Going Online

JUNE 2022

Using chatbots to create self-service channels for HIV prevention in Nigeria

TECHNICAL BRIEF

Chatbots are emerging as a promising approach for facilitating access to actionable health information, supporting behavior change, and helping individuals navigate health care services. A growing number of publicly available chatbots aim to take an active role in health promotion, disease diagnosis, and treatment services. Chatbots simulate one-on-one conversations by responding to user-generated inputs on the other end of an automated system. Most chatbots offer simple question-and-answer functionality, while more advanced chat platforms recall the user's prior inputs to inform the next engagement (i.e., it forms a memory of the user). Chatbots have the potential to create a safe, private experience for clients confidentially searching for health information, behavior change support, and service referrals.

INTERNET PENETRATION

There will be an estimated 8 million WhatsApp users in Nigeria by 2025, expanding the market of potential askNivi chatbot users who can be connected with products and service providers.

51%

Internet penetration in Nigeria stood at 51% of the total population at the start of 2022.

In Nigeria, an estimated 1.7 million people are living with HIV, with almost 90% aware of their status and 86% of people living with HIV on treatment [1]. While this represents important progress, further advances in HIV epidemic control will require innovative approaches. A strong use case can be made for chatbots to support the Federal Ministry of Health's goal to strengthen community structures for the provision of equitable HIV prevention interventions and provide targeted strategic behavior change communication for general, key, and vulnerable populations [2]. With Nigeria's internet penetration rate at 51% of the total population at the start of 2022 and continuing to rise, chatbots have the potential to strengthen the enabling environment for people seeking services and support [3]. Moreover, WhatsApp, a common platform for use of chatbots, is the most frequently downloaded app in Nigeria. WhatsApp's user base in Nigeria amounted to approximately 4.03 million users in 2021 and is projected to reach 8.13 million users by 2025 [4].

FHI 360 introduces askNivi for HIV awareness and services in Nigeria

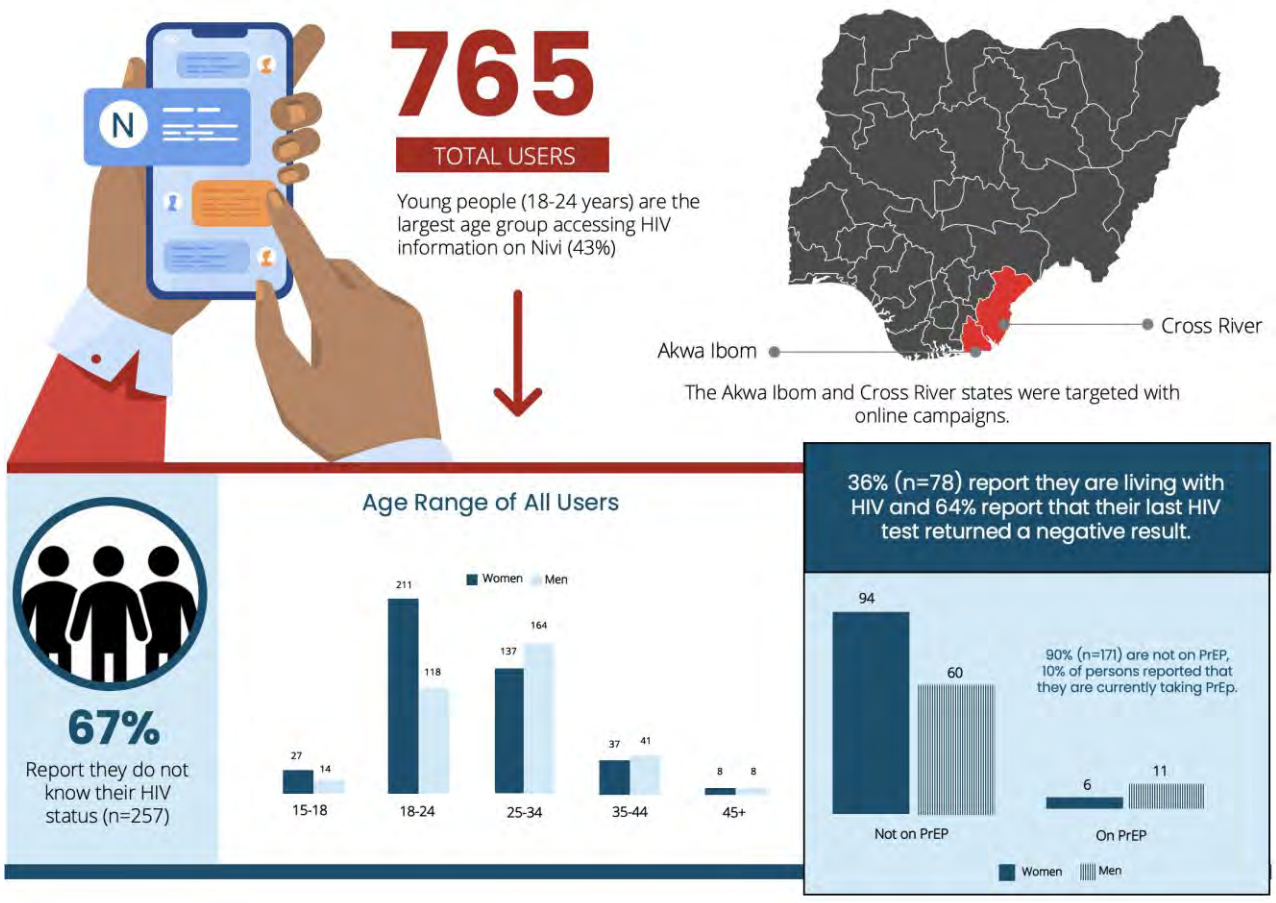
In July 2021, the Meeting Targets and Maintaining Epidemic Control (EpiC) Activity II project in Nigeria, supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the United States Agency for International Development (USAID) and led by FHI 360, partnered with Nivi to launch HIV

PEPFAR USAID FROM THE AMERICAN PEOPLE EpiC Meeting Targets and Maintaining Epidemic Control Nivi

conversations on Nivi's existing chatbot, askNivi. Nivi is a digital health company with a consumer-facing chatbot experience in Nigeria, Kenya, South Africa, and India. In Nigeria, organizations like Society for Family Health, Pathfinder International, and FHI 360 partner with Nivi to deploy the askNivi chatbot as a dynamic resource for populations prioritized or targeted for specific health services. askNivi is available via WhatsApp and Facebook Messenger, removing the need to engage with a newly built website or app and easily accessible by Nigeria's substantial base of WhatsApp users.

Through the partnership with FHI 360, askNivi introduced HIV content for the first time on World AIDS Day 2021 (Dec. 1). Rollout was targeted to Akwa Ibom and Cross River states, where the EpiC Activity II Project is being implemented. Users learned about askNivi via a variety of outreach and marketing activities implemented by health care providers and community-based antiretroviral therapy (ART) teams supported by the EpiC Activity II project. A user reaches the chatbot by sending a keyword to the WhatsApp number (+23417006390) or by clicking on a link embedded in ads promoted through social media. Once onboarded, askNivi provides HIV, tuberculosis, reproductive health, and primary health information via chat interactions, encouraging the user to act on their personal health objectives. Users can self-screen for HIV risk using a conversational version of FHI 360's Digital Risk Assessment Tool. Based on the user's location, gender, age, and willingness to pursue HIV prevention and testing services, askNivi refers users to care and follows up to gauge quality of care after they access services.

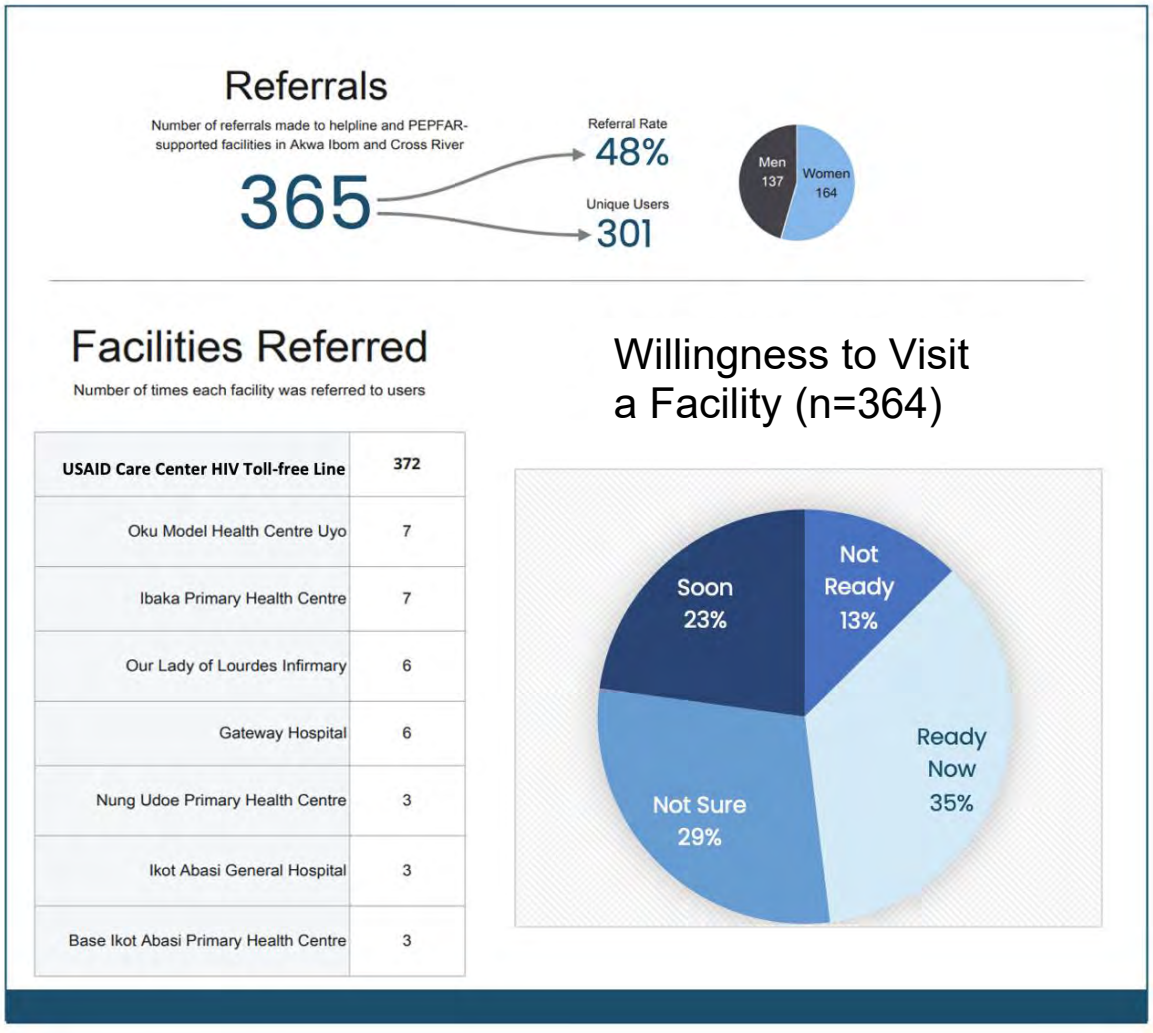
FIGURE 1. Demographic data from the first five months of askNivi rollout through the EpiC Activity II project in Nigeria



Between December 2021 and April 2022, 765 people engaged with the chatbot via a series of marketing pilots (Figure 1). Of the users, 43% were young people (18–24 years). Of those who responded to the risk assessment, 67% (n=257) reported they did not know their HIV status. Among the 78 users who reported that they knew their status, 64% reported being HIV negative, and 36% reported that they had been diagnosed with HIV.

askNivi made 365 referrals for HIV services at clinics and hospitals in Akwa Ibom and Cross River states and to the USAID Care Center HIV Toll-free Line, which was set up to provide virtual support for health services across the country, during the first five months of implementation (Figure 2). This represented a 48% conversion rate from initiating HIV conversations to seeking a referral for HIV-related services.

FIGURE 2. Data from Nivi Insights



There were 301 unique users, of which 45.5% were men and 54.5% were women. At least 58.2% of all users reported some level of readiness when asked if they would take up referrals, 29% were not sure if they were ready to access services at the providers listed, and 13% reported they were not ready at all. There were 372 instances where users were referred to the USAID Care Center Toll-free Line. Users can receive multiple referrals over time, especially as their readiness to seek HIV services increases.

Data generated through askNivi can help programs to segment their audiences for more targeted engagement, broadly supporting efforts to get the right information to the right people to improve health outcomes. The data give insights into the HIV risk profiles of users, their enrollment in services such as pre-exposure prophylaxis (PrEP), and their readiness to use services.

Options for scaling for impact

The Nivi chatbot introduces a new option for self-care, empowering clients to engage with health services at their own pace. Based on the implementation experience in Nigeria, a few measures can be taken to increase scale and improve targeting:

- **Online marketing campaigns** — A chatbot by itself will not tap into new networks of users. Potential users connect to askNivi, deployed on WhatsApp and Facebook Messenger, via the WhatsApp number or a web link that leads them to the first chat. This connection can be made through social media ads, peer-led community mobilization, and traditional "offline" media campaigns, among other options. Programs with well-run campaigns will describe Nivi, establish trust, and demonstrate its relevance to clients searching for HIV services. Ads, especially on social media, can help with targeting users by location, age, gender, and other factors that distinguish a program's clientele.
- **Integrate with ORA** — Programs using an online reservation app (ORA) such as QuickRes.org, can integrate this with Nivi to support greater uptake of services. Nivi's "chat-to-book" technology can redirect clients to ORA using a unique link to book their appointment. ORA can then be used to send automated reminders to users and includes program-facing tools that help with measuring site traffic, uptake of health services, and enrollment of clients in case management.
- **Risk network referrals** — Nivi's algorithm can help identify clients at higher risk of acquiring HIV through its self-guided risk assessment and later encourage those users to refer their peers to the chatbot. This can help health programs reach deeper into high-risk networks or target ideal users for some health services including those related to HIV.

The askNivi chatbot is programmed to provide accurate information on HIV and is demonstrably a good resource for HIV awareness and prevention. Programs opting for a chatbot should consider the broader context of their HIV response and consider user journeys that will lead to awareness and demand for services where they are most needed. Chatbots may require regular monitoring and will attract costs related to subscription fees and marketing.

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