. Data quality is a key barrier to prioritization and sequencing. More guidance on alternative data sources or types (e.g., regional data) could help support countries in navigating these challenges. Lessons Learned: Comprehensive support can streamline coordination and ensure robust workshops, but hinges on clear and early communication about in-person workshop timelines to enable participation, particularly for stakeholders like WHO and UNICEF. Workshops should be scheduled so that prioritization and sequencing activities can be completed before NIS timelines and include adequate time and space for meaningful discussion and consensus-building.

Additional Examples: Comprehensive support for NVI-PST processes and workshops in Ethiopia is described in a recent publication: Memirie ST, Teka T, Mekasha A, et al. Prioritization of future new vaccines introduction: The experience of the Ethiopian National Immunization Technical Advisory Group. Vaccine. <https://doi.org/10.1016/j.vaccine.2025.127932>

Lessons Learned

Strengths & Weaknesses

Holistic planning for vaccine prioritization:

- The NVI-PST approach marks a departure from the previous practice of recommending new vaccine introduction on a case-by-case basis.
- The process is very time-intensive, incorporating both in-person workshop sessions over multiple days as well as data collection, synthesis, and other preparation (e.g., workshop logistics). Streamlining and further country iteration of the NVI-PST approach will be critical for sustainability.

Country ownership and capacity:

- The NVI-PST approach enables country decision-makers to gather proactive, independent, and expert recommendations on new vaccine introductions that reflect the country's realities. It strengthens government stakeholders' capacity for planning, coordination, and resource mobilization for the timely and effective implementation of recommendations.
- As NITAGs transition to proactively informing MOH decisions, rather than validating them, these workshops can help facilitate a deliberative process that looks across vaccines and priority criteria.
- Ensuring that NITAGs are well-equipped to facilitate the process is crucial, as is their ability to work hand-in-hand with EPI representatives.

Consensus building and acceptance:

- By convening key stakeholders throughout the process, this approach provides adequate space for discussion, review, and consensus-building that results in a shared vision for vaccine introductions and decision-making. A transparent and well-communicated prioritization strategy helps build public trust in and acceptance of vaccination efforts.
- Data gathered for workshops was at times challenging to find, mixed quality, or was incomplete. Ensuring that country stakeholders are equipped and supported to identify and source up-to-date data (including neighboring or comparator country data) is required for an evidence-based process.
- Adult learning suggests that group decision-making techniques, including ranking, voting, pile sorting, and other consensus methods, allow for more equitable participation and engagement.

Data for Prioritization and Sequencing

Drawing on their experience with the NVI-PST, workshop participants identified several key lessons learned to support future use of the framework.

Improve data access and availability: Many documents and articles were only available in English, posing a significant barrier for participants seeking to use information, especially global data, in their decision-making.

Strengthen data collection, interpretation, and visualization skills: Across the workshops, participants noted that some data were too complex to be quickly digested and leveraged for the ranking exercises.

Increase market awareness and data access for new vaccines: Countries need support accessing global data and insights about upcoming vaccines, as some participants had little awareness or understanding of some of the vaccines to be considered. Providing insights and transparency on current and anticipated vaccine supply, as well as scientific and technical information on upcoming vaccines, could both inform countries' vaccine prioritization and support Gavi market shaping and demand teams to stimulate investment.

Pathway Forward

NVI-PST workshops offer a valuable approach to prioritization and sequencing, providing a structure for deliberations while creating space for countries to tailor and adapt the process to their own contexts and norms. Not all prioritization and sequencing approaches necessitate in-person workshops, but these are a critical component of the NVI-PST methodology.

These workshops provided opportunities to learn how to best increase capacity in vaccine prioritization and optimization; but sustainability remains a critical challenge, as they require well-resourced country stakeholders. The workshop experiences outlined here illustrate the range of support needed, as, based on country needs and resources, a country can require low, moderate, or high levels of support from technical partners. Other delivery approaches should also be considered to move toward independent facilitation and sustainability.

Data availability and quality were challenges across all countries. Improved data transparency and forecasting related to vaccine products, including costing, is required for countries to make informed decisions about their immunization programs. In most countries, health resources are limited and donor support is declining; as such, it is critical that any decision to introduce new vaccines be preceded by a thorough assessment of affordability and long-term budget impact. There must also be adequate capacity related to data collection and analysis.

Continued investment in capacity strengthening and coordination will be essential to ensure that country stakeholders can be responsive, their contributions sustained, and equitable in their decision-making for their vaccine programs. Prioritizing a systematic approach, like the NVI-PST, can support countries in this decision-making.

Importantly, the NVI-PST has been primarily designed, piloted, and implemented in Gavi-eligible and other low- and middle-income countries. It is intended to be scalable and adaptable to all settings—components have been used in high-income countries (e.g., Canada) to shape criteria and priorities, for example. Documenting non-Gavi-supported country experiences with NVI-PST approaches and workshops is an important next step.