Integrating Health Facility Information in Nigeria

Progress on a Master Facility List and Health Facility Registry

July 2018

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MEASURE Evaluation

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Cover photo: A health care provider at the Ibadan Primary Health Care Clinic, Nigeria.

INTRODUCTION

A master facility list (MFL) is a data source for countries or a district within a country that comprises a list of health facilities, by location and type of services delivered; a data system that houses the data on each facility; and the governance structure to support the continued updating and maintenance required to sustain the MFL's accuracy.[1]

An accurate list of health facilities referenced by their geographic location is a crucial tool for the health sector to be able to offer services that meet local needs, and to ensure HIV services are offered in the areas where there is the greatest potential to achieve control of the HIV epidemic. MEASURE Evaluation—funded by the United States Agency for International Development (USAID) and the United States President's Emergency Plan for AIDS Relief (PEPFAR)—is a global leader in working with countries to build national master facility lists.

Developing an MFL and a health facility registry (HFR) to house data was a priority action in the Nigeria Health Information System Strategic Plan (2014–2018). However, this was yet to be fully achieved in 2016, with a chief shortcoming that processes to facilitate ongoing management did not exist. As part of strengthening the national health information system (HIS) in Nigeria, addressing this gap was prioritized by USAID, which had previously supported the development of a paper-based MFL in the country between 2011 and 2013.

This brief documents the first phase of the process of creating a sustainable MFL/HFR, including the creation of local ownership through strong governance structures and the consolidation and validation of the facility listing. We display the process in a timeline (Figure 1) and in a model (Figure 2) that illustrates improvements made and those desired in three main MFL elements: (1) a facility listing; (2) a facility registry; and (3) governance structures in Nigeria. (The rollout of the MFL/HFR to the states so they may update the outstanding data elements in the HFR and begin maintaining the MFL is the next crucial step.)

The process may serve as a guide for other countries wishing to refine or establish an MFL/HFR.

[1] United States Agency for International Development. (2017). Master Facility List Resource Package: Guidance for countries wanting to strengthen their MFL. Washington, DC, USA: USAID

BACKGROUND

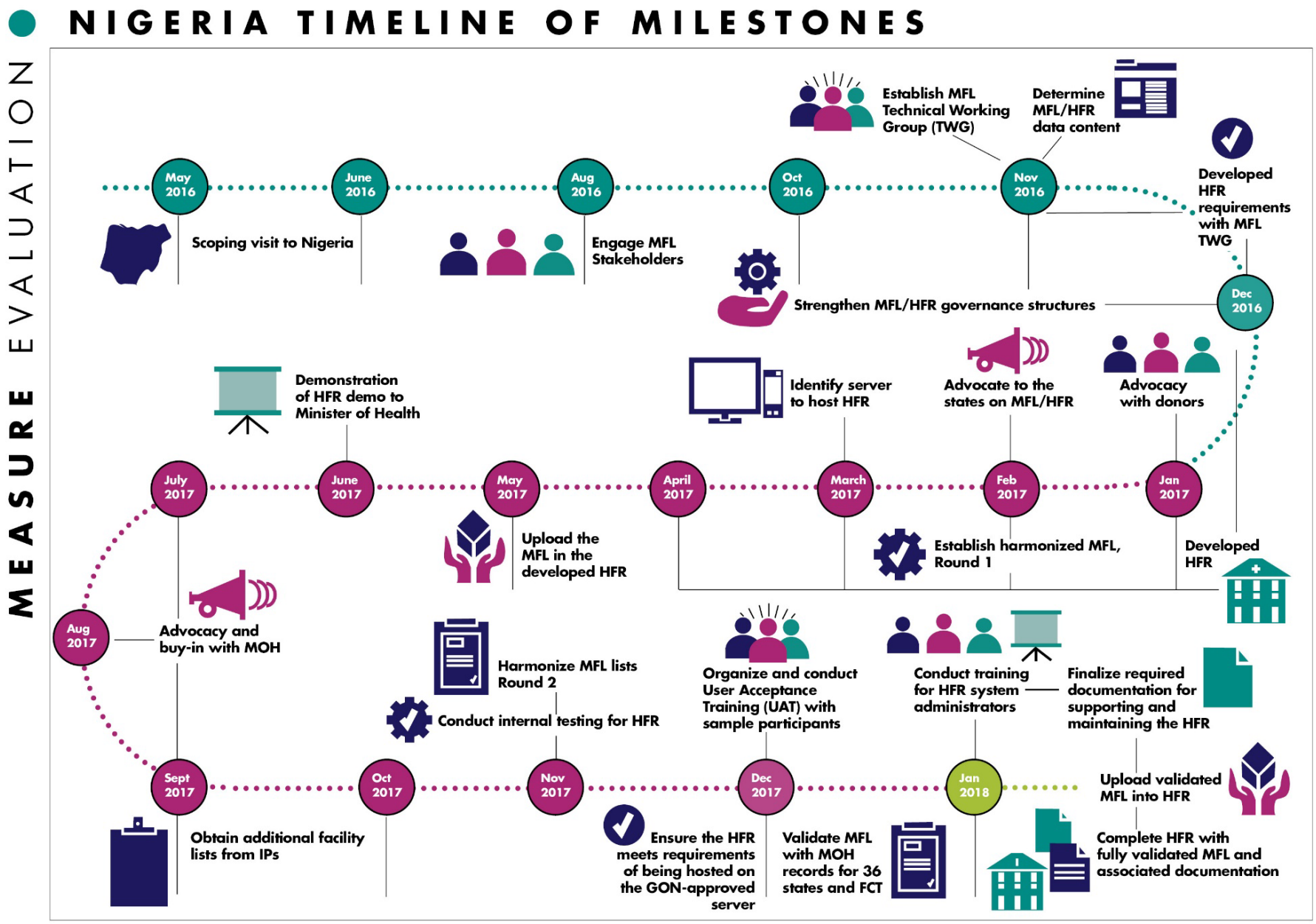
At the outset of this effort, various facility lists had existed independently for decades at the Nigeria Federal Ministry of Health (FMOH), the State Ministry of Health (SMOH), and Local Government Area (LGA) offices. An early intention was to centralize and coordinate these separate lists to make use of information technology, add e-health applications to the HIS, and provide a coding system applicable for all facilities across all LGAs. From 2010–2013, the FMOH and MEASURE Evaluation updated the national health facility list, allocating unique identifiers to each and assigning identification codes for more than 34,000 health facilities.[2] The next step was to develop guidelines for maintaining and updating the MFL, a facility registry for managing all lists, and proper governance to oversee sustainability of the MFL.

STEPWISE DEVELOPMENT OF AN MFL/HFR

Step 1 was a scoping visit to Nigeria to assess the current HIS environment with the Department of Health Planning Research and Statistics (DHPRS) and other relevant government agencies. The visit confirmed that the Nigeria HIS landscape was characterized by multiple reporting systems, lack of adequate coordination between national and subnational levels, and a lack of standardized procedures to achieve a unified, single national HIS capable of producing quality data and serving diverse stakeholder data and reporting needs

[2] Makinde, O.A., Azeez, A., Bamidele, S., Oyemakinde, A., Oyediran, K., Adebayo, W., Fapohunda, B., Abioye, A., Mullen, S. (2017). Development of a Master Facility List in Nigeria. Open Journal of Public Health Informatics. 6(2): e184. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4235326/

Figure 1. Nigeria Timeline of Milestones



As Step 2, in August 2016, FMOH and MEASURE Evaluation collaboratively held a workshop with stakeholders interested and invested in the MFL to understand the landscape and plan next steps. All parties agreed to prioritize the development and operationalization of an MFL/HFR to serve as the backbone for the HIS. Participants also agreed to the following:

- An electronic health facility registry (HFR) is needed to manage the MFL.
- An HFR should capture information on hospitals and clinics, pharmacies, laboratories, and imaging and radiology centers.
- Data for each facility in the HFR should consist of identification and contact information and service data.
- An MFL technical working group (TWG) should be set up to manage development of the MFL.

Step 3 was to establish the governance environment for the TWG and other agencies that would assist in maintaining an MFL. To ensure that the MFL would be owned and governed by the FMOH, MEASURE Evaluation worked closely with the DHPRS to establish a national Health Data Governance Council (HDGC) to provide leadership and oversight for all health data-related issues. This council was to be supported technically by the national Health Data Consultative Committee (HDCC), with the TWG under the HDCC.[3] This work included developing terms of reference and selection of members.

Beginning to operationalize this structure became the next task. In November 2016, the TWG was inaugurated and co-chaired by the DHPRS, the FMOH, and the Department of Hospital Services. As part of its mandate, the TWG led a study in three states (Lagos, Cross River, and Federal Capital Territory) between December 2016 and February 2017 to understand the processes for registering health facilities and secure local buy-in. Discussions were held with the Pharmacists Council of Nigeria, the Radiographers Registration Board of Nigeria, and the Medical and Laboratory Science Council of Nigeria, to understand their roles and interest in the regulation of health facilities and health professionals. Conversations encompassed the data elements these stakeholders thought should be included in the MFL/HFR.

Other activities included organizing presentations on the MFL/HFR to stakeholders, which included regulatory agencies, the Federal Capital Territory health services department, and the minister of health. The MFL TWG was engaged throughout this process and continued to meet quarterly.

As Step 4, the FMOH then turned its attention to harmonizing the various facilities lists at hand. The DHPRS MFL from 2013 was used as the base list and eight lists identified from the stakeholder workshop were harmonized with the base list. Late in 2017, stakeholders were asked to provide any additional lists, and the nine new lists were merged with the base list. This effort produced a draft MFL with more than 50,000 hospitals and clinics included.

A guide for cleaning and validating the lists at the state level was developed with the TWG. Teams visited each of the 36 states to work with the commissioners for health and state directors to validate all lists. Throughout the merging process, details were verified and cleaned—a process to resolve duplicate names, name similarities, incomplete names, spelling errors, and health services incorrectly listed as facility names—and uploaded to the HFR. At the end of the validation visits, the national MFL listed a total of 39,550 health facilities—almost 36,000 from the initial MFL and an additional 3,821 added from state records.

Step 5 was to develop a platform that houses the data on each facility. The HFR that houses all information in the MFL now also has standards that were developed by the TWG and MEASURE Evaluation, based on

[3] Makinde, O.A., Oyediran, K.A. Is the Nigerian government one step closer to evidence-based decision making in health? [Internet]. Nigeria Health Watch 2017. Available from: http://nigeriahealthwatch.com/is-the-nigerian-government-one-step-closer-to-evidence-based-decision-making-in-health/

stakeholder feedback. The group used open-source tools to develop the platform. The architecture is multilayered, with several application programming interfaces (APIs) patterned after the RESTful architecture[4] (see Table 1). The HFR allows external applications to retrieve information or submit information after authentication.

Table 1. Technical information on the HFR

Website	https://hfr.health.gov.ng/
Database	MySQL
Programming Language	PHP, Java Script, HTML
API Architecture	REST
API Output Format	JSON, XML

The HFR then needed to be tested. This was accomplished through test cases developed by an internal testing team. The team identified deficiencies or errors, and these were captured in a web-based bug tracking database for easy tracking of how issues were resolved. Once resolved, regression testing helped to confirm that no new bugs were present. User acceptability testing (UAT) was then conducted to determine other outstanding issues to addressed before the HFR could be handed over to the FMOH. Participants were given a detailed orientation on the UAT checklist and a live demonstration to navigate the HFR.

As Step 6, MEASURE Evaluation then developed technical resources to facilitate the easy deployment and takeover of the HFR by the Government of Nigeria (see Table 2).

Table 2. HFR document package

Reference Number	Title
NG-HFR-000	Document Package Index
NG-HFR-001	Implementation Guidance
NG-HFR-002	Metadata Schema
NG-HFR-003	Functional Requirements
NG-HFR-004	Administrator Guide
NG-HFR-005	User Guide
NG-HFR-006	Codebook
NG-HFR-007	Testing Plan
NG-HFR-008	Test Scenarios
NG-HFR-009	System Architecture
NG-HFR-010	Installation and Release
NG-HFR-011	WebService API Release
NG-HFR-012	System Administrator Job Profile
NG-HFR-013	User Acceptance Testing
NG-HFR-014	Service Continuity Considerations

[4] The Representational State Transfer (REST) architectural style is a popular approach to building APIs because it emphasizes simplicity, extensibility, reliability, and performance.

Reference Number	Title
NG-HFR-015	System Logins
NG-HFR-016	Source code (on CD and flash drive only)
NG-HFR-017	Software Handover Undertaking
NG-HFR-018	ICT Skills Assessment Tool
NG-HFR-019	System Administrators Training Outline
NG-HFR-020	System Administrators Training Report

SUCCESSES AND CHALLENGES

An MFL is the keystone for integrating health facility information from different actors, programs, and monitoring systems. A clear plan for governance issues, such as updating and sharing data, is crucial. Through technical assistance, MEASURE Evaluation addressed technical and governance issues related to a useful facility list for Nigeria and a data repository to maintain the information.

Support from the Minister of Health was a crucial factor in the success of the effort. The Minister of Health ensured the full support of federal and state government health personnel for the MFL/HFR effort. He held a meeting of the heads of health regulatory agencies, where the HFR was demonstrated, to seek their cooperation in ensuring the HFR functioned as planned. He requested that state commissioners cooperate in the rollout and asked the DHPRS to present a memo on the MFL/HFR to the National Council on Health, one of the highest health policy making bodies in the country. This level of ownership and commitment is instrumental for the future sustainability of the MFL and HFR.

Several challenges were encountered. At times, government and institutional bureaucracy led to delays and cancellation of activities. Maintaining a balance between donors' expectations and government priorities was demanding. Competing priorities among different government agencies caused interruptions. And there was a lack of uniformity within states, which are responsible for health facility regulation and registration.

Work remains to achieve a fully functioning MFL supported by an HFR. Figure 2 illustrates what has been achieved and what remains.

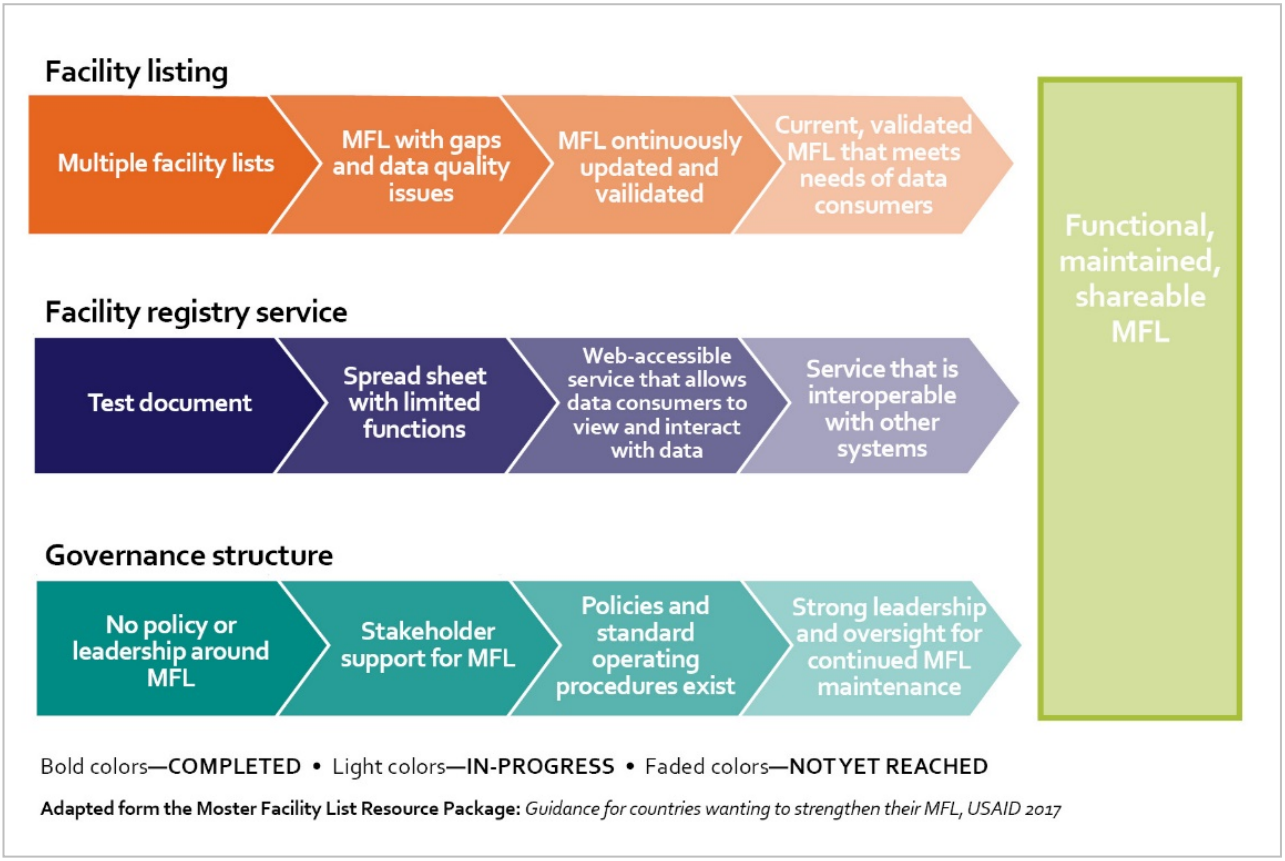


Figure 2. Progression towards a fully functional MFL

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