
How Can Digital/ Mobile health Improve healthcare delivery and economy in Armenia

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Public Lecture

27 July 2018, American University of Armenian, Yerevan, Armenia

Summary

- **What is digital/ m-Health ? WHO/ digital health Interventions**
- **The Science of m-Health - Clinical areas and healthcare applications**
- **The digital health economy and global market- Lessons learnt**
- **Establishing a digital health economy in Armenia: Opportunities and Challenges**
- **A Clinical Exemplar (MofiD®- Digital Diabetes Population management system)**
- **Conclusions**

m-Health: The beginning

In 2003:

The first representation of mobile health (m-health) was first coined and defined as :

‘Mobile computing, medical sensor and communications technologies for healthcare’ — (Istepanian et al , 2003 & 2004).

In 2011, WHO defined it as

‘Medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices’ (WHO, 2011).

Ref: M-Health : new horizons for health through Mobile technologies, WHO, 2011.



Ref: Istepanian et al. , m-health; Beyond seamless mobility
IEEE Trans. InfomTechnology in Biomedicine, 8(4), 2004

Proceedings of the 25th Annual International Conference of the IEEE EMBS
Cancun, Mexico • September 17-21, 2003

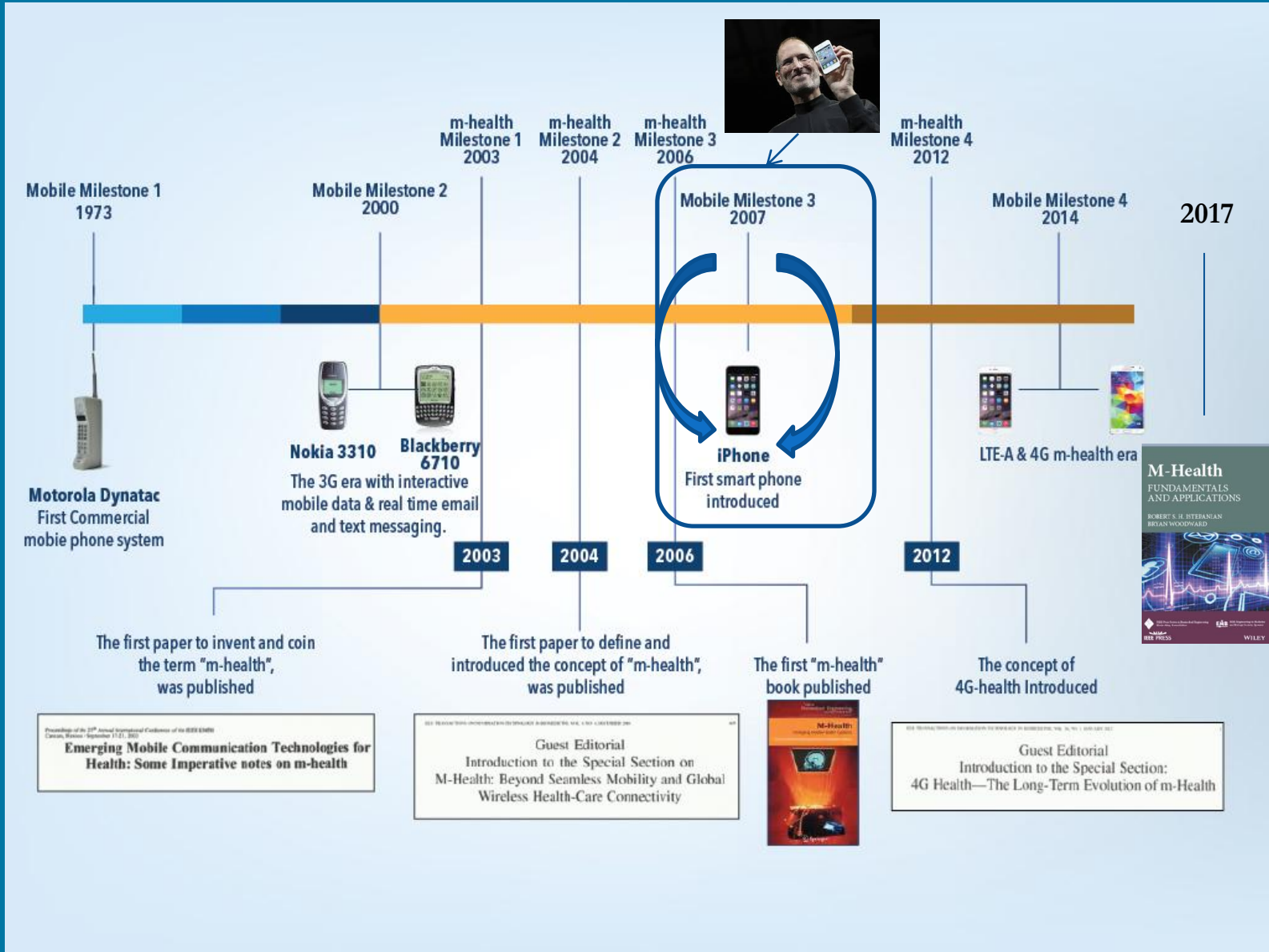
Emerging Mobile Communication Technologies for Health: Some Imperative notes on m-health

Robert S. H. Istepanian¹ and Jose C. Lalca²

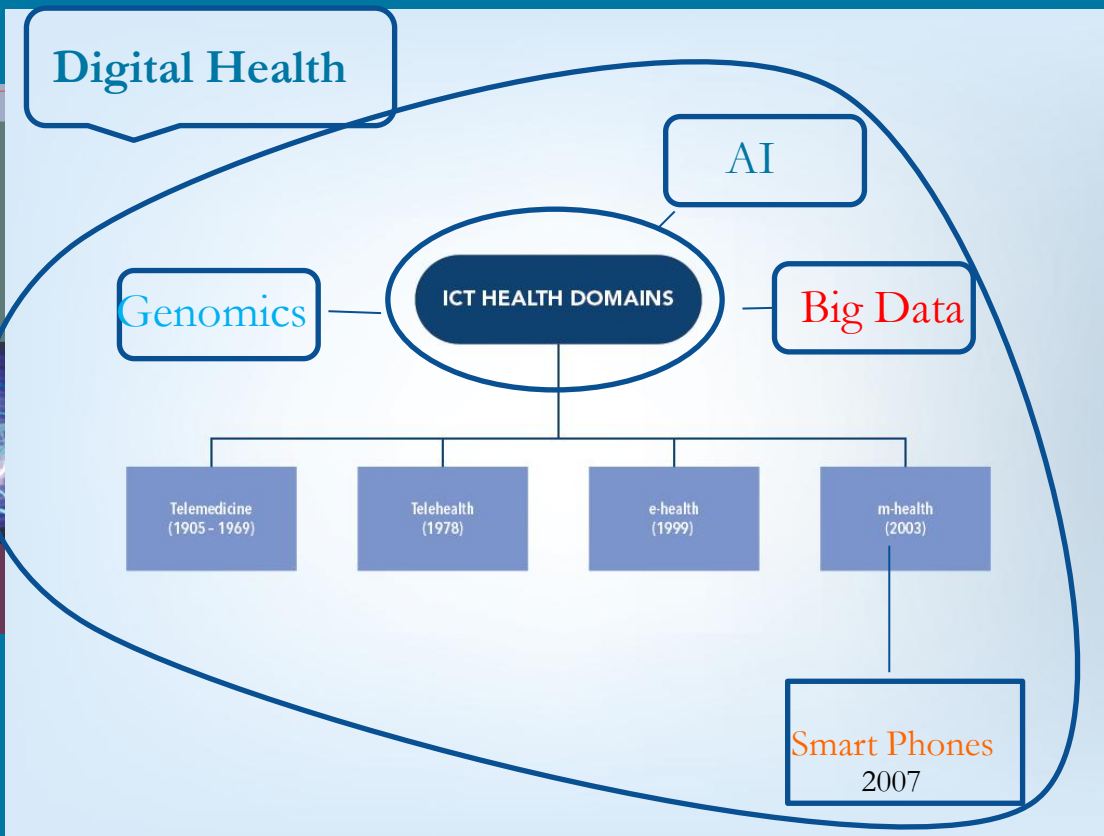
¹Mobile Information & Network Technologies Research Center; Kingston University (UK)

²Tele-Health Solutions; Motorola / iDEN Subscriber Group (USA)

m-Health evolution & technology timeline



What is digital health?



REF: Istepanian & Woodward, m-Health Fundamentals, 2017

m-Health: Now

2011 :

'Mobile health is the biggest technology breakthrough of our time' Kathleen Sebelius

Former US Secretary of Health and Human Services, m-health Summit 2011.



2018 :



Formerly mHealth summit



Why m-Health/ digital health

Clinical/Healthcare :Provision of healthcare delivery especially for the most needed (e.g. in remote and underserved areas, timely medical interventions, early diagnosis, reducing complications,

Patient empowerment/ Patient centric care: , Self education on their wellbeing and disease conditions , linking healthcare providers with patients .

Reduce healthcare inequality and cost (e.g. provision of specialist services using existing digital technologies and utilising communications, computing , internet infrastructures.

Enabler for new clinical insights and evidence clinical research.

Improving medical education and training opportunities
(e.g. new generation of digital healthcare providers, doctors and healthcare managers t that embrace new digital technologies and innovations in hospitals, clinics care centres etc.

Market Economy :Creating new digital health economy for businesses (SMEs and PPP)
(jobs, innovations, business opportunities etc.)

The global market of m-Health/ Digital health

Mobile health (m-health) is expected to grow to more than \$20 billion by 2018.



REF: www.mhealthshare.com
& Research2Guidance

The market for mHealth app services will reach \$26 billion by 2017

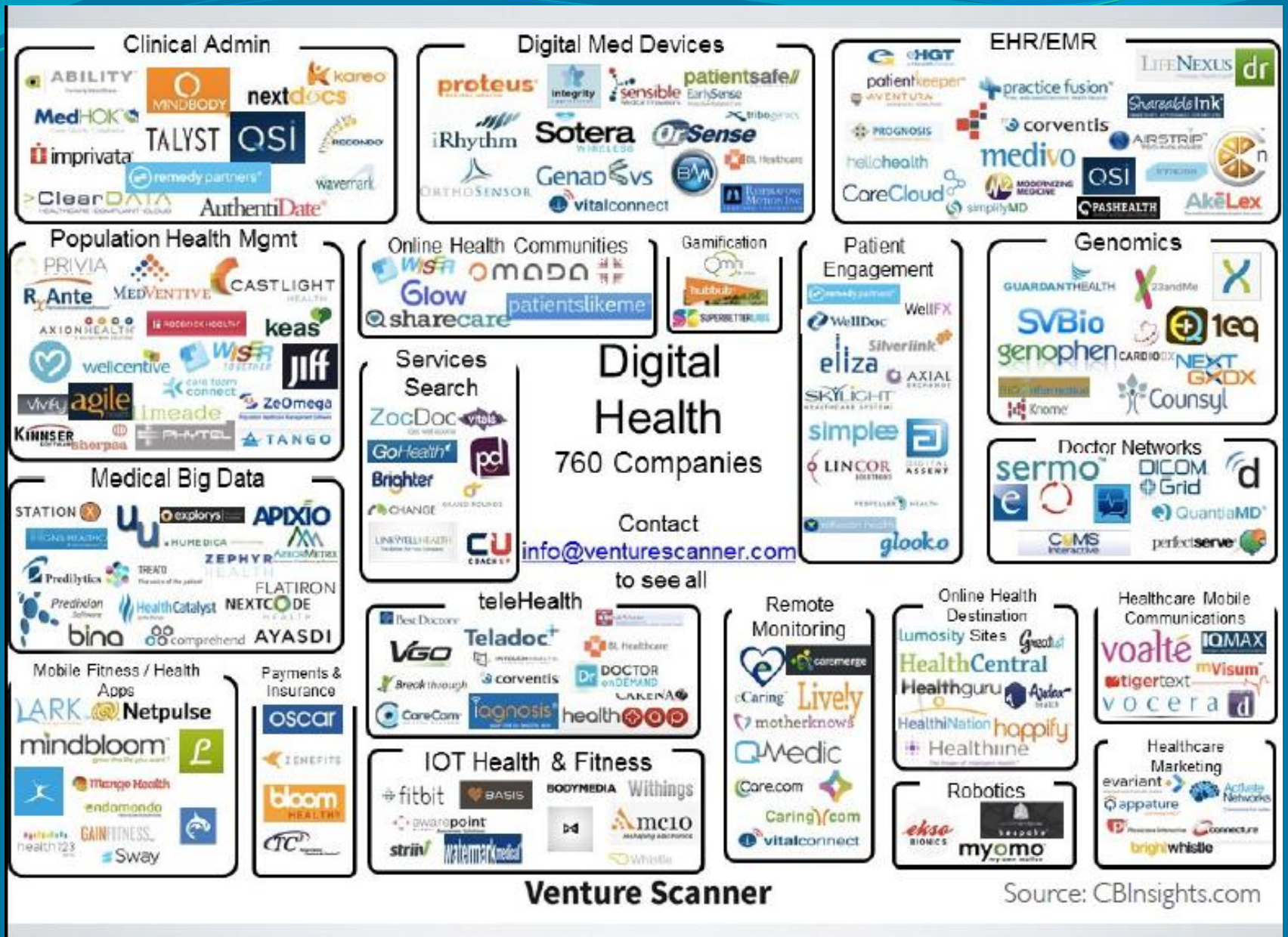
REF: Research2Guidance

mHealth services start to leverage apps to become commercially successful.

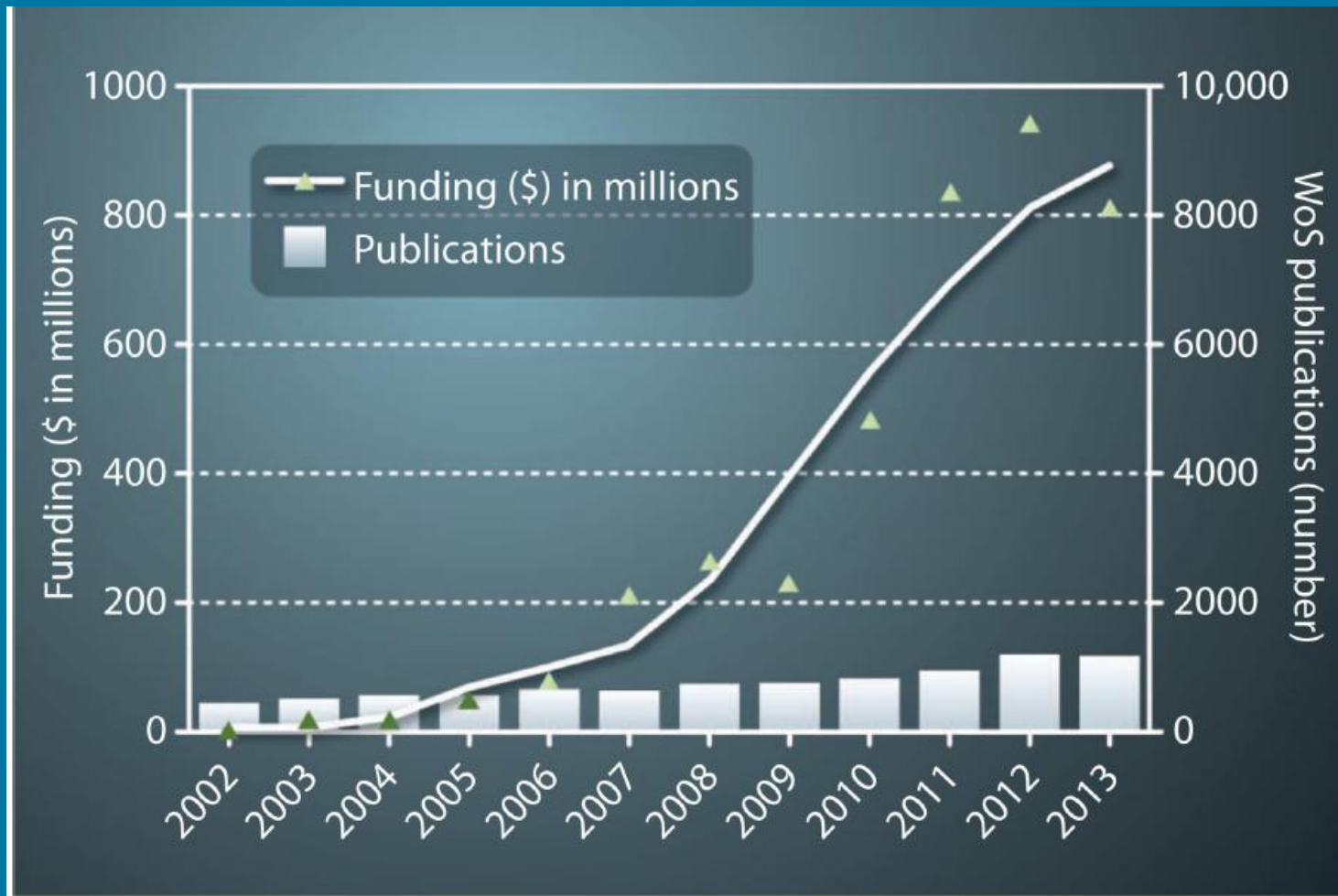
m-Health: As global business & Industry



An SME global m-Health landscape



The global m-Health Trend (Market v/s Science)



Publications:

2006-2016: 5465 documents were published with an average of ~ 499 paper/year

WHO- WHA-71 May 2018 (m-Health/ Digital Health)



World Health Organization



Documentation

WHA71



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. http://apps.who.int/gb/e/e_wha71.html



World Health Organization



Forthcoming WHO Guidelines on Digital Health Interventions for Health Systems Strengthening

Expected publication in latter half of 2018

Imperial College London

Institute of Global Health Innovation

WHO Digital Health Interventions Guidelines



CLASSIFICATION OF DIGITAL HEALTH INTERVENTIONS v1.0

A shared language to describe the uses of digital technology for health

1.0 CLIENTS

2.0 HEALTHCARE PROVIDERS

1.1 THEORETICAL CLIENT COMMUNICATION	1.3 CLIENT TO CLIENT COMMUNICATION	1.6 ON-DEMAND INFORMATION SERVICES TO CLIENTS
1.1.1 transmit health advice based on health status or population groups	1.3.1 peer group for clients	1.6.1 client look-up of health information
1.1.2 transmit targeted health information to clients based on health status or population groups	1.4 PERSONAL HEALTH TRACKING	1.6.2
	1.4.1 access by clients	1.7 CLIENT FINANCIAL TRANSACTIONS

CLASSIFICATION OF DIGITAL HEALTH INTERVENTIONS v1.0

A shared language to describe the uses of digital technology for health

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 supervisor	2.8.1 enable access to content to healthcare provider
2.1.2 send clients for health service/clinical completion	2.5.2 communication and performance feedback to healthcare provider	2.8.2 assess capacity of healthcare provider
		2.9 PROFESSIONALISM

Available at:

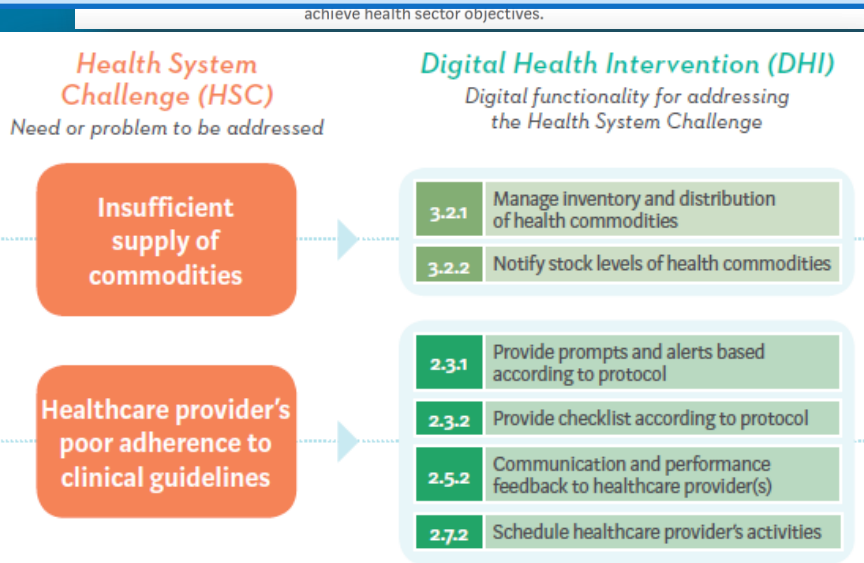
<http://www.who.int/reproductivehealth/publications/mhealth/classification-digital-health-interventions/en/>

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 use health workforce data to inform decision making	3.3.1 notification of public health events from point of origin	3.6.1 monitor status of health equipment, track regulator and timing of medical equipment
3.1.2 monitor performance of healthcare providers	3.4 CASE, BURDEN AND VITAL EVENTS	3.6.2
3.1.3 storage and retrieval of supervisor of healthcare providers	3.4.1 register birth events	3.7 FACILITY MANAGEMENT
3.1.4 report cases/complaints to healthcare providers	3.4.2 register birth events	3.7.1 use health facilities and related information across health facilities
3.2 SUPPLY CHAIN MANAGEMENT	3.4.3 certify birth events	3.7.2
3.2.1 manage inventory and distribution of health commodities	3.4.4 register death events	
3.2.2 verify stock levels of health commodities	3.4.5 certify death events	
3.2.3 monitor cold chain sensitive commodities	3.5 HEALTH FINANCING	
3.2.4 register lowest stage and health commodities	3.5.1 register and verify client insurance enrollment	
3.2.5 storage procurement of commodities	3.5.2 track insurance billing and claims submission	
3.2.6 report commodities or substandard drugs by clients	3.5.3 track and manage insurance reimbursements	
	3.5.4 transmit eligible payroll payments to healthcare providers	
	3.5.5 transmit or manage insurance claims to healthcare providers	
	3.5.6 storage budget and expenditures	

4.0 DATA SERVICES

4.1 DATA COLLECTION, MANAGEMENT, AND USE	4.2 DATA CLOUD	4.3 LOCATION TRACKING
4.1.1 non-machine data collection and management	4.2.1 new structured data received from data sources	4.3.1 map location of health facilities/structure
4.1.2 data storage and management	4.2.2 merge, de-duplicate, and centralised datasets or analytics	4.3.2 map location of health events
4.1.3 data synthesis and visualization	4.2.3 classify datasets/records	4.3.3 map location of clients and households
4.1.4 automatic analysis of data to generate new information or predictions on trends		4.3.4 map location of healthcare providers
	4.4 DATA EXCHANGE AND INTEROPERABILITY	
	4.4.1 data exchange across systems	





1.0 CLIENTS

1.1 TARGETED CLIENT COMMUNICATION

- 1.1.1 Transmit health event alerts to specific population group(s)
- 1.1.2 Transmit targeted health information to client based on health status or demographics
- 1.1.3 Transmit targeted alerts and reminders to client(s)
- 1.1.4 Transmit diagnostics result, or availability of result, to clients

1.2 UNTARGETED CLIENT COMMUNICATION

- 1.2.1 Transmit untargeted health information to an undefined population
- 1.2.2 Transmit untargeted health event alerts to undefined group

1.3 CLIENT TO CLIENT COMMUNICATION

- 1.3.1 Peer group for clients

1.4 PERSONAL HEALTH TRACKING

- 1.4.1 Access by client to own medical records
- 1.4.2 Self monitoring of health or diagnostic data by client
- 1.4.3 Active data capture/ documentation by client

1.5 CITIZEN BASED REPORTING

- 1.5.1 Reporting of health system feedback by clients
- 1.5.2 Reporting of public health events by client

1.6 ON-DEMAND INFORMATION SERVICES TO CLIENTS

- 1.6.1 Client look-up of health information

1.7 CLIENT FINANCIAL TRANSACTIONS

- 1.7.1 Transmit or manage out of pocket payments by client
- 1.7.2 Transmit or manage vouchers to client for health services
- 1.7.3 Transmit or manage incentives to clients for health services



World Health
Organization

human
reproduction
programme **hrp.**
research for impact
UNDP · UNFPA · UNICEF · WHO · WORLD BANK



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(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 provider				
2.4.3	Transmission of medical data to healthcare provider				
2.4.4	Consultations for case management between healthcare provider(s)				





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 drugs 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
4.1.1	Non routine data collection and management
4.1.2	Data storage and aggregation
4.1.3	Data synthesis and visualization
4.1.4	Automated analysis of data to generate new information or predictions on future events

4.2	DATA CODING
4.2.1	Parse unstructured data into structured data
4.2.2	Merge, de-duplicate, and curate coded datasets or terminologies
4.2.3	Classify disease codes

4.3	LOCATION MAPPING
4.3.1	Map location of health facilities/structures
4.3.2	Map location of health events
4.3.3	Map location of clients and households
4.3.4	Map location of healthcare provider(s)

4.4	DATA EXCHANGE AND INTEROPERABILITY
4.4.1	Data exchange across systems

M-Health from the Global health perspective

Region	Focal Country	m-Health Programs Identified	Level of m- Health Activity	Number of m-Health Initiatives Addressing MDGs			Adoption of e-Health and m-Health National Strategies	
				MDG4	MDG5	MDG6	e-Health National Strategy	m-Health National Strategy
Asia	India	16	High	1	6	6	Yes	No
	Bangladesh	7	Medium	5	5	0	Yes	No
	Vietnam	1	Low	0	0	0	No	No
Latin America	Guatemala	4	High	0	0	0	No	No
	Peru	2	Medium	0	0	2	Yes	Yes
	Panama	1	Low	0	0	0	Yes	No
Sub-Saharan Africa	Tanzania	21	High	5	8	7	Yes	Yes
	Nigeria	5	Medium	1	2	3	No	No
	South Sudan	2	Low	1	0	0	No	No

Source: Adapted from m-Health Alliance (2012b).

MDG4: Reducing child mortality;
MDG5: Improving maternal health;
MDG6: Combating infectious diseases (e.g.HIV, Malaria)

REF: Istepanian & Woodward, m-Health Fundamentals, 2017



This clinic proudly utilizes
Mobile Oral Telemedicine

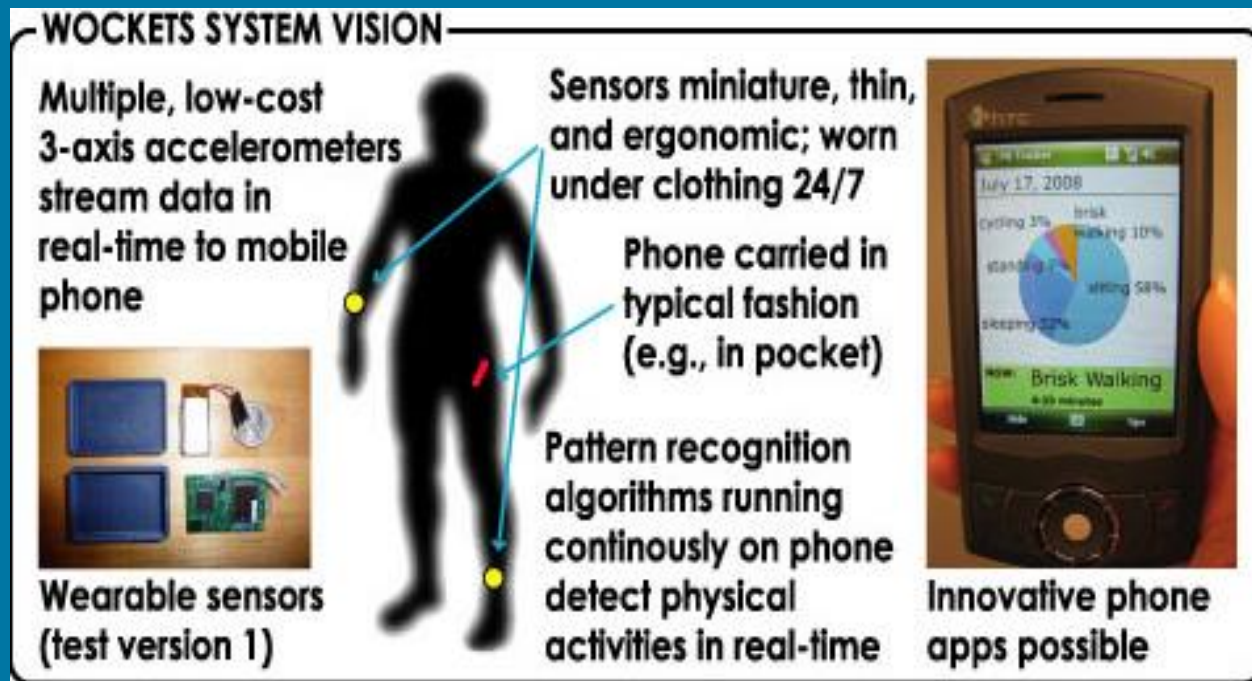
Using mobile phones to extend the reach of the highest quality health care to all Batswana

This mhealth service is made possible by:



Global Examples of m-Health:

- **Problem:** Population-scale measurement of physical activity
- **Solution:** Miniature, low-cost devices that measure human motion using redesigned accelerometers in a user-friendly format



Examples of m-Health in LMIC

South Africa Mobile Alliance for Maternal Action

USAID: Maternal Health Program via Mobile Device

- Mobile Marketing Campaign May 2011
- The U.S. Agency for International Development (USAID) started first mobile application: free health care information and tips to pregnant women and mothers via cell phone.
- Secretary of State Hillary Clinton announced the formation of the Mobile Alliance for Maternal Action (**MAMA**)
- Goal: Raise \$10 million, direct services to women in Bangladesh, India and South Africa
- Read more: <http://bit.ly/mvhZ3Z>

MAMA
MOBILE ALLIANCE FOR MATERNAL ACTION



AT THE SPEED OF IDEAS™

Alcatel-Lucent

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Ghana



MOTECH is a software system from Grameen Foundation that harnesses the ubiquity of mobile phones to deliver and receive information from patients and caregivers.

Nigeria

SMS printers aid early infant diagnosis of HIV/AIDS in Nigeria
CHAI's SMART



Challenge: Sustainability; scaling up beyond the pilot phases ???

mHealth for HIV Treatment & Prevention: A Systematic Review of the Literature

Garacia Catalani,^{*1} William Philbrick,² Hamish Fraser,³ Patricia Mechael,² and Dennis M. Israelski¹

[Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#) ▶

Chronic Disease Management & Monitoring

- **Problem:** Chronic diseases are difficult and expensive to manage within traditional healthcare settings
- **Solution: Many** Disease self-management programs for asthma, alcohol dependence and lung cancer
- Information provided the user needs it
- Intervene remotely with greater than traditional care
 - Real-time management
 - More efficient triage
 - Reduces acute care



Potential areas of m-Health in Armenia

m-Health areas/applications	Clinical Examples
Health and wellness monitoring and disease management	Remote patient monitoring and mobile disease management, patient education, mobile EPR & EHR access.
Remote diagnostic and treatment services	Point-of-care diagnostics, mobile ultrasound and remote diagnostics.
Patient education and behavioural change	SMS for patient education, appointment and medication reminders.
Home and elderly care	Ambient Assisted Living, fall detection, m-rehabilitation
Public and global health applications	Patient education and health promotion, maternity and child health, logistics management, healthcare workforce training
Medical training and learning and healthcare workflow processes and management	Remote medical education and training for healthcare workers and medical personnel.
Primary and emergency care	A&E and trauma services, primary care clinics.

m-Health: A Global Innovations Perspective



Health Statistics: Armenia, Israel & Singapore



Armenia

Map



This map is an approximation of actual country borders.

Statistics

Total population (2016)	2,925,000
Gross national income per capita (PPP international \$, 2013)	8
Life expectancy at birth m/f (years, 2016)	71/78
Probability of dying under five (per 1 000 live births, 0)	not available
Probability of dying between 15 and 60 years m/f (per 1 000 population, 2016)	176/65
Total expenditure on health per capita (Intl \$, 2014)	362
Total expenditure on health as % of GDP (2014)	4.5

Latest data available from the Global Health Observatory

Israel

Map



This map is an approximation of actual country borders.

Statistics

Total population (2016)	8,192,000
Gross national income per capita (PPP international \$, 2013)	32
Life expectancy at birth m/f (years, 2016)	80/84
Probability of dying under five (per 1 000 live births, 0)	not available
Probability of dying between 15 and 60 years m/f (per 1 000 population, 2016)	75/41
Total expenditure on health per capita (Intl \$, 2014)	2,599
Total expenditure on health as % of GDP (2014)	7.8

Latest data available from the Global Health Observatory



Singapore

Map



This map is an approximation of actual country borders.

Statistics

Total population (2016)	5,622,000
Gross national income per capita (PPP international \$, 2013)	76
Life expectancy at birth m/f (years, 2016)	81/85
Probability of dying under five (per 1 000 live births, 0)	not available
Probability of dying between 15 and 60 years m/f (per 1 000 population, 2016)	65/38
Total expenditure on health per capita (Intl \$, 2014)	4,047
Total expenditure on health as % of GDP (2014)	4.9

Latest data available from the Global Health Observatory



Examples of digital health economic: Singapore

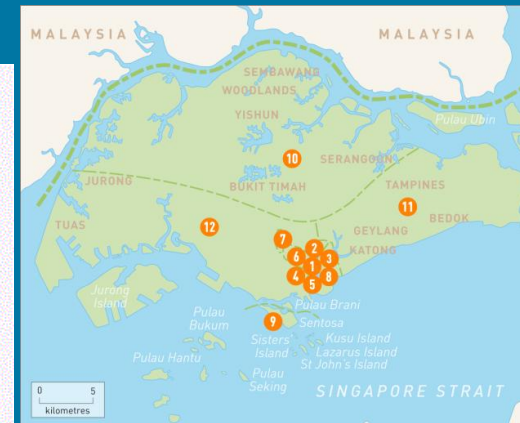
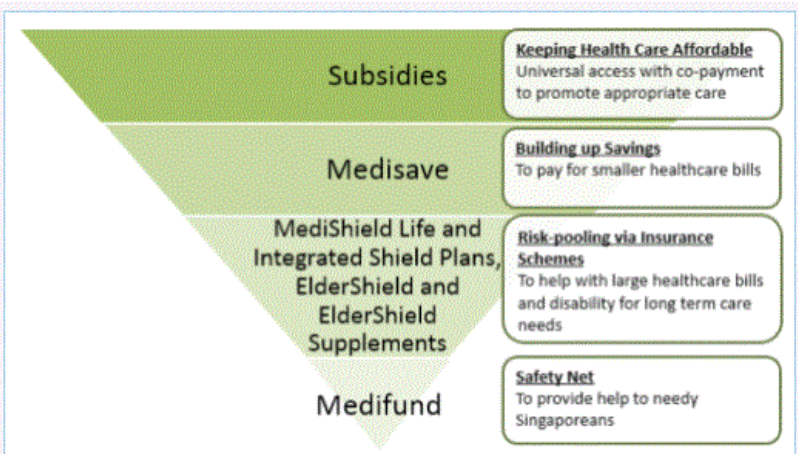


Armenian Church of Saint Gregory the Illuminator, Singapore, C. 1835



More than 80% of the hospital beds in Singapore are in public hospitals

Area	
• Total	721.5 km ² (278.6 sq mi) ^[3] (176th)
Population	
• 2017 estimate	5,612,300 ^[4] (113th)
• of which citizens (2015):	3,375,000 ^[4]
• Density	7,796/km ² (20,191.5/sq mi) (3rd)
GDP (PPP)	
• Total	2018 estimate \$554.855 billion ^[5] (39th)
• Per capita	\$98,014 ^[5] (3rd)
GDP (nominal)	
• Total	2018 estimate \$349.659 billion ^[5] (41st)
• Per capita	\$61,766 ^[5] (8th)



Google maps; Images

Singapore Digital Health Economy

The MOH in Singapore has identified five therapeutic areas based on factors such as impact of disease:

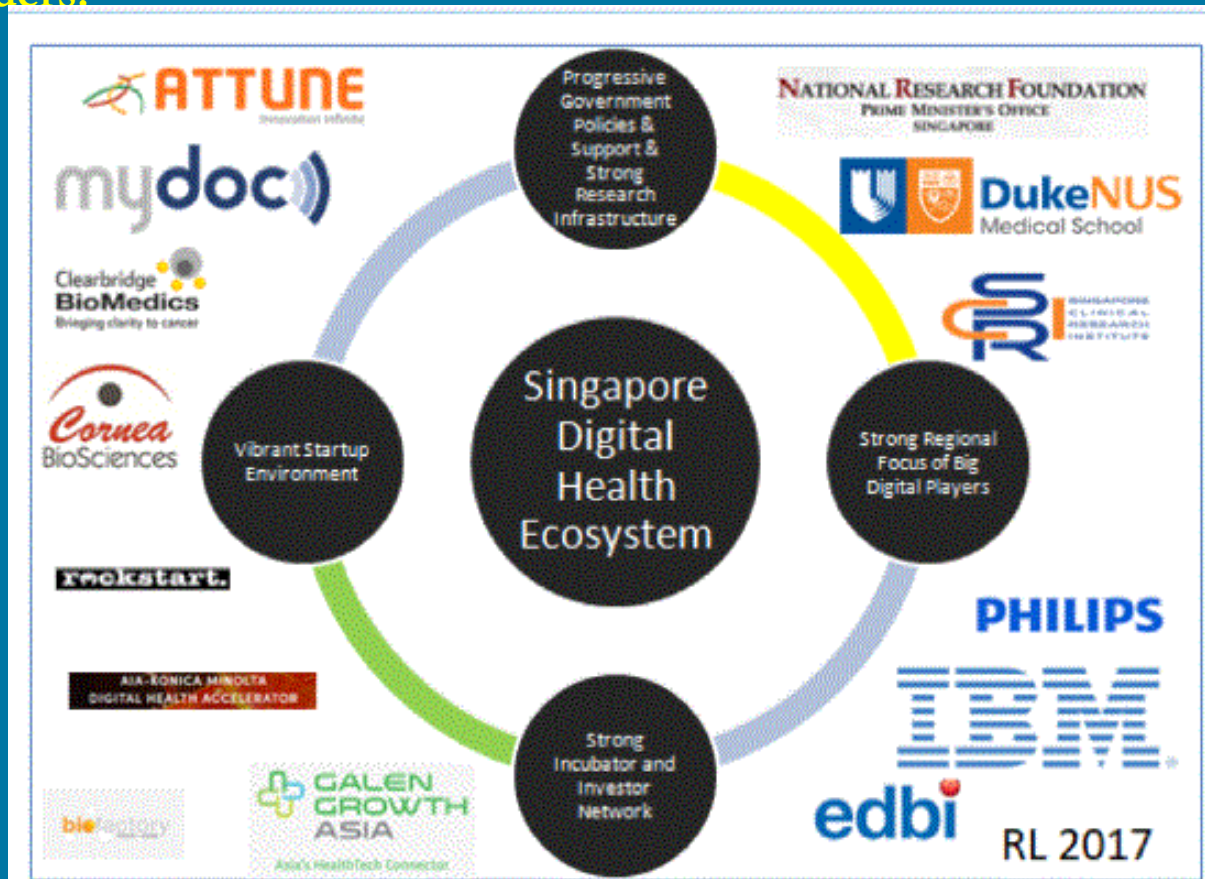
- 1- Cancers.
- 2- Cardiovascular diseases.
- 3- Diabetes mellitus and other metabolic or endocrine conditions.
- 4- Infectious diseases.
- 5- Neurological and sense disorders.

https://www.moh.gov.sg/content/moh_web/home/our_healthcare_system.html

Digital Health Market Map in Singapore :

Singapore recently announced it would pump in more than US\$13 billion to a five-year plan for research and development, some of which will go towards innovation at the intersection of healthcare and IT.

REF: PwC & EDB-Singapore, 2018



Examples of digital health economic: Israel

Israel: ranked 4th globally for healthcare efficiency & 9th. Healthiest

<http://www.meddevsoft.com/israels-mobile-health-is-reaching-new-heights/>

<http://nocamels.com/2018/01/israeli-tech-revolutionizing-healthcare/>

Area	
• Total	20,770–22,072 km ² (8,019–8,522 sq mi) ^[a] (150th)
• Water (%)	2.1
Population	
• 2018 estimate	8,887,380 ^[12] (96th)
• 2008 census	7,412,200 ^[13]
• Density	403/km ² (1,043.8/sq mi) (33rd)
GDP (PPP)	
• Total	2018 ^[14] estimate \$334.328 billion (54th)
• Per capita	\$37,673 (35th)
GDP (nominal)	
• Total	2018 ^[14] estimate \$373.751 billion (33rd)
• Per capita	\$42,115 (20th)



MHEALTH ISRAEL

Non-profit organization, with 4200+ members, supporting Israel's Health Tech startup community. Global healthcare companies use mHealth Israel to access Israel's vibrant connected health sector

mHEALTH ISRAEL KEY ACTIVITIES

Enabling global healthcare market leaders and Israeli startups to share innovation, best practices and transformative commercial opportunities

- Monthly Meetups with Global Speakers
- "Israeli Connected Health Startups Database" with 400+ companies



2018: Investing \$300 on disruptive health technologies

nocamels.com/2018/01/israeli-tech-revolutionizing-healthcare/

Imperial College
London

Institute of
Global Health Innovation

Photos: Google, The Times of Israel, mhealth Israel

Digital Health - Academic and Innovations Perspectives from Europe

In April 2018, the [NHS Digital Academy](#) formally enrolled the first cohort of participants onto their one year programme commissioned by the NHS in partnership with Imperial's Institute of Global Health Innovation ([IGHI](#)), the [University of Edinburgh](#) and [Harvard Medical School](#).

Aim to train the next generation of NHS digital health leaders in UK

The Institute is co-directed by Professor Lord Ara Darzi IGHl, Imperial College, London

Imperial College
London

Home

College and Campus

Science

Engineering

Health

NHS Digital Academy launches first cohort of digital health leaders

by Jo Seed

23 April 2018



The NHS Digital Academy cohort 2018.



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Spring House Co-working Club Amsterdam - The Netherlands

Founded by Independent Dutch Curator
as incubator for societal innovations

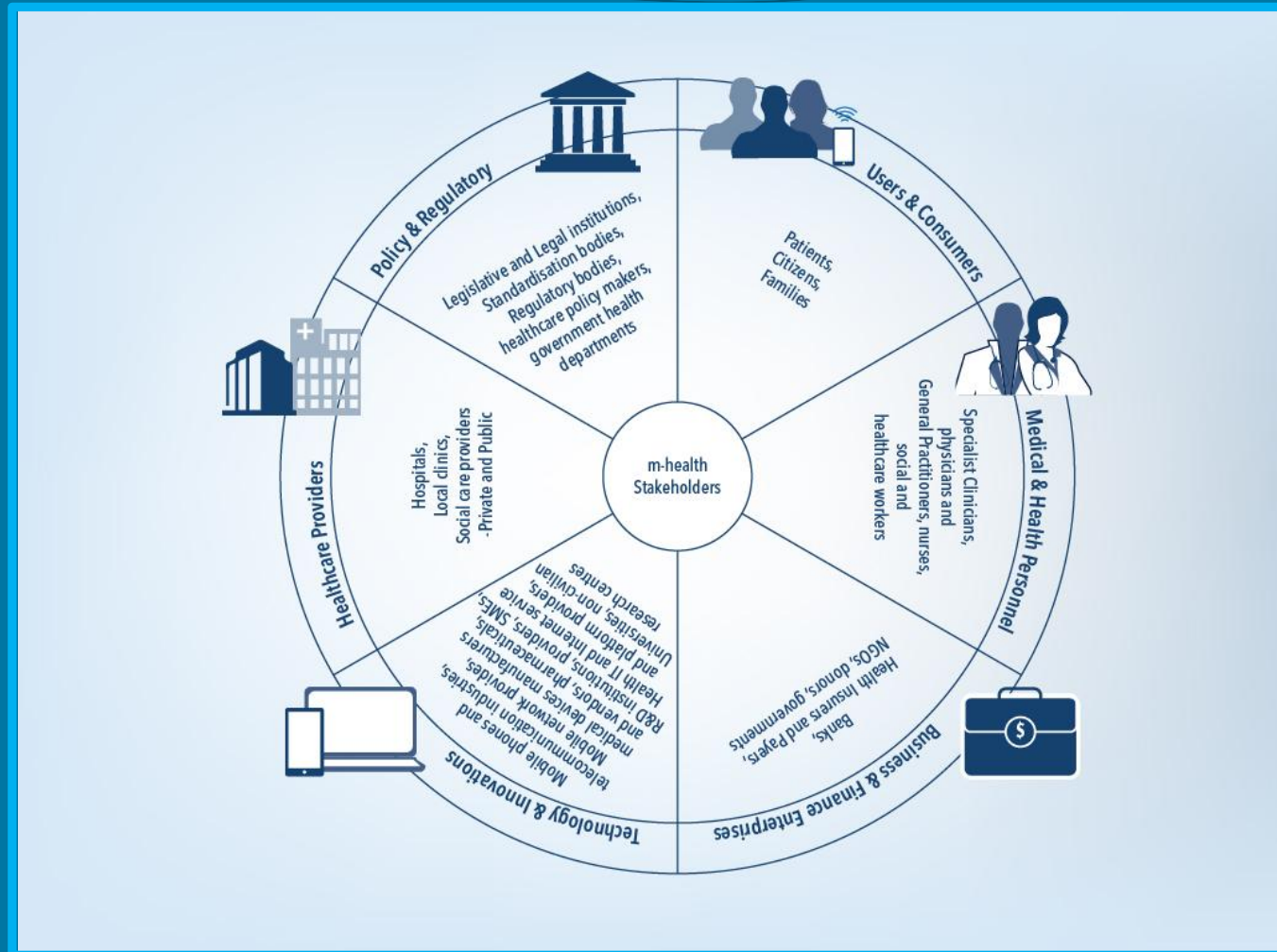
Also supported by the Amsterdam Economic
Board that aim for transforming Amsterdam as
Europe's top three regions for innovation

REF: <https://springhouse.nl/>, amsterdameconomicboard.com



Plethora of m-Health ecosystems and business models

- Users and consumers
- Medical & healthcare Personnel
- Healthcare Providers
- Business and Finance Enterprises
- Technology and Innovations
- Policy and Regulatory



m-Health stakeholders

REF: Istepanian & Woodward, m-Health Fundamentals, 2017

Digital health for Armenia- Evolution or Revolution

Core skills for high performance organisations

Is Armenian Ready for digital health?

If so which approach is the best tailored

For the country and its people?

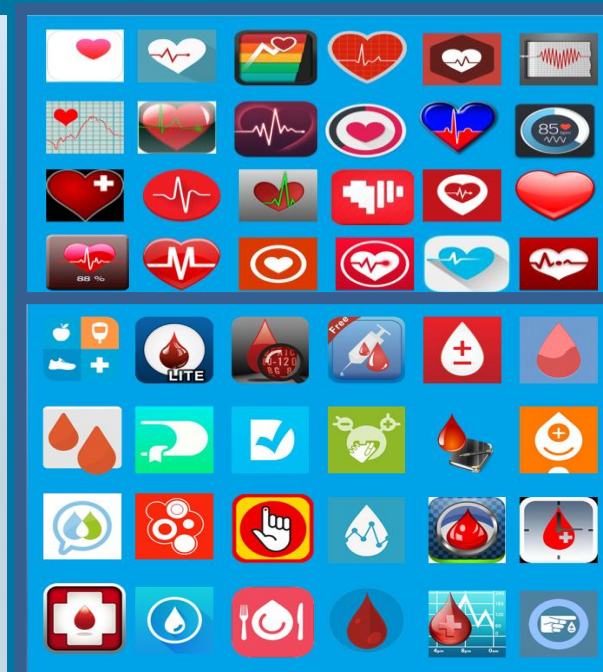
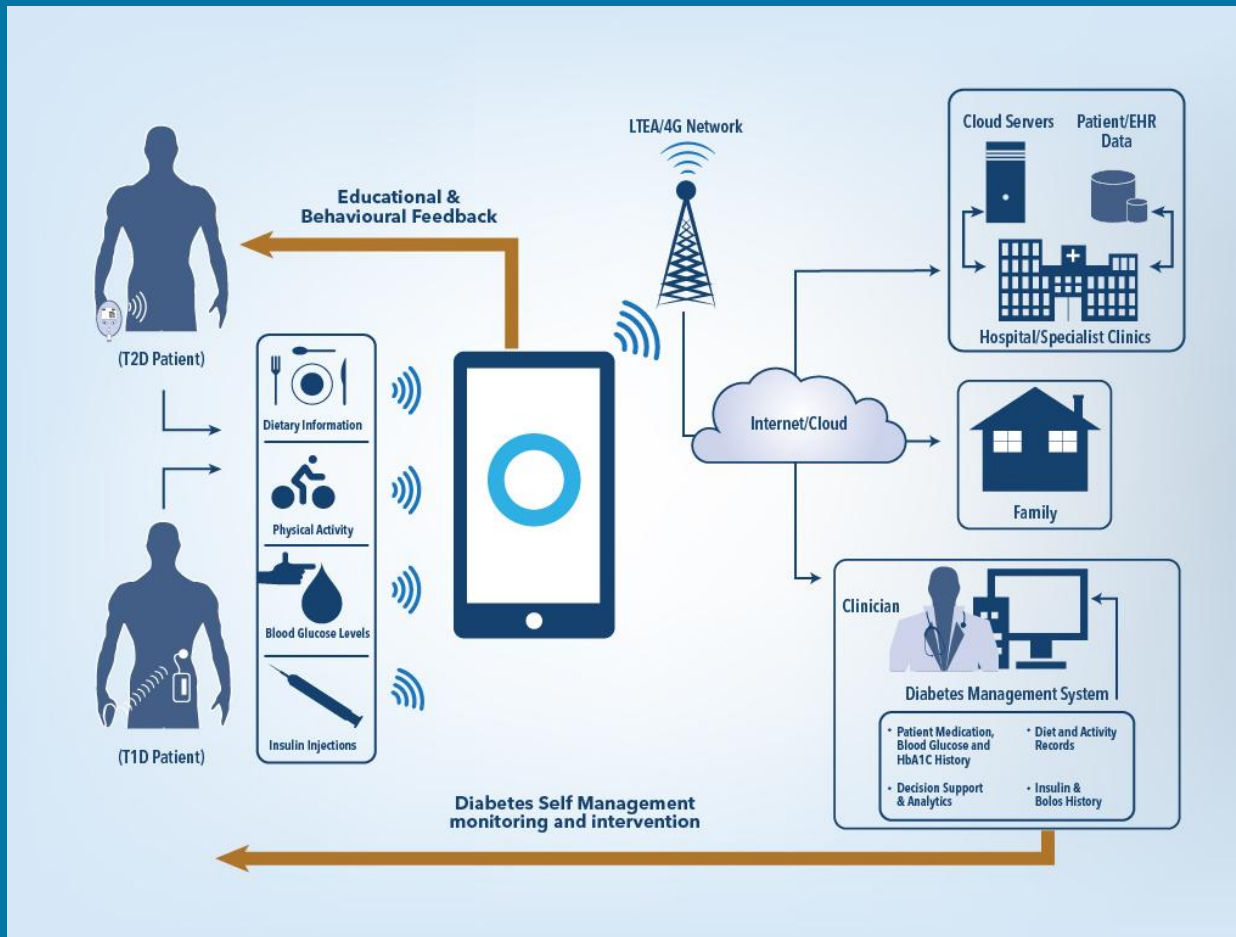
There are number of complex factors that inhibit the sound and progressive implementation of digital/mobile health in Armenia:

- 1- Lack of sound digital healthcare policy in place
- 2- Cultural and population barriers
- 3- Lack of adequate voluntary healthcare system support (e.g. healthcare insurance contributions, government healthcare funds)
- 4- Lack of the digital health expert skills and clinical knowledge base .
- 5- Lack of digital health leaders and home grown business and societal entrepreneurs.



Clinical Exemplar of digital health innovations

Digital Diabetes



➤ 1200 Diabetes m-Health Apps in the iOS and Android markets



REF: Istepanian & Woodward, m-Health; fundamentals & Applications 2017



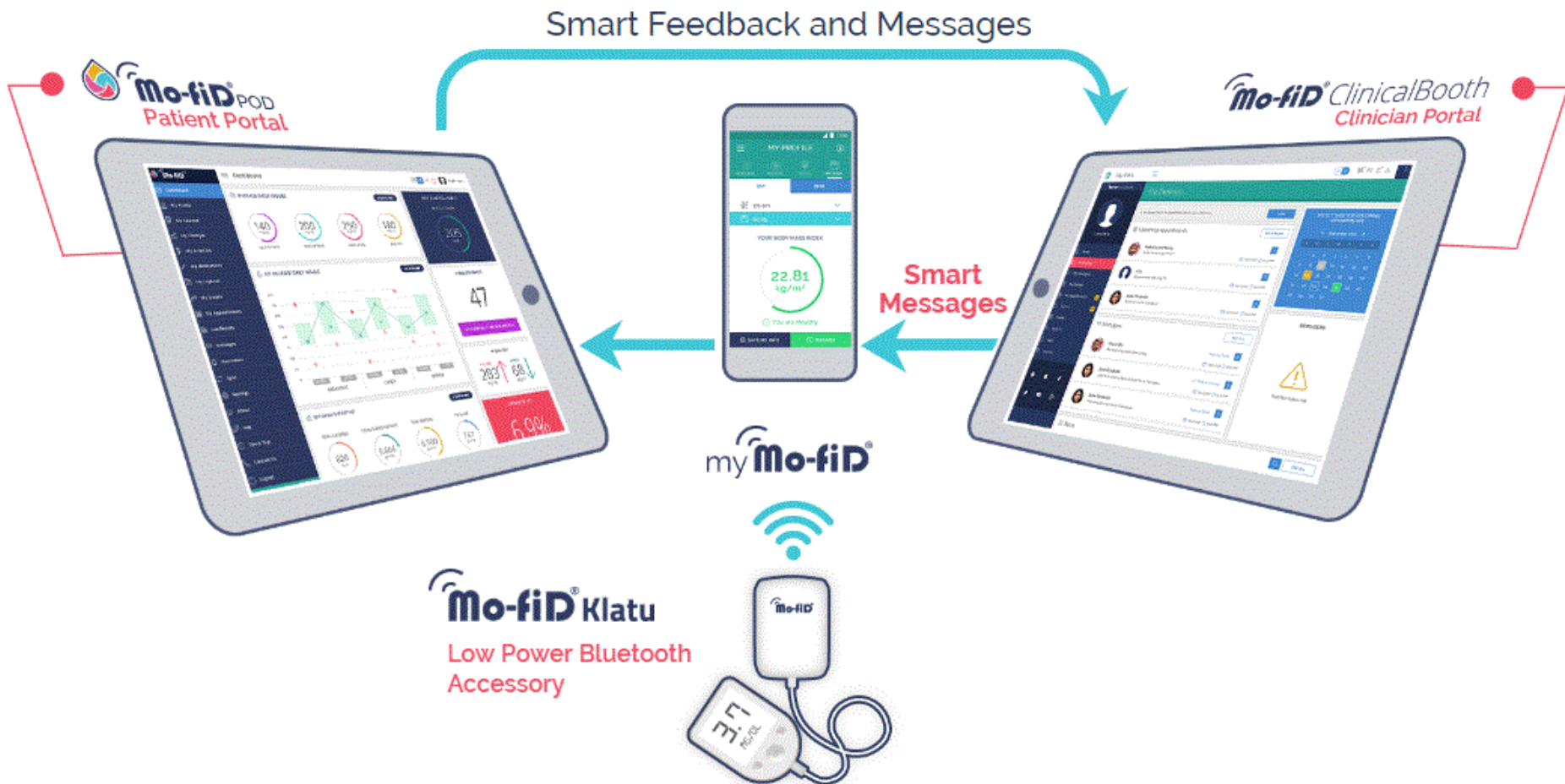
Mo-fiD[®]

world's first multilingual culturally agnostic mobile diabetes monitoring, self-management platform and unifying population management system.

MyMofid.com



Mo-fiD[®] Smart diabetes population management system

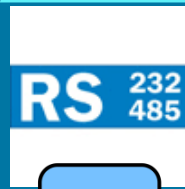


Enabling digital diabetes population management

Wireless and Non-Wireless
Diabetes monitoring devices



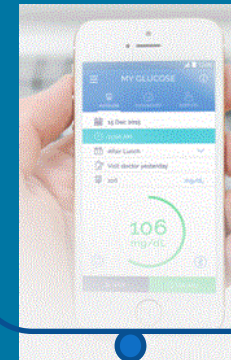
Smart wireless Aggregator and M2M gateway
(Mo-fiD)



M2M
WiFi



M2M
Cellular



EHR/ Data
Analytics

HCP/
Diabetes Clinic



HEALTH COACH





All integrated in one unifying and integrated diabetes population management system

MofiD- Smart wireless digital diabetes aggregator

The world's first smart wireless blood glucose aggregator connecting market available blood glucose meters to the patients own smart phone using the MofiD unifying app.

The MofiD® smart wireless aggregator uses the latest low energy Bluetooth® technology to allow the patient to seamlessly transfer their blood glucose readings from their own smart phones.



The myMo-fiD[®] app include most of the key diabetes self management functionalites that allows the diabetic patient to better manage their diabetic conditions using their existing smart phone and blood glucose meters



Blood glucose
mointoring



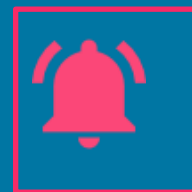
Exercise
levels



Diet &
Nutirition

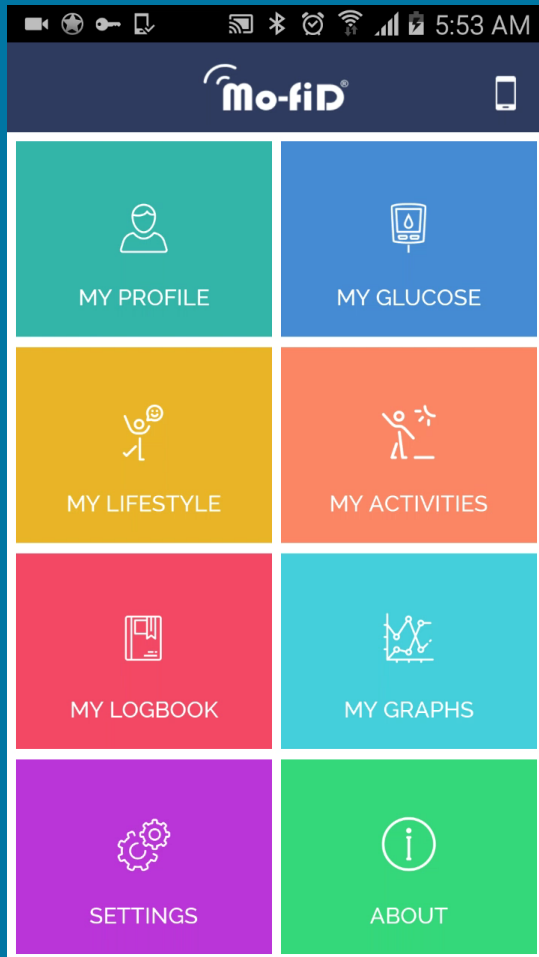


Medication
Reminders



Alerts and
feedback/ advice
from healthcare
providers

myMo-fiD[®] app



myMo-fiD[®] App

Support you properly track your medication intake and provides smart reminders for type, dosage and repeat time

Keeps nutrient information of over 20,000 Middle Eastern foods for better health and quality of life. All nutrition values that you need to know including energy, carbohydrates, protein and fat.

Track your blood glucose, diet and other data logs easily and quickly using our intuitive logbook to achieve better control of your diabetes and diet goals.

Receives blood glucose readings from the variety of glucometers and sends alerts the patients of high and low blood glucose.

Very flexible and easy to use for tracking a variety of recurring activities.

Easy to use health gauges and graphs for monitoring your vital parameters relevant to diabetes including average daily blood glucose, calories consumed or burned to monitor and improve your lifestyle.

Smart Digital Diabetes connectivity



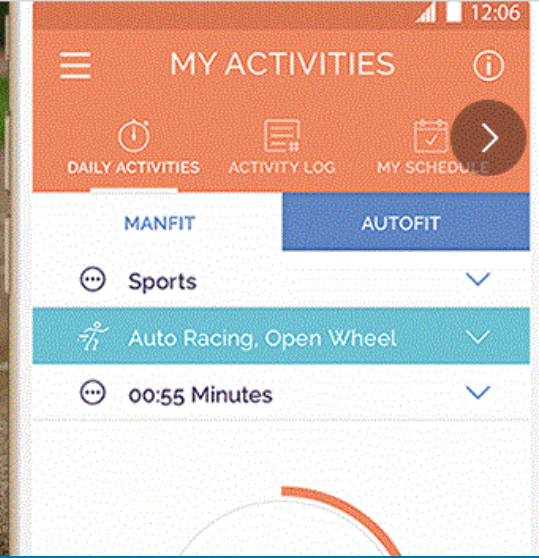
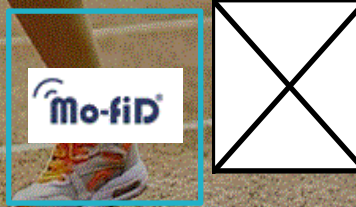
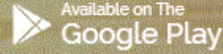
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SIGN UP

SIGN IN

EN ▾

of your diabetes control seamlessly with your own smart mobile phone and glucose meter anytime anywhere

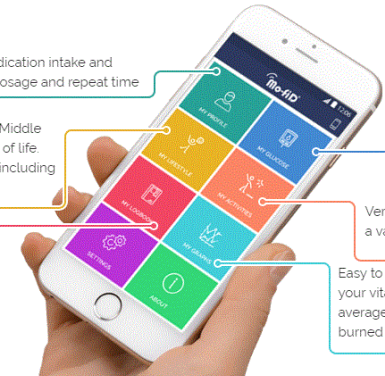


Smart Feedback and Messages



myMo-fiD® App

- Support you properly track your medication intake and provides smart reminders for type, dosage and repeat time
- Keeps nutrient information of over 20,000 Middle Eastern foods for better health and quality of life. All nutrition values that you need to know including energy, carbohydrates, protein and fat.
- Track your blood glucose, diet and other data logs easily and quickly using our intuitive logbook to achieve better control of your diabetes and diet goals.
- Receives blood glucose readings from the variety of glucometers and sends alerts the patients of high and low blood glucose.
- Very flexible and easy to use for tracking a variety of recurring activities.
- Easy to use health gauges and graphs for monitoring your vital parameters relevant to diabetes including average daily blood glucose, calories consumed or burned to monitor and improve your lifestyle.



The Development of Digital /Mobile health For Armenia – A Plan for Action

- Introduction a sound national digital health board responsible for the long term digital health strategy and policies for Armenia.
- Allocation of a national digital health fund and plan for implementation and services through (PPP) financing.
- 5 year digital health targeting the solutions to tackle the most urgent disease and healthcare problems in Armenia.
- A digital health education plan (PG courses) for training new generation of ‘digital work force of doctors, nurses and health care managers.
- Sustainable plans for digital health economy with targeted priorities through government support and initiatives (e.g. subsidised spaces and locations for SMEs, free digital health innovation zones, digital health tourism services etc.)



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