Digital Health Resources for COVID-19

July 13, 2021

Agenda

- Inventories of existing country digital systems and mapping to COVID-19 use cases by country
  - Map and Match (USAID and Digital Square)
  - UNICEF Mapping Tool

- New guidance and tools, and how to use them to inform country support
  - Digital Square and Map and Match Resources
  - Digital Pandemic Preparedness Assessment Tool

- COVID-19 Digital Health Center of Excellence (DICE) Overview:
  - What it is and how it can be used to support country digital health systems strengthening in the context of COVID-19

- Discussion

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- Inventories of existing country digital systems and mapping to COVID-19 use cases by country
  - Map and Match (USAID and Digital Square) - Presented by Vrunda Rathod, Digital Square, vrathod@path.org and Merrick Schaefer, USAID mschaefer@usaid.gov
  - UNICEF Mapping Tool - presented by Vrunda Rathod

- New guidance and tools, and how to use them to inform country support
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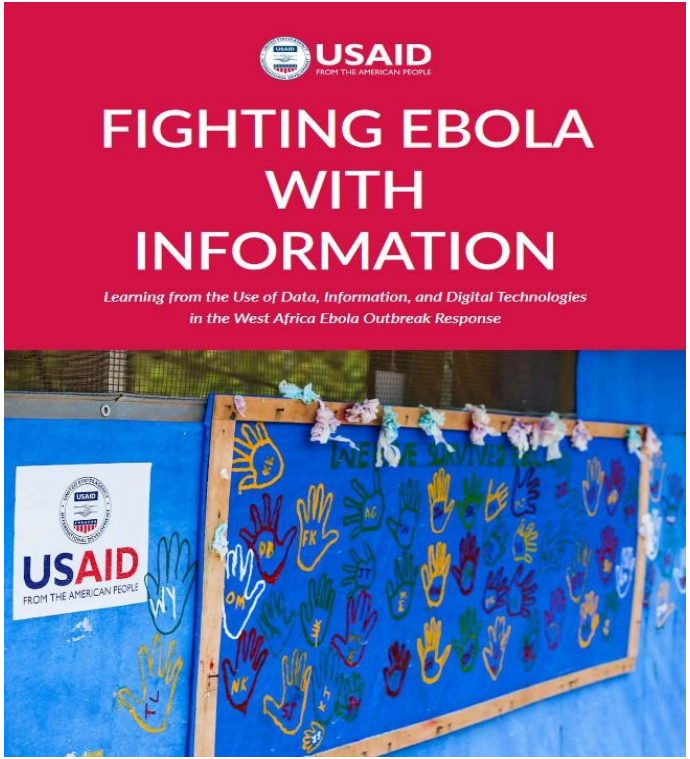
Digital Tool Mapping for COVID-19

Why Map & Match?

Key Lesson from Ebola:

Adapting existing digital tools rather than deploying new ones helped:

- Speed of deployment
- Save money
- Reduce duplicative investments
- Lead to sustainable tools
- Increase government leadership
- Enable exchange of data



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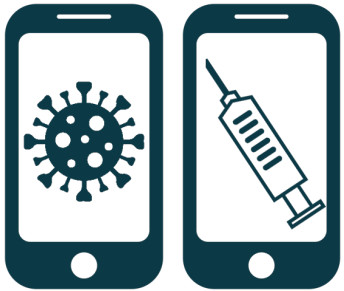
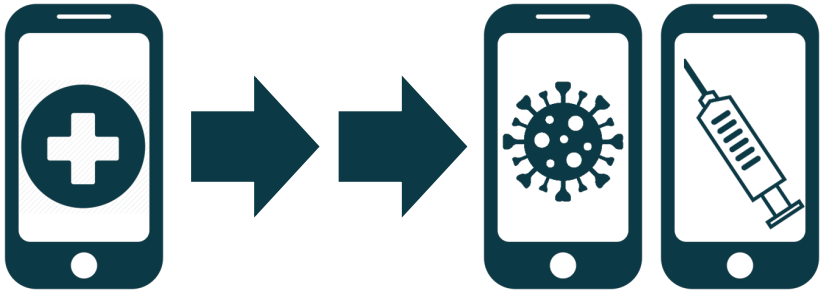
Map & Match Goals

Map **existing** digital health tools deployed **at scale** in country.

Identify digital health tools **already deployed** for COVID-19 response and vaccine distribution



Identify digital health tools that **can be adapted** for COVID-19 response and vaccine distribution



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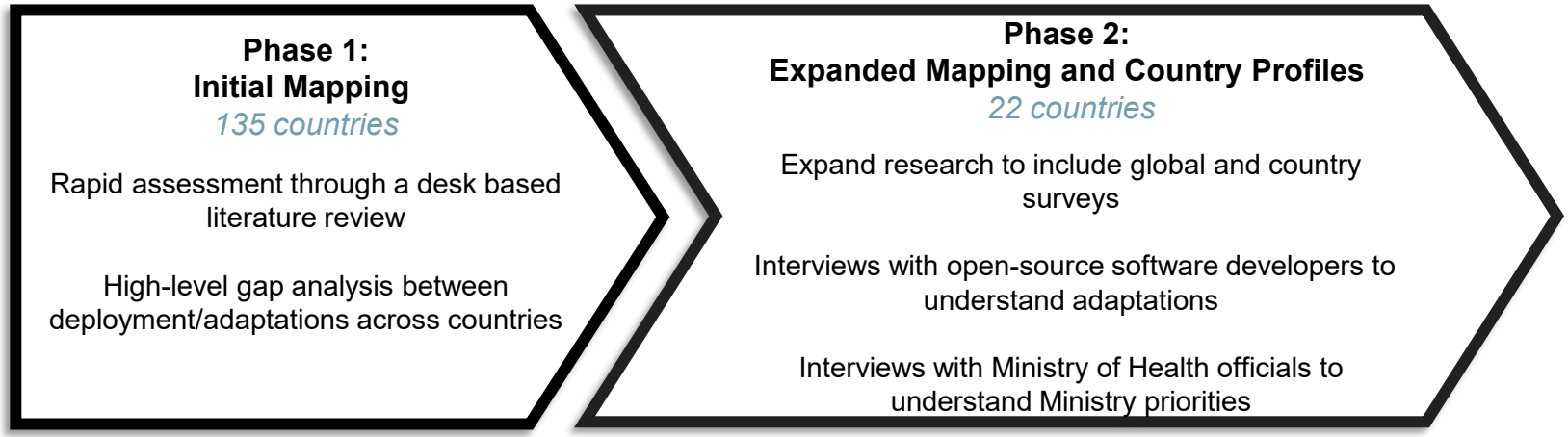
Map & Match Overview



Investor and Partner Coordination

Coordination and alignment has been a key tenant throughout the Map and Match project.

Structuring information: use cases

A ‘use case’ refers to a specific type of information collected, stored, tracked, analyzed, or visualized as it relates to the functional response to an epidemiological event, specifically COVID-19. One digital health tool can be deployed for multiple ‘use cases’.

- Case management
- Contact tracing
- Data science assets
- Event-based surveillance
- Health facility & provider administration
- Infection prevention control
- Laboratory systems
- Learning & training

- One Health
- Points of entry
- Risk communication & community engagement
- Routine surveillance
- Supply chain
- Vaccine planning, monitoring and delivery*

* Added for COVAX

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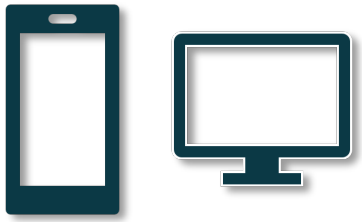
Phase I Findings

Phase I: July 20 – October 2020

749

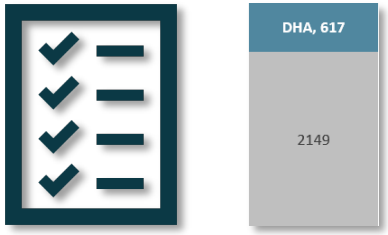
Documents, websites, reports, and landscapes submitted and reviewed.

2,910



digital tool deployments identified

78%



% of digital deployments NOT identified in the Digital Health Atlas

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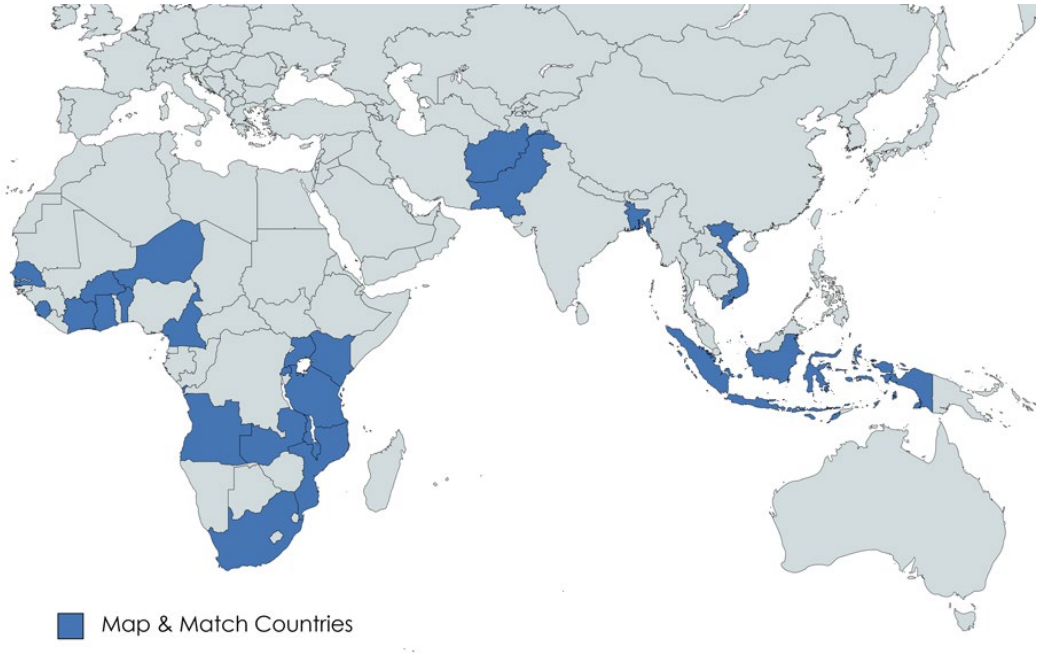
Map & Match Phase 2

The 22 countries with briefs already developed or forthcoming include:

Afghanistan, Angola, Bangladesh, Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Indonesia, Kenya, Malawi, Mozambique, Niger, Pakistan, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Uganda, Vietnam, and Zambia.



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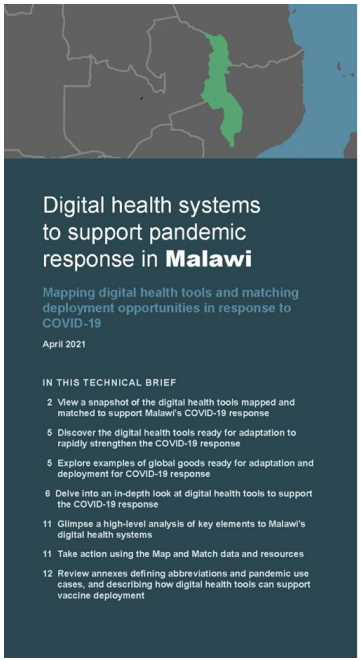
Country Briefs



Digital health systems to support pandemic response in **Malawi**

Mapping digital health tools and matching deployment opportunities in response to COVID-19

April 2021

IN THIS TECHNICAL BRIEF

Introduction

Malawi's Ministry of Health (MOH) outlines its priority for strengthening health information systems in its *Monitoring, Evaluation, and Health Information Systems Strategy (MEHIS): 2017–2022*. Its principal objectives are to have interoperable digital systems populated with high-quality data to support data use for decision-making. The COVID-19 pandemic brought a new level of urgency to this objective. Leveraging digital health tools is a rapid, cost-effective strategy to accelerate Malawi's COVID-19 response while at the same time reinforcing the MEHIS objectives.

Background

Digital Square conducted a landscape analysis of Malawi's digital systems in the ten-year period from 2010–2020 with information validated by tool implementers and designers, digital health experts, and MOH stakeholders as part of the USAID-funded Map and Match project. The purpose was to identify the existing digital tools utilized in Malawi, map the tools already deployed for COVID-19 response to relevant uses cases, and highlight opportunities where existing tools can quickly be adapted and deployed to support COVID-19 response.

54 digital tools identified

25 tools scaled nationally

22 tools deployed for COVID-19

18 tools potentially adapted for COVID-19

Analysis overview

Malawi's health system utilizes 54 digital health tools with at least 22 already deployed for COVID-19. This brief identifies opportunities for existing digital tools to be adapted to pandemic use case needs for the COVID-19 response and potential future epidemics. Mapping tools to the use cases revealed where there are strengths and gaps in Malawi's digital health systems response to COVID-19. For example, the analysis identified only one tool that currently supports health facility and provider administration with additional tools ready for adaptation to further address this use case.

Strategic adaptation of existing digital health tools will accelerate the COVID-19 response, offering greater efficiency and more robust support to the government, health workers, the clients, and other stakeholders.

Figure 1. Current number of digital health tool deployments mapped to pandemic use cases in Malawi.

Figure 1 illustrates that many use cases are addressed using several tools in Malawi's COVID-19 response while other use cases are filled by few tools.

Abbreviation: HFPA: health facility and provider administration

Key definitions

Pandemic use case refers to the specific type of information collected, stored, tracked, analyzed, or visualized as it relates to the functional response to an epidemiological event, specifically COVID-19.

Digital health tool refers to a website, application, or other computer or mobile technology that supports data collection, storage, tracking, analysis, or visualization. The tool must have an electronic interface. One digital tool can address multiple use cases.

Application refers to components of digital tools that are primarily designed for use by clients of the health system or by health workers. Applications can be reused to address more than one use case, or applications can be uniquely used for only one use case.

Adaptation refers to making improvements to existing digital tools to improve their applicability and impact in the context of COVID-19.

Map & Match created easy to read analysis for each of the 22 countries in Phase 2.

There is a lot of variability in the information found through our assessment. Some countries have tools for all use cases, many of which are already being adapted and used to support COVID response. Many still rely on paper-based tools and have limited use and scale of digital technologies.

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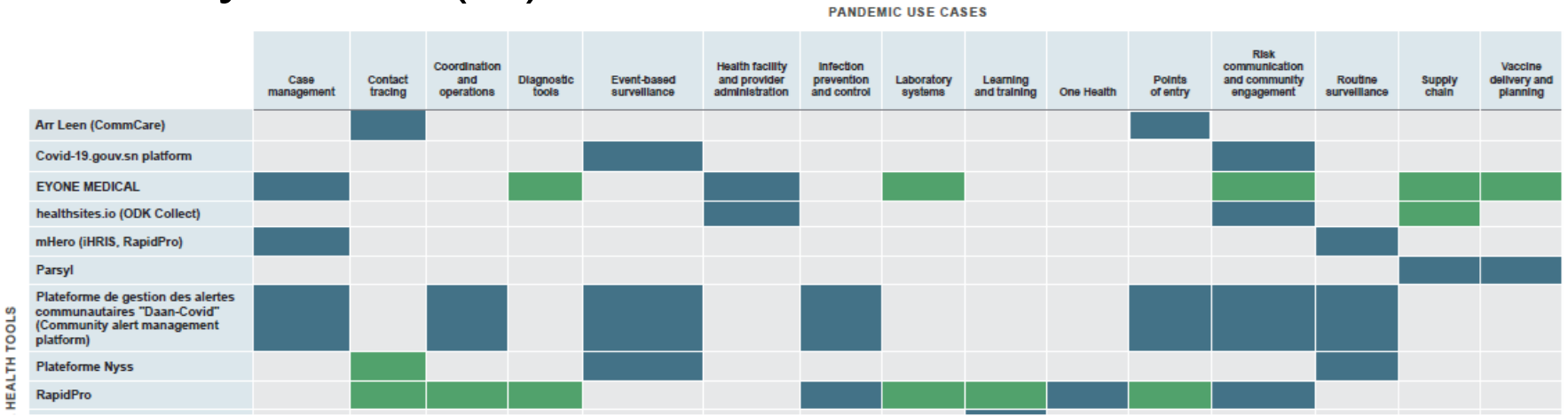
Country Briefs (III): A look at tools



The briefs provide an overall mapping of all the tools in country, highlighting both current COVID-19 use cases (blue) and possible adaptations (green). This allows for staff to quickly scan the existing tools and in country and see what use cases are there tools for and where the opportunities lie.

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Country Briefs (IV): In-depth look at existing tools

Digital health tool	Purpose	Use case(s)	Funder(s)	Implementer(s)	Licensing	Scale
Arr Leen (CommCare)	Arr Leen is a platform used by community health workers and chief nurses (ICPs) to monitor pregnant women and children under the age of 18 via a mHeath application and dashboard modules. Arr Leen has been adapted by adding a COVID-19 component to detect, trace and monitor cases at the community level.	Contact tracing, points of entry	Africare, Dimagi, Foundation Kempers	PanAfricare	Open source	Subnational
Covid-19.gouv.sn platform	Covid-19.gouv.sn is a platform that provides reliable information on Covid-19 (e.g., practical guidance, awareness videos) and statistics on the spread of the virus via an interactive dashboard showing data for each locality. Individuals can also report a case of infection via the covid19.gouv.sn platform.	Event-based surveillance, rapid response teams, case investigation, risk communication and community engagement		MSAS		National
EYONE MEDICAL	EYONE MEDICAL is an end-to-end hospital management application that allows patients to interact with health professionals and have their up-to-date digital medical records at any time and in any place. This application includes an adaptation by digitizing patient files related to COVID-19 (e.g., case investigation forms, Form	Case management, diagnostic tools, health facility and provider administration, laboratory systems, risk communication		BMC Audit and Consulting, Ministry of Interior, Polychlinique	Commercial	National

In addition to summary information, the briefs provide descriptions of tools used in each country, highlighting both current COVID-19 use cases (blue) and possible adaptations (green). Where the information was available, the briefs display funders, implementers, and scale information. Licensing information is also included to enable implementers to consider the price of the software upfront.

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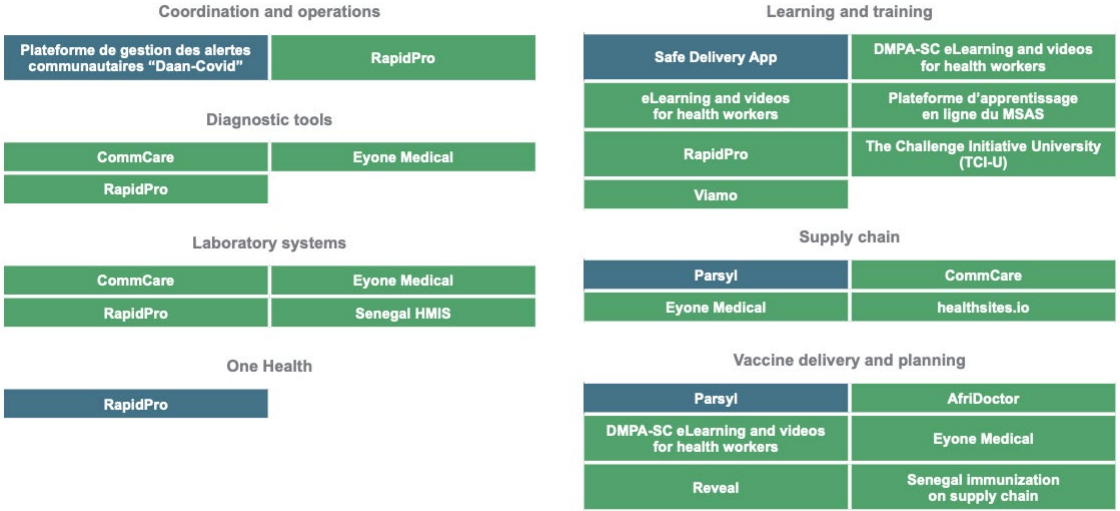
Country Briefs (V): Opportunities

Briefs also showcase digital health tools that can be adapted for other use cases.

For example, Commcare, a digital health tool deployed in malaria program in Senegal has been adapted for COVID-19 use cases in other countries. Commcare can be adapted in Senegal for Lab systems and supply chain.



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UNICEF Digital Systems Mapping

- Increased access to actionable, data-driven insights and improved service delivery through the understanding of existing digital health ecosystem
- Categories around the priority problem areas and opportunities identified by the WHO-UNICEF COVAX Vaccine Delivery Innovation Team
- Sources:
  - Country consultations
  - USAID Map and Match
  - Digital Health Atlas
  - INVENT
  - Gates Ventures & World Bank DH Landscaping

Agenda

- Inventories of existing country digital systems and mapping to COVID-19 use cases by country
  - Map and Match (USAID and Digital Square)
  - UNICEF Mapping Tool

- New guidance and tools, and how to use them to inform country support
  - Digital Square and Map and Match Resources - Presented by Vrunda, Digital Square, abendor@path.org and Merrick Schaefer, USAID mschaefer@usaid.gov
  - Digital Pandemic Preparedness Assessment Tool - Presented by Tessa Lennemann, GIZ tessa.lennemann@giz.de

- COVID-19 Digital Health Center of Excellence (DICE) Overview:
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- Discussion

Additional Map & Match Outputs

- Executive summary/overview of the project.
- Annex information about digital tools which support vaccine deployment.
- Map & Match survey tools (data model).
- Final data set of Phase I and Phase II data
- Global Goods COVID-19 adaptations
- Digital Applications and Tools Across an Epidemiological Curve (DATEC)
- Scale framework

digital square

COVID-19 Map & Match

EXECUTIVE SUMMARY

Digital Square recognizes a coordinated approach to digital investments is essential to quickly scale access to time-sensitive data and information needed to inform an effective disease outbreak response. Without this critical alignment of funding to existing digital health infrastructure, there is a risk of deepening fragmentation of digital tools and data silos that could hamper COVID-19 response efforts and undermine health systems.

The purpose of the USAID-funded Map & Match project is to help countries, donors, implementers, and the global digital health community at large to leverage and adapt existing digital tools in response to the COVID-19 pandemic.

As the world learned during the West Africa Ebola outbreak response, prioritizing the reuse and adaptation of existing digital tools is vital to quickly scale access to time-sensitive disease information and data.

Through this project, Digital Square sought to understand the landscape of existing, adaptable software tools used at scale in countries, and subsequently matched those tools with potential use cases for COVID-19. After a broad landscaping in which data was collected from over 130 countries, the project narrowed the scope to validate and collect additional information for 23 countries.

For this set of countries, all in sub-Saharan Africa and Asia, Digital Square launched a survey and conducted key informant interviews with ministries of health and local partners in the country. Digital Square also conducted in-depth data collection and interviews with partners in the project's global good community.

The countries prioritized included: Afghanistan, Angola, Bangladesh, Benin, Burkina Faso, Cambodia, Cameroon, Cote d'Ivoire, Ghana, Indonesia, Kenya, Malawi, Mozambique, Myanmar, Niger, Pakistan, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Uganda, Vietnam, Zambia, and Zimbabwe. Two countries—Cambodia and Zimbabwe—were subsequently removed from activity at the request of the local missions.

Through this project, Digital Square developed a highly visual brief for each country, identifying which tools are currently in use in the country, which tools have already been used in the country's COVID-19 response, and where there are opportunities for quick adaptation of existing tools across COVID-19 response use cases. Digital Square prioritized dissemination of the country briefs and supplemental resources with national governments, investors, and other stakeholders.

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Additional resources available from Digital Square

- Use the Global Goods Guidebook to learn more about the over 30 approved Digital Square global goods. The guidebook includes more information on the individual tool and specific information on use of the tool in the COVID-19 response.

- Resources on the Digital Square wiki are regularly updated to feature global good adaptations. Information from JHU, UNICEF, and other partners is also maintained on the wiki to link the community to important initiatives in the ecosystem.

https://wiki.digitalsquare.io/index.php/COVID-19

DPPA - Discussing country software landscape in the context of pandemic use cases

Aim of Digital Pandemic Preparedness Assessment (DPPA):

1) Map out the existing software landscape against pandemic use cases
2) Gap analysis and mitigating actions
3) Discussion with national stakeholders to:
    a) Built consensus on need
    b) Develop priorities and rank actions
    c) Identify “patrons” for different gaps
    d) Identify funding opportunities

1) (Monitor progress?)

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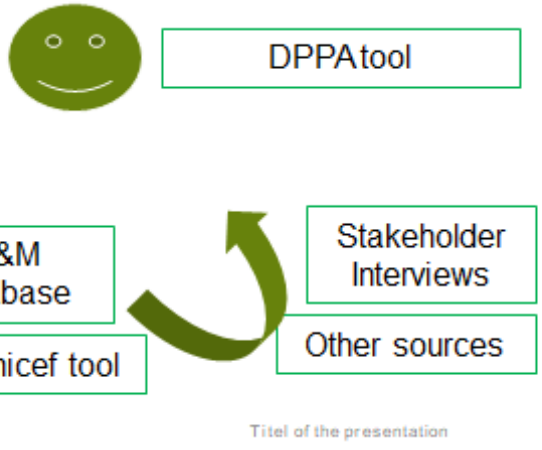
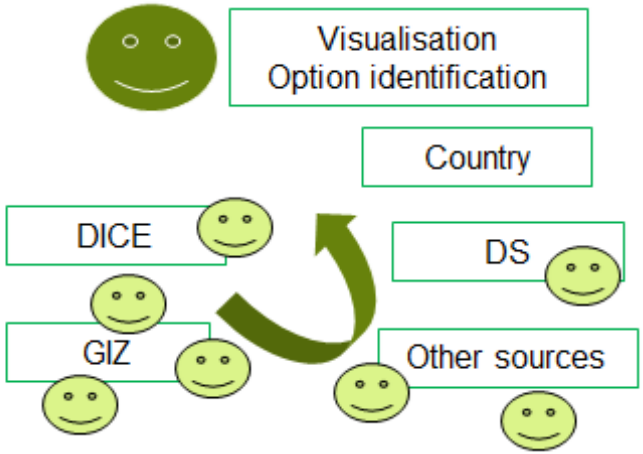
DPPA Process

Mapping of:
- Digital health tools against usecases.
- Stakeholders
- Background information

Guiding questions for gap analysis:
- Where are gaps?
- What options to close gaps?
- Who is best placed?

Facilitation meeting:
- What have we found?
- What options to close gaps?
- Who is best placed?





How to use DPPA and other assessment tools

DPPA available on the digital square web page:

AN INTRODUCTION FOR STAKEHOLDERS (SLIDE DECK)

This document provides background context, methodology, and other information about the development of the Digital Pandemic Preparedness Assessment Tool.

INSTRUCTIONS (SLIDE DECK)

This document provides procedural guidance for DPPA implementation and interpretation. It follows the structure of the DPP Assessment Tool Excel File.

DPP ASSESSMENT TOOL TEMPLATE

The DPP Assessment Tool Excel File provides a template for partner countries and other stakeholders.

DPP ASSESSMENT TOOL EXAMPLE

This Excel File provides an example of a completed DPP assessment.

Contact for DPPA support: digital-health@giz.de OR tessa.lennemann@giz.de

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Why should I use DPPA?

- Structured and comprehensive assessment helps to:
  - Define Gaps and Priorities
  - Identifies opportunities to extend use of existing applications
  - Identifies duplications
  - Supports stakeholder harmonization
  - Allows to cost needs & apply for funding

- Contributes to:
  - Development of a comprehensive digital health system
  - Makes countries comparable
  - Supports cross-country and international collaboration

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COVID-19 digital health Centre of Excellence (DICE)

Karin Källander, Senior Health Advisor
Chief Digital Health & Information Systems Unit
UNICEF Programme Division
New York
kkallander@unicef.org

unicef | World Health Organization

Digital solutions and innovations can support COVID-19 vaccine delivery

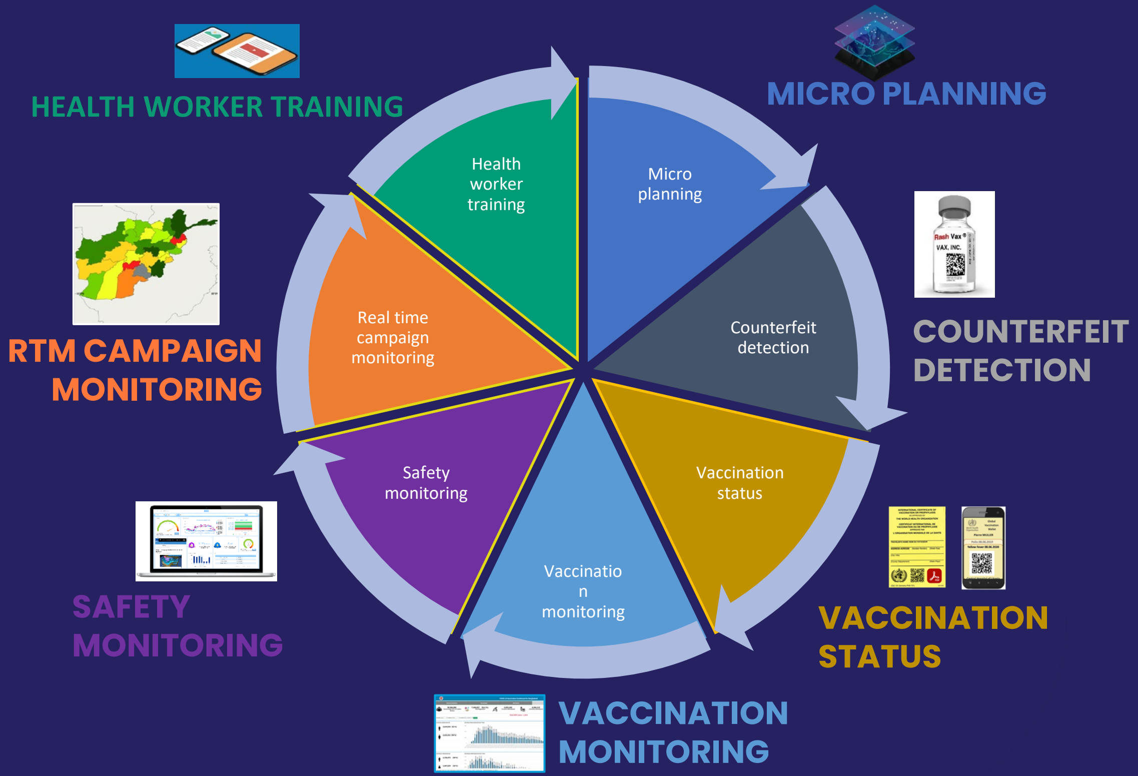
Challenge

- LMIC health systems are under severe stress in their abilities to manage routine health services during the COVID-19 pandemic, while responding to the pandemic and rolling out COVID-19 vaccines

Opportunities

- Sustainable and scalable deployment of carefully chosen digital health interventions can support health priorities in the context of the COVID-19 pandemic, as well as post-pandemic health systems strengthening needs.
- Digital health investments can lead to more equitable coverage of quality health services, including vaccines, through increased use of data and evidence.

COVAX Innovation Working Group: Priority problem areas and solutions



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What is the Digital Health COE (DICE)?

- The DICE is a multi-agency consortium with a UNICEF-WHO co-hosted secretariat. UNICEF will run day-to-day activities and will manage funding for operations.
- The DICE will provide coordinated, standardized support to Governments, initially responding to support requests for preparation and deployments of mature digital technologies to support health service delivery in the context of the COVID-19 pandemic
- DICE will align with donor agencies and support Governments to identify and apply for funding for deployments using costed investment cases

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Principles for Digital Health Support for COVID-19

UNICEF, WHO and partners are working with partners to support deployment of robust, mature and easily scalable digital solutions using globally endorsed principles:

1. **Demand driven**: Prioritizing country support that aligns with needs outlined in the National Deployment and Vaccination Plans (NDVPs)
2. **Agile**: Establishing contracting mechanisms with approved vendors and technical experts to allow for a rapid response to country COVAX priorities
3. **Sustainable**: Supporting Governments to use existing systems and resources to deploy cost-effective digital solutions with COVID-19 specific functionalities, which later can be expanded and integrated into the health management information system.
4. **Secure**: Safeguarding the global principles of digital development by only endorsing digital platforms that apply acceptable security standards for patient privacy and cyber security.
5. **Capacity building:** Providing guidance and technical assistance to Governments on digital health investments, including vendor selection, platform set-up, training and maintenance

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COVID-19: What are the needs right now?

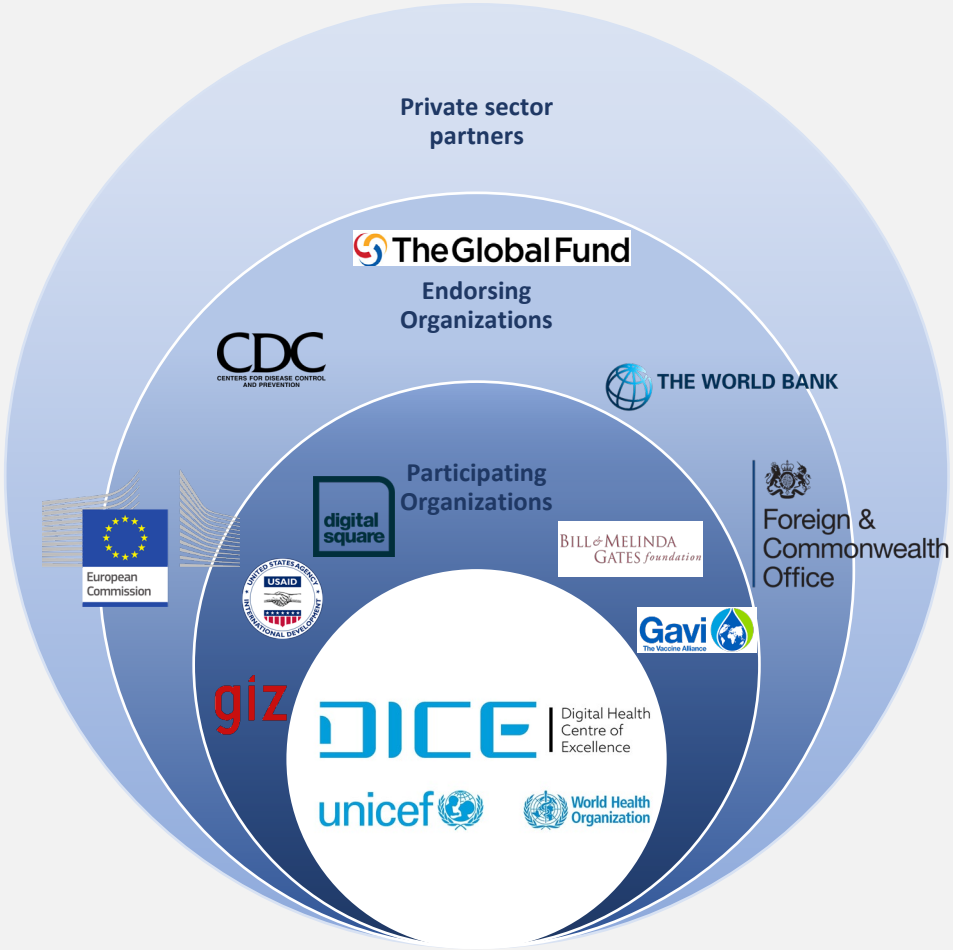
- Diagnostics, treatments and vaccines are being rolled out now, yet many countries do not have the digital systems or solutions required to support microplanning, remote health worker training, surveillance, monitoring of service uptake, demand creation and programme monitoring.
- Governments, donors and International Organisations at country level are reaching out with requests to urgently support, yet there is often not sufficient capacity at HQ or ROs to meet these needs.
- With its current structures UNICEF, WHO and partners will not be able to deliver on its core commitments to the ACT-A and its COVAX facility:
    - Technical assistance to CO's for digital solutions support may be of poor quality, and not meet national demand.
    - Digital investments may be poorly selected and coordinated, potentially leading to fragmented implementation of unsustainable solutions which further weaken already weak health systems.

Who supports DICE?

Participating organisations – Funding DICE core functions

Endorsing organizations – Indirect DICE funding and direct country funding through various mechanisms; staff secondments

Private sector partners – Funding DICE core functions, funding for direct country support, in-kind support



What areas can DICE support?

- Coordinate between donors and development partners at Regional and Global level
- Review Concept Note, TORs, Business Requirements and Proposals
- Provide Guidance & support Implementation of assessment tools
- Advise on existing Digital Global Goods, including existing evidence and plans to scale/institutionalize
- Provide recommendations /support in contracting technical experts and partners
- Support capacity building, training and knowledge exchange

DICE Digital Health Centre of Excellence

How will the DICE function?

- Core team of experts, roster of consultants, and standby partners
- Generation and use of strategic Long Term Agreement for Services (LTAs), Partnership agreements
- Donor coordination and alignment of investments
- Standardised TA to Government and UN Agencies on readiness assessments, business requirements, platform analysis, costing, deployments and partnerships

DICE Digital Health Centre of Excellence

How can support be requested?

- Contact the DICE secretariat to request technical assistance: contact@digitalhealthcoe.org
- Support requests should be from or endorsed by Government and have been going through existing technical/donor coordinating mechanisms
- TA should be aligned with National Deployment and Vaccination Plans (NDVPs) and leverage existing Global Fund (C19RM), GAVI and other assistance mechanism
- Support will be provided through existing regional and country structures, including Government, UN, and DICE consortium partners

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How can you get involved?

Offer your skills!

- Let us which countries you already support and how we can collaborate
- Volunteers, Secondments and consultancies

Spread the word!

- Inform Government stakeholders and other in-country partners about DICE
- Support the Government to contact the DICE secretariat if they are interested in requesting technical assistance: contact@digitalhealthcoe.org

DICE Digital Health Centre of Excellence

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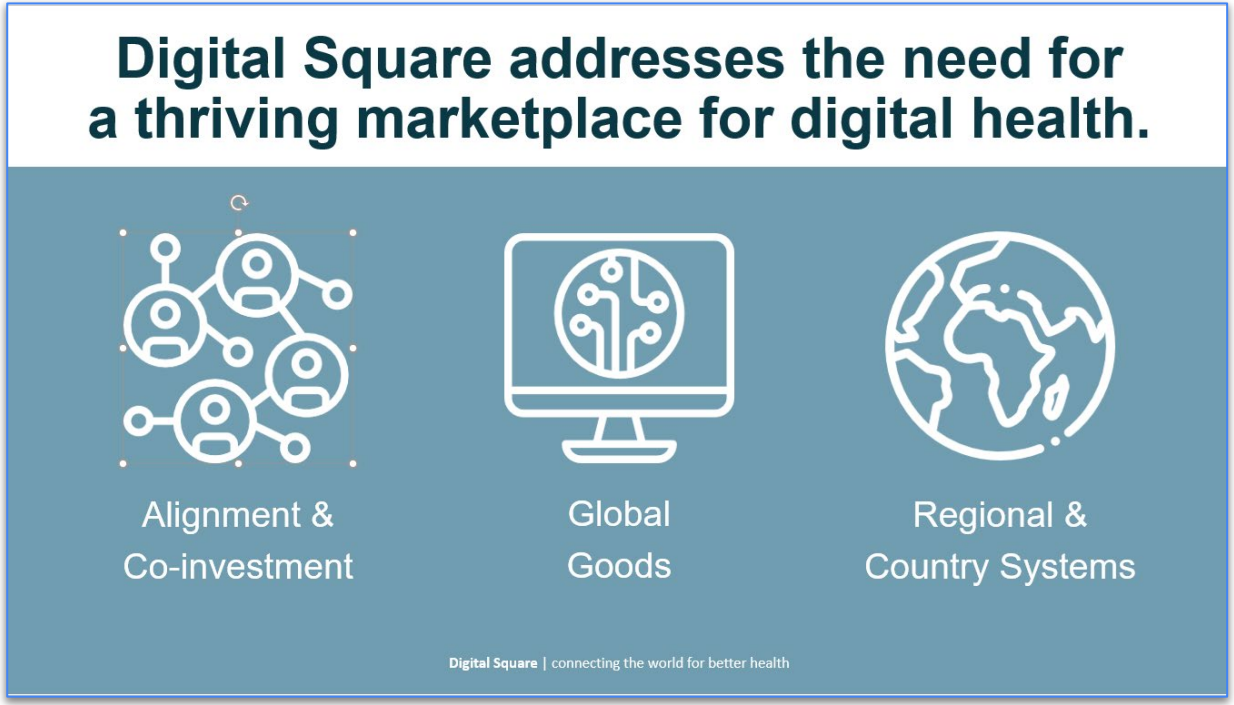
Thank you for listening!

Q&A

Overview of Digital Square

Digital Square is a digital health marketplace—or 'square'—where supply and demand come together to accelerate health equity through the development, adoption, scale, and delivery of digital health innovations in low- and middle-income countries. We help funders, country leaders, implementers, and global policy makers learn about high-quality, trustworthy digital health software that is appropriate for low-resource settings.



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Annex

Country Briefs (II): Overview of existing tools

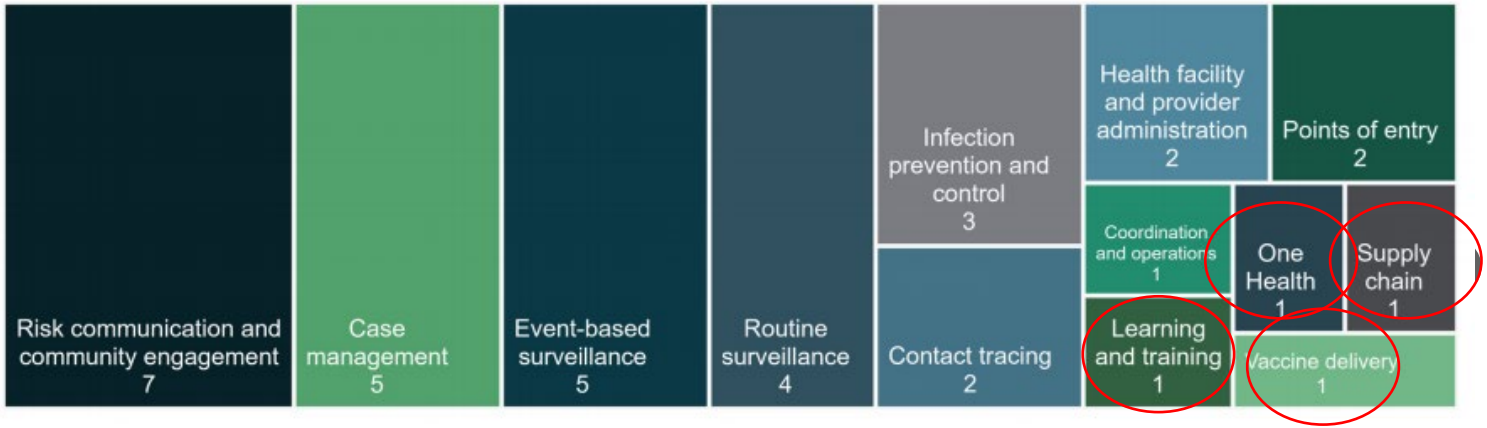
50 digital tools identified

27 tools scaled nationally

16 tools deployed for COVID-19

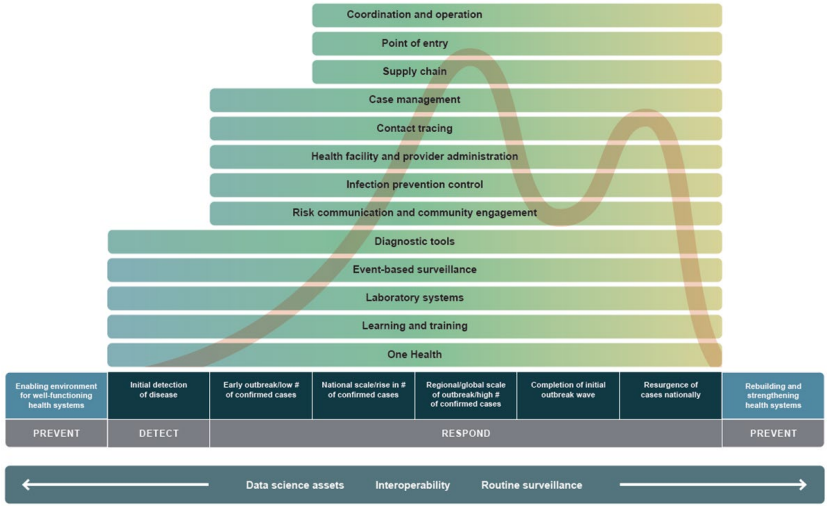
19 tools potentially adapted for COVID-19

Country briefs provide a quick snapshot of how many digital health tools and the use cases addressed by the tools. This allows a quick assessment of which use cases have many existing tools and where additional tools may be needed.



DATEC purposes

- Visualize when and how digital applications and tools can be strategically used during phases of an outbreak
- Identify tools and applications that should be in place *before* an outbreak and recommend strategies for improving digital tools *after* an outbreak
- Demonstrate the role data science, system interoperability, and routine surveillance play *before* and *during* an outbreak
- Show how digitals applications and tools support the utilization of outbreak control techniques (e.g., diagnostics, therapeutics, vaccines)
- Offer examples of how digital tools can mitigate stressors on health workers, facilities, and systems during an outbreak
- Provide information on which investors fund specific use cases to facilitate coordination and smart investments



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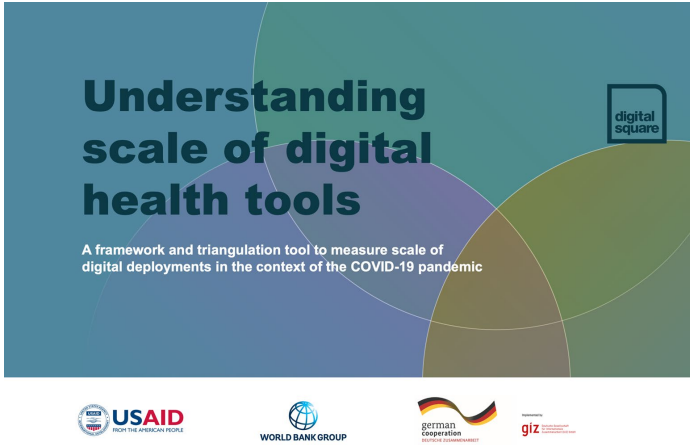
Identifying Scaled Systems

Map and Match focused on identifying scaled systems by collecting information on, where available:

- **Number of end users:** determining *who* is using a tool and *where*. Information can be evaluated using the number of health workers, number of clients, or number of facilities using a tool.
- **Breadth of tool use:** understanding the *number ways* in which a tools is used, such as use cross health focus areas or digital health intervention areas.
- **Institutionalization:** delves into how well the tool is integrated into the country's priorities by understanding if the tools has dedicated resources, and/or is included as a tool that is necessary for health workers to use in formal job descriptions.



Our scale document can be found here.

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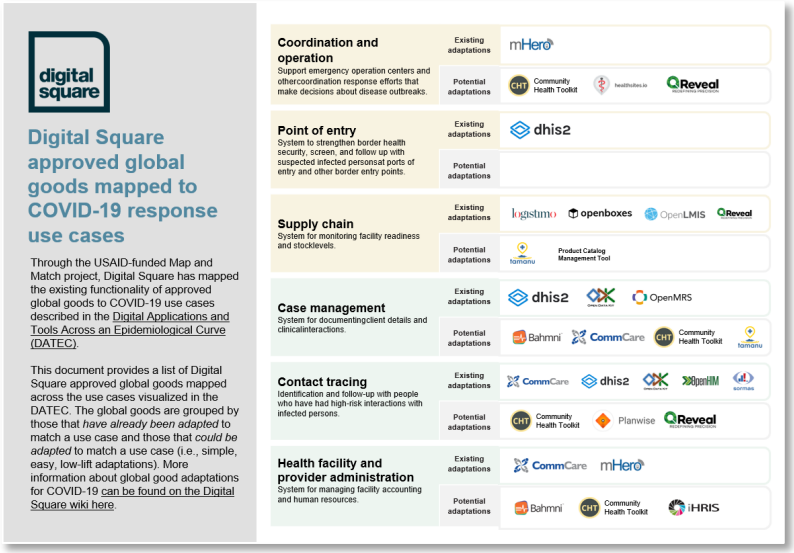
Global Goods Pandemic Uses

Map and Match also mapped Digital Square approved Global Goods to provide a more comprehensive view into how these open-source tools can be used to address pandemic use cases.

The Digital Square wiki also provides more in-depth information about these tools.



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