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Where are we now? Digital Health for Nutrition Service Delivery

An Overview for the
2020 Global Digital Health Forum

Leona Rosenblum, JSI, on behalf of
USAID Advancing Nutrition



Photo Credit: Leona Rosenblum, JSI

Overview

- The [Principles for Digital Development](#) call for an *understanding of the existing ecosystem* and for *reusing and improving* on what has already been done.
- Documentation and recommendations for digital health interventions for nutrition are limited.
- Given the fast pace of development in this area, we set out to:
 - Provide an overview of how digital tools have been used to strengthen the delivery of nutrition services.
 - Give examples of ways digital tools have been used.



Process: Identifying Tools

To create the broadest, most comprehensive compilation of digital tools **for service providers**, we:

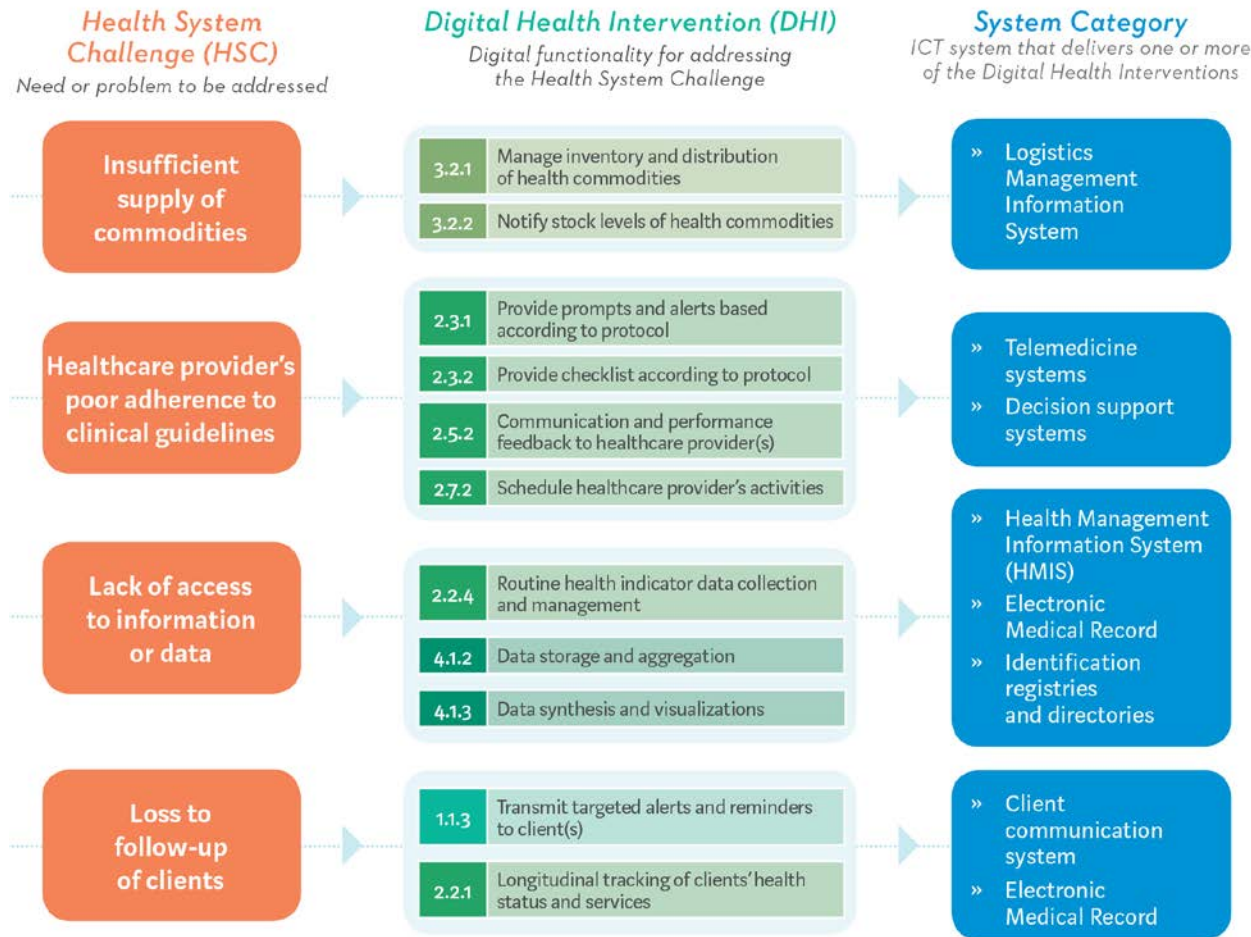
1. Targeted Web search of the [Digital Health Atlas](#), recent conference presentations, and prior compendia of digital tools.
2. Sent a brief survey to nutrition and digital health experts via listservs such as the [Global Digital Health Network](#), [Asian eHealth Information Network](#), Digital Health and Interoperability Working Group, CORE group, and the Child Health Task Force.
3. Requested additional information on experiences with and content of tools for nutrition-related service delivery from specific programs, implementing agencies, and digital solutions providers.

Process: Cataloging Tools

We recorded the following characteristics of each tool:

- Country of use
- Funder
- Health system challenge addressed
- Digital health intervention(s) implemented
- Digital system used
- Primary end user
- Program/service supported
- Client targeted or recipient of nutrition services
- Whether the tool was designed specifically and only for the delivery of nutrition services or for a broader set of services
- Technology platform used
- Scale of use (number of users)
- Integration within the health system

Relationship between Challenges, Interventions, and Systems (Illustrative)



"World Health Organization (WHO). 2018. Classification of digital health interventions. Geneva: WHO."

Classification of Health System Challenges

1	INFORMATION	3	QUALITY	6	EFFICIENCY
1.1	Lack of population denominator	3.1	Poor patient experience	6.1	Inadequate workflow management
1.2	Delayed reporting of events	3.2	Insufficient health worker competence	6.2	Lack of or inappropriate referrals
1.3	Lack of quality/reliable data	3.3	Low quality health commodities	6.3	Poor planning and coordination
1.4	Communication roadblocks	3.4	Low health worker motivation	6.4	Delayed provision of care
1.5	Lack of access to information or data	3.5	Insufficient continuity of care	6.5	Inadequate access to transportation
1.6	Insufficient utilization of data and information	3.6	Inadequate supportive supervision		
1.7	Lack of unique identifier	3.7	Poor adherence to guidelines		
2	AVAILABILITY	4	ACCEPTABILITY	7	COST
2.1	Insufficient supply of commodities	4.1	Lack of alignment with local norms	7.1	High cost of manual processes
2.2	Insufficient supply of services	4.2	Programs which do not address individual beliefs and practices	7.2	Lack of effective resource allocation
2.3	Insufficient supply of equipment			7.3	Client-side expenses
2.4	Insufficient supply of qualified health workers			7.4	Lack of coordinated payer mechanism
		5	UTILIZATION	8	ACCOUNTABILITY
		5.1	Low demand for services	8.1	Insufficient patient engagement
		5.2	Geographic inaccessibility	8.2	Unaware of service entitlement
		5.3	Low adherence to treatments	8.3	Absence of community feedback mechanisms
		5.4	Loss to follow up	8.4	Lack of transparency in commodity transactions
				8.5	Poor accountability between the levels of the health sector
				8.6	Inadequate understanding of beneficiary populations

"World Health Organization (WHO). 2018. Classification of digital health interventions. Geneva: WHO."

Classification of Digital Health Interventions for Health Care Providers

2.1	CLIENT IDENTIFICATION AND REGISTRATION	2.5	HEALTHCARE PROVIDER COMMUNICATION	2.8	HEALTHCARE PROVIDER TRAINING
2.1.1	Verify client unique identity	2.5.1	Communication from healthcare provider(s) to supervisor	2.8.1	Provide training content to healthcare provider(s)
2.1.2	Enrol client for health services/clinical care plan	2.5.2	Communication and performance feedback to healthcare provider(s)	2.8.2	Assess capacity of healthcare provider(s)
2.2	CLIENT HEALTH RECORDS	2.5.3	Transmit routine news and workflow notifications to healthcare provider(s)	2.9	PRESCRIPTION AND MEDICATION MANAGEMENT
2.2.1	Longitudinal tracking of clients' health status and services	2.5.4	Transmit non-routine health event alerts to healthcare provider(s)	2.9.1	Transmit or track prescription orders
2.2.2	Manage client's structured clinical records	2.5.5	Peer group for healthcare providers	2.9.2	Track client's medication consumption
2.2.3	Manage client's unstructured clinical records	2.6	REFERRAL COORDINATION	2.9.3	Report adverse drug events
2.2.4	Routine health indicator data collection and management	2.6.1	Coordinate emergency response and transport	2.10	LABORATORY AND DIAGNOSTICS IMAGING MANAGEMENT
2.3	HEALTHCARE PROVIDER DECISION SUPPORT	2.6.2	Manage referrals between points of service within health sector	2.10.1	Transmit diagnostic result to healthcare provider
2.3.1	Provide prompts and alerts based according to protocol	2.6.3	Manage referrals between health and other sectors	2.10.2	Transmit and track diagnostic orders
2.3.2	Provide checklist according to protocol	2.7	HEALTH WORKER ACTIVITY PLANNING AND SCHEDULING	2.10.3	Capture diagnostic results from digital devices
2.3.3	Screen clients by risk or other health status	2.7.1	Identify client(s) in need of services	2.10.4	Track biological specimens
2.4	TELEMEDICINE	2.7.2	Schedule healthcare provider's activities		
2.4.1	Consultations between remote client and healthcare provider				
2.4.2	Remote monitoring of client health or diagnostic data by healthcare provider				
2.4.3	Transmission of medical data to healthcare provider				
2.4.4	Consultations for case management between healthcare provider(s)				

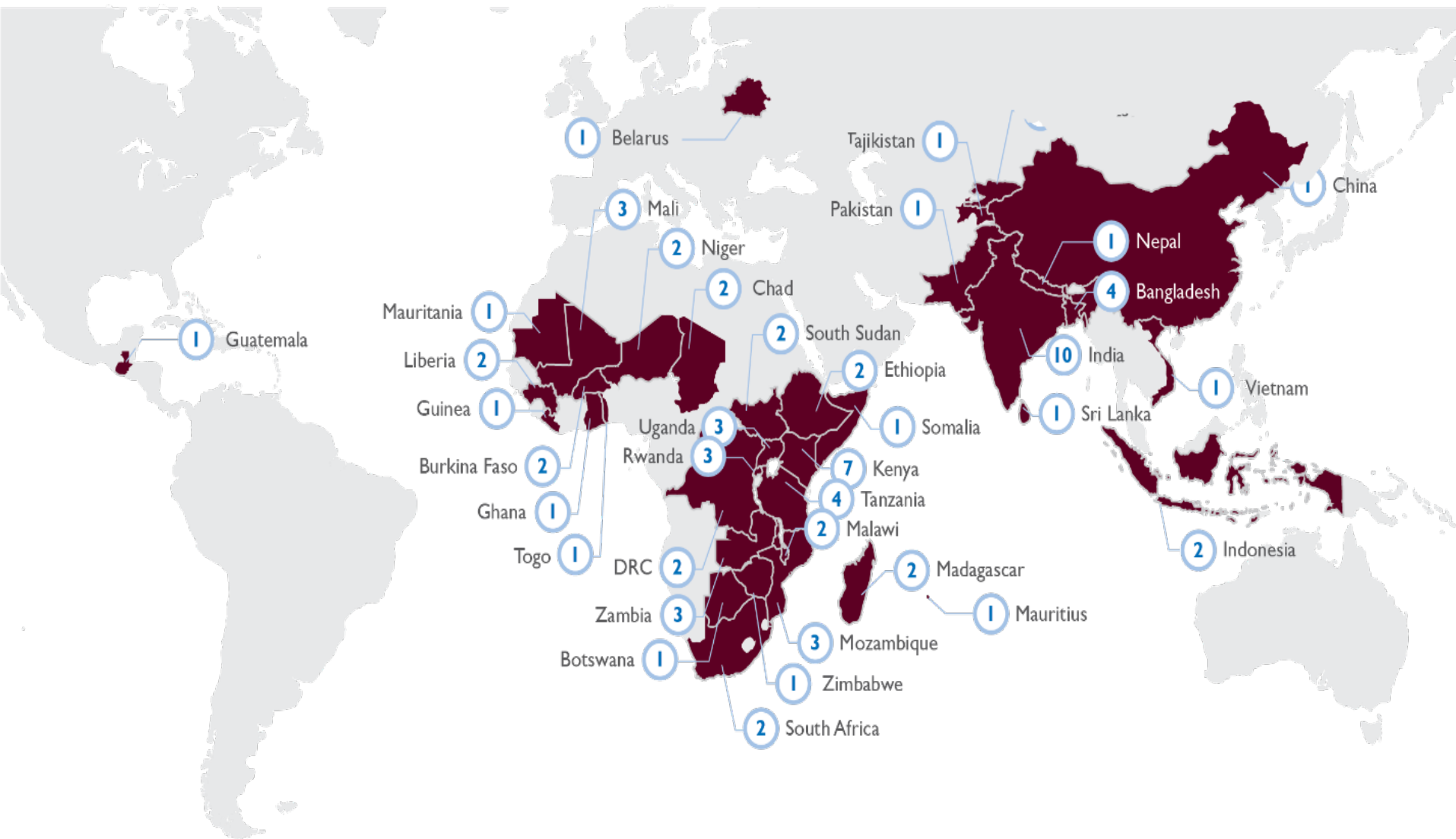
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Findings

Countries Where Tools Were Used



Funders of Tool Development, Deployment, and/or Use

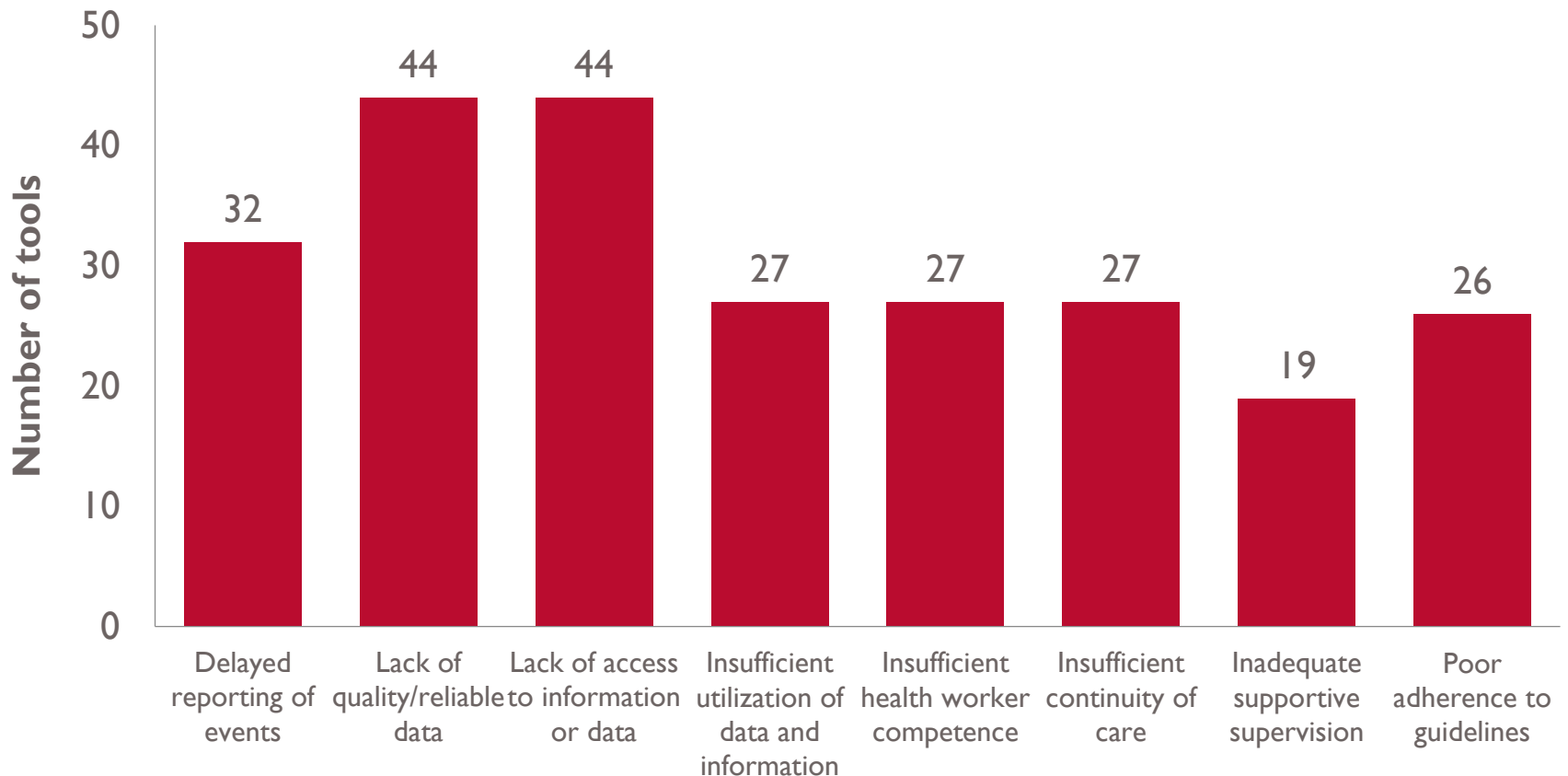
The digital tools we reviewed were most commonly funded by:

- Private foundations, companies, or organizations (22 tools)
- USAID (12 tools)
- The Bill & Melinda Gates Foundation (9 tools)
- The United Nations Children's Fund (9 tools)



Photo Credit: Irene Angwenyi/USAID Kenya

Health System Challenges Addressed



Digital Health Interventions Implemented

Digital Health Interventions Implemented	Number of Tools
Enable routine health indicator data collection and management	48
Enable longitudinal tracking of client's health status and services received	41
Provide prompts and alerts according to protocol	38
Provide checklist according to protocol	37
Screen clients by risk or other health statistic	36
Verify client unique identity	25
Communication from health care provider(s) to supervisor	15
Manage referrals between points of service within the health sector	12
Communication and performance feedback to provider(s)	11
Enroll client for health services/clinical care plan	11

Digital System Leveraged

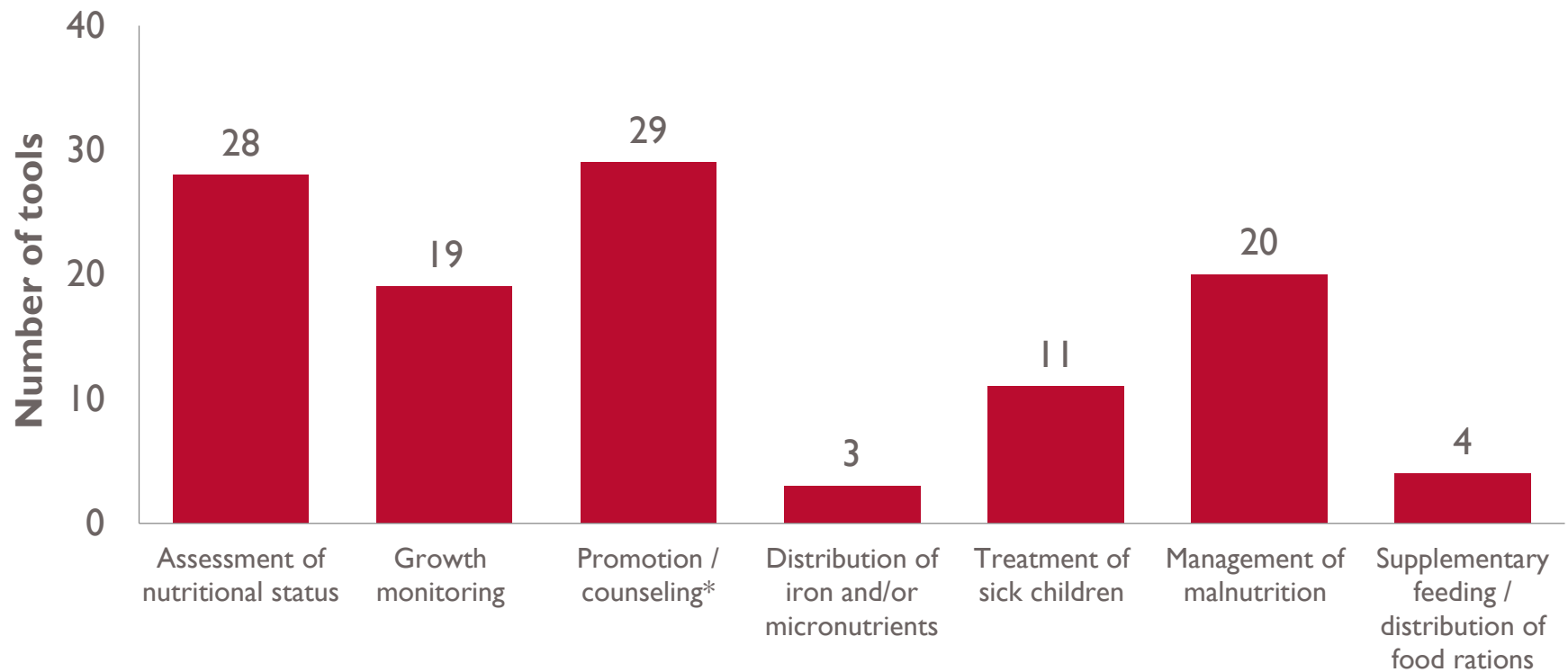
Digital System Leveraged	Number of Tools
Digital client record*	38
Electronic medical record	8
Learning and training system	7
Community-based information system	3
Health management information system (HMIS)	2
Client communication system	1
Public health and disease surveillance system	1
Other	5

* This was not included as a type of digital system in the WHO guidelines.

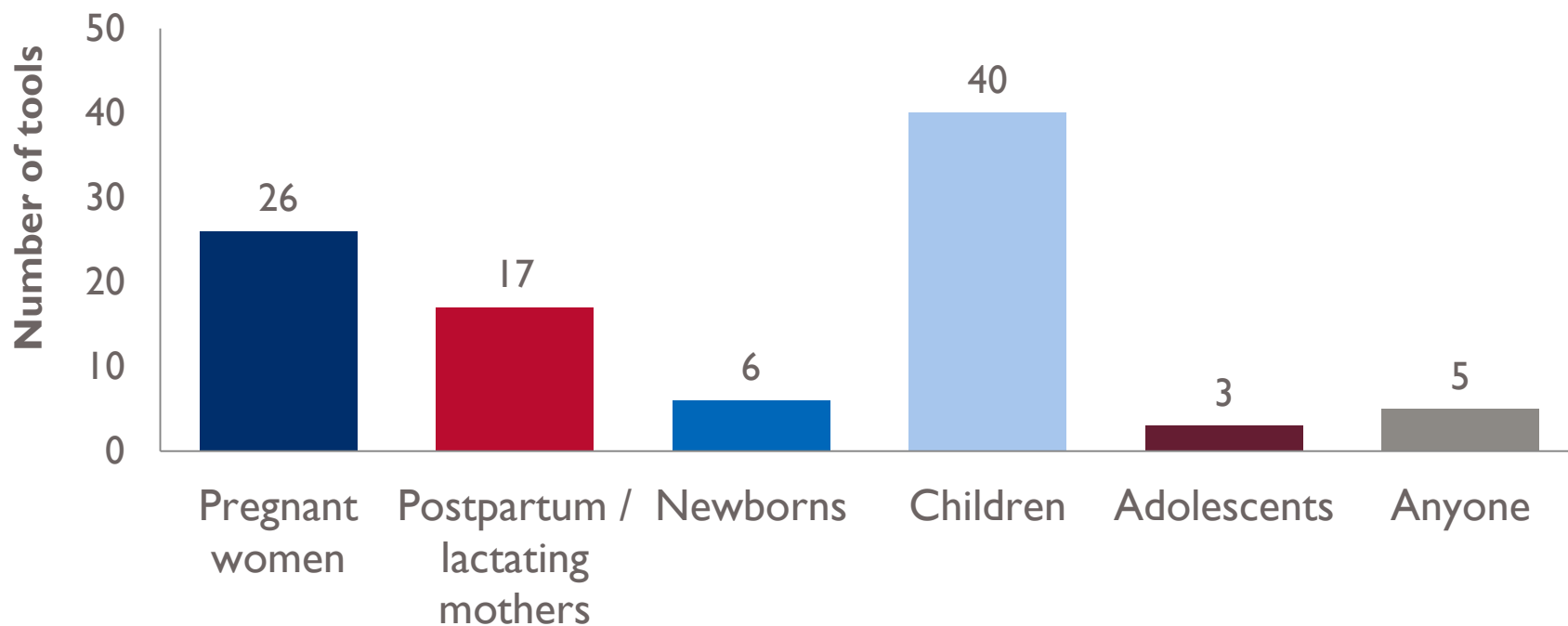
Primary End Users

Primary End User	Number of Tools
Community health workers	32
Facility-level health workers	20
Supervisors	4

Programs/Services Supported



Clients of the Programs/Services Supported



Additional Findings

- We found 34 tools that were part of a larger tool for delivery of service packages; 21 were designed only for nutrition services.
- Dimagi's CommCare was the most frequently used platform, used by 16 tools, followed by Open-source Smart Register Program (6), and DHIS2 (5).
- 15 tools reported more than 1,000 users.
- 16 tools that were reportedly integrated into or owned by the health system.



Photo Credit: Ranelle Sykes/USAID

What's Next?

This year, to improve the coverage and quality of nutrition services, USAID Advancing Nutrition will:

1. Review the evidence of the acceptability, usability, and/or effectiveness of digital tools for improving growth monitoring and promotion (GMP) services.
2. Develop a guidance package describing user personas, work flows, data elements, and decision logic to facilitate the development and use of digital applications for the delivery and supervision of GMP according to national and global guidelines.

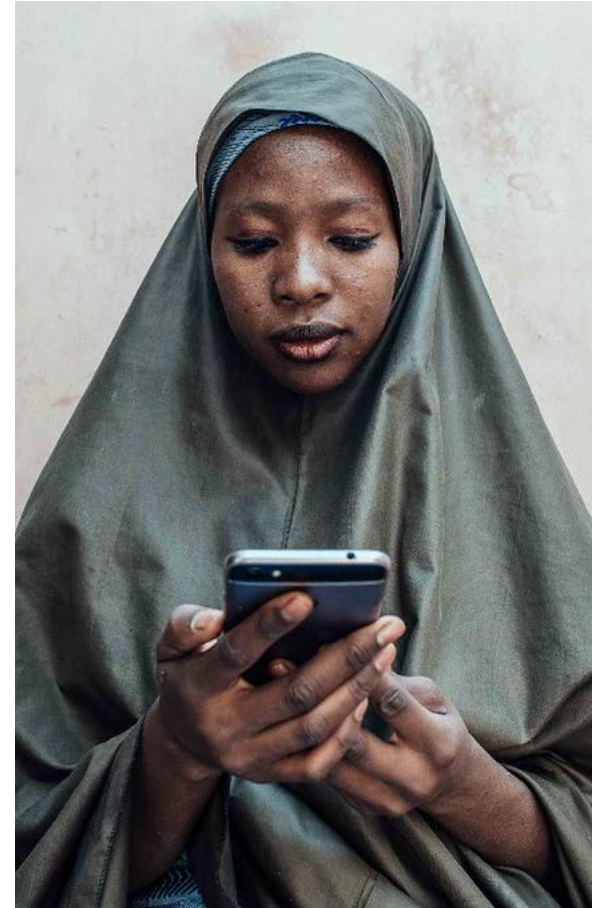


Photo Credit: KC Nwakalor for USAID / Digital Development Communications



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