

Question 2: *What are effective and sustainable mechanisms or processes to integrate local, community, sub-national, national, and regional voices, priorities, and contributions into health system strengthening efforts?*



## Title: Senegal health systems double COVID-19 vaccination rate in Kaffrine district through systems thinking, localized solutions, and human-centered design.

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### Context

Senegal launched its COVID-19 vaccination campaign in February 2021. One year later, vaccination coverage remained below 10%, placing Senegal among the lowest performing countries in Africa. This low coverage was due to a combination of supply and demand factors, including misunderstanding about vaccines among the general population and health workers, varying opinions about the value and effectiveness of vaccines, and the country's relatively low COVID-19 incidence rate, leading people to believe that vaccination was unnecessary and affecting the motivation of health personnel to promote vaccination, even when resources were available.

At the request of USAID Senegal, the Building a Resilient Health System activity (BRHS) initiated and implemented a COVID-19 vaccine acceleration initiative, which consisted of a one-month campaign to accelerate vaccination in 9 regions of Senegal through a result-based financing (RBF) mechanism.

Piloted in Kaffrine, district health staff collaborated with BRHS to design a comprehensive strategy based on an analysis of the vaccination system from the perspectives of providers and the population. This human-centered approach resulted in an innovative decision of local stakeholders to organize vaccination sessions where and when this is most convenient for the populations, who are traditionally asked to attend sessions in places and at times decided by, and convenient for, providers. The "Where I am" strategy translated into the organization of 10-night vaccination sessions by three health posts for people working on farms during the day and allowed Kaffrine to exceed its vaccination target by 127% while contributing to 5.2% of the results.

### Activity Description

The preparation phase of the vaccination campaign in Kaffrine began with a two-day orientation meeting with local health authorities, both political and medical, community leaders and women's groups, during which all the context-specific drivers of the supply and demand side of a COVID-19 vaccination system were identified, including systems barriers and facilitators such as:

- Barriers: misinformation about the seriousness of COVID-19, the population at risk and side effects of the vaccines; lack of integration of vaccination during routine health care visits in facilities, explained by service providers as a "lack of motivation"; populations who work in the farms, are not available during the opening hours of health facilities and long distances to a facility limit their equitable access to care.
- Facilitators: influence of local political and religious leaders; availability of vaccines; logistical support from local authorities; leadership of Kaffrine chief medical officer; technical and financial partners ready to support.

The participants spent the second day developing an action plan that included a population communication component (organized "caravans" that combined increased community awareness about the vaccine and delivered vaccination on the spot) and a calendar of mobile outreach vaccination sessions covering all 274 villages in the catchment areas of the 30 health posts in Kaffrine district. BRHS contributed through a RBF component designed to address the motivation of health providers and to alleviate the district financial burden of a campaign. The RBF reimbursed expenses proportionally to the level of achievement of a target, calculated as the doubling, in one month, the number of patients vaccinated at the beginning of the campaign. Kaffrine district was familiar with RBF from previous HSS programs, and it had produced results, but this was the first time that it was used to accelerate COVID-19 vaccination coverage.

The planning process included small groups representing the supply side of the health systems (district health team and health facilities providers) and the demand side (women's groups, villages chiefs and religious leaders) who know their community. They shared their proposed activities in plenary and developed an implementation calendar. One of the activities suggested by the representatives of the communities was the "Where I am" strategy, which is based on the concept of adapting the health system to the situation of its population from a human centered design perspective. In Kaffrine, it meant finding people in their villages and fields and vaccinating them where they are and at a time that is convenient for them, generally after their workday. While mobile outreach for vaccination campaigns is not new for an expanded program on immunization (EPI) trying to reach more children, the strategy for COVID-19 had never been tested in Senegal, especially for adults over 18 (COVID-19 vaccine eligible population) who are generally not the targets of EPI.

One activity was the organization of night vaccination sessions in specific villages where most adults are working in the farms during the day to address their accessibility issue. Thus, as part of the campaign, the Head Nurses of the Nganda, Medina Taba, Santhie Gal Ngone and health posts organized 10-night vaccination sessions with support from influential leaders at district and community levels.

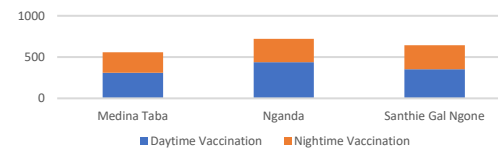
### Activity Impact

The results achieved by the three health posts are presented in Table 1 and Figure 1 to show the relative contribution of the night vaccination sessions to the total number of people vaccinated during the campaign.

Table 1: Number and proportion of people vaccinated during COVID 19 outreach sessions

Health Post	# Nighttime Vaccination Sessions	Total # Vaccinated - Daytime	Total # Vaccinated - Nighttime	Total # of People Vaccinated	% People Vaccinated at Night
Medina Taba	2	310	248	558	44%
Nganda	5	439	282	721	39%
Santhie Gal Ngone	3	352	292	644	45%
<b>Total</b>	<b>10</b>	<b>1,101</b>	<b>822</b>	<b>1,923</b>	<b>43%</b>

Figure 1: Efficiency gains from the nighttime vaccination sessions: 43% of people vaccinated



### Evidence

Kaffrine district exceeded its initial vaccination target by 127% (15,687 people vaccinated in one month compared to a target of 12,374 people), allowing Kaffrine to increase its full vaccination coverage (1 or 2 doses depending on the vaccine) from 8% to 13% and its first dose coverage (for vaccines that require two doses) from 10% to 19% in only one month. The night vaccination sessions had a positive impact, reaching an additional 822 people and contributing to these results by 5.2% (822/15,687) with only three health posts out of 30 facilities in Kaffrine district involved in the night vaccination activities.

Of particular significance, the night vaccination activity was organized to maximize coverage, address access barriers, and not leave anyone behind, especially workers who do not have time to visit health posts to get vaccinated during the day. In the small catchment area where this activity was implemented, 43% of those vaccinated received their vaccine during the night-time vaccination sessions. This activity played a significant role to increase the number of people vaccinated, and most importantly the proportion of the population covered in these areas—an important factor to reach herd immunity.

### Facilitators

The key factor in the success of the "Where I am" strategy was the active participation of community stakeholders who were heavily involved in the planning and implementation of the campaign and helped design a strategy that considers the local socio-cultural context. The role of administrative (village chiefs) and religious community leaders and influencers was essential to ensure effective communication through community dialogues to inform target populations about the vaccination campaign and the times and locations of night vaccination sessions. Their involvement secured their ownership and support (logistical and financial) before and during the month-long campaign. Other influential community groups, including women's development groups (such as Bajenu Gox) also played an important role in the mobilization of the community and informing them of the night vaccination sessions and even helping with the logistics. Once sensitized, the local authorities contributed through the mobilization of their own resources (transport, sometimes with a donkey-led cart). Finally, the RBF component played a role in the motivation of health workers to work extra hours to meet the needs of the community and the population "where it is." The Ministry of Health at the national level was only marginally involved, while the region's governor and district authorities led the effort with the support of different projects.

### Challenges

Two main challenges were encountered:

- The number of health personnel available to conduct night vaccinations was limited, as healthcare providers had to continue their daily work in health facilities. To address this issue, the RBF component provided incentive to participate as the community health workers received their share of the bonus.
- There were additional costs: night vaccination sessions require additional expenses in terms of logistics (transporting vaccinators) and lighting equipment. These additional costs had not been anticipated and assessed in advance at the planning phase. It is possible that these costs limited the number of health posts able to conduct night vaccinations (only 3 out of 30), however, in general, local authorities were able to mobilize resources, knowing that the district and regional bonuses from the RBF component would contribute to reimburse the expenses incurred.

### Lessons Learned

Several lessons can be drawn from this experience that can benefit Senegal, COVID-19 programs, and the international development community:

- The difficult access to health services in rural areas requires the development of innovative vaccination strategies to reach populations, especially during the winter period and for a campaign mode of delivery.
- Nighttime vaccinations can have a positive impact on vaccination coverage in rural areas far from health posts, when planned in collaboration with the populations concerned. This "moonlighting" strategy has been used for other programs, such as HIV/AIDS, but to our knowledge not for COVID-19.
- By involving local communities in the design of the immunization campaign, the "Where I am" strategy is a good example of a client-centered service that created a sense of ownership, shared responsibility and solidarity that helped increase the immunization rate in the Kaffrine district.
- It is important that a project act as a catalyst to support the generation and implementation (and part of the costs of innovative ideas from local stakeholders and does not impose a pre-determined solution without validating its local relevance to the context. This localization of innovations informs national strategies for benefit the scale-up in other regions and maybe other programs, such as the EPI, which regularly organizes vaccination campaigns to address gaps.
- Stakeholders credited the RBF component with motivating regional and district managers and service providers to invest time and resources into the campaign while maintaining the delivery of routine health services.
- Finally, an important application of systems thinking, in this instance, was the comprehensive review and understanding of the supply and demand-side drivers of success for a vaccination campaign to achieve its goals, hence strengthening the vaccination system for COVID-19