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Maternal and Child
Survival Program



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Maternal and Child Survival Program / John Snow Inc.

What is Digital Health?

- (Digital Health, eHealth) Umbrella terms to encompass all concepts and activities at the intersection of health and information and communications technologies (ICTs), including mobile health (mHealth), health information technology, electronic health records (EHRs), and telehealth, and encompassing three main functions:
 - the **delivery of health information, for health professionals and health consumers**, through the Internet and telecommunications media,
 - using **ICTs to improve public health services** (e.g., through the education and training of health workers), and
 - **using health information systems (HIS)** to capture, store, manage or transmit information on patient health or health facility activities.

What problems are we trying to address?

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		

WHO Digital Health Taxonomy



1.0 CLIENTS

1.1 TARGETED CLIENT COMMUNICATION	1.3 CLIENT TO CLIENT COMMUNICATION	1.6 ON-DEMAND INFORMATION SERVICES TO CLIENTS
1.1.1 Transmit health event alerts to specific population group(s)	1.3.1 Peer group for clients	1.6.1 Client look-up of health information
1.1.2 Transmit targeted health information to client based on health status or demographics	1.4 PERSONAL HEALTH TRACKING	1.7 CLIENT FINANCIAL TRANSACTIONS
1.1.3 Transmit targeted alerts and reminders to client(s)	1.4.1 Access by client to own medical records	1.7.1 Transmit or manage out-of-pocket payments by client
1.1.4 Transmit diagnostics result, or availability of result, to clients	1.4.2 Self-monitoring of health or diagnostic data by client	1.7.2 Transmit or manage vouchers to client for health services
1.2 UNTARGETED CLIENT COMMUNICATION	1.5 CITIZEN-BASED REPORTING	1.7.3 Transmit or manage incentives to clients for health services
1.2.1 Transmit untargeted health information to an undefined population	1.5.1 Reporting of health system feedback by clients	
1.2.2 Transmit untargeted health event alerts to undefined group	1.5.2 Reporting of public health events by client	



2.0 HEALTHCARE 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 to sponsor	2.8.1 Provide training content to healthcare provider(s)
2.1.2 Enrol client for health and/or financial care plan	2.5.2 Communication and performance feedback to healthcare provider	2.8.2 Assess capacity of healthcare provider
2.2 CLIENT HEALTH RECORDS	2.5.3 Transmit routine news and work/life notifications to healthcare provider(s)	2.9 PRESCRIPTION AND MEDICATION MANAGEMENT
2.2.1 Longitudinal tracking of client's health status and services received	2.5.4 Transmit non-routine health event alerts to healthcare providers	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 effects
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 or 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 clients 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 provider		
2.4.3 Transmission of medical data to healthcare provider		
2.4.4 Consultations for case management between healthcare providers		



3.0 HEALTH SYSTEM MANAGERS

3.1 HUMAN RESOURCE MANAGEMENT	3.3 PUBLIC HEALTH EVENT NOTIFICATION	3.6 EQUIPMENT AND ASSET MANAGEMENT
3.1.1 List health workforce cadres and related identification information	3.3.1 Notification of public health events from point of diagnosis	3.6.1 Monitor status of health equipment
3.1.2 Monitor performance of healthcare provider(s)	3.4 CIVIL REGISTRATION AND VITAL STATISTIC	3.6.2 Track regulation and licensing of medical equipment
3.1.3 Manage certification/registration of healthcare provider(s)	3.4.1 Notify birth event	3.7 FACILITY MANAGEMENT
3.1.4 Record training credentials of healthcare provider(s)	3.4.2 Register birth event	3.7.1 List health facilities and related information
3.2 SUPPLY CHAIN MANAGEMENT	3.4.3 Certify birth event	3.7.2 Assess health facilities
3.2.1 Manage inventory and distribution of health commodities	3.4.4 Notify death event	
3.2.2 Notify stock levels of health commodities	3.4.5 Register death event	
3.2.3 Monitor cold-chain sensitive commodities	3.4.6 Certify death event	
3.2.4 Register licensed shops and health commodities	3.5 HEALTH FINANCING	
3.2.5 Manage procurement of commodities	3.5.1 Register and verify client insurance membership	
3.2.6 Report counterfeit or substandard drugs by clients	3.5.2 Track insurance billing and claims submission	
	3.5.3 Track and manage insurance reimbursement	
	3.5.4 Transmit routine payroll payment to healthcare provider(s)	
	3.5.5 Transmit or manage incentives to healthcare provider(s)	
	3.5.6 Manage budget and expenditures	



4.0 DATA SERVICES

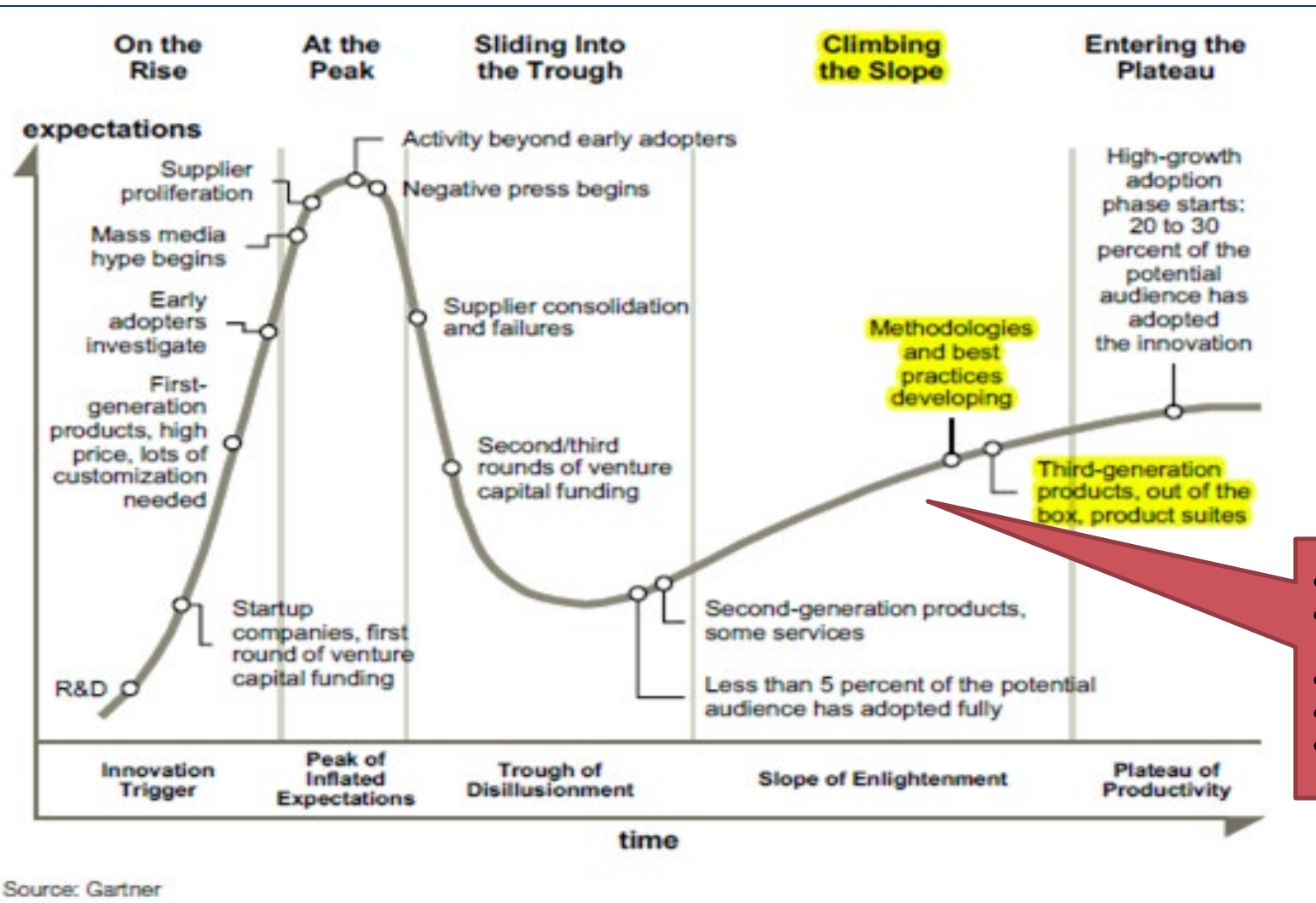
4.1 DATA COLLECTION, MANAGEMENT AND USE	4.2 DATA CODING	4.3 LOCATION SLIPPING
4.1.1 Non-routine data collection and management	4.2.1 Parse unstructured data into structured data	4.3.1 Map location of health facilities/structures
4.1.2 Data storage and aggregation	4.2.2 Merge, de-duplicate, and encode coded formats or terminologies	4.3.2 Map location of health workers
4.1.3 Data synthesis and visualization	4.2.3 Classify disease codes	4.3.3 Map location of clients and facilities
4.1.4 Automated analysis of data to generate new information or predictions on future events		4.3.4 Map location of healthcare provider(s)
		4.4 DATA EXCHANGE AND INTEROPERABILITY
		4.4.1 Data exchange across systems

World Health Organization (WHO). Classification of Digital Health Interventions V1.0. Geneva, Switzerland:WHO; 2018. License: CC BY-NC-SA 3.0 IGO <http://www.who.int/reproductivehealth/publications/mhealth/classification-digital-health-interventions/en/>

A brief history

- Proof of concept
- Pilot-itis
- Scale-up!
- Enterprise thinking
- Building blocks
- eHealth => iHealth
- Balancing scale and innovation while ensuring no one left behind

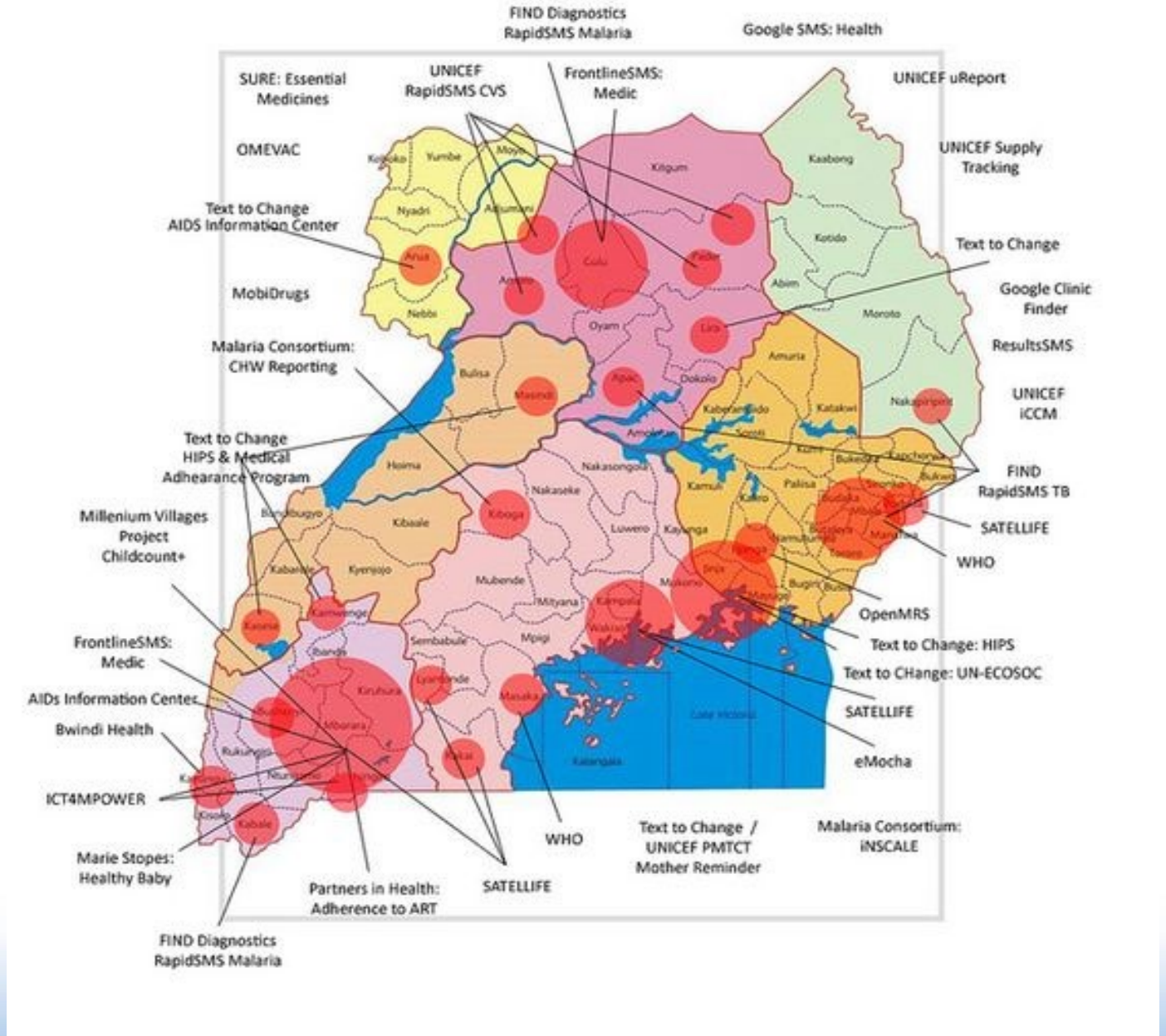
Trends in Digital Health



- Toolkits/Frameworks
- Standards and Interoperability
- Collaboration
- Global Goods
- Productization

Climbing the slope?

Pilotitis!



Principles for Digital Development



Design With the User



Understand the Existing Ecosystem



Design for Scale



Build for Sustainability



Be Data Driven



Use Open Standards,
Open Data, Open Source,
and Open Innovation



Reuse and Improve



Address Privacy &
Security



Be Collaborative

Donor Investment Principles



1. Collaborate

Collaborate to align investments with national digital health strategies.



2. Invest in national plans

Prioritise investments in **national plans that incorporate “digital global goods”** and avoid bespoke systems.



3. Enable sustainable investment

Engage early to **determine and quantify long-term costs** of operating, maintaining, and supporting digital health systems for sustainable country ownership.



4. Track & measure

Track investments, progress, learnings and successes in digital health systems in a transparent manner.



5. Strengthen skills

Strengthen donor technical skills and core capacities, including awareness of the Principles for Digital Development.



6. Creation and evolution

The **creation and evolution** of a country's national digital health strategy, policies and regulatory framework. Strategies include components such as architecture, standards, investment frameworks, privacy protection, and detailed operational and monitoring plans.



7. Maturity continuum

Systems at a level appropriate to the country's progress along the **digital health maturity continuum**.



8. Country capacity

Sustainable country capacity for digital health leadership, governance, implementation, oversight, global good adoption, and donor coordination.



9. Global goods

Scalable, sustainable, accessible, interoperable, and evidence-based **digital health global goods** that meet country priorities.



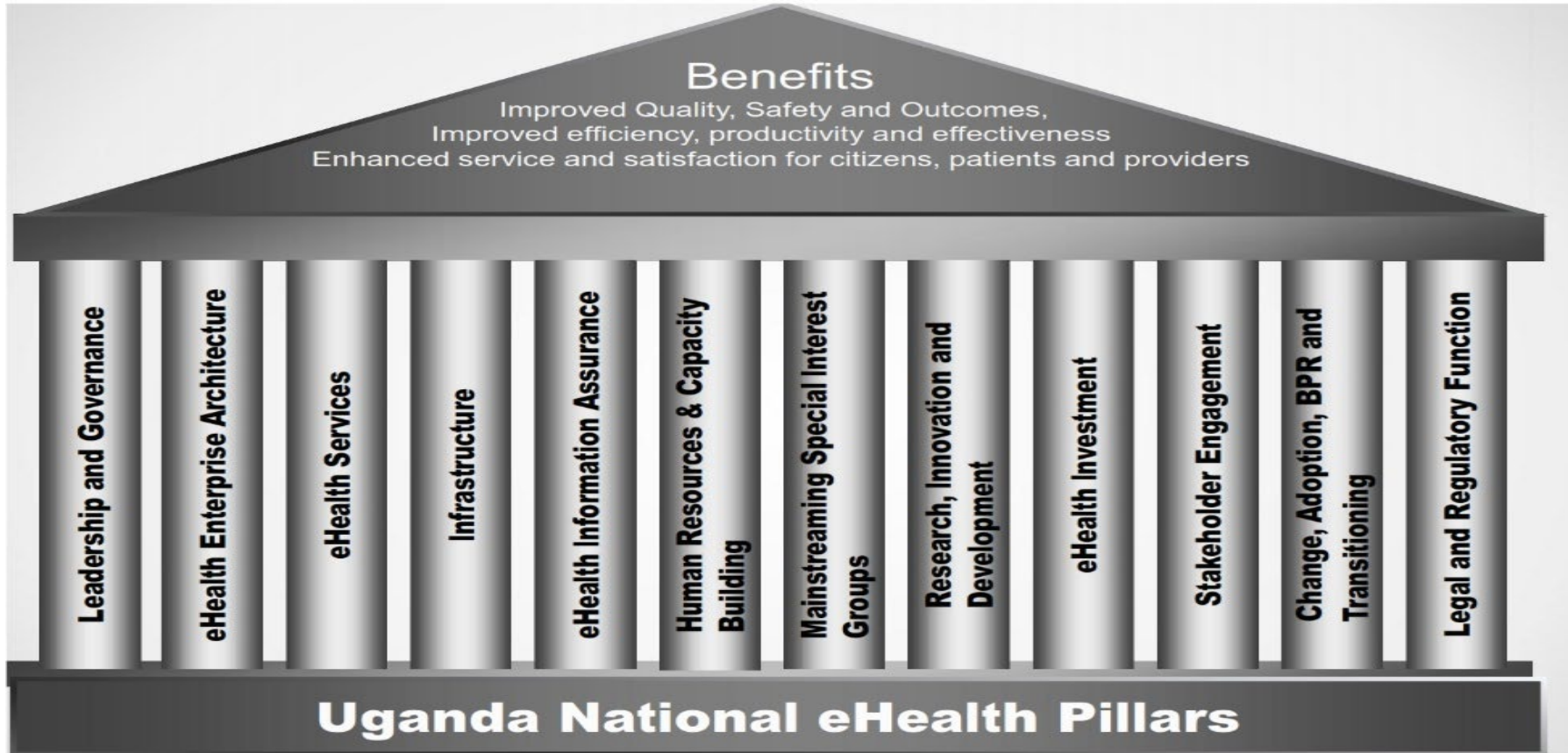
10. Information and peer-learning

Diverse stakeholder **information-sharing and peer-learning networks** at country and regional levels to foster coordination and alignment of implementation activities.



THE REPUBLIC OF UGANDA

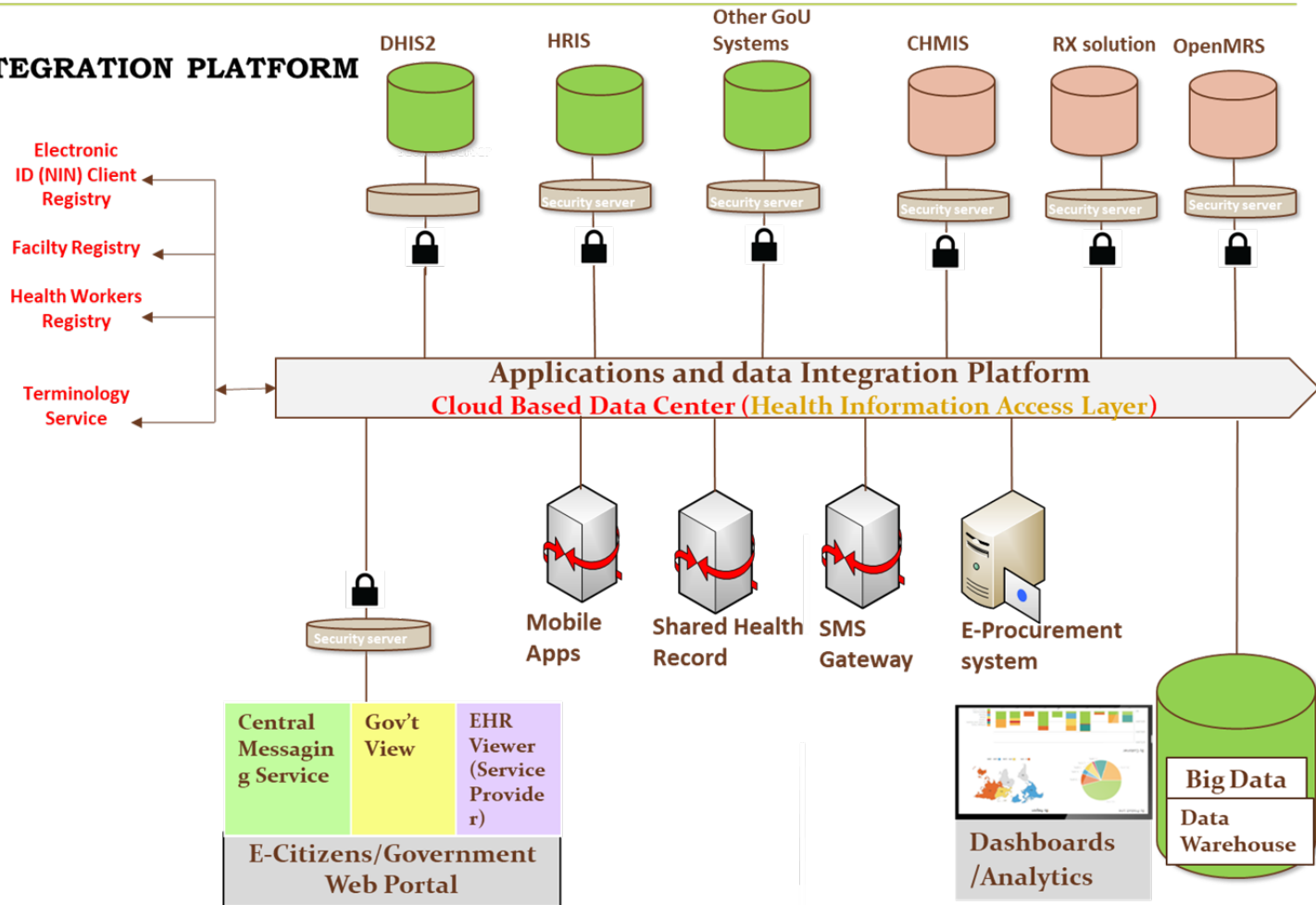
eHealth policy and strategy pillars





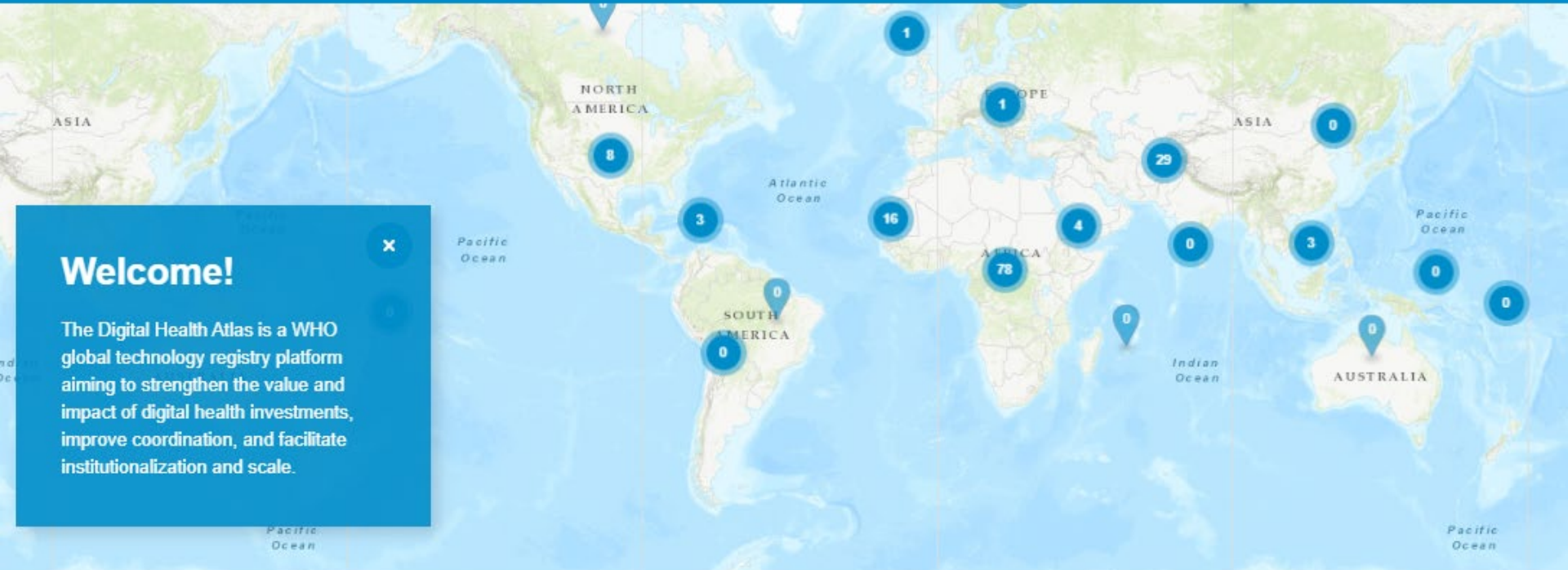
THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

SYSTEM INTEGRATION PLATFORM




WHO Digital Health Atlas

[Dashboard](#) [My Projects](#) [Planning and Guidance](#) [Toolkit](#)



WHA Resolution

- Urges Member States **to prioritize the development and greater use of digital technologies in health** as a means of promoting UHC and advancing the SDGs
- WHO develop a global strategy on digital health and **supports the scale-up of these technologies in countries** by providing technical assistance and normative guidance, monitoring trends and promoting best practices



World Health Organization

SEVENTY-FIRST WORLD HEALTH ASSEMBLY
Provisional agenda item 12.4

A71/20
26 March 2018

mHealth

Use of appropriate digital technologies for public health

Report by the Director-General

1. In May 2016, the Executive Board at its 139th session noted an earlier version of this report.¹ A previous version of this report was also considered and noted by the Executive Board at its 142nd session.² The present document has been amended to take account of Member States' comments. It also includes the use of other digital technologies for public health. Thus the report expands beyond but includes mobile wireless technologies.

2. The use of mobile wireless technologies for public health, or mHealth,³ is an integral part of eHealth, which refers to the cost-effective and secure use of information and communication

http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_20-en.pdf

WHO Re-organization

- Establishes office of Digital Health
- Division of Data, Analytics and Delivery

A screenshot of the World Health Organization's website showing a news release. The page has a blue header with the WHO logo and navigation menus for 'Health Topics', 'Countries', 'News', and 'Emergencies'. The main content area features a large headline, a date and location, a summary paragraph, a detailed paragraph, and a bulleted list of changes.

World Health Organization Health Topics Countries News Emergencies

WHO unveils sweeping reforms in drive towards “triple billion” targets

6 March 2019 | News Release | Geneva

WHO today announced the most wide-ranging reforms in the Organization’s history to modernize and strengthen the institution to play its role more effectively and efficiently as the world’s leading authority on public health.

The changes are designed to support countries in achieving the ambitious “triple billion” targets that are at the heart of WHO’s strategic plan for the next five years: one billion more people benefitting from universal health coverage (UHC); one billion more people better protected from health emergencies; and one billion more people enjoying better health and well-being.

These changes include:

- Aligning WHO’s processes and structures with the “triple billion” targets and the Sustainable Development Goals by adopting a new structure and operating model to align the work of headquarters, regional offices and country offices, and eliminate duplication and fragmentation.

Reinforcing WHO’s normative, standard setting work, supported by a new Division of the

Key challenges

- Ensure technology helps us close, not widen gaps in
 - Gender¹
 - Urban/rural
 - Network coverage
- Unique identifiers
- Power
- Data Use
- Data quality - especially in age of AI and ML!
- Move from how much does this cost to how much can we save?

¹<https://www.gsma.com/mobilefordevelopment/connected-women/the-mobile-gender-gap-report-2018/>

To learn more

- [Global Digital Health Network](#)
- [WHO Digital Health Atlas](#)
- [African Alliance of Digital Health Networks](#)
- [Asian eHealth Information Network](#)
- [Health Data Collaborative](#)



Stay in touch

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For more information, please visit
www.mcsprogram.org

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