Digital Health Transformation: The Israeli Experience

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Digital transformation is not like any other organizational change:
Expectation are Linear, Reality is Exponential
“We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten” (Bill Gates)
The Israeli Digital Health Ecosystem in 2018

- 537 innovative Digital Health companies
- Over 25 years of digitalized accumulated EMR
- Market players: 4 HMOs servicing the entire ~9M population
- ~100 active investors in the sector with an Israeli presence

- Multinationals: 32 with exposure to Digital Health
- Hubs, including hospitals & HMOs innovation platforms: 23 Digital Health hubs, including 11 accelerators
- Incubators: 4 industry focused

Source: Startup Nation Central
Digital Health as a growth engine

~1 billion NIS 2018-2022

The Israeli health system will be one of the world leaders in digital health solutions.

Clinical and academic research will be promoted in Israel in the field of digital health.

The Israeli digital health industry will be a national growth engine and a hub for global innovation.
Digital Health Strategy

System Transformation

Clinical Transformation

Human Centered Care

Sustainable Healthcare
Digital Health Strategy

System Transformation

Clinical Transformation

Human Centered Care

Sustainable Healthcare

Electronic Medical Records and More...
System Transformation

Clinical Transformation

Human Centered Care

Sustainable Healthcare

Research – Secondary Use of Clinical Data, i.e. Big Data, Analytics

Electronic Medical Records and More...
Digital Health Strategy

System Transformation

- New Care Delivery Models
- New Collaborations
- New Professions & Skills

Clinical Transformation

- Human Centered Care
- Personalized
- Predictive
- Preventive
- Proactive

Care - Primary Use of Clinical Data

- Research – Secondary Use of Clinical Data, i.e. Big Data, Analytics

Electronic Medical Records and More...
Digital Health Strategy

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System Transformation

Clinical Transformation

Human Centered Care

Sustainable Healthcare

Policy

Incentives

Infrastructure
Primary use of clinical data

Primary use is when health data is used to deliver health care to the individual from whom it was collected.

Policy
- Cloud
- Telemedicine
- PHR

Incentives
- Challenge Tender
- Pilots Program
- Dev. & Imp.
- Telemedicine

Infrastructure
- Eitan:HIE
- FHIR
- Terminology
- Open EMR
- Patient ER app
Creates regulatory framework for telemedicine services, including evaluation of services for remote delivery and guidance on clinical fields requiring in-person care.

Prohibits decreases in in-person care and clinics as a result of telemedicine services.

Allows HMOs to charge patients a copay fee for telemedicine services, similar to that of in-person services.

**Telemedicine Standards for remote healthcare**
Encouraging Partnerships: Pilots Program

Health organizations as a subcontractor of the industry

In 12 months:
- 54 pilots
- 30 health organizations
- Total value: 40 million Euros
- Gov’t Fund: 17.5 million Euros

For every ILS of government support, private companies invest 2-3 ILS in partnerships with Israeli health organizations.
Interoperability Infrastructure: Health Information Exchange

“Eitan” platform allows exchange of clinical information between all health organizations

Improve continuum of care
The next generation of interoperability: from closed to open systems

Source: Harvard Business Review, The Strategic Value of APIs
The next generation of interoperability: from closed to open systems

The overarching goal: leapfrog in the ability to share and use information for the benefit of patients, therapists and researchers

Key Factor: FHIR Community

- Open standards & open source tools
- Work on clinical and operative needs that are coming from the field
- Building trust between developer community and the medical community
Terminology

Changing the way we store and use clinical data

Policy

Incentives

Infrastructure

ICD-9

ICD-11

SNOMED International
Secondary use of clinical data

The use in research of information or human biological materials originally collected for a purpose other than the current research purpose

Policy
Secondary use regulation
Digital Signature
AI in Healthcare

Incentives
Support of Research Infrastructure
Research Grants (IPMP)

Infrastructure
Timnna
Mosaic (Psifas)
Secondary Use of Clinical Data Regulation

- De-identification
- Secure Environment
- Users Control

- Certificate Mechanism
- Transparency
- Organizational Policies and Procedures

- Opt Out Mechanism
- Data Use Agreements

Clinical data can be re-identified, assuming enough time & resources; A multi-layer mechanism that could protect patient privacy according to the use propose
To encourage health organizations to develop their own plan for improving access to clinical data for research, 26 organizations applied to the program: 22 hospitals and 4 HMOs. Total amount awarded: 10 Million Euros. Total program cost: 17 Million Euros.
Timnna: Big Data Research Platform

The “Timna” platform offers researchers a secure, virtual environment for big data research.
Timnna: Big Data Research Platform

E2E Solution
available for health organizations

Operative Environment
on going process;
deployment, national future use

Customized Service Bundle
data scientists, epidemiologists,
de-identification, storage, NLP,
image processing

Joint Effort
MOH full support on regulatory aspects,
technology and policy
What are the next Challenges?

How will health organization capture the potential?

Should we regulate non-health organization?

Should we have a new definition of Health organization?

Can we rely on informed Consent?

Would be happy to continue the conversation: Esti.Shelly@moh.gov.il

Thank you