Spotlight on **Senegal**

Community health workers are driving the development of the digital health tools they need to serve their communities

"We work for the good of our community, which is a great motivation."

This sentiment from a community health worker (CHW) in Senegal reflects the best of health service delivery at the community level. In Senegal, the community-based health system helps bridge the distance between rural communities and health facilities, as well as the gap left from the shortage of skilled health workers throughout the country. Using digital tools to record health data from their daily tasks, Senegalese CHWs deliver preventive and curative services— frequently for malaria and other febrile illnesses. Senegal's strong community-based health system is central to many of the country's impressive increases in health care coverage, which have coincided with its rapid progress against malaria.

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During the past nearly two decades, Senegal has cut its malaria cases by 73 percent and its death rate from the disease among children under five by 90 percent. Senegal's progress is an inspiring public health story, resulting from three major success factors: **(1) excellent leadership and partner engagement; (2) the achievement and maintenance of high intervention coverage levels; and (3) a thriving data culture, which has been boosted by the country's pioneering use of information systems to unlock increased access to health data.**

Early action advances digital health data systems

In 2013, Senegal's national malaria control program introduced a digital health data system to allow for a more evidence-based approach to guiding interventions for malaria control and elimination. Over time, health facilities across the country began feeding malaria clinical data and information from CHWs on malaria case investigations in the country's elimination areas into this system on a weekly basis. By 2017, all health facilities nationwide were conducting weekly reporting, and since 2018, these data have been captured in a web-based national platform. This robust data system now enables Senegal's health leaders to monitor progress and make more informed and timely decisions about how to allocate resources and where to target interventions.

Daro Niang, a community health worker from Senegal's Dagana district during a focus group discussion on the design of community-level digital health tools. Photo: PATH.

"I send a report every month in paper format. Nevertheless, I have already used a smartphone to monitor pregnant women and children under five years of age through the CommCare application with a Neema/USAID project."

> "The theme of the monthly health meeting in my community is based on the issues identified through the data that we have recently collected."
>
> -Community health worker

Digital tools make it possible for health data to be accessible for decision-making at all levels of the health system—from national, regional, and local health leaders to health facilities and community health workers. With this aim in mind, Senegal's Ministry of Health and Social Action (MSAS) has partnered with the US President's Malaria Initiative (PMI) through PMI's Digital Community Health Initiative (DCHI) to achieve the shared goal of strengthening the quality of health service delivery at the community level. PMI DCHI aims to invest in the scale-up of digitally enabled community health platforms that:

- Equip frontline health workers with mobile tools to improve data collection and case management.
- Improve access to nearly real-time, high-quality community data.
- Catalyze a cultural shift in the use of community data for decision-making at all levels of the health system.
- Facilitate the integration of services at the community level.
- Integrate and empower CHWs as a valued part of the health system.

Community health workers direct the design of digital tools through focus groups

CHWs in a wide variety of countries have become familiar with a stream of digital health tools they are asked to use without having contributed to their design or functionality. Through support from PMI, Senegal's country-led effort is designed to usher in a new and more sustainable era for community-level digital health tools through the development of tools that are functional and easy to use by all health workers, from the national to the community level.

PMI DCHI, implemented by Digital Square at PATH, began with an ecosystem assessment of digital community health and malaria and produced country profiles for PMI's partner countries, including Senegal. From there, to improve access to high-quality health services in Senegal, MSAS and PMI recognized the need to create a stepwise and structured approach to developing, piloting, and scaling a digital community health febrile disease management system. As part of this system, CHWs will use a digital tool to allow them to not only share health data into the central system in a seamless manner but also understand insights from the data in a visual and educational way that will help them carry out their work more effectively.

To ensure that the design of the digital tool is CHW-informed, MSAS and Digital Square ran focus group discussions with more than 120 CHWs, their supervisors, and district and regional medical directors to clearly define their workload, motivations, and working environment, and the barriers and solutions to providing high-quality health services.

During these interviews, one CHW noted, "The theme of the monthly health meeting in my community is based on the issues identified through the data that we have recently collected." Another CHW shared that "the mobile network coverage is not good in some areas and so sometimes we have problems communicating well with the nurses at health facilities, especially during emergency referrals." This input reinforced the need for a tool that can work offline, with the ability to push notifications when connectivity becomes available.

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To bring together CHWs with district and regional representatives, MSAS and Digital Square created a user advisory group to provide input and guidance throughout the development process. To date, the group has participated in the business process and workflows development. At subsequent development stages, the user advisory group will test the tool, provide formal feedback after testing, and pilot the tool in carrying out day-to-day work.

Collaborative workshop helps integrate findings and develop a plan of action

Using the collection of insights from CHWs, MSAS and PMI DCHI developed user personas to inform the next step of establishing requirements for the digital tool through a collaborative workshop with PMI DCHI and MSAS as well as with regional-, district-, facility-, and community-level stakeholders. During the workshop, the group carried out these steps:

- Examined existing processes in the provision of malaria and febrile illness management at the community level to develop a business process and workflows.
- Identified challenges and inefficiencies at each step in the process to rethink how these services should be provided.
- Explored how these process steps can be redesigned using digitalization to address the challenges and inefficiencies.
- Defined what is required for the development of an integrated georeferenced digital community health febrile disease management system.

Health system stakeholders in Senegal participate in the collaborative workshop to help establish digital tool requirements. Photo: PATH.

The workshop's facilitation team pauses for a photo on the last day of activities. Photo: PATH.

The next step is for MSAS and Digital Square to conduct a landscaping of digital health local partners to better understand the technical expertise of the existing market. This landscaping will help to clarify how local partners can be involved in the early stages of implementation to provide information technology support, maintenance, and software development—all of which will be crucial for enabling a sustainable, country-owned era for digital health in Senegal. Based on these discussions, Digital Square will support MSAS to select and adapt an existing digital community health tool—potentially a digital health global good—or develop a new tool.

To ensure this effort is far more comprehensive than the creation of a specific digital health tool, Digital Square will support MSAS to develop an enterprise architecture subset for digital community health that fits within the larger enterprise architecture of the country. Digital Square will also partner with MSAS to develop a three-year national strategic digital community health implementation plan to help integrate digital health efforts into the overall health system of the country, ensuring that long-term partners, services, and skills exist to create a sustainable digital health ecosystem in Senegal.

Soon-to-come activities include identifying core and user hardware needs, establishing a minimum viable product, and conducting user acceptance testing. Stay tuned for more updates as we unpack key next steps and share developments from this Senegal-led effort to strengthen the quality of community-level health service delivery.

To learn more about this project and related work, check out the Digital Square website.

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