Healthcare digitalization reforms around the world and Georgia's path

KAKHABER JAKELI, TAMAR LOBJANIDZE, MARIAM LOBJANIDZE
University of Georgia
k.jakeli@ug.edu.ge

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Abstract

The digitalization of the world economy has created a new opportunity for healthcare. We, all humans, long dreamed about deep personalization in healthcare. Now the time has come. Doctors can treat all humans with their unique differences, special features, and critical approaches. The development of Electro Healthcare, with telemedicine and virtual medicalization, is a way towards the personalization of healthcare. Humanity has long been moving from mass healthcare to personal issues. The conference article is devoted to a very popular topic: the virtual migration of healthcare in Georgia, with its obstacles, long-term reforms, and problems.

KEYWORDS: digitalization, e-healthcare, healthcare reforms.

Introduction

What is the goal? The development of e-health is a path towards personalized healthcare. Humanity has long been moving from mass healthcare to personal issues, and the revolution in information communications in this direction has allowed us to consider a person not as an average statistical social being, but to focus primarily on their personal health, risks, genetic and genealogical diseases, and accordingly on the issues of personalized diagnosis and organized storage and analysis.

Also, the COVID-19 outbreak in the country has confirmed the need for the development of e-healthcare in Georgia. Back in 2020, when the second phase of the coronavirus pandemic began in Georgia, remote primary healthcare teams were created, which were very effective in combating the virus, informing the population, providing consultations, and freeing up secondary healthcare. It must be said that the effective use of primary healthcare around the world has reduced the catastrophic consequences of the coronavirus and confirmed the need for the development of new healthcare information technologies. Accordingly, primary, secondary, and tertiary healthcare in Georgia today needs a well-organized model of e-healthcare that will strengthen its sustainability.

As is known, Georgia has come a long way in healthcare reform. First of all, it is interesting to analyze these reforms and then consider what healthcare will be like in Georgia, taking into account new trends and challenges. When we talk about healthcare reforms, we must take into account the economic and social foundations of these reforms in the country, as well as the country's history, people, culture, business patterns, and many other factors that shape the country's competitiveness. The attitude of the country's population towards solidarity should also be taken into account. The trust that often arises between a person and the government has a great impact on healthcare reform. Therefore, when reforming healthcare, it is necessary to know what trust is between the local population and the government, because without trust nothing will work.

If we recall Georgia's past path of healthcare reform, we will see that when Georgia became independent for the second time in 1991, it embarked on a healthcare reform agenda. If we take into account the fact that the Semashko model of centralized healthcare planning and management, which was dying in 1991, soon collapsed, we will see that the Georgian people and their healthcare leaders, already in 1993, had lost this healthcare model, which was widespread in the Soviet Union. In 1994, Georgia began creating a new healthcare system, which was a major step on the path to building an independent one. In 1994, Georgia created a state healthcare management model that provided for healthcare programs, their standardization, and state-set prices. This model was ineffective because inflation and economic recession destroyed any pricing system and made it ineffective.

Healthcare reforms in Georgia

According to Semashko's model, after the cessation of central funding from Moscow, Georgia lost the ability to provide public health care guaranteed by the Soviet Union. In the 1990s, newly independent countries rejected communism and had to question state health insurance models. As we know, Soviet health care was governed by a plan developed on a territorial basis, which assigned each citizen to a specific health care organization (Robles, 2008).

Healthcare in Georgia was planned by the territorial organizations of the state plan. Semashko's model can be described as a global healthcare model, very similar to the English "Beverage" model. It ensured universal access to healthcare services for Georgians (Collins, 2003).

Was this period good or bad for the health system? Many citizens now recall this period as a good one, as the Semashko model ensured that all citizens were protected in case of illness. There is no doubt that the Georgian health system was efficient before 1990, but it could not have been efficient because the Soviet planned economic system was not efficient (Collins, 2006) .

Since then, Georgia, as an independent country, has implemented 3 waves of healthcare reforms: a) in 1994-1997, when the country attempted to create a national health insurance system but failed due to high corruption and economic instability, high inflation, and poverty; b) in 2007-2010, when the country created a liberal economic model and demanded that healthcare be driven more by market forces than by state forces; and c) when the country began to establish a universal healthcare model.

The second and third stages of healthcare reforms in Georgia

In the short period of independence, Georgia has already implemented three different types of healthcare reforms. In 1994-1997, the country's healthcare systems began to be rebuilt based on the Social Health Insurance (SHI) model, but without success. The reformers of 1994-1997 failed to understand Georgia's economic foundations. Against the backdrop of social unrest and high corruption, as well as major fiscal and monetary problems, the country's efforts to create an effective social insurance model proved futile. Since 2004, Georgian healthcare reformers have decided to use the economic theory of the great American economist, Mr. Milton Friedman, whose goal was to increase access to basic healthcare for the vulnerable segment of the population (Friedman, 1982). Healthcare reformers began their innovative implementation in 2007 and soon achieved very clear results. The country's most vulnerable citizens received affordable health care, and they were satisfied. The second health care reform, which focused on people below the poverty line, was only partially effective (Ensor & Rittmann, 1997).

In 2006-2007, a new healthcare reform began in Georgia.

The second healthcare reform had the following goals:

- Continued privatization of state healthcare ownership
- Health insurance coverage was limited to poor groups
- Private insurance companies were considered an effective management model
- Minimizing state regulation to the necessary minimum
- Public health remained the responsibility of the government (UNICEF report, 2010).

The goal was to ensure access to and widespread availability of healthcare. Government spending on healthcare (as a percentage of GDP) increased from 0.6% to 1.8% in 2010.

The zero-tolerance policy towards bribery has brought brilliant achievements to Georgia's growing state budget.

In the field of primary healthcare, healthcare facilities have developed outside Tbilisi.

What was achieved? State funding for the population increased. Private insurance companies soon began building health facilities. Some private insurers left because they were unable to manage all their obligations well. When state controllers began to audit health insurance premiums financed from the budget, they discovered evidence of embezzlement. Because the systems were so difficult to manage, health experts began to criticize the reform.

The 3rd wave of healthcare reforms in Georgia began in 2012 - in 2013, Georgia launched a new healthcare reform, created a Universal Health Coverage Program (UHCP) and took steps towards a healthcare program that would cover almost all Georgians and even foreigners. In 2013, the country's budget and financial situation were sufficient for such a big step. Today, the quality of healthcare and its sustainable development remain the main problems of the Georgian healthcare system.

The Universal Health Coverage (UHC) program in Georgia, its economic foundations and success were significant. In 2013, Georgia launched a welfare-oriented healthcare policy. The new ruling coalition, the Georgian Dream, introduced a universal healthcare program in Georgia.

Health system reforms with the Universal Health Coverage (UHC) program were introduced in Germany by Otto von Bismarck and have since been successfully developed in countries such as the United Kingdom, France, Sweden, or Turkey.

More than two million citizens of the country became beneficiaries of this model. By providing financial support to insured Georgian citizens, basic healthcare services became accessible. The universal healthcare program was extended to citizens of the country, as well as to holders of neutral identity cards/neutral travel documents. The state healthcare budget doubled during this period.

This universal healthcare model provided the following healthcare services:

- Family doctor visits,
- Emergency medical assistance,
- Inpatient treatment,
- Planned surgical operations.

Public spending and health spending increased from 1.6% of gross domestic product (GDP) in 2012 to 3% in 2017. The state health budget increased from 450 million GEL in 2012 to 1092 million GEL in 2017. In 2017, public health spending was 2.9% of GDP. Out-of-pocket payments accounted for 7% of private health spending. The percentage of out-of-pocket payments in total health spending also decreased during this period (WHO, 2020).

But since then, Georgia's healthcare model has been plagued by a number of factors. Poverty and catastrophic healthcare costs are rising in Georgia. Foreign direct investment has declined, including in the healthcare sector. Since trust in primary healthcare is very low, people are turning to secondary or tertiary healthcare providers for healthcare services.

The COVID-19 pandemic has tested the effectiveness of Georgia's healthcare system . In 2021, the number of vaccinated citizens in the country was less than 35%, which is a basis for criticism.

The path to digital healthcare worldwide

Today, the following directions of healthcare digitization are being discussed in the world, as they are important for creating high-quality healthcare services for patients. The goal being discussed is to provide personalized healthcare services to citizens of highly developed countries. Therefore, to create this new healthcare, digitization is taking place in the following directions:

a) Creation of national electronic health records (EHR) and patient portals. In order for clinicians and citizens to share a single longitudinal record, a central EHR + patient portal in countries that have excelled in healthcare digitization (e.g. Estonia) is a classic example of success.

b) Achieving interoperability in the field of health records - interoperability is achieved through digitization. Common data standards are created to ensure secure data exchange between healthcare sectors, companies and professionals - hospitals, primary healthcare, laboratories and pharmacies.

c) Tools for analysis and verification, risk and threat assessment and quantification are being created - tools for implementing digital records and measuring "meaningful use" (training, funding and regulation). The US HITECH program has dramatically accelerated EHR implementation, with funding for meaningful use and privacy rules.

d) A biometric base is being created for the development of remote telemedicine. Tele-

medicine and the creation of remote monitoring tools - it must be said that it has expanded rapidly during COVID and is now integrated into routine care methods.

e) Strengthening data protection systems - establishing frameworks for data governance, confidentiality and security - is essential for public trust and secure sharing (Djakeli , 2013).

f) Creation of patient identification, assignment of a unique code, and management systems for patient diagnosis databases based on the establishment of biometric systems - using national ID cards/authentication to provide patients with secure access and consent tools (Balabanova, el at 2008).

Why is it necessary to create a national electronic health records system?

Countries have launched Nationwide electronic health records (EHR) and patient portals. This is needed to solve a very difficult problem. The problem is that according to common practice, patients often consult several providers in different hospitals, clinics or regions, which leads to fragmented treatment and repeated tests. Consequently, fragmented treatment can harm the patient and endanger his life. To solve this problem - a national electronic health registry (EHR) ensures that all providers have access to the same up-to-date medical information (diagnoses, allergies, medications, laboratory results, imaging, etc.).

EHR reduces duplication in diagnosis and treatment, eliminates medical errors, and eliminates inaccuracies and delays in diagnosis.

If countries create an EHR system, they will improve patient safety and quality. There is also another problem: medical diagnoses and records on paper, including isolated digital systems, can lead to incorrect medication administration, which can be fatal for the patient. Of particular importance is the fact that standardized, digital records with built-in notifications (e.g., drug interactions, allergies) improve safety and evidence-based decision-making in healthcare.

- Cost-effectiveness and cost-savings in healthcare systems are a very important issue. The problem is that improper planning and improper logistics in healthcare, which lead to repeated tests, unnecessary hospitalizations and administrative costs, cost healthcare billions of dollars annually, as well as great moral and physical harm to patients. .

Because electronic health records (EHRs) simplify documentation, billing, and coordination—saving time for care and reducing costs for patients and payers—they are a key enabler of healthcare reform. They are essential for public health and research. The problem is that without integrated data, it is difficult to track disease trends and developments. For example, it is difficult to respond quickly to outbreaks (as was the case with COVID-19).

That's why national electronic health records allow for large-scale, anonymized data to support real-time surveillance, early outbreak detection, and health research.

Today's healthcare systems require well-informed and well-prepared patients. Hence the need for patient empowerment. The challenge is that patients often do not have easy access to their medical information. Therefore, once an electronic health record system is in place, all patients have access to their records. Patient portals allow individuals to view their records, schedule appointments, ask questions , and communicate with providers – all of which promote active participation and health literacy.

One of the main issues is the interoperability and portability of records. The problem is that current electronic health record systems often do not “talk” to each other, even between organizations. Therefore, electronic records provide interoperability, which allows health data to follow the patient - which is critical for emergency situations, displacement and disaster response. Health policy and equity are also important issues. Since unequal access to quality health information exacerbates inequalities, some equity should be achieved through electronic records. Since unified, accessible electronic health records facilitate equitable care across socioeconomic, geographic and institutional boundaries, this ensures equity. Thus, national electronic health records create a connected, efficient, secure and patient-centered health system that supports both individual care and improved public health outcomes.

Georgia's place in today's digital healthcare systems

Georgia already has a national e-Health / HMIS platform with multiple modules (financial/statistical reporting, electronic medical record (EMR) capabilities, citizen/patient modules, pharmaceutical and licensing modules, birth/death registration). The Ministry of Health’s e-Health website and HMIS pages display active modules and ongoing developments (EMR, patient modules, financing/administration).

This means: Georgia has the digital foundations (national platform and modules) — so the task is to scale, improve interaction, privacy, clinician workflows, and citizen-centric services instead of starting from scratch.

What does Georgia's electronic healthcare system need in the future?

The system needs to develop a personalized healthcare model, which requires: analytics, population health, and AI pilots Aggregated, de-identified HMIS data for planning, early warning, and targeted prevention (e.g., diabetes trends). Why: Shift from response to prevention and efficient resource allocation.

Citizen-centric services and digital inclusion — without fragmentation, a joint patient portal, mobile access, multilingual support, and offline access paths for rural/elderly populations should be created.

The main challenges for the system are avoiding fragmentation and digital exclusion. The system's opportunities are: user research + gradual application improvement.

Conclusion

Given the history of healthcare in Georgia, the development of electronic healthcare systems is a key task. To rationally establish the system, citizen-oriented services and digital inclusion should be achieved. An important task is to create a joint patient portal, mobile access, multilingual support and offline access for the rural/elderly population without fragmentation. The system should ensure the prevention of fragmentation and digital exclusion. The system’s opportunities are: providing users with the means to study their own healthcare records and verify their diagnoses, by involving all digital communication channels (Abiiro & De Allegri, 2015).

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