



Voices from the Field:

The need for a Digital Health Maturity Model Navigator

Introduction

When planned for and invested in with a systems strengthening approach,¹ digital health solutions facilitate the effective use of health information to improve the health system and, ultimately, health outcomes. How do we determine the robustness of a country's digital health enabling environment or the extent of the digital transformation of a country's health information systems?

In recent years, a variety of maturity model-based tools have emerged to standardize the way we assess and improve the digital transformation of country-level health systems.² These tools offer a means to assess the capabilities of people, processes, and technology to determine what improvements are needed for advancements.

The increasing interest and activity in this space has led to a proliferation of maturity model-based tools,³ leading to confusion in deciding which ones are best suited to specific goals and contexts. To address this confusion, a group of actors collaborating through the Digital Health and Interoperability Working Group⁴ identified the need to provide guidance to potential users on how to select and apply—and in which order—available maturity model tools for digital health. In 2020, with funding from the United States Agency for International Development (USAID), a core team from the University of North Carolina at Chapel Hill and Digital Square initiated a process to develop a Maturity Model to address this need.

To prepare content on practical experiences for the Maturity Model Navigator, the core team interviewed tool developers, implementers, and country stakeholders to better understand their motivation and end goals in creating and using the tools individually or in combination. This technical brief summarizes the results of these interviews.

The team interviewed eight people from five countries (Uganda, Nigeria, Sierra Leone, Kenya, United States) involved in the design and/or use of the following maturity model-based tools:

Digital Health is the systematic application of information and communications technologies, computer science, and data to support informed decision-making by individuals, the health workforce, and health systems, to strengthen resilience to disease and improve health and wellness.



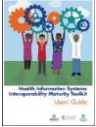

Source: [DIIG](#)

¹ See, for example, the seven building blocks identified in the WHO-ITU *National eHealth Strategy Toolkit* (2012) that each require assessment and strengthening as part of digital health planning and implementation.

² Background on use of maturity models: <https://www.measureevaluation.org/resources/publications/fs-17-246>

³ Matrix of relevant maturity-model based tools: <https://www.measureevaluation.org/resources/publications/fs-18-305>

⁴ https://wiki.digitalsquare.io/index.php/Digital_Health_%26_Interoperability_Working_Group

	<p>The Early Stage Digital Health Investment Tool (EDIT) is a global good designed to assess a country's readiness to implement a digital solution(s).</p>
	<p>The Global Digital Health Index (GDHI) is an interactive digital resource that tracks, monitors, and evaluates the use of digital technology for health across countries.</p>
	<p>The Health Information Systems (HIS) Interoperability Maturity Model (IMM) identifies the major components of HIS interoperability and lays out an organization's growth pathway through these components.</p>
	<p>The HIS Stages of Continuous Improvement (SOCI) Toolkit was collaboratively designed to help countries or organizations holistically assess, plan, and prioritize interventions and investments to strengthen an HIS.</p>

Detailed information on each of these tools can be found in the forthcoming Navigator.

Methods

To conduct an in-depth review of experiences with these four tools, tool developers and implementers were interviewed virtually using a semi-structured interview guide that had the following lines of inquiry:

- The respondent's role in the creation or use of maturity model-based tools.
- Their understanding of how users decided to apply the various tools, either an individual tool or several tools.
- Reactions and experiences of tool users.
- Benefits and challenges of implementing the various tools together.
- The value of using a maturity model-based tool to inform strategic planning.
- Considerations for tool alignment and users' understanding of their major similarities and differences.

Participants' responses were analyzed and coded for emerging themes, which are summarized below.

Findings

The need for guidance on navigating maturity models

The interviews highlighted the need for guidance on the use of the maturity model-based assessment tools for digital health. Both tool designers and users faced confusion from stakeholders about how to select a tool to best fit a given context, and how to use the tools in a complementary way. Respondents suggested creating a Navigator that would clearly lay out which tool to use for what purpose. It would also

provide high-level information on the tools for decision-makers and detailed information on tool attributes for a more technical audience.

“There is a time you need detailed information, there is a time when you need high-level information....people need to know the differences between the tools.”

Respondents recommended that guidance be provided for decision-makers on how to determine the appropriate tool for a specific context:

“Helping decision-makers in thinking about the problem they have and the tool to use—this could be part of a framework—what among the tools you are reviewing and what are the problems they want to solve and what do you have in place in the country already.”

Respondents also discussed the need for targeting different audiences with the Navigator’s content:

“For a navigator, you need the right people to interact with it—but it needs to enable a natural language process. If I am using it, I need to be able to speak in my language for my function and the navigator needs to have an interactive process that encourages almost natural conversation—needs to be simple enough without being bogged down with the details of these tools and the tool complexity, that is in the backend. The interface should allow a normal conversation.”

The importance of understanding the existing ecosystem

Respondents emphasized that to facilitate the optimal use of an assessment’s results, it is important to appreciate what has been done, consider what is already planned, and which tool or tools will map to these factors.

“Overall, this body of work was accepted well, but perhaps there should have been a step to discuss with countries where they were in their work with digital health strengthening, and having a structured process for determining where the tools fit in. Then that process becomes a common solution between implementers and the country.”

Respondents emphasized that for any specific assessment tool, the process of selecting and using the tool must be collaborative and include leaders from various sectors in any given context to reduce biases in results and increase ownership.

“It’s important to consider who to include. Stakeholders are usually from the ministry of health, but should also be the custodians of data, the disease program people who are the data owners, people from academia, and also from different ICT [information and communications technology] aspects, as well as people from programs.”

“You need the Ministry of ICT or similar authority; you also need the program people. The health information system is a symptom of the where the field is, because digital health is an intervention and not the endpoint, it’s key to have representation from the users of systems. Selection of stakeholders who participate is key; it’s important to bring together champions and people with the right lens for digital health.”

Respondents suggested that having training on basic digital health and interoperability concepts before using an assessment tool could broaden the lens through which stakeholders are thinking about digital health. In some cases, potential participants need sensitization on the benefits of using a tool to gain commitment and mobilize resources.

Different audiences benefit from different tools

The **Global Digital Health Index (GDHI)** was seen as a low-resource tool that could be completed by key stakeholders in a few hours and used to orient key stakeholders to a holistic view of digital health that they might not have considered.

“It [GDHI] gives a bird’s-eye view of where things are, not necessarily detailed enough for everything you need. To get this, a different tool can fill in the details.”

The **Interoperability Maturity Model (IMM) Toolkit** was seen as a more labor-intensive process, but a tool that could yield more actionable results.

“The IMM toolkit requires more effort to carry out. The process and toolkits and procedures are meticulous and intense, you need to understand the aspects. If it’s done correctly, you can get a lot more actionable data because of the depth of the information collected.”

In terms of the sequencing of the tools, respondents felt that it would vary by country context and what assessments had already been conducted.

*“For an emerging health information system, start with **SOCI** and then **IMM**. You could do the IMM first in mature settings.”*

*“**EDIT** is meant to be rapid and not resource-intensive. But it does target some areas that the GDHI doesn’t get to and informs where investments or resources are needed to support infrastructure for digital health.”*

Additional comments on navigating maturity models

The respondents’ opinions varied on how and whether the tools should be harmonized. Some felt that it was best to let the tools be used as they are, whereas others said that it would be best to harmonize a subset of tools into a combined resource that would be most useful to the greatest number of people. Respondents also recognized that there was a much larger community of maturity model tool designers and tool users that needed to be involved in that decision.

Most respondents felt that alignment was needed on the key terms used in the tools related to digital health and health information systems. Some respondents suggested that guidance on how the levels of maturity aligned (or did not align) would be especially valuable.

Last, respondents felt that guidance on maturity models, in general, would be helpful to those who want to use and create such tools in the future.

Summary

Overall, respondents said that a Maturity Model Navigator is needed to guide stakeholders in understanding, selecting, and sequencing the application of the various maturity model-based tools. Respondents felt that the Navigator should consider the different audiences—from donors to country-based users—at all levels and provide guidance on how to select a maturity model, how to prepare in-country stakeholders to participate in the assessment, and how to use the findings. Respondents emphasized that any guidance should be centered around the country context and utility of tools to stakeholders' goals, and that the Navigator should be a user-friendly, interactive, and living resource.

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