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Strengthening the Implementation of the National Vaccination Plan in Colombia

Local Health System Sustainability Project

Task Order 1, USAID Integrated Health Systems IDIQ

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Local Health System Sustainability Project

The Local Health System Sustainability (LHSS) Project under the USAID Integrated Health Systems IDIQ helps low- and middle-income countries transition to sustainable, self-financed health systems as a means to support access to universal health coverage. The project works with partner countries and local stakeholders to reduce financial barriers to care and treatment, ensure equitable access to essential health services for all people, and improve the quality of health services. Led by Abt Associates, the five-year, $209 million project will build local capacity to sustain strong health system performance, supporting countries on their journey to self-reliance and prosperity. In Colombia, this project is known as "*Comunidades Saludables*".

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Acronyms

COVID-19	Coronavirus Disease 2019, disease caused by SARS-CoV-2
COVECOM	*Comité de Vigilancia Epidemiológica (*Community Epidemiological Surveillance Committee)
EAPB	*Entidad Administradora de Planes de Beneficio* (Benefit Plan Administration Entities)
EPS	*Entidad Promotora de Salud* (Health Promotion Entities)
ICBF	*Instituto Colombiano de Bienestar Familiar* (Colombian Family Welfare Institute)
ICRC	International Committee of the Red Cross
IPS	*Institución Prestadora de Servicios de Salud* (Health Care Providers)
LHSS	Local Health System Strengthening Program
MSPS	*Ministerio de Salud y de la Protectión Social* (Ministry of Health and Social Protection)
PAI	*Programa Ampliado de Inmunizaciones* (Expanded Program of Immunization)
PISIS	SISPRO Integration Platform
PNV	*Plan Nacional de Vacunación* (National Vaccination Plan)
SISPRO	*Sistema Integrado de Información de la Proteción Social* (Integrated Social Protection Information System)

1. Background

Objective 4 of the Local Health System Sustainability Project's (LHSS's) Colombia Activity is to strengthen the resilience of the country's health system so it can respond to current and future threats, including the COVID-19 pandemic. To do this, LHSS Colombia is supporting the Ministry of Health and Social Protection (MSPS), the territorial health secretariats, and other stakeholders in implementing the National Vaccination Plan against COVID-19. It is building management capacity to deploy the National Vaccination Plan in the territorial entities, training health workers and communities to generate demand, and adapting guidelines to improve vaccination monitoring. It also is developing digital mechanisms to strengthen National Vaccination Plan implementation aimed at increasing access to vaccines, particularly for Venezuelan migrants, vulnerable ethnic groups, and low-income and uninsured populations.

Specifically, LHSS Colombia is working with the MSPS and the health secretariats to build the capacities of the teams that are managing the vaccination process, and to coordinate with stakeholders to implement microplanning interventions to reach all the population groups targeted for vaccination.

2. Context

Colombia's National Vaccination Plan against COVID-19 was launched in February 2021. The National Vaccination Plan is based on the principles of solidarity, efficiency, charity, public interest, and social and distributive justice. The Plan has two phases of activities: The first aimed to reduce mortality from COVID-19 and the incidence of severe cases of COVID-19, and to protect health and support personnel, caregivers of prioritized populations (community mothers and caregivers of older adults), and police and military personnel. The second phase is to gradually reduce the transmission of COVID-19 in the general population, and in the population groups prioritized by the MSPS (MSPS 2021b). The National Vaccination Plan framework puts the MSPS in charge of issuing the technical and operational guidelines for executing the Plan. It establishes the roles and responsibilities of the stakeholders involved during microplanning, implementation, monitoring, and evaluation of the vaccination strategy in the country. It provides guidance on health communication and on strengthening human resource capacity, and provides technical guidance to health service providers for managing the information system (MSPS 2021a). The management of the Expanded Program of Immunization (PAI) COVID-19 requires the participation, coordination, and accountability of the departmental, district, and municipal territorial entities, health care providers, and the benefit plan administrators, among others (MSPS 2021a).

Active participation of these stakeholders is required to implement microplanning interventions, which aim to deliver vaccinations in a systematic and organized manner to achieve established vaccination goals. Microplanning comprises a series of steps, implemented in stages, which begins with a situational analysis that identifies gaps in vaccination coverage. This information then is used as an input to define the strategies, tactics, and requirements for implementing vaccination-related activities. The stages of microplanning are scheduling, monitoring, supervision, and evaluation.

As part of the response to the pandemic, LHSS Colombia deployed health experts to support the PAI teams to implement vaccination-related activities in the field. The project made significant contributions during each of the microplanning stages by assisting PAI teams to adapt to each territory's context, and consult with communities to standardize the criteria for delivering vaccinations to priority ethnic groups

such as indigenous and Afro Colombians. This support promoted a participatory strategy that used an inclusive and diverse approach for adapting the delivery of vaccinations to various territories.

LHSS Colombia's support to the vaccination microplanning process facilitated the involvement of the health professionals responsible for delivering COVID-19 vaccinations, as well as community leaders and the wider community (including dispersed rural areas, ethnic minorities, migrant and vulnerable populations) concentrated in the territorial entities of Medellín, Arauca, Bogotá, Bucaramanga, Buenaventura, Barranquilla, Caldas, Cartagena, Cesar, Cauca, Casanare, Cundinamarca, Riohacha, Nariño, Norte de Santander-Cúcuta, Santa Marta, Sucre, Cali, and Meta. LHSS's assistance helped PAI teams to identify vaccine-hesitant populations and develop strategies for building trust in and acceptance of vaccination.

3. Objective

This report describes the activities implemented for microplanning vaccination strategies and tactics at the territorial level, highlighting the territorial entities' successful experiences managing COVID-19 vaccination.

4. Methodology

This document was prepared following a protocol for systematizing microplanning interventions within the context of the National Vaccination Plan against COVID-19.

The specific objectives of the systemization were:

1. Describe the planning and implementation of activities implemented by LHSS Colombia to support microplanning for the National Vaccination Plan against COVID-19 (PAI-COVID), highlighting factors and/or conditions hindering and facilitating implementation.
2. Identify lessons learned, best practices, and recommendations, in order to continuously improve the support LHSS Colombia provides to the microplanning interventions in the territories.
3. Document LHSS's experiences contributing to strengthening and continually improving the microplanning interventions at the territorial level.

The process for systematizing microplanning interventions was based on: 1) collecting primary information (interviews and workshops) using a phenomenological-hermeneutic approach, which looks at the voices and narratives of people about a specific phenomenon or experience, respecting their perceptions in order to develop a shared description based on the categories of analysis—in this case, the voices were of the stakeholders who participated in designing and implementing the microplanning interventions, and 2) consulting secondary information, which included National Vaccination Plan and PAI COVID technical documents, and the reports prepared by the PAI teams. These documents were compared and expanded to include information provided by key stakeholders.

The following qualitative categories were used to structure the interviews and workshops, and to analyze the information collected.

4.1 CATEGORIES OF ANALYSIS AND DESCRIPTORS

The following categories of analysis were used for the systematization process:

1. Management of the COVID-19 National Vaccination Plan microplanning interventions
2. Cross-sectoral coordination
3. Facilitating factors
4. Challenges
5. Accomplishments in each territory
6. Lessons learned

4.2 DATA ANALYSIS

The data analysis was conducted in four stages: the first was based on **the review and analysis of documents,** mainly technical documents, to understand the conceptual pillars of the strategy, ideas, concepts, and significant references on the categories of analysis.

The second stage was to **listen to stakeholders and transcribe the information.** The audio material shared by the National Vaccination Plan's territorial management support teams was listened to and transcribed. Once the information was uploaded, stage three organized and coded the information, and organized the findings according to the categories of analysis.

The fourth stage **summarized the data** and identified the common themes between both sources of information, organized by the categories of analysis.

Inductive-deductive reasoning was used to analyze the data: in the inductive method, review and re-review of the texts yielded useful discoveries for the results of the study; the deductive reasoning was oriented toward verifying testimonials.

5. Intervention management

According to the World Health Organization, vaccination should be an ongoing essential health service. Therefore, immunizations must be provided as long as the COVID-19 response requires. Decisions about the delivery of vaccination services to minimize excessive risk of morbidity and mortality from vaccine-preventable diseases should be based on a detailed evaluation of a territory's epidemiological status, the COVID-19 transmission context, mitigation measures, and the health system's immunization resources, especially the availability of vaccines and supplies (MSPS 2021a:1-3).

Therefore, the MSPS presented to the departments, districts, and municipalities the vaccination roadmap for the country, which comprised, as stated by one of the stakeholders: organizing the logistics for each stage of the vaccination process; designing schemes to enable broad access to vaccines to the populations targeted for vaccination; and identifying locations that would accommodate the installation of vaccination points according to MSPS guidelines. This implied physical adaptations and training the personnel in charge of the vaccination process.

This vaccination roadmap clearly describes the roles of key stakeholders, the activities that will be performed, a schedule for the process, and the need to build trust between the vaccination team and the community, among other topics. As expressed by one of the stakeholders interviewed, this process

was carried out in a cascade, with the delivery of clear instructions and guidelines from the MSPS to the territories:

"[...] When we faced the challenge of defining the National Vaccination Plan, what was required from the nation was to provide those guidelines that were needed to move forward with this process, and, accordingly, we had to conduct a planning process following the policy that we had available at the time, Decree 109. Regulating the decree led the Ministry and many of its units to identify a series of transactions and tasks that we should manage in order to achieve the results that each phase demanded from us [...] and it was at this stage of the implementation where the nation had the responsibility of establishing the instructions and guidelines in order for the territories to move forward with the microplanning [...]" (NM01).

If the microplanning interventions are to achieve their established objectives, the vaccination tactics established during microplanning must be coordinated with health insurers and health service providers. They should reflect the characteristics and particulars of each territory and prioritized population (MSPS 2021a).

In accordance with the general PAI guidelines in the context of the COVID-19 pandemic, the departmental and district level authorities were required to hold virtual meetings on the vaccination program. They then communicated the information exchanged through these meetings with the other key stakeholders and partners, including for: updating the nominal information system based on the daily vaccination records; preparing an estimation of vaccines and redistribution needs to guarantee the availability of vaccines at the local level; design a strategy adaptable to different ethnic groups; and comply with the vaccination schedule. During the meetings, the authorities also discussed the importance of vaccinating the migrant population, collaborating with other stakeholders from different sectors, and strengthening communications to inform, raise awareness, and create links with the community, thus improving trust in the vaccination process.

5.1 ROADMAP FOR THE PAI COVID-19 TEAMS

In response to the need to strengthen capacity to manage the National Vaccination Plan in the territories, LHSS Colombia deployed 19 PAI COVID-19 teams in the departments and districts; each comprised a specialized health professional and a nursing professional. The purpose of these teams was to support the management, planning, implementation, and monitoring of the vaccination plan through the following tasks:

- Provide support to the management and microplanning interventions in urban, rural, and dispersed rural areas.
- Foster sectoral, cross-sectoral, and community coordination to implement vaccination strategies.
- Support the development of a technical assistance plan focusing on the municipalities with the largest population to be vaccinated, and highly dispersed areas.
- Plan vaccination-related community participation and education strategies at the municipal level.

LHSS develop a roadmap for the PAI COVID-19 teams that established the roles, functions, and activities for strengthening the management of the National Vaccination Plan for COVID-19 in the prioritized territories. The PAI COVID-19 teams collaborated directly with the territorial entity and the MSPS vaccination teams, strengthening the technical capacity of the territorial health system stakeholders. The roadmap was developed based on the lessons learned and best practices gathered during the deployment of the LHSS-supported COVID-19 rapid response teams, and through monitoring management capacity strengthening activities for health system and community stakeholders.

6. Results of the intervention

The PAI COVID-19 teams provided support to the territorial entities in co-creating pedagogical aids, presentations, national and territorial operational guidelines, regulations for health system stakeholders, and tools for collecting information on vaccine doses administered, and for monitoring vaccine inventories. This support contributed to improved COVID-19 vaccination results.

The LHSS-supported PAI COVID-19 teams provided capacity strengthening on implementation of the PAI WEB information system to service providers offering vaccinations and to territorial representatives. The capacity strengthening improved knowledge and technical capacities on: 1) creating user profiles for service providers to register the doses administered in the territory, 2) updating information system modules for administering vaccines, the system's virtual inventory warehouse, placing orders for vaccines and supplies (from providers to the municipality, from the municipality to the department or district, and to the MSPS, which delivers the items), and registering vaccine and booster doses, 3) uploading the doses administered to the migrant population in order to monitor the completion of vaccination schedules, and 4) massive uploading of doses administered to reduce the lag in the registration of COVID-19 information in the PAI WEB information system.

Results achieved during the intervention are presented below, organized by the categories of analysis:

6.1 MANAGEMENT OF THE COVID-19 PNV MICROPLANNING INTERVENTIONS

To achieve vaccination coverage targets, the planning process was detailed and thorough, employing a bottom-up approach or strategy that began at the health facility and incorporated the territory, with supervision and support provided by the regional and national levels. Following this structure, the microplanning sought to answer the following questions:

What is the purpose?	Objectives and goals
What?	Activities
How?	Strategy
Where?	Tactics
Who?	Responsible parties
When?	Schedule
What resources are required?	Resources

Micro-planning interventions were:

- Based on the local reality: grounded on the knowledge of the population dynamics in each micro-area, and on the identification and estimation of the location and number of the target population.

- Feasible: based on the local context, the activity determines the most effective tactics for vaccinating the target populations, and estimates the most efficient resources and logistics required to achieve the goal.
- Flexible: able to incorporate adjustments, respond in a timely manner, and provide an effective solution to the problems that may be encountered, establishing contingencies if required.
- Efficient: optimizes the management of resources, facilitates the proper forecasting, execution, monitoring, and evaluation of the use of the resources for implementing the vaccination process.
- Empowering: fosters creativity among health teams for developing their own strategies for reaching their objectives.
- Orderly: executes activities in an organized and sequential manner, establishes clear and measurable objectives, and orients the activities to achieving the objectives.
- Establishes controls: checks that the schedule is on track.

During implementation of the microplanning process, the PAI COVID-19 teams strengthened the capacity of the human resources managing the vaccination process, resulting in the implementation of 968 vaccination campaigns in health centers and in communities. For these campaigns, the PAI COVID-19 teams identified and located migrant groups and populations targeted for vaccination in dispersed areas. They also addressed questions and myths regarding the safety of vaccines among the target populations.

6.2 CROSS-SECTORAL COORDINATION

To improve the health of the population, it is necessary to consider social determinants of health and involve sectors outside of the health system that develop policies and activities that affect health. Accordingly, the microplanning process promoted the participation of health system stakeholders and coordinated activities with other sectors, such as the police and military, which provided security during the distribution of vaccines in the territories. The microplanning process also involved the education sector to conduct vaccination campaigns in schools and participate in community awareness campaigns. In all, the PAI COVID-19 teams participated in 213 cross-sectoral coordination groups established to adapt vaccination activities to the local reality, identify the actions to be implemented in the municipality, department, or district, and to coordinate, monitor, and evaluate the vaccination process.

Stakeholders and partners who participated in the coordination of the vaccination process included: scientific societies, the Ombudsman Office, the Department for Social Prosperity, the Family Welfare Institute (ICBF), the police and the police in charge of children's issues, secretariats of education, family commissions, churches, Catholic social groups, non-governmental organizations, and academic societies, among others.

6.3 FACILITATING FACTORS

The following factors contributed to the success of microplanning interventions:

- **The availability of health professionals residing in each of the prioritized territories with experience in public health issues and, in particular, with expertise in vaccination management**.

This facilitated the understanding of the dynamics present in each territory, the existing gaps, and the opportunities to resolve identified challenges. Using local health professionals was important for

understanding the security situation in different geographical areas, and the hesitations of different population groups toward vaccination, among other challenges.

- **Reliance on clear, flexible guidelines for microplanning interventions that can be adapted and adopted in each territory.**

A master plan for vaccination was developed by each territory and delivered to the MSPS, but territories, municipalities, and health service providers constantly adjusted and adapted their micro plans as their situation changed.

- **Coordination between the territorial entities and the LHSS Colombia PAI team facilitated the execution of the microplanning interventions.**

Territorial entities were open to receiving technical assistance and incorporating new ideas from the PAI-COVID-19 teams.

- **Collaboration with other international cooperation agencies facilitated the implementation of field work and increased the scope of vaccination campaigns.**

Coordination with international cooperation agencies was instrumental for accessing and achieving vaccination goals in areas that vaccination teams had difficulty reaching because of security challenges, or the population being dispersed. LHSS established coordination mechanisms with different health system stakeholders and partners in the territories, such as the International Committee of the Red Cross (ICRC). Coordination with the ICRC, for example, enabled vaccination teams to enter the department of Arauca.

- **Implementation of strategies to contact indigenous representatives facilitated reaching these communities.**

Working with municipal health authorities, PAI COVID-19 teams used indigenous schools to reach out to indigenous communities and explain the purpose of vaccination campaigns, and agree on the times and places that these communities preferred to host vaccination campaigns. This effort greatly increased the number of indigenous people attending vaccination sessions.

- **Human resources capable of adapting their approach to the environment and the needs of the community.**

Territorial health teams and service providers adapted to often changing COVID-19 vaccination guidelines, and adapted their vaccination strategies on the go to reach diverse populations.

6.4 CHALLENGES

The issues hindering the microplanning interventions included:

- **Complex socio-cultural contexts in territories affected by violence and other social phenomena hindered the implementation of the vaccination strategy.**

In some territories, vaccinators from the health secretariats were asked to not travel to certain locations, or were asked to leave immediately due to armed conflict. They were not able to conduct vaccination sessions in those areas.

- **The mobility of the migrant population made it difficult to collect their information and direct them direct them to vaccination sites.**

Migrants often moved from one territory to another, making it difficult to reach out to them to ensure they returned for their second vaccine dose. Some migrants did not have cell phones or another contact number where they could be reached.

- **Beliefs and misperceptions among parents hinder reaching vaccination coverage targets for children and adolescents.**

Many parents were reluctant to vaccinate their children. All children under 18 years old needed permission from their parents to get vaccinated. In some cases, young people under 17 wanted to be vaccinated but their parents were not willing to give them permission.

- **Insurance companies lacked key information on their members.**

Insurance companies are responsible for ensuring their members are vaccinated, but many did not have information on which still needed to be vaccinated, their sociodemographic information, nor their contact information. The lack of this information made it difficult for health service providers implementing the vaccination sessions to know where to find unvaccinated populations, especially those in rural and dispersed areas.

- **The PAI WEB information system experienced delays in reporting information from the territories and delays delivering vaccination cards.**

The PAI WEB system for managing the national vaccination scheme was not designed to be used for a nationwide mass vaccination campaign. Information reported by the territories was not aggregated and shared in a timely fashion, and vaccination cards for vaccinate individuals were not always delivered immediately.

6.5 ACCOMPLISHMENTS IN EACH TERRITORY

This section highlights the accomplishments of the COVID-19 National Vaccination Plan in each territorial entity. Although all 19 PAI COVID-19 teams had an impact on the management of the vaccination process, it is important to highlight the following accomplishments:

1) Department of Arauca: despite its geographically dispersed population and sociocultural and political context, it made significant progress vaccinating its population. 2) District of Barranquilla: it implemented communication strategies that successfully raised awareness of COVID-19 vaccinations and mobilized the community. 3) District of Buenaventura: developed a measurement instrument (perception survey) that increased their understanding of the population's concerns regarding vaccination; and held a training focused on vaccinating people with hearing disabilities. 4) The departments of Cauca and 5) Riohacha: implemented differentiated approaches to promote COVID-19 vaccination to diverse ethnic populations. Riohacha also implemented vaccination strategies targeting the migrant population, as did 6) Norte de Santander. Finally, 7) Department of Cesar: designed a follow-up and monitoring system that enabled them to take corrective actions along the way, resulting in achieving vaccination targets.

The details of the accomplishments in each territory are described below:

- **Department of Arauca**

As mentioned during the interview with the LHSS PAI COVID-19 team, understanding the territory and its needs made it possible to implement microplanning interventions, coordinate activities with stakeholders from other sectors, and to anticipate challenges that could impact vaccination coverage. According to one interviewed stakeholder:

"[...] We conducted an exhaustive analysis of the department, as this is a territory that has a considerable dispersed rural area. We performed a local analysis, identifying the urban population, the rural population, the communes, the neighborhoods, the rural settlements, indigenous reservations, hamlets, and other settlements. We also identified the most important establishments in the territory to partner with them, to plan and coordinate activities, and to be able to initiate vaccinations and define the areas that would be difficult to access and how we could deliver vaccinations there [...]" (CSAR01).

The LHSS PAI COVID-19 team supported the territory to identify the target population, focusing on the indigenous and the migrant communities. Then, they identified the health service providers that would perform vaccinations so they could be trained and engaged in planning the vaccination campaign. The PAI COVID-19 teams and territory developed coordination strategies with international cooperation organizations such as the ICRC and International Organization for Migration, implemented education and communication strategies for social mobilization, and identified community leaders and representatives that could facilitate access to target populations. They raised awareness among these leaders about the vaccination process, and convinced leaders to promote vaccination among their communities. People interviewed said this strategy facilitated meeting vaccination coverage goals in populations that were historically difficult to engage, such as minority ethnic groups and migrant communities. One of the interviews reflected this:

"[...] We contacted a chief of an indigenous population. She was a person they trusted, that they know is one of them and that she was not going, all of a sudden, to give them something that was bad for them. Her presence was very useful; we talked to her [...] also, we produced a video which included the whole population, both migrant and indigenous. A video was produced where everything came together, it was explained to them. It was, I believe, this educational effort that we insisted on providing, that resulted in over 600 indigenous people already being vaccinated, so at least this is progress, since it would be considered progress if only 10 had been vaccinated [...]" (ETAR01).

In addition, both the territorial entity and the LHSS PAI COVID-19 team worked hard to establish links with the educational community to mobilize parents in favor of vaccination, since coverage in this population group remained low. As the territorial stakeholders shared, creating strategies, engaging institutions, seeking partnerships, and establishing links facilitated breaking down the barriers to vaccinating children and adolescents. Myths about vaccination also emerged as a challenge in the territory, but awareness-raising and social mobilization efforts were successful in dispelling these myths.

- **Barranquilla**

The LHSS Colombia PAI team worked together with the District Health Secretariat to support microplanning activities. This experience was highlighted as overwhelmingly positive during interviews with the territorial entity. One key stakeholder stated: *"[...] Thank you for all the support we have received in this*

process; it has not been easy. It has been a rather complex process that has required efforts that perhaps have never been implemented before, so all the assistance we have received with capacity building of health personnel have allowed us to lighten that burden a little [...]" (ETBA01).

This support consisted primarily of implementing social mobilization activities—encouraging attendance at extramural vaccination days in stadiums, senior centers, educational institutions, and others. According to key stakeholders, a main challenge was to ensure that strategies were flexible enough to respond to the needs of the community. In this regard, one of the key stakeholders reported that LHSS's support was instrumental, for example, in organizing the district's support desks, where people with comorbidities who did not yet qualify for vaccination due to their age could be assessed to determine if and when they qualified for vaccination due to co-morbidities. This experience was narrated by one of the stakeholders, as follows:

"[...] These support desks, well, the district of Barranquilla had the idea of implementing support desks in order to support those people who had a comorbidity but were still not eligible to be vaccinated; for example, they could not start the COVID vaccination schedule because they did not qualify yet due to their age. So, what were we going to do? [...] we were assigned at a mass vaccination point and these people with comorbidities arrived at these support desks that we organized, and there we verified their clinical history and confirmed with their insurer if this person suffered from this disease, and authorized them to be vaccinated [...]" (CSBA01).

In addition to supporting mass vaccination sites, LHSS's PAI COVID-19 teams facilitated sectoral and cross-sectoral coordination spaces to generate links with institutions such as the district's local migration center, which has access to vulnerable and migrant populations. This helped to identify other key stakeholders that are working with these populations, such as foundations and community-based organizations, and made it possible to conduct vaccination outreach in places where migrants gather, advancing the implementation of the national vaccination scheme and the COVID-19 vaccinations, and facilitating communications to mobilize migrant communities with messages aimed at improving their trust in vaccines.

Moreover, Barranquilla's experience was significant because it implemented an ongoing awareness-raising campaign on the importance of vaccination, addressing the users who visited the vaccination points. Barranquilla also provided training and technical assistance to health services providers on the application and monitoring of vaccinations at mass and traditional vaccination points.

District officials and LHSS PAI COVID-19 teams interviewed concluded that the response to vaccination was positive. The community was mobilized and attended vaccination days, making it possible to reach vaccination coverage targets. In the words of the stakeholders: *"[...] the Barranquilla community became greatly involved in this whole process of the vaccination against COVID-19, as confirmed and ratified by the coverage indicators [...]" (CSBA01).*

Vaccination of children 12 to 17 years of age was identified as a continuing challenge, and Barranquilla will continue working with the educational community, especially with parents, to mobilize this population, demystify vaccination, and increase vaccination coverage for this group. Interviewees affirmed that the cross-sectoral coordination with the education sector should continue, to conduct vaccination sessions in schools or direct children to health centers. As stated by one of the stakeholders, "*the district is still conducting challenging work with this population because [COVID-19 vaccine] coverage*

for children over 12 years is trailing other age groups and we need parents, then, to take their children to get vaccinated" (ETBA01).

- **District of Buenaventura**

Despite the sociocultural characteristics of the district and the protests that took place as the PAI COVID-19 was being implemented, Buenaventura made good progress on its vaccination microplanning interventions. The Health Secretariat focused its efforts on designing and implementing a tool for gathering information on the perceptions and misperceptions of vaccination in the district. This information was instrumental in addressing misperception and mobilizing the community to be vaccinated. LHSS Colombia's PAI COVID-19 team supported the district Health Secretariat to develop the tool, and the Health Secretariat used it to survey 1,331 people about their perceptions on vaccination. In the words of one of the key stakeholders, "[...] *the survey was useful to learn about the fears related to vaccination, the reason for their hesitancy, why they did not get vaccinated, what were the factors influencing their decision to avoid vaccination, among others [...]*" (CSBU01). The survey results will continue to be available to the Health Secretariat and MSPS officials interested in using them.

In addition, the Health Secretariat presented information on COVID-19 vaccination for people with hearing disabilities using a sign language interpreter. As stated by the COVID-19 PAI team and the District Health Secretariat, it is important to continue implementing activities aimed at providing health information, education, and communication to mobilize communities and achieve vaccination coverage targets. One key stakeholder explained: "*[...] As the secretary of health, we provided additional resources to deliver an aggressive media plan, which was implemented from July through December 2021. Conversations were held on radio and television; we used mobile and fixed billboards, street billboards; and developed primers describing everything about the PAI, because the PAI was a single program, both for the permanent [vaccination scheme] and for COVID [...]*" (ETBU01). Implementing these activities was expected to increase vaccination coverage to counter the downward trend in the district.

- **Department of Cauca**

Key stakeholders began department-level microplanning with an analysis of the current vaccination coverage and existing strategies. The territorial entity personnel and LHSS PAI COVID-19 team collected information from the municipalities regarding the status of their microplanning interventions and vaccination coverage. They prioritized the municipalities with the lowest vaccination coverage for support and those that are very rural and dispersed. Although stakeholders were not able to provide support to all municipalities due to resource constraints, they provided ongoing technical assistance to the prioritized municipalities, as described by one of the key stakeholders:

"*[...] it was the document and statistical review of vaccination variables and indicators, and the technical assistance in the field aimed at municipalities located near the city of Popayán. This field work was very important as institutional fear prevented the territorial entity staff from conducting field work…the people who started supporting vaccinations in the field were those from the LHSS Colombia PAI COVID-19 team [...]*" *(CSCA01).*

Support provided to the municipality of Puracé, which contains four indigenous reservations, is worth highlighting. The LHSS Colombia PAI COVID-19 team began implementing activities in the Paletará reservation, where people were less hesitant about vaccination. The team met with traditional doctors and the indigenous governor, who facilitated the team's awareness-raising and sensitization activities in

the community. Vaccination sessions were conducted according to the schedule and in the places defined by the indigenous community, and with respect for their practices and traditional beliefs. As a result, the community response was positive.

Both the territorial entity and the PAI COVID-19 team identified the importance of promoting spaces for dialogue to harmonize worldviews and different practices (western vs traditional/indigenous) that would mobilize the community for vaccination to achieve the targeted coverage. The vaccination program began with low participation but then increased, reaching 514 community members. This approach was supported by one of the key stakeholders, who described how the PAI harmonization was carried out with these communities:

"[...] they started with their own disinfectant processes; they had their own customs. They had some turpas, which are fireplaces, and there they placed certain bushes with special disinfecting characteristics. Afterwards, the people and vaccines entered. This was extremely important for us because it gave the community peace of mind that the people nor the vaccines were infectious, and that provided them a little more trust to accept the vaccine [...]" (CSCA01).

The fact that microplanning considered this different approach facilitated further work with the indigenous population, as it broke down barriers and social misconceptions through dialogue. One example was the creation of Community Epidemiological Surveillance Committees (COVECOM), which are spaces for exchanging the experiences of indigenous communities related to health and disease. As a stakeholder related to interviewers, the key with these groups is: *"[...] to work based on their timeline, because it was not a short process, it was a process that started in July 2021 with the first introductions, then in August we implemented activities, meetings, and knowledge exchanges, and in September the National Vaccination Plan began in these communities, and finally a coverage of 57% was achieved in December [...]" (ETCA01).*

According to the experience of the department's stakeholders, it is important to continue implementing training activities that align with current needs of the territory. Training will be performed using engaging methodologies, by standardizing the information and communication about the vaccination process, and by taking into account the social and cultural context when planning strategies and tactics. Finally, to develop processes that empower the community and its institutions, and to engage vulnerable populations such as street dwellers and indigenous communities, it is necessary to involve sectors beyond health, such as the education sector.

- **Department of Cesar**

The LHSS Colombia PAI COVID-19 team provided significant support to the department of Cesar to monitor microplanning interventions. The LHSS team provided one-to-one support to each of the 25 municipalities in the department. The support was determined by a monitoring committee that held weekly virtual meetings, during which the committee assessed each municipality's microplanning indicators. In the words of one of the territorial stakeholders: *"[...] the ongoing follow-up on progress against the goals [and] the continuous monitoring of each of the municipalities provided by the LHSS Colombia team to each municipality was apparent. They provided full support. And, this support helped all the municipalities to become active, engaged, and responsive to the requests for information and progress against objectives; it was very productive [...]" (ETCE01).*

Despite the fact that the support was provided virtually, the stakeholders responded positively. They attended the weekly monitoring committee meetings led by the territorial entity, coordinated

effectively, and implemented 100% of the planned monitoring activities. This one-to-one support yielded positive results, as stated by one of the interviewees: "*[...] learning about the compliance of the doses given throughout the process, and receiving clarity on monitoring all the microplanning processes performed in each target population. We had the support of all the committees, and assistance from all the stakeholders [...]" (ETCE01).*

Learning about what was happening in the municipalities made it possible for the department to take corrective actions along the way, adjust activities, and search for strategies to increase vaccination coverage among specific population groups such as children, who were lagging behind due to parents' hesitancy. These strategies required the LHSS Colombia PAI team and the territorial entity to establish alliances and partnerships with stakeholders from other sectors such as "[...] the ICBF, departmental secretariat of education "*[...] what we did was also to reach an agreement among all the partners of the education sector so that we could reach all the municipalities and deliver the vaccination to these minors. Many times, many children or many families in the municipalities suddenly changed their attitude toward vaccination and chose to be vaccinated [...]" (ETCE01).*

In addition to the virtual monitoring support, the LHSS Colombia PAI COVID-19 team supported each municipality to draft a summary of the strengths and weaknesses and challenges encountered implementing their vaccination plans. These summaries helped the municipalities to advance with the implementation of their plans. The LHSS Colombia PAI team also implemented a series of strategies for social mobilization and used a media campaign to announce the vaccination day schedules to the rural and dispersed areas.

- **Department of Norte de Santander**

According to the key stakeholders in the department of Norte de Santander, conflict, myths, and disinformation hindered vaccination progress. Stakeholders had to develop new strategies to increase coverage, establish a presence in remote areas, reach the migrant population, and address the information lag in PAI WEB by implementing an in-house system to report data in the territorial entity.

COVID-19 vaccination activities in the territory focused on developing working groups, supporting the staff of the departmental institute of health, and training the personnel in charge of assisting the vulnerable Venezuelan migrant population. In the words of one key stakeholder: "*[...] we have trainings and departmental and municipal working groups, and when we suddenly see low coverage in the municipalities, advisors visit to see how they can help expand COVID-19 vaccination coverage [...]" (CSCU01).*

Regarding the activities carried out for the migrant population, stakeholders lauded the LHSS Colombia PAI COVID-19 team's support: "*[...] they helped migrants to understand that it was necessary for them to take care of their health, to seek health services not only for COVID-19 vaccination but also other services available in the department. They [the LHSS Colombia team] organized many sessions to issue identification cards for migrants. These activities were implemented in different areas of the department, including Tienditas, Los Patios, and in Villa del Rosario, near the bridge [...]" (ETCU01).*

LHSS also provided training on COVID-19 guidelines and vaccine administration at these campaigns. The migrant population was receptive to mass vaccination days, and partner institutions were mobilized to provide services and insurance for migrants.

Additionally, the LHSS PAI COVID-19 team conducted outreach to the community to increase acceptance of the vaccine, supported the territory to monitor the information system on a daily basis,

organized inter-agency working groups with the municipalities, and facilitated partnerships, especially in conflict zones that were difficult to access, such as Catatumbo, to transport vaccines to remote areas.

Communication products were produced together with health professionals in each territory, including radio spots, informative flyers, and videos addressing the safety of COVID-19 vaccination.

Referring to the monitoring process, which is a differentiating element of this strategy, one of the key stakeholders commented: "*[...] we have a coverage tracking table for the department. We meet with all the municipalities, and we look at how each municipality is progressing. When we suddenly see a drop in coverage, we propose a work schedule with that municipality and we develop strategies to expand their COVID-19 vaccination coverage [...]*" *(CSCU01).* This monitoring strategy was complemented by the development of the *vacunaCid* technological tool for each territorial entity. The tool gives vaccination data in real time, analysis reports, and allows territories to track the transport of vaccines. The purpose of this tool was to overcome information lags in PAI WEB.

- **District of Riohacha**

According to its key stakeholders, Riohacha implemented the district's microplanning according to the national guidelines, namely, vaccination was structured in stages according to age and risk, among other factors. The information provided by the Unified Command Posts (*Puestos de Mando Unificados*) led by the MSPS was also used as an input, and this process summarized the weekly and monthly guidelines periodically issued by the MSPS.

Subsequently, according to key stakeholders, partnerships were created with institutions and agents in the territory to ensure that the vaccination microplanning process was participatory, inclusive, and effective for reaching the expected vaccination coverage. One of the stakeholders said: "*[...] We also selected some routes together with the health service providers in order to cover all areas of the district, including both urban and rural areas. And, finally, we implemented mass vaccination campaigns by age groups to complete the vaccination scheme, booster doses, first doses, and second booster doses to comply with the National Vaccination Plan and achieve coverage targets [...]*" *(CSRIO01).*

It is worth highlighting the district's mass vaccination strategies, awareness-raising campaigns, and consultation process that facilitated the creation of partnerships with the Ministry of Education, indigenous affairs section, the ICBF, the chamber of commerce, shopping centers, and others. This collaboration adopted a flexible approach to adjust strategies on an ongoing basis. As one of the officials related: "*[...] they started evaluating and checking together with me and the mall coordinators or the managers and realized that it was better to change the strategy. Just with the schedule, look, we changed the morning schedule for a schedule beginning at three in the afternoon until eight at night, not every day, but Thursdays, Fridays, Saturdays, and Sundays; and let me tell you, prior to this change we were administering 80 vaccines, and the first day of the first week that we started this new strategy, we went from giving 80 vaccines a day to giving 300 vaccines a day. [...]*" *(ETRI01).*

In addition to the support LHSS's PAI COVID-19 teams provided at the district's mass vaccination events, it is worth highlighting the ongoing work implemented with the education, and efforts to mobilize vulnerable ethnic communities for vaccination. As narrated by one of the key players: "*[...] we needed to collaborate with the secretary of education, who summoned a meeting with the coordinators of the ethnic institutions in order to strengthen and increase the coverage of all students. But this is a process, as first they must have,*

well, a meeting with the coordinators, the coordinators then meet with the parents, an awareness-raising campaign is then implemented [...] we have always collaborated with the education sector and with the indigenous affairs section because those are the ones that facilitate the implementation of our activities amongst the indigenous population [...]" (ETRI01).

In addition to the activities described above, key stakeholders highlighted the trainings conducted during outreach campaigns, the health "caravans" that provided vaccinations in urban and rural areas, and community education campaigns.

6.6 LESSONS LEARNED

This section describes the lessons learned in implementing activities aimed at strengthening the PNV.

1. The implementation of microplanning interventions enabled each municipality to achieve its vaccination goals. Based on these experiences detailed above, microplanning interventions should include: learning about the particulars of the territory or local context; identifying the key stakeholders; and providing communities the opportunity to communicate their needs for them to effectively participate in the vaccination process.
2. Ongoing training is required for the human resources for health for them to stay up-to-date on vaccination guidelines and information. Therefore, training and education must continue, especially for activities meant to raise community awareness about COVID-19 and future health emergencies.
3. Collaboration with community-based organizations and leaders facilitated implementation of vaccination campaigns and achievement of vaccination coverage targets; additionally, collaboration helped raise awareness of vaccination and mobilization of the communities these organizations and leaders represented. These partnerships at the community level should be maintained to advance with vaccinations. Additionally, territorial entities should compile a directory of stakeholders to facilitate future activities in the territory.
4. Dialogue about and recognition of indigenous practices generated the trust needed to implement the vaccination campaigns in these communities. Experience from various territories illustrated the importance of recognizing the worldview of indigenous communities, and to design and implement vaccination campaigns that incorporate their worldviews and schedules. Accordingly, the community-based activities should be developed with and for the community.
5. Ongoing monitoring activities enabled those managing vaccination campaigns to take corrective actions in real-time to improve the execution of the PAI. These strategies should be strengthened and implemented throughout the microplanning and vaccination process, especially in territories reporting low vaccination coverage and low demand for vaccinations.
6. The development of communication and education strategies targeting communities is essential to achieve progress on vaccination. It is vital to communicate messages targeting specific audiences to mobilize them for vaccination.
7. It is critical to allocate economic resources to hire personnel to implement microplanning strategies in the territories. Hiring sufficient personnel will avoid overburdening staff, which would lead to resignations and turnover, and make it difficult to sustain the capacity built in the territories, thus hindering their responses to public health emergencies.
8. The continuous improvement of the information system is necessary to avoid information gaps, delays in loading and reporting data, and delays in delivering vaccination cards, which could discourage people from getting vaccinated.

7. Use of the deliverable

This deliverable, which will be submitted to the MSPS, documents the microplanning and management strategies that LHSS supported and implemented in the prioritized territorial entities. The document will inform the MSPS and territorial entities' future initiatives for planning, managing, and monitoring vaccination campaigns. This information will be important for allowing the MSPS to reassess its approach to microplanning and monitoring vaccination, implementing and coordinating cross-sectoral strategies for achieving vaccination targets, and for planning responses to future emerging or re-emerging public health threats.

The strategies outlined in this document will also help health workers to improve their skills for delivering vaccines, promoting the use of health care and heathy practices, and to implement preventative health activities. These activities must be adjusted periodically based on the societal context and be tailored to the situation in each territory.

Training activities must continue in the territories to strengthen capacity for preparing and implementing local microplanning interventions, and coordination activities with key stakeholders should be maintained to create synergies that improve health outcomes of the population.

Finally, this document will strengthen the implementation of health microplanning by facilitating health system stakeholders' engagement of the community, including migrant and host populations. These experiences will also strengthen capacity for identifying and dispelling myths regarding vaccination, and create demand for vaccination among community stakeholders.

8. References

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