

Interview summary

Interviewee: Muhammad Ilkay Kaynak, Ministry of Health, Turkey

mHealth Practice: e-Nabiz

Interviewers: Ivana Ostoic (HCZC)

Date of interview: 2021-01-12

Topics

e-Nabiz has a successful approach to the following topics:

- Planning
 - **Governance for mHealth**
 - **Technical infrastructure requirements**
 - **Interoperability with existing systems**

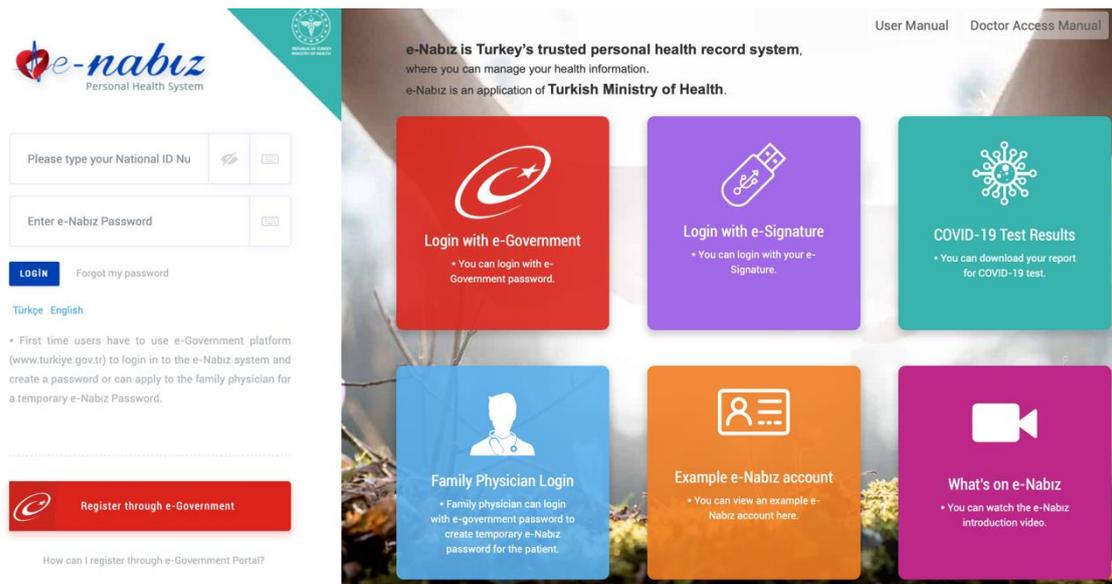
Summary

e-Nabiz gives an opportunity to exchange data among all levels of health care system to empower citizens to have a say in their health. App was developed by the Ministry of Health (Turkey) and it has been fully operational since 2015.

Early in the development stage it was obvious that there would be requirements connected with technical infrastructure in order to connect all medical facilities into one system, so government started comprehensive investments in technical infrastructure as well interoperability with other government e-services.

Scope of mHealth Practice

e-Nabiz gives an opportunity to exchange data among all levels of health care system to empower citizens to have a say in their health. App was developed by the Ministry of Health (Turkey) and it has been fully operational since 2015.



Topic: governance for mHealth

It took around 10 months to develop the first version of the app.

IT experts and medical staff defined the needs for the app and, based on that, IT experts started development. First generation was put in use without involving patients in the development, so there was immediately need for the upgrades and second generation of the app based on user (patient) needs and comments.

For the first app, main **weakness** was that not all stakeholders were involved in the process, which caused problems in the use of the app, but now both sides are actively involved in the design and implementation of upgrades or when new apps are created

All had active roles in testing the app and providing comment

Simplicity of use and faster exchange secured that stakeholders accepted to use it as they saw advantages

The main **barrier** at the beginning was the user friendliness.

Main **success factors** were on organizational side, as now doctors have more time for patients.

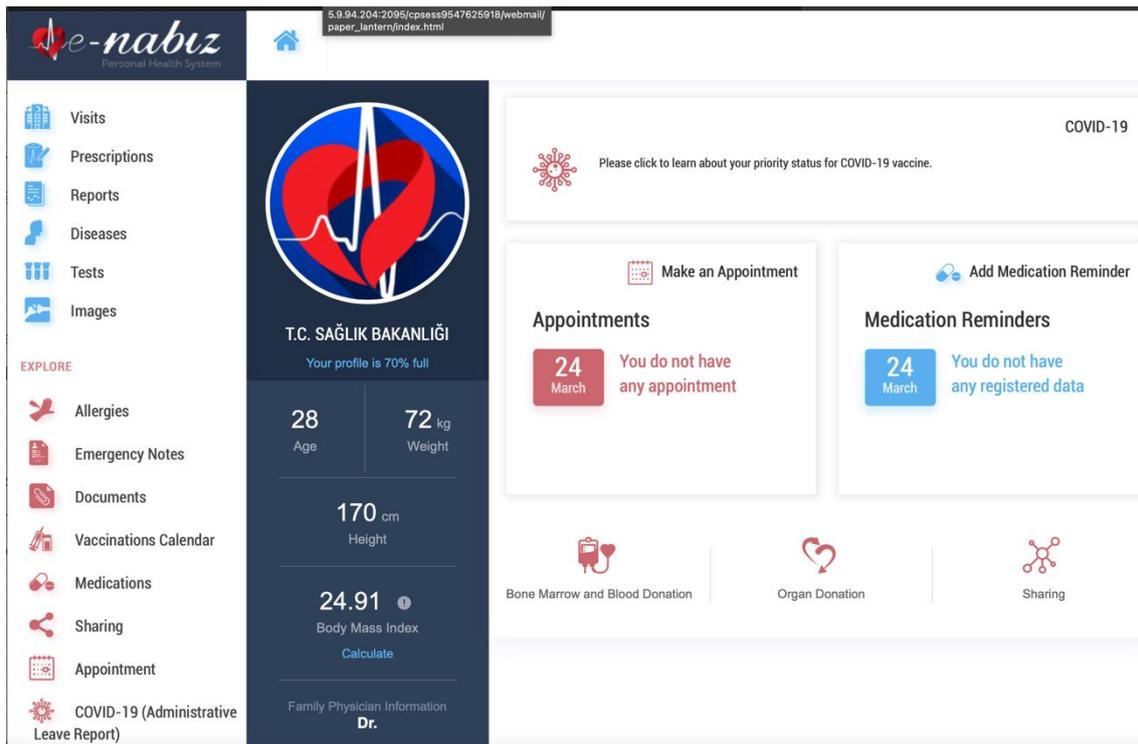
Other barrier was that the doctors at first, were reluctant to use it. Before COVID, there was limit of daily virtual visits per patient per doctor. It took a while for the patients to use and in the second version patient can do self-learning (guidelines) – the barrier was that patients did not know how to use it.

Main **lesson learnt** was that app directly contributed to reengineering of the clinical processes and significantly shortened the time for the patients to get appropriate medical assistance – e.g. instead of physical visit or going to the emergency room patient goes directly to the doctors and gets therapy or aid.

Main **outcomes** are that the patient has all its data, can make appointments, virtual visits, write down requests to the doctors, ask for emergency virtual doctor, recommendations for the

preventive care, patient can see all referrals, communication with doctor, there is a chat function (only on laptop), administration – preauthorisation for e.g. MRI

e-Nabiz is a two-sided system. Patients can see all of their health records. Also, doctors can check their patients' previous health record through e-Nabiz during the visitations. Additionally, patients can feed the e-Nabiz with their data collected from wearable devices. Patients can also provide data to e-Nabiz by manual entry. Also, they can add notes so that health professional can see them not only at visitations but also in case of emergencies.



There is a need to keep developing and upgrading the app as it is constantly evolving as patients and doctors have additional needs and requests

E – Nabiz features:

- Vitals as blood pressure, weight, daily step count, diabetes information are recordable by using wearable devices or smartphones.
- Sleeping data entry is also at our citizens' disposal.
- Image data is available at the system.
- Patients can reach their lab results through e-Nabiz by using their smartphones or tablets.
- Health reports given by the health care professionals can be reachable thorough e-Nabiz..
- Citizens can see their vaccine information.
- Citizens can add any related additional documents to the e-Nabiz.

Topics:

technical infrastructure requirements, interoperability with existing systems

Early in the development stage it was obvious that there will be requirements connected with technical infrastructure in order to connect all medical facilities into one system, so government started comprehensive investments in technical infrastructure as well interoperability with other government e-services.

e-Nabız is fully in-line with the GDPR of Turkey.

Information security and patient privacy are the most important and primary-considered factors. Within e-Nabız application, all the data are stored in private by encrypting them. System provides a secure communication infrastructure between health provider that produces health data and patients.

Thanks to the Private Cloud system, effective resource management is realized. By utilising Big Data and NoSQL technologies, a 24/7 online and tolerated system against errors and failures is developed.

People can sign up to e-Nabız via e-Government with e-Government password, mobile signature or e-signature, also sign up can be realized by getting temporary e-Nabız passwords from family medicines as SMS.

Healthcare professionals can reach their patients health data through e-Nabız during visitations by authenticating themselves through their hospital information system.

e-Nabız is a widely used PHR system in Turkey. Besides, every healthcare facility in Turkey is subject to send all of the patients' data as soon as available. To be able to do that, common structure is needed. This issue considered at the development phase. Also, there are many different firms which provides Hospital Information Management Systems to the health care facilities. Integration of all these firms to the centralized system e-Nabız takes enormous effort. Creating support groups to solve any obstacle is very important for the feature of the initiative.

Main conclusions:

- Change management is crucially important. Proper change management plan could overcome all the resistance coming from the field.
- Similar systems can be examined. Internalisation of the best practices collected by the domain is absolutely recommended to avoid any unpleasant surprises that can be faced. Professionals from different fields should work together and legislation should be involved.
- Continuously search for new features that can be added to the e-Nabız system.
- Create or change necessary rules in medical regulations (e.g documentation, patient pathways, financing, authentication, responsibilities). Prepare long term solutions and recommendations for government decisions.

References: <https://enabiz.gov.tr>