ICT INFRASTRUCTURE ASSESSMENT TOOL AND SERVICES

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Proposal Status: Out of Scope

MEASURE Evaluation Phase IV is a worldwide United States Agency for International Development (USAID) cooperative agreement, awarded to the University of North Carolina (UNC) at Chapel Hill. The project is carried out through sub agreements with John Snow, Inc. (JSI), The Futures Group in Washington, DC, Tulane University in New Orleans, LA, ICF International in Calverton, MD and MSH. Its objective is to improve and institutionalize the collection and utilization of data for population, health and nutrition programs. Project activities are currently underway in multiple countries in Africa, Asia and Latin America.

John Snow, Inc., and the nonprofit JSI Research & Training Institute, Inc., are public health management consulting and research organizations dedicated to improving the health of individuals and communities in the US and around the globe.

INTRODUCTION:

Since the 2014 Ebola outbreak, the developing world in general and the West African region in particular is under high pressure to develop a strengthened and more resilient health information system that is able to handle future disease outbreaks. The West African region, despite being the most integrated one in Africa, with the Economic Community of West African States (ECOWAS) at the state level, and the West African Health Organization (WAHO) at the public health level, is composed of countries with different cultures and infrastructure and capacity realities that make them unique and difficult to superimpose. Thus providing the means to first of all assess the state of the country's ICT infrastructure should be the initial step of any implementation project aimed at sustainably empower the Ministries of health to face future diseases threats.

PROBLEM STATEMENT

Investing in the interoperability of HIS sub-systems is one of the most promising ways of improving efficiency of health information sub-systems to be more responsive to potential future outbreaks and provide general means for improvements in service delivery integration and provision of a continuum of care to the citizens. As such, different health information system strengthening and interoperability projects are taking shape everywhere in developing countries trying to provide the best software or information system applications to enable an a more efficient early warning system or health service delivery. Unfortunately the network infrastructures of these countries are not always adequate to support all these high tech solutions brought by NGOs and health system strengthening implementing partners in support the Ministries of health. Therefore any effort to strengthen these developing countries health information systems must first assess countries' existing IT infrastructural capacities in order to be aware of important determinants that may affect the implementation of any given health system-strengthening plan.

Unfortunately tools to easily perform such a task are missing, making it harder for organization to perform this basic task prior to do their implementation work. This results on a higher risk of project failure or unsustainable results. To resolve this problem MEASURE Evaluation has develop an MS Excel based tool that makes it possible to easily perform such an infrastructural assessment in a standardized way with metrics that helps understand the country's ICT infrastructure readiness to support the intended new health IT solution in addition to what already exist.

The ICT Infrastructure Assessment Tool (ICTIAT) developed under the MEASURE Evaluation project is developed to solve this problem. It assesses the IT infrastructure supporting the national health information systems (HIS) at all level of a countries and provides useful metrics to understand the level of performance of the ICT infrastructure in order upgrade it or adjust one's expectations.

THEORY OF CHANGE

The ICTIAT project will support the increased use of HIS data for decision-making and as such integrates very well within the Performance of Routine Information System Management Framework and the Better Immunization Data Initiative Theory of Change developed by JSI. Building on two decades of experience collaborating with country governments, MEASURE Evaluation / JSI has developed a theory of change containing two paired pathways to improved health outcomes through data-led decision-making: the data use pathway and the information architecture pathway. The preconditions to success are grouped under several domains, each of which supports the emergence of the layer above. These pathways and domains include preconditions for two outcomes:

- **Improving data use for decision making:** Individual Behavior, a Supportive Organizational Environment, and System Level Conditions
- **Strengthening information architecture:** Skills and Practices; User-Tool Interface, Information Product Development and Information Infrastructure

PROJECT OBJECTIVES

The ICTIAT is a collaborative effort to draw a baseline of the performance of country's ICT infrastructure to be used as initial step on the process toward the design of an HIS Enterprise architecture or plan to enable interoperability of different HIS. This tool is designed primarily to be used in the health sector but nothing is preventing it to be used in others sectors as well.

The tool is modular and can used as a full set or a light version suitable for mobile and sms assessments. The tool assesses the infrastructure at the national and decentralized level as well existing and planned applications using it.

It has already been used in 3 developing Countries (Liberia, Guinea and Madagascar) but the current version has some limitations due to the fact that it is an MS Excel based tool which limits the size of the data that can be captured as well the flexibility and level of automation of the tool.

The main objective of this proposal will be to develop a web base version of the ICTIAT to be offered as installable application but also as service to the community to help minimize cost of implementation and use of the tool. The platform will also offer in the long run database of the status of the ICT Infrastructure of the different developing countries allowing Ministries of health and organization to access open data that can help them plan ahead their IT solution and better tailored them to the targeted country.

The outcomes of the implementation of this concept will include:

- An improved version of the HIS ICTIAT is produced in English and French
- A web version of the ICTIAT published under open source software license
- A web service of ICTIAT publicly and freely accessible to all that will allow anyone to assess the ICT Infrastructure and get automated analysis and recommendations
- Provide a database of open data about status of ICT infrastructure supporting the health information system of supported countries

PARTNERSHIP FRAMEWORK/APPROACH

Key stakeholders include ministries of health, development partners, implementers, academic institutions, and private sector. To be

successful, Ministries of Health and Implementing Partners and eventually the private sector will need to be part of this solution. Their contribution will be key to produce a more relevant, accurate and exhaustive updated version of the ICTIAT.

JSI under MEASURE Evaluation project will be the main organization in charge of the development of the tool but the test phase will involve Ministries of health of at least 3 developing countries.

ACTIVITIES & EXPECTED RESULTS

A. ACTIVITIES

- Review existing tools & frameworks that could help improve the current version of the HIS ICTIAT
- Design of a comprehensive HIS ICTIAT MS Excel version of the assessment tool
- Design a web based version of the revamped ICTIAT tool
- Setup an ICTIAT web service to provide an open assessment platform to NGO and Countries.
- Formulate key indicators to include in HMIS tools to continuously monitor the performance of the HIS ICT infrastructure.
- Pilot of the tool in 1 Country .

B. RESULTS

Activity results will include:

- A new MS Excel version of the ICTIAT with updated questions and analysis module.
- A open source licensed code repository of the developed web version of the ICTIAT application.
- A cloud hosted web platform offering free ICT infrastructure assessment to all.
- A cloud hosted ICTIAT web service platform offering open data on ICT infrastructure.
- Evaluation report for the test country.