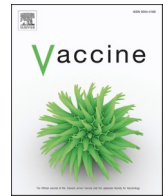




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Establishing priorities to strengthen National Immunization Technical Advisory Groups in Latin America and the Caribbean

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ABSTRACT

Following the COVID-19 pandemic, the Americas faced a significant decline in vaccination coverage as well as increased vaccine hesitancy. The objective of this paper is to summarize the challenges and opportunities outlined by the National Immunization Technical Advisory Groups (NITAGs) in Latin America and the Caribbean (LAC) and prioritize targeted interventions.

The exploratory survey included open-ended questions on two primary components: challenges, and opportunities. Free-text comments presented by each NITAG were collated and classified using indicators and sub-indicators of the NITAG Maturity Assessment Tool (NMAT). Opportunities were classified thematically, and priority actions were generated from the responses.

All 21 NITAGs in LAC, representing 40 countries, 76 % of which have been active for over a decade, responded to the survey. The most common challenges were establishment and composition (62 %), integration into policymaking (62 %), resources and secretariat (52 %), and stakeholder recognition (48 %). The distribution of responses was seen across the whole sample and did not suggest a more pronounced need in relation to year of establishment. Opportunities included maximizing the Regional NITAG Network of the Americas (RNA) to facilitate collaboration, information sharing, visibility, and communication; existing global, regional, and systemic analyses; the World Health Organization/Pan American Health Organization (WHO/PAHO) templates for standard operating procedures; twinning programs with mature NITAGs; and NITAGs in governance structures. Action plans were outlined to formalize the establishment of NITAGs and broaden their composition; strengthen decision-making and access to data resources; and enhance the credibility of evidence-based recommendations and their uptake by policymakers and the public. NITAG challenges are not unique to LAC.

NITAGs have outlined a short-term prioritized action plan which is critical to enhancing NITAG value and importance in countries.

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1. Introduction

National Immunization Technical Advisory Groups (NITAGs) are multidisciplinary groups comprising national experts responsible for providing independent, evidence-informed recommendations on vaccines and immunization to national health authorities [1]. In the countries of Latin America and the Caribbean (LAC), ministries of health have a strong record of establishing NITAGs and bolstering their role in providing advisory support to national immunization programs (NIPs) [2].

The COVID-19 pandemic and the post-emergency phase of the COVID-19 pandemic have highlighted new challenges and needs for NIPs in the Americas, namely the most significant decline in vaccination coverage in recent years, along with increased vaccine hesitancy, underscoring the important role of NITAGs [3,4].

The objective of this paper is to summarize the NITAG challenges and opportunities post-emergency phase of the COVID-19 pandemic, and to prioritize targeted interventions to address vaccination coverage and vaccine hesitancy among others.

2. Background

Since the early 2000s, the World Health Organization (WHO) and GAVI, the Vaccine Alliance, have consistently urged all countries to commit to immunization, to inform and engage opinion leaders on the value of immunization, and to strengthen national capacity to formulate evidence-informed policies to guide the design and delivery of immunization services to all [1,5]. These calls to action have greatly influenced NITAG establishment and growth in LAC countries throughout the years.

There are currently 23 NITAGs in the Region of the Americas that advise 42 countries, including a sub-regional technical advisory group – the Caribbean Immunization Technical Advisory Group (CITAG) – which advises 22 English-, Dutch-, and French-speaking countries and territories [6]. Except for the Dominican Republic and Venezuela, all countries in the Americas have a NITAG; the newest ones include CITAG, created in 2018, Haiti in 2019, Belize in 2020, and Suriname in 2022.

In 2021, based on global NITAG performance standards, 17 (81 %) of the LAC NITAGs were functional [4]. However, to respond to future emerging scenarios, all NITAGs need to be better equipped to survey developments in science, technology, and socio-behavioral interventions relevant to vaccine-preventable diseases and to formulate robust policy guidelines to address potential outcomes proactively.

Conforming to the second strategic priority of the global Immunization Agenda 2030 (IA2030), developed in 2020 - which calls for countries to strengthen evidence-informed decision-making, with technical input from NITAGs [8,9] - the Regional NITAG Network of the Americas (RNA) was created in 2022 to be the main communication channel among the NITAGs in the Region; to improve the capacity of NITAGs to efficiently formulate evidence-informed recommendations on immunization through regional collaboration and cooperation; and to facilitate NITAG exchanges in the languages spoken in the Americas [4]. At the first RNA meeting and launch in October 2022, NITAGs came together in the city of Antigua, Guatemala, where they reaffirmed their advisory role and their significance in helping their governments make credible decisions on vaccine-preventable disease. The responses to the survey discussed in this paper were shared at this meeting and later summarized using NITAG Maturity Assessment Tool (NMAT) indicators.

The NITAG Maturity Assessment Tool (NMAT) was finalized in 2023 by a multi-partner workgroup comprising the United States Centers for Disease Control and Prevention (CDC); the Task Force for Global Health (TFGH); WHO Headquarters along with the African (AFRO) and American (PAHO) regional offices; the Global NITAG Network (GNN); and the Wellcome Trust. The NMAT was developed as a practical planning, monitoring, and evaluation tool to guide the development and strengthening of NITAGs by providing a mechanism to assess NITAG

maturity, and a framework for organizing and prioritizing tangible and achievable next steps for NITAG strengthening activities. It encompasses seven indicators, further divided into sub-indicators, with the goal to help align future regional and global NITAG agendas [10,11].

3. Methods

3.1. Survey design

This exploratory survey was conducted by the PAHO Secretariat during the inaugural RNA meeting in Guatemala in October 2022. A directory of NITAGs in the Americas was created. Each chair or representative of the 21 NITAGs in the LAC Region was invited to prepare narratives for PowerPoint presentations. The United States of America and Canada were excluded from the survey. The survey included the following two open-ended questions: 1) What are your NITAG's challenges? and 2) What are your NITAG's opportunities? These questions were not taken from the NMAT, nor was the NMAT shared with the participants at the time the survey was shared. However, considering that a systematic process was not used to obtain results for specific NITAG features, we decided to group the findings based on the NMAT indicators and sub-indicators to help categorize the answers received and align and compare the narratives with future NMAT assessments conducted.

3.2. Data collection

The survey was distributed in English, Spanish, Portuguese, and French in a PowerPoint format. The NITAGs were given three weeks to respond. Multiple reminders were sent out as the survey deadline approached. The responses were returned in the country's language, translated into the other three languages, and presented orally by each NITAG chair or representative at the RNA meeting. The free text statements were collated and classified using NMAT indicators and sub-indicators [11] and entered into SPSS. The Caribbean Immunization Technical Advisory Group was required to submit a collective response for the Caribbean countries as this group is represented by a single NITAG. Additional data on the year of establishment of each NITAG were added to the dataset to ascertain years of NITAG activity for additional comparisons.

3.3. Analysis

Descriptive statistical analysis was conducted using SPSS. Opportunities aligned with NMAT indicators and sub-indicators were tabulated and subjected to simple thematic analysis based on the survey responses. Survey results were presented to the RNA executive board one month later. Priority areas to strengthen NITAG functionality were developed from the thematic analysis of NMAT indicators and sub-indicators.

4. Results

4.1. Submission of assessments

The response to the NITAG survey was high, with the following 21 NITAGs in LAC submitting assessments: Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, plus the CITAG representing 22 countries and territories in the Caribbean. The distribution of responses was seen across the whole sample and did not suggest a more pronounced need based on year of establishment of the NITAG. Two NITAGs, Chile and Cuba, did not highlight having any challenges. Table 1 displays the RNA members according to year of creation. Fig. 1 shows the distribution of the number of years NITAGs have been active. Challenges and opportunities stratified by NMAT indicators and sub-indicators are presented

Table 1
NITAGs in the Americas according to year created.

Year of creation	Country (overall total 42)	NITAG (total 23)
1964	United States, Canada	- Advisory Committee on Immunization Practices (ACIP) - National Advisory Committee on Immunization (NACI)
LAC countries		
1985	Uruguay	National Advisory Commission on Vaccination (CNAV)
1989	Cuba	National Committee on Immunization Practices (CNPI)
1991	Brazil, Mexico	- Technical Advisory Committee on Immunization (CTAI) - National Vaccination Council (CONAVA)
1999	Honduras	National consultative Council on Immunization (CCNI)
2000	Argentina, Bolivia	- National Commission on Immunization (CoNai) - National Immunization Committee (CNI)
2001	Costa Rica, El Salvador, Panamá, Paraguay	- National Commission on Vaccination and Epidemiology (CNVE) - Advisory Committee on Immunization Practices (ACIP) - National Advisory Commission on Immunization Practices (CONAPI) - Technical Advisory Council on Immunization (COTENAI)
2003	Ecuador	National Immunization Committee (CNI)
2004	Peru, Nicaragua	- Advisory Committee on Immunization (CCI) - National Committee on Immunization Practices (CNPI)
2009	Chile, Colombia	- Advisory Committee on Vaccines and Immunizations (CAVEI) - National Committee on Immunization Practices (CNPI)
2013	Guatemala	National Advisory Council on Immunization (CONAPI)
2018	22 Caribbean countries/territories	Caribbean Immunization Technical Advisory Group (CITAG)
2019	Haiti	Technical Advisory Group on Vaccination (GTCV)
2021	Belize	National Immunization Technical Advisory Group (NITAG)
2022	Suriname	National Immunization Technical Advisory Group (NITAG)

Note: The NITAGs from the United States and Canada were excluded from this survey.

Source: Country Reports through the WHO/UNICEF Joint Reporting Form, 2022.

in Tables 2 and 3 respectively. The NMAT indicators detailed below outline the free-text issues faced by NITAGs as well as opportunities identified to address the challenges.

4.2. Indicator 1: Establishment and composition

While most of the NITAGs are legally established and have been active for more than a decade (Fig. 1), 62 % of NITAGs considered this indicator to be a challenge, especially the sub-indicator relating to diversity of expertise among members (Table 2). The NITAGs noted difficulty finding independent experts with sufficiently diverse professional backgrounds and who were solicited by their governments. NITAGs also expressed a desire to integrate with different government sectors and scientific societies (Table 3), and address member attrition. Other challenges cited by newly established NITAGs, included the absence of a legal framework, resulting in a lack of recognition and hampered functionality. The NITAG of Belize mentioned that it's NITAG is "not

legally established" with no legal framework supporting its structure and function." The CITAG mentioned that "Caribbean countries in the Region are not aware of the role of CITAG and is underutilized to influence policy and practice".

4.3. Indicator 2: Independence

A quarter of NITAG representatives expressed the need for more independence from their governments and greater transparency through improved communication mechanisms between NITAGs and health authorities (Table 2). Additionally, decision-making free from personal, political, or commercial bias was flagged as a substantial issue to be addressed. Colombia mentioned that its NITAG "is not independent and depends on the political will of the moment... In times of crisis and emerging immune-preventable diseases, the mission and vision of the advisory group is threatened, since the legal entity predominates over the technical-scientific concept". The NITAGs suggested strengthening mechanisms and processes to ensure recommendations are free from bias and conflicts of interest (Table 3). They also suggested that the establishment of the RNA would increase the representativeness of other societies as well as encourage intra- and inter-regional trainings to address the lack of expertise among core members. In their opinions, this RNA would also help NITAG members to connect and exchange with members from different professional backgrounds and varied expertise.

4.4. Indicator 3: Resources and secretariat support

Resources and secretariat support were the second most challenging indicators for around half (52 %) of the NITAGs, with lack of funding and secretariat support highlighted as a major challenge by 8 (38 %) committees (Table 2). Poor access to scientific and epidemiological databases for vaccine-preventable diseases also affected decision-making. Suriname stated that its biggest challenge is establishing "a strong NITAG secretariat". A number of NITAGs suggested establishing scientific linkages between NITAGs to strengthen resources and secretariat support (Table 3).

4.5. Indicator 4: Operations

Concerning operational challenges, two NITAGs lacked standard operating procedures (Table 2) and a number of NITAGs noted implementation challenges in regard to annual work plans. Suggested opportunities included assistance from WHO/PAHO in developing guidelines for standard operating procedures for operationalization, as well as establishing twinning programs between NITAGs (Table 3).

4.6. Indicator 5: Making recommendations

Five (24 %) NITAGs indicated needing assistance in developing systematic approaches to evaluate data and conduct bibliographic reviews. The same NITAGs expressed their concerns for successfully preparing technical documents and providing quality opinions and recommendations, considering the limited expertise of their members (Table 2). Argentina mentioned having challenges "developing methodologies for data analysis, literature reviews, and evaluation of the evidence." The need to establish scientific linkages between NITAGs was emphasized in the opportunities listed along with encouraging training for the "evidence to recommendation" (EtR) framework (Table 3), which helps advisory groups move from evidence to decisions in a systematic manner.

4.7. Indicator 6: Integration into policymaking

Integration into policymaking (62 %) was another common indicator affecting NITAG functionality; credibility and visibility are critical concerns. A quarter of NITAGs stated they faced challenges ensuring that

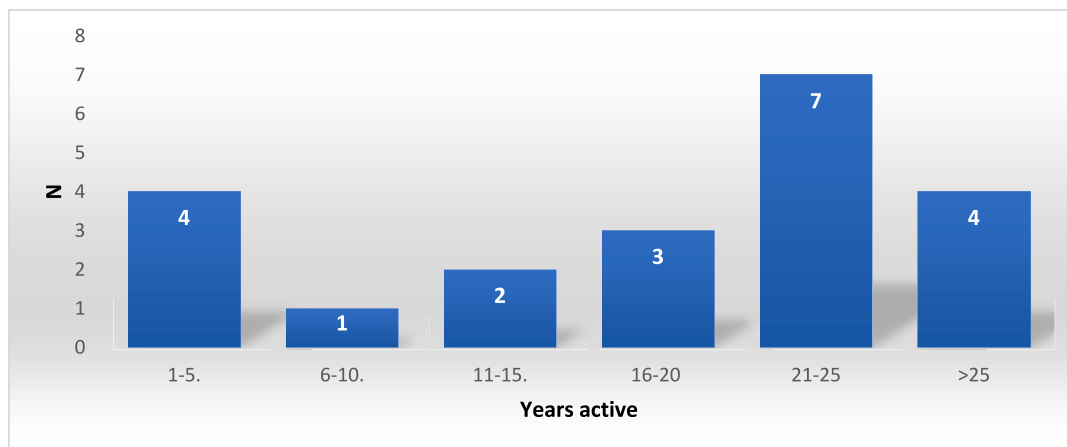


Fig. 1. Distribution of NITAGs ($n = 21$) according to number of years since establishment.

Table 2

Challenges of 21 NITAGs in Latin America and the Caribbean stratified by NITAG Maturity Assessment Tool indicators and sub-indicators.

Indicator	No. ^a (%)	Sub-indicator	No. ^a (%)
Establishment and composition	13 (62)	Official status	2 (10)
		Terms of reference	1 (5)
		Diversity of expertise	10 (48)
Independence	5 (24)	Membership	4 (19)
		Disclosure and conflict of interest process	0 (0)
		Transparency	3 (14)
		Independence from primary workplace of members	3 (14)
Resources & secretariat support	11 (52)	Secured funding	5 (24)
		Access to relevant data and other necessary tools	4 (19)
		Access to external technical expertise and capacity-building tools	4 (19)
		Secretariat support	3 (14)
Operations	2 (10)	Meeting logistics	0 (0)
		Standard operating procedures	2 (10)
		Evaluation	1 (5)
Making recommendations	5 (24)	Decision-making process	5 (24)
Integration into policymaking	13 (62)	Documentation and communication	0 (0)
		Government consideration and solicitation	13 (62)
Stakeholder recognition	10 (48)	Implementation	6 (29)

^a Number of responses.

recommendations are implemented, or at least debated with health authorities before being disregarded. The NITAGs stated that policy-making bodies were unaware of their role, resulting in them being underutilized and uninfluential in contributing to immunization policymaking and implementation in their countries (Table 2). Ecuador stated the lack of visibility of its NITAG as the biggest challenge. In certain countries, advisory groups were often sidelined due to chaos and political agendas. For some NITAGs, formal communication channels to announce recommendations to national authorities had disintegrated. Opportunities to improve integration into policymaking include developing new strategic plans where NITAGs are included in program governance structures (Table 3).

4.8. Indicator 7: Stakeholder recognition

Approximately half of the NITAGs (48 %) expressed challenges vis-

Table 3

Opportunities suggested by NITAGs.

Challenge	Primary sub-indicator	Opportunities
Establishment and composition	Diversity of expertise	- Advisory committee networks (GNN, RNA) - Increase representativeness by including other scientific societies - Develop a training and coaching platform with international partners
Independence	Independence from the primary workplace of members	Ensure that the recommendations issued are not biased by conflicts of interest
Resources and secretariat support	Data	Updated recommendations (WHO, SAGE, others)
	Secretariat	- Establish scientific links between NITAGs in the Region - SYSVAC
Operations	Standard operating procedures	- Twin with mature NITAGs - GNN/WHO guidelines for operationalization
Making recommendations	Decision-making process	- Establish scientific links between NITAGs in the Region - Access training for Etr (evidence to recommendation) frameworks such as GRADE, WHO, etc.
Integration into policymaking	Government consideration and solicitation	Development of a new strategic plan where the NITAG will be included in program governance structures
Stakeholder recognition		- Digital space for communication with the population - Communication with the population: using appropriate messaging techniques for different populations - Partnerships with media houses - Sensitization of authorities to the importance of the NITAG - Increase capacity for social communication

à-vis public recognition, with policymakers only occasionally considering NITAG recommendations despite strong epidemiological data and rigorous research findings from independent studies supporting NITAG recommendations. To address the lack of credibility among stakeholders as well as vaccine hesitancy, the committees expressed the need to improve their communication strategies to combat misinformation and

reach hesitant populations effectively (Table 3). Two NITAGs shared the opportunity to reach more stakeholders from scientific societies and to increase human resources training to support community education policies. Peru for example shared the need to “improve the public’s access to NITAG’s recommendations.”

4.9. COVID-19 pandemic challenges and opportunities

The NITAGs indicated the ways in which the COVID-19 pandemic had magnified their weaknesses, exposing fragile administrative and procedural best practices: in some cases weaker than expected ties to their governments were exposed. Some NITAGs were not sought for their expertise while others were over-solicited to the point of membership burnout. In one case, during political turmoil, the NITAG was disbanded and replaced with an independent committee, without the input of the NITAG. Member availability and expertise within a NITAG also affected the regularity at which recommendations were formulated as well as the quality of the recommendations provided. Opportunities to improve NITAG performance included ensuring NITAGs are better equipped to operate in times of crisis by increasing their participation in the meetings of scientific societies and on social media platforms for better visibility and credibility, as well as increasing advocacy with governments to solidify the legal or administrative basis of the NITAGs. Engaging credible local experts and maintaining regular and fluid communication with national health authorities would help establish communication channels between NITAGs and their governments, resulting in enhancing NITAG value. Vaccine hesitancy during the COVID-19 pandemic highlighted the need for better social communication skills among NITAGs.

5. Discussion

Carving out a space for NITAGs to share their challenges and opportunities during the first RNA meeting was an occasion to inform governments of the current state of their NITAGs and to remind them of NITAGs’ key role in guiding national immunization policy and strategy formulation [3]. The open-ended exploratory survey approach was ideal because it allowed respondents to provide unrestricted, detailed, and transparent responses in their local languages and identify challenges unique to their country setting. Grouping the survey findings based on the NMAT indicators has proven to be valuable, considering that all 23 NITAGs in the region conducted self-assessments using the NMAT in 2023, as recommended by PAHO/WHO, which enables us to easily align and compare the results from this survey with current and future NMAT assessments.

Overall, LAC NITAGs expressed challenges similar to those experienced among NITAGs in other Regions with the findings predominantly highlighting issues around functionality and communication mechanism gaps [2,12–14].

Considering that NITAGs strongly supported the establishment of the RNA and its potential to strengthen and maximize NITAGs, strategies should be identified to rapidly increase the RNAs visibility and effectiveness, such as opportunities for increasing interaction and collaboration among NITAGs within and outside of the Region; and identifying experts for opinions and lessons learned on specific topics, to address the shortage of expertise and membership attrition. Such an approach was used in the Caribbean where experts in the CITAG have been identified among 22 Caribbean countries and territories, some with small populations and limited expertise [6]. Moreover, the RNA can assist in providing support to NITAGs seeking to establish a robust legal or administrative basis; stimulate NITAG learning through peer-to-peer exchanges; link NITAGs based on their similarities; facilitate twinning opportunities; increase vaccinology education opportunities and; promote and encourage NITAG participation in the GNN.

The RNA can also help build a sustainable scientific network to exchange research, administrative and procedural best practices, and

lessons learned regarding policy implementation to provide real-time knowledge sharing between countries and improve evidence-informed vaccine decision-making [15]. To further strengthen the uptake of recommendations by policymakers and the public, and increase public recognition, the RNA can help formalize the role of NITAGs in communicating the underlying evidence and processes that support a data-driven immunization policy process for the public and other relevant stakeholders; promote effective communication-aligned guidance materials for specific audiences and; advertise activities to engage community members such as parents, adolescents, providers and civil society.

In response to this need, the RNA platform was created in 2023 for NITAGs, to exchange lessons learned and best practices on policy implementation. The platform seeks to be a digital space where RNA members can find relevant information on collaboration and learning, share documents, and participate in interest groups. Members can communicate in real-time in public or private group conversations, and official documents and materials are available in English, Spanish, Portuguese, and French. The platform is linked to the GNN website, with the goal to increase access to experiences and best practices among NITAGs globally [7].

Regarding approaches to strengthening the formulation of evidence-based recommendations, using online communication, remote technical assistance, webinars, and provisions of materials via the RNA platform can help increase NITAG participation in virtual technical training, disseminate key guidance materials, and build NITAG capacity [15]. The RNA platform can help promote centralized NITAG communication, increase regional networking and collaboration, access and share evidence, and convene around common immunization policy issues, all opportunities and suggestions raised by NITAGs in the survey.

The freely accessible SYSVAC registry hosted by the GNN (7); the EVIDA initiative – Strengthening Evidence-informed Vaccine and Immunization Decision-making and Appraisal established in 2023 and funded by the Wellcome Trust to continue the gains from PAHO’s 2004–2016 ProVac initiative; several generalizable decision support tools that facilitate country-led disease burden assessment, cost-effectiveness analysis, costing exercises; and modelling-informed simulation impact studies to inform questions about the value and projected health benefits of the introduction of new and underutilized vaccines [16,17,18] are resources linked to the RNA platform that can assist NITAGs in addressing future emerging settings regarding immunization.

Increasing the interaction of LAC NITAGs with NITAGs from other regions, along with improved access to global-level WHO recommendations and evidence, would significantly aid LAC NITAGs and key policy enablers [3]. For example, the evidence from the WHO’s Strategic Advisory Group of Experts on Immunization (SAGE) is already contextualized in the regional technical advisory group meetings. The NITAGs would only need to review the latest evidence, identify national public health needs, and adapt and contextualize the evidence to their country’s context. The existing systematic reviews accessible in SYSVAC can also help NITAGs use their time and resources more efficiently to focus on applying the findings to their local contexts and gathering other policy-relevant information [7].

Regarding resources and secretariat support, the capacity of ministries of health to fund NITAG activities is important. This has been highlighted in Chile and Argentina, two well-established NITAGs that have solid administrative bases with a clear conflict of management policies as well as strong and sustainable support from their ministries of health [14,19,20]. Integrating NITAG recommendations into the Ministry of Health decision-making is critical to NITAG’s relevance. The findings indicate variability in relation to the country context, governance, and NITAG capacity to achieve Ministry of Health recognition [21,22]. The RNA can give NITAGs an opportunity to discuss difficult topics amongst themselves and aims to centralize and facilitate these exchanges and peer support for cross-regional collaboration.

The number of NITAGs in the Americas has grown in the last three

decades. This is linked to the fact that the landscape in which health policy decisions are made has changed, and governments must prioritize policy decisions within health-sustainable, developmental goals and restricted resources [23]. There has been an expansion of the health and development agenda relating to immunization [3,13]; a shift towards a systems perspective that maximizes health equity embodied in the IA2030 [5]; and a transition in some countries from external support to national health financing, resulting in reduced resources for financing immunization activities [24,25]. NITAGs and governments also face challenges from increased vaccine hesitancy and decreased vaccination coverage. They must include transparent and persuasive communication and behavior change strategies in their immunization plans to rebuild trust in the benefits of vaccines and address the anxiety generated by misinformation and erroneous perceptions. Therefore, policies and legislation safeguarding immunization as a public good are further mechanisms that can be explored concurrently with these strategies [26,27]. Also, written conflicts of interest policy, with definitions of types of conflicts of interest, and processes for assessing and managing conflicts of interest need to be prioritized to ensure recommendations are free from bias.

The COVID-19 pandemic-related hardships experienced in the Region have resulted in most countries facing resource constraints that jeopardize the sustainability of NIPs. In a number of countries, political instability resulted in a high turnover of immunization program management teams and staff and a lack of capable and willing local experts, thus jeopardizing the continuity of IA2030 and its public health impact. Experience has shown that establishing and strengthening NITAG decision support tools is critical for improving leadership in informing decisions on vaccine introduction and financial sustainability in countries [1]. Without strong NITAGs, the countries in LAC will have difficulty addressing program needs as they arise and carrying out successful introductions of new vaccines in the future [11].

6. Conclusions

The challenges facing LAC NITAGs are not unique to the Region. While most NITAGs have been established for over a decade, the majority are still struggling to function properly with the main challenges, including a lack of diversity in expertise among NITAG core members, difficulties in integrating recommendations into policy, NITAG recognition, visibility, and credibility as well as constraints on financial and human resources. Opportunities have been highlighted to identify specific areas for targeted intervention; however, optimizing the RNA and its platform is one of the most promising ways forward for NITAGs in the Region, as it encompasses all other opportunities such as regional scientific community collaboration mechanisms, linkages to policymakers, cultivation of trust, and effective communication of evidence-informed decision-making to key audiences. NITAGs must be positioned to ministries of health as valuable and credible resources. The RNA and national ownership of NIPs will help foster these processes.

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CRediT authorship contribution statement

Tracy Evans-Gilbert: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing, Supervision. **J. Peter**

Figuerola: Conceptualization, Writing – review & editing. **Pablo Bonvehí:** Conceptualization, Writing – review & editing. **Mario Melgar:** Conceptualization, Writing – review & editing. **Daniel Stecher:** Conceptualization, Writing – review & editing. **Renato Kfoury:** Conceptualization, Writing – review & editing. **Greta Munoz:** Conceptualization, Writing – review & editing. **Rakesh Bansie:** Conceptualization, Writing – review & editing. **Renato Valenzuela:** Conceptualization, Writing – review & editing. **Eduardo Verne:** Conceptualization, Writing – review & editing. **Daniel Salas:** Conceptualization, Writing – review & editing. **N. Jennifer Sanwogou:** Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The authors alone are responsible for the views expressed in this publication, and they do not necessarily represent the decisions or policies of the Pan American Health Organization.

Data availability

Data will be made available on request.

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