

From Pilot to Population Impact: Scaling Digital Tools That Last

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Outline

- Introduction
- Digital Pivot
- Guiding Principles of Digital Health
- What is Digital Health?
- Digital Health Classification
 - Health Systems Challenges
 - Digital Health Interventions
- Digital Health Atlas
- Additional Resources

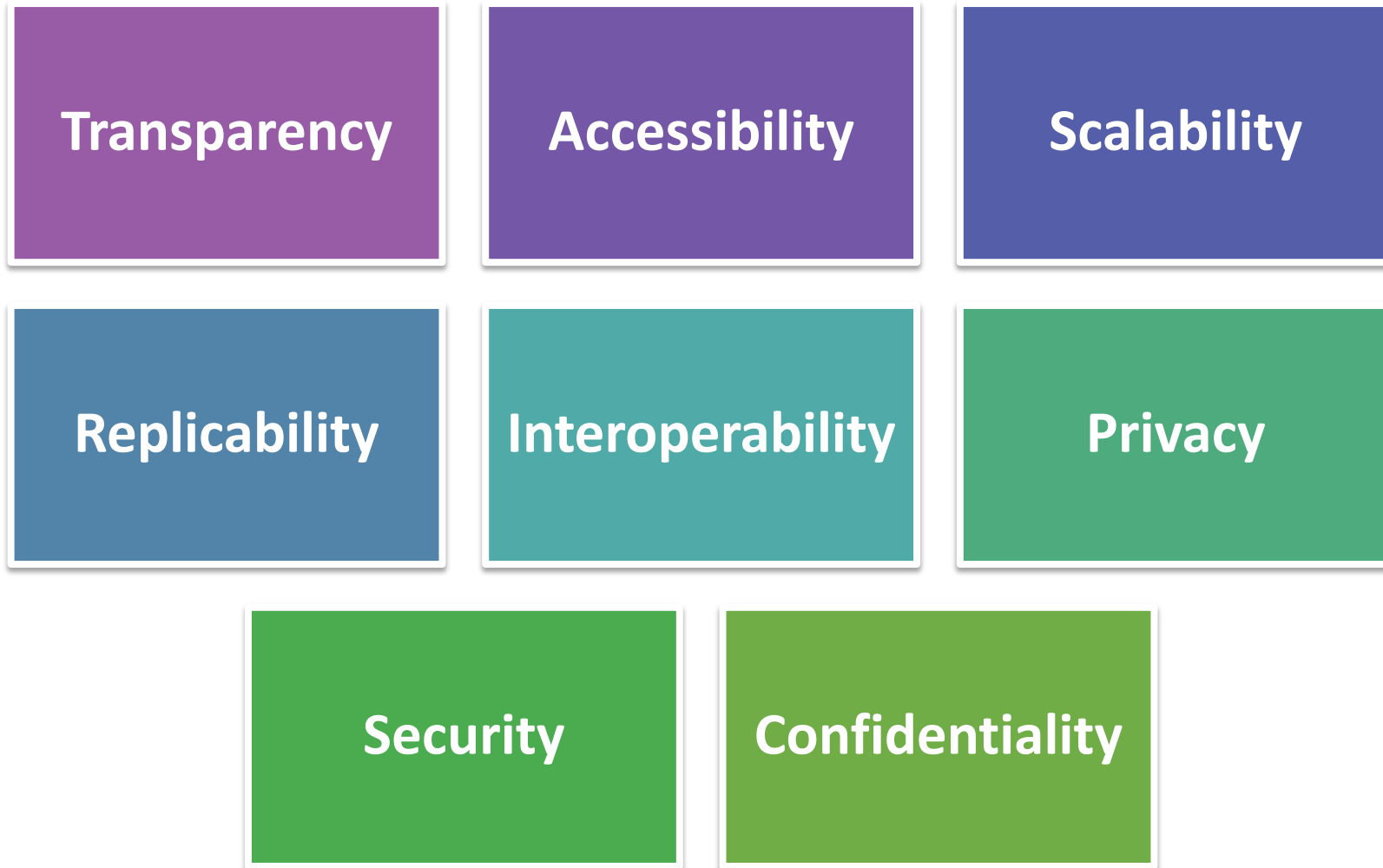
Introduction: The Funding Crisis

- With the recent funding crisis, the commitment to ending the HIV epidemic **by 2030** has never been more urgent.
- In 2025, member countries experienced the sharpest funding drop in two decades.
- The impact of the funding crisis resulted in supply chain disruptions, service delivery breakdowns, HRH crisis (over 140,000 layoffs), data and surveillance blackouts, and a decline in community-based and led services.
- At the height of the crisis, young volunteers in Ethiopia used patient-focused methods, created WhatsApp groups to check on their peers, mothers came together to support children's treatment, and youths used community radio to share health information ([UNAIDS 2025 Global AIDS Update](#))
 - Digital interventions, scalable with the right tools

The Digital Pivot: From Crisis to Resilience

- According to the UNAIDS 2025 Global AIDS Update report, data-driven technologies, including machine learning and generative artificial intelligence tools, have shown promising possibilities in connecting people to the needed services and in supporting service delivery itself.
- Data-driven technologies have shown promise in
 - Predicting stockouts
 - Targeting high-risk groups to reduce interruption in treatment (IIT) and improve client retention in care.
 - Automating client follow-up
 - Providing self-paced HIV literacy
- As HIV response programs integrate digital technologies into healthcare delivery and community engagement, privacy, confidentiality, and other digital rights must be non-negotiable ([UNAIDS 2025 Global AIDS Update](#))

Principles of Digital Health Innovations



(WHO, Global strategy on digital health 2020-2025)

What is Digital Health?

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, thereby strengthening resilience to disease and improving health and wellness ([WHO, 2023](#))

Health system challenges

Digital health interventions (DHIs)

Digital Services and
Application types

Digital Health Classification

The classification of Digital interventions, services, and applications in Health is organized around three axes:

1. Health System Challenges
2. Digital Health Interventions
3. Digital Services and Application Types

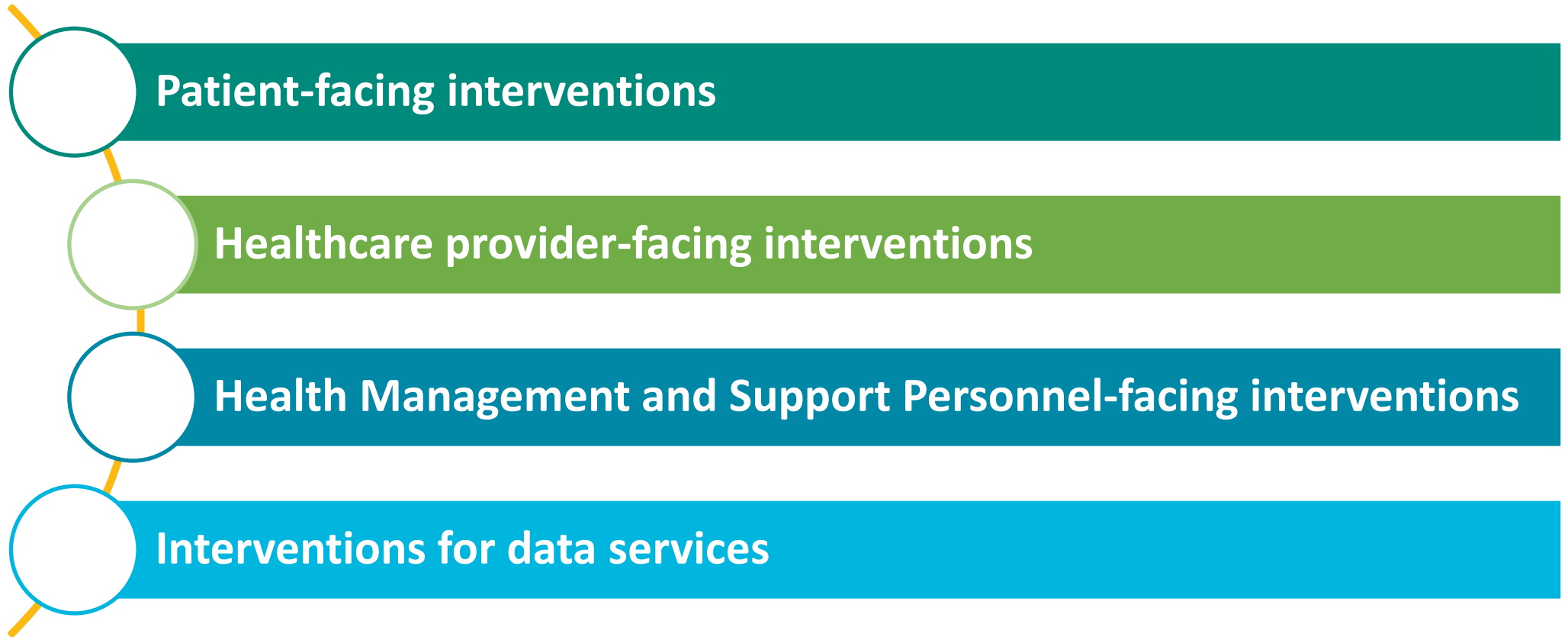
Health Systems Challenges

When classifying Digital Health Interventions (DHIs), Health System Challenges (HSC) should also be considered to highlight how technology addresses specific health challenges.

 HEALTH SYSTEM CHALLENGES		
1. Information	4. Acceptability	7. Cost
1.1 Lack of population denominator	4.1 Lack of alignment with local norms	7.1 Lack of effective and equitable resource allocation
1.2 Delayed reporting of events	4.2 Programs which do not address individual beliefs and practices	7.2 Catastrophic health expenditure
1.3 Lack of quality/reliable data		7.3 Lack of coordinated payer mechanism
1.4 Communication roadblocks		7.4 Lack of financial protection for persons
1.5 Lack of access to information or data (including disaggregated data)	5. Utilization	
1.6 Insufficient utilization of data and information	5.1 Low demand for services	
1.7 Lack of unique identifier	5.2 Geographic inaccessibility	
	5.3 Low adherence to treatments	
	5.4 Loss to follow up	
2. Availability	6. Efficiency	8. Accountability
2.1 Insufficient supply of commodities	6.1 Inadequate workflow management	8.1 Insufficient person(s) and community engagement
2.2 Insufficient supply of services	6.2 Lack of or inappropriate referrals	8.2 Unaware of service entitlement
2.3 Insufficient supply of equipment	6.3 Poor planning and coordination	8.3 Absence of community feedback mechanisms
2.4 Insufficient supply of qualified and skilled health workers	6.4 Delayed provision of care	8.4 Lack of transparency in commodity transactions
	6.5 Inadequate access to transportation and other health services	8.5 Poor accountability between the levels of the health sector
	6.6 Burden of manual processes	8.6 Inadequate understanding of beneficiary populations
3. Quality		9. Equity
3.1 Poor experience of persons		9.1 Inadequate literacy
3.2 Insufficient health worker competence		9.2 Inadequate representation
3.3 Low quality health commodities		
3.4 Low health worker motivation and support		
3.5 Insufficient continuity and integration of care		
3.6 Inadequate supportive supervision		
3.7 Poor adherence to evidence-based standards, guidelines and protocols		
3.8 Inadequate identification and management of risks		

Digital Health interventions (DHIs)

Digital Health Interventions are organized into:



Digital Health Interventions for Persons

Name	Purpose	Country
AI health coach	AI chatbots, self-testing platforms, appointment reminders, and peer support	South Africa
BSmart SafeHub	connects users to sexual health education and services delivery across the continuum of care, as well as enabling real-time communications with health care providers and peers	Sierra Leone
My Safe Space (MSS) Mobile Application	Youth-centered service delivery approaches that strengthen engagement and retention in care. Integration of mental health and HIV services, supporting holistic, person-centered care.	Zambia



Digital Health Interventions for Healthcare Providers

Name	Purpose	Country
Predictive Risk Characterization	Mitigation of HIV Treatment Interruption Using Machine Learning: Predict, Prevent, and Re-Engage.	Kenya
Monitoring PLHIV with IVSA (DSH2 IVSA Tracker)	Enables efficient management of advanced HIV disease (AHD) cases by providing treatment sites with a secure web interface for entering and visualizing PLHIV patient monitoring data at varying access levels to support informed decision-making	Cote d'Ivoire
Telemedicine	HIV service delivery through real-time virtual clinical support and mentorship by linking peripheral HFs with specialists for case reviews and clinical decision-making for complex cases, including AHD.	Zambia

 2.0 DIGITAL HEALTH INTERVENTIONS FOR HEALTHCARE PROVIDERS		
2.1 Identification and registration of persons 2.1.1 Verify a person's unique identity 2.1.2 Enrol person(s) for health services/clinical care plan	2.4 Telemedicine 2.4.1 Consultations between remote person and healthcare provider 2.4.2 Remote monitoring of person's health or diagnostic data by provider 2.4.3 Transmission of medical data (e.g. images, notes, and videos) to healthcare provider 2.4.4 Consultations for case management between healthcare providers	2.7 Scheduling and activity planning for healthcare providers 2.7.1 Identify persons in need of services 2.7.2 Schedule healthcare provider's activities
2.2 Person-centred health records 2.2.1 Longitudinal tracking of person's health status and services 2.2.2 Manage person-centred structured clinical records 2.2.3 Manage person-centred unstructured clinical records (e.g. notes, images, documents) 2.2.4 Routine health indicator data collection and management	2.5 Healthcare provider communication 2.5.1 Communication from healthcare provider to supervisor(s) 2.5.2 Communication and performance feedback to healthcare provider(s) 2.5.3 Transmit routine news and workflow notifications to healthcare provider(s) 2.5.4 Transmit non-routine health event alerts to healthcare provider(s) 2.5.5 Peer group for healthcare providers 2.5.6 Generative AI for tailored content creation	2.8 Healthcare provider training 2.8.1 Provide training content to healthcare provider(s) 2.8.2 Assess capacity of healthcare provider(s)
2.3 Healthcare provider decision support 2.3.1 Provide prompts and alerts based according to protocol 2.3.2 Provide checklist according to protocol 2.3.3 Screen persons by risk or other health status	2.6 Referral coordination 2.6.1 Coordinate emergency response and transport 2.6.2 Manage referrals between points of service within health sector 2.6.3 Manage referrals between health and other sectors (social services, police, justice, economic support schemes)	2.9 Prescription and medication management 2.9.1 Transmit or track prescription orders 2.9.2 Track individual's medication consumption 2.9.3 Report adverse drug effects
		2.10 Laboratory and diagnostics imaging management 2.10.1 Transmit person's diagnostic result to healthcare provider 2.10.2 Transmit and track diagnostic orders 2.10.3 Capture diagnostic results from digital devices 2.10.4 Track biological specimens
		2.11 Healthcare provider financial transactions 2.11.1 Verify individual's health coverage and financing scheme membership 2.11.2 Receive payments from individuals


DHIs for Health Management and Support Personnel

Name	Purpose	Country
Integrated Technical Support Supervision	Tracks integrated health service provision for enhanced efficiency, effectiveness, and coordination, enabling critical supervision and mentoring of facilities during service integration.	Uganda

3.0 DIGITAL HEALTH INTERVENTIONS FOR HEALTH MANAGEMENT AND SUPPORT PERSONNEL		
3.1 Human resource management 3.1.1 List health workforce cadres and related identification information 3.1.2 Monitor performance of healthcare provider(s) 3.1.3 Manage registration/certification of healthcare provider(s) 3.1.4 Record training credentials of healthcare provider(s) 3.1.5 Manage health workforce activities	3.3 Public health event notification 3.3.1 Notification of public health events from point of diagnosis	3.6 Equipment and asset management 3.6.1 Monitor status and maintenance of health equipment 3.6.2 Track regulation and licensing of medical equipment
3.2 Supply chain management 3.2.1 Manage inventory and distribution of health commodities 3.2.2 Notify stock levels of health commodities 3.2.3 Monitor cold-chain sensitive commodities 3.2.4 Register licensed drugs and health commodities 3.2.5 Manage procurement of commodities 3.2.6 Report counterfeit or substandard drugs by persons	3.4 Civil Registration and Vital Statistics (CRVS) 3.4.1 Notify, register and certify birth event 3.4.2 Notify, register and certify death event	3.7 Facility management 3.7.1 List health facilities and related information 3.7.2 Assess health facilities
3.5 Health system financial management 3.5.1 Register and verify health coverage scheme membership of persons 3.5.2 Track and manage insurance billing and claims processes 3.5.3 Transmit and manage payments to health facilities 3.5.4 Transmit and manage routine payroll payment to healthcare provider(s) 3.5.5 Transmit or manage financial incentives to healthcare provider(s) 3.5.6 Manage and plan budget allocations, revenue and expenditures 3.5.7 Determine level of subsidies for health coverage schemes 3.5.8 Collect health insurance contributions	3.8 Person-centred health certificate management 3.8.1 Register and store current health certificate information 3.8.2 Retrieve and validate current health certificate information 3.8.3 Revoke and update health certificate	

DHIs for Data Services

Name	Purpose	Country
Digitalizing HIS	Improve access, efficiency, and quality of care through centralizing health data through an integrated health information system.	Uganda



4.0

DIGITAL HEALTH INTERVENTIONS FOR DATA SERVICES

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Services and Application Types

These represent the types of software, information, and communication technology systems and services or communication channels that deliver or execute DHIs and Health content.

SERVICES AND APPLICATION TYPES

The digital services and application types represent the types of software, information and communications technology (ICT) systems and services or communication channels that deliver or execute the digital health intervention(s) and health content. The classification categorizes them into 5 representations within the Digital Health Architecture. Definitions and additional descriptors are included to support the appropriate mapping and categorizing of digital solutions.

A. Point of service		C. Registries & Directories		D. Data Management services	
A1	Communication systems	C1	Census and population information systems	D1	Analytics Systems
A2	Community-based information systems	C2	Civil registration and vital statistics (CRVS) systems	D2	Data interchange and interoperability
A3	Decision support systems	C3	Facility management information systems	D3	Data warehouses
A4	Diagnostics information systems	C4	(Health) Facility registries	D4	Environmental monitoring systems
A5	Electronic medical record systems	C5	Health worker registry	D5	Geographic information systems (GIS)
A6	Laboratory information systems	C6	Identification registries and directories	D6	Health Management Information systems (HMIS)
A7	Personal health records	C7	Immunization information systems	D7	Knowledge management systems
A8	Pharmacy information systems	C8	Master patient index	D8	Shared Health Record and Health Information Repository
A9	Telehealth systems	C9	Product catalogues		
		C10	Public Key directories	E. Surveillance and Response	
		C11	Terminology and classification systems	E1	Emergency preparedness and response systems
				E2	Public health and disease surveillance systems

B. Health system/ Provider administration	
B1	Blood bank information management systems
B2	Health finance-related information systems
B3	Health program monitoring systems
B4	Human resource information systems
B5	Learning and training systems
B6	Logistics management information systems (LMIS)
B7	Patient Administration systems
B8	Research information systems

Digital Health Atlas (DHA) for Registered Projects

The screenshot displays the Digital Health Atlas (DHA) interface. On the left, a 'Filter by:' sidebar includes options for Country, Services, Target population, Health Focus Area, Technologies, Standards, Number of beneficiaries, Category of evidence, Lead organization, and Implementation partners. The main content area is titled 'Explore projects (1105)' and features a search bar, an 'Order by' dropdown set to 'Newly added project', and a 'Register your project' button. Below the search bar is a grid of project cards, each with a category (e.g., 'Sexual and Reproductive Health', 'Maternal and child health'), a title, location, and services. A world map on the right shows project counts by country, with a summary box at the bottom indicating 116 countries (Ethiopia), 21 health focus areas (Others), and 20 services (Predictive health an...). The footer includes 'Implementome © 2025' and 'About Tutorials'.

- An online global repository where digital health projects are registered.
- The platform is designed to support governments, technologists, implementers, and donors to better account for and coordinate their digital health investments.

<https://gdhub.unige.ch/implementome/projects/source/dha>

Additional Resources



Ethics and governance of artificial intelligence for health: Guidance on large multi-modal models

January 2024



Classification of digital interventions, services and applications in health

October 2023



Global strategy on digital health 2020-2025

August 2021



Digital implementation investment guide (DIIG): Integrating digital interventions into health programmes

September 2020



WHO guideline: recommendations on digital interventions for health system strengthening

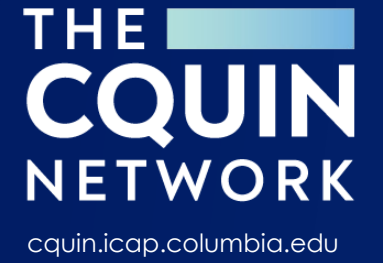


Digital Implementation Investment Guide (DIIG): Integrating digital interventions into health programmes



Digital implementation investment guide (DIIG): quick deployment guide





Thank You

