EUROPEAN PUBLIC AUTHORITIES EFFORT WITH A VIEW TO DIGITIZATION THE NATIONAL OR LOCAL PUBLIC HEALTH SYSTEM [1]

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Abstract:
The Romanian public healthcare system is full of problems and shortcomings. Logistics raises numerous problems, as well as the adjacent health insurance system, both being closely related to the concept of digitization that is meant to support and modernize all the systems with which it interacts, regardless of their nature. In fact, the European Union's latest policies are focused on issues related to the modernization of the health system infrastructure, the improvement and efficiency of this system, and the modernization of medical devices.
The problems systematically encountered in this area and which this material will want to address are related to the processing of personal data, the safety of patients in terms of secrecy and the provision of details of their suffering or issues related to the provision of information on vaccines and efforts to modernize the public health system both in Europe and especially in our country.
Keywords: Health, system, device, digitalization.

1. DIGITALIZATION OF THE PUBLIC SYSTEM IN EUROPE. GENERAL ASPECTS

Currently, it is claimed that [2], [3] that the population that benefits from substantial incomes tries to obtain the best quality medical services, no longer being delighted with the available ones, is looking for ways to further increase the quality of paid medical services. This inevitably leads to a possible decrease, in the future, of the quality of services of this type for materially disadvantaged people [4].

These problems strictly related to the digitalization of medicine can have good but also bad consequences, which brings us to the trends of introducing electronic identity cards at a global and general level, triggering great dissatisfaction among people who see this instrument as a way for the authorities to constantly follow and monitor the lives of each of us [5].

In the sense of digitalizing European medicine, we find that in the name of the principle called Digital first - some European states are shaping their current local and central medical policies, creating new gender strategies. The essence of the principle is that European states can make a substantial joint effort to provide fast and high-quality medical services to their citizens and companies [6].

Some of the indicators taken into account in Europe of our days in terms of digitalization are surprised by the 2021 DESI [7]. ICT indicators that measure, for example, the adoption of gigabit services by private companies or those that have already adopted the e-invoicing system. Among the states whose administrations reacted more promptly in terms of digitalization, in general (including in relation to the medical environment) were Denmark, Finland and the Netherlands. There is a substantial percentage of mature citizens (over 90 percent of internet consumers) who interacted with the administration using government portals. Other peoples, including Romanians, interacted less in this regard, the percentage in this case being 40 percent lower than in the first listed states [8].

The year 2025 was a significant year in terms of the evolution and digital transformation of EU states, in which sense we recall the DDP, The Digital Decade Policy Program that helps the digital transformation of the EU. Based on it, a large-scale digitalization of some public services took place, 5G coverage, the use of high-performance programs based on which a fast and much more efficient data processing could take place. In this regard, European states presented some statistics that demonstrate that last year they took a series of measures in the area of digitalization of public services and administrations that involved serious investments of 288.6 billion euros, 1.14 percent of the EU GDP [9].

The previously mentioned digital transformation involves, as can be seen, both massive investments in infrastructure and technology, but also streamlining the activities of civil servants who are going to take command of such technologies in order to create the best possible access conditions for all interested citizens [10].

The great advantage of the era called Europe's Digital Decade is the fact that most of those interested and who have the necessary skills to handle specific technology can access various platforms connected to public services, including those in the health

sector, these connections being very useful especially for people living in villages, in mountainous areas and in remote areas, considered to be disadvantaged from this point of view [11].

Moreover, the great advantage of digital technologies and their application in the public services environment is precisely the fact that they obviously increase the quality of services and ensure much faster access for all citizens to a diversified range of them [12], [13].

It is known that medical services in former communist states, for example, are still far from the real needs of citizens. Even though medicine has evolved, a large part of state hospitals and clinics currently benefit only from specialized doctors and less from evaluated equipment or technologies (see “major burns”, cardiology, oncology sections etc.) As noted in the doctrine, one of the roles of smart digitalization is to "connect and unify access to public services" which also involves services provided by government authorities at local and central levels, usually known as smart city services [14].

We hope that this role will be taken over as quickly as possible by the Romanian health system, which has acutely shown its lack of performance, especially during the sad memory of COVID and the one that followed it. At that time, the hospital systems in Romania, but also other European states, demonstrated that they have many deficiencies and gaps and that they cannot provide resources or operative treatments, especially in the case of those affected by the pandemic wave and its disastrous consequences [15], [16].

Regarding the use of new, high-performance technologies in the medical field, we note that this brings to mind the term digital health. According to the World Health Organization, the term itself refers to the use of information and communications technology in the field to support health and related fields [17].

The digitalization of the medical field plays an important role in the sense that it involves faster and higher-quality interaction between doctors, patients, but also between the first two categories and other health specialists by facilitating the diagnosis of patients in hard-to-reach areas, for example [18].

Public expenditure on health and long-term care has been increasing over the last decades in all EU. In this regard, we can show that public spending on health and long-

term care of some patients has increased significantly recently, which shows, however, a significant contribution of states in terms of ensuring facilities granted to vulnerable people from a health point of view. Thus, if in 2015 these expenditures reached 8.5 percent of EU GDP, it is estimated that in 2060 they will reach 12.5 percent of it [19].

Despite these financial efforts, there are still major problems in the area of digitalization of healthcare systems, including resistance and a series of opposition and refusals from specialists and even patients themselves [20], [21].

Digital technologies can solve the problem of unequal access to healthcare services. For example, medical technology solutions such as telemedicine allow healthcare professionals and patients to be in different locations during treatment. This functionality can increase the availability of healthcare services, especially in regions with a shortage of outpatient care [22], [23].

2. ROMANIAN SYSTEM

A sad truth is that most hospitals in our country do not have their own advanced IT teams or technology, and there is currently no common denominator regarding the type of digitalization that is desired, especially in special cases imposed by delivery rooms, intensive care units or neonatology units [24].

In Romania, there is a widespread lack of trust among citizens and even staff regarding the use of data exchange or information, the provision of personal data from patients, etc., and central decision-making policies from the Ministry of Health are hampered by low technical capacity or lack of consensus. [25].

A Romanian study involving 423 accountants from the healthcare industry shows that digital technologies in Industry 4.0 will enhance healthcare costing processes, requiring adaptation and support from senior accountants for effective implementation/ 26],[27].

A specific study from the level of specific units in Romania - consisting of the analysis of the opinions of a number of 423 respondents from the healthcare industry, hospitals and other care units - shows that there is hope that digital technologies from the 4.0 industry will bring a significant improvement in terms of calculating medical costs,

which also requires an important contribution from experienced accountants and not only from specialists in strictly technical matters.

The healthcare digitization strategy, because it actually addresses some elements of providing a digital healthcare infrastructure in the short and medium term. The key initiatives are:

- Resizing, standardizing, and optimizing the health insurance IT platform (PIAS).
- Developing the single integrated IT system (SIUI).
- The electronic health insurance card system (CEAS).
- The National Electronic Prescription System (SIPE).
- Digitization of 60 public health institutions.
- Digitization of 200 public hospitals.
- Telemedicine [28].

Some of the goals pursued by the use of the technique in the medical field are also the development of interoperability through the National Agency for Health Digitization, which will have the possibility to use and comply with the standards regarding the GDPR or the EU space regarding patients' personal data and their health status [29].

From another perspective, namely the one offered by Datanet Systems, the IT system of a modern clinic should refer to the following sectors of activity - telemedicine and video collaboration, video surveillance, IT infrastructure and cybersecurity, all of which are necessary to ensure quality standards in the medical field, as happened, for example, in the case of the Oncology Department of the Municipal Hospital in Timisoara. Here, in 2020, Datanet Systems provided it with a video collaboration solution with potential clients (patients). This solution involved the integration of Cisco video terminals and the Webex platform, respectively the use of Cisco desktop monitors, equipped with high-quality webcams and microphones [30].

Among other things, video surveillance is one of the components of the new advanced technique highly sought after and applied in modern and digitalized clinics in Romania, remedying the old problems related to patient monitoring. This allows medical staff to intervene only in absolutely urgent cases, reducing the risk of incidents. For example, in the case of the Marie Curie Hospital in Bucharest, Datanet Systems developed a complex telemedicine system that provides medical staff with real-time audio

and video transmissions from mobile surveillance cameras, which ensures the possibility of medical staff to access and monitor useful and up-to-date information about patients from almost any area [31].

Also in our country, in 2023, the digitalization of hospitals was also achieved with the support of financing programs from the World Bank. With its help, the Ministry of Health was to equip approximately 130 emergency departments in county, municipal and city hospitals with modern telemedicine solutions [32]

For example, the Galați County Council has approved several projects to digitize the hospitals under its authority – the “Sf. Apostol Andrei” County Emergency Clinical Hospital, the Infectious Diseases Hospital, the Pneumology Hospital, the Târgu Bujor Town Hospital, and the “Anton Cincu” Hospital. The projects involve the purchase of IT equipment, communications equipment, operating licenses, the development of computer applications, and the training of medical staff.The value of the investments is 20.6 million lei, approximately 4 million euros [33].

Also, in the same county, the project "Digitization of the activity of the Clinical Hospital for Infectious Diseases "Sf. Cuv. Parascheva" Galați" was approved in 2023, with a view to financing it under the National Recovery and Resilience Plan - Component C7 - Digital Transformation - Investment I.3 Implementation of the eHealth and telemedicine system. Approves the total value of the project "Digitization of the activity of the Clinical Hospital for Infectious Diseases "Sf. Cuv. Parascheva" Galați," in the amount of 5,889,310.00 lei (including VAT). Art.4. The personal contribution to the project in the amount of 11,900.00 lei is approved, representing the payment of all ineligible expenses of the project [34].

Also, at the level of Galati county, the development of an innovative health information system - SANINFO presents support for increasing the competitiveness of members of the innovative Cluster "For Health Lower Danube" Galati, in the medical field (health), by concentrating resources within partners in the development of innovative services through the health information system [35].

The technologies underlying the development of the SANINFO platform are known as progressive web applications (PWA), as they consist of a combination of web APIs,

technologies and design concepts that create a native application experience in a mobile browser.

Their objectives are

1. Informing the public (with a focus on prevention) about various medical fields, especially medicine, engineering, nutrition, general medicine, ICT, dentistry.
2. Ensuring maximum visibility for medical studies and various scientific works.
3. Developing a technical tool that assures digitalization of the medical industry.
4. Ensuring 24/7 accessibility, regardless of the visitor's location [36].

3. SPAIN

The Spanish public health system is a typical system of this kind, which is largely financed by taxes and fees and which provides public health services to a large extent for the majority of Spanish citizens. Thus, at the level of this country, of the expenses incurred with the health system, 73.51% correspond to public expenses, and 26.48% to private health expenses.

In this state, the structure that deals with digitalization in the national medical system is the General Secretariat for Digital Health, Information and Innovation of the National Health System of Spain, which is responsible for projects to modernize, innovate, improve and transform the National Health System [37].

This structure is responsible for developing information systems, managing clinical and administrative information related to the department's competencies, as well as identifying the protected population and access to clinical and therapeutic information of the National Health System, controlling, standardizing and cataloging health information [38].

The e-health segment in Spain is a hot topic and is helping to transform and modernize the country's healthcare system. By 2024, there were about 2,100 e-health startups and scaleups operating in the country, all of which had attracted over 114 million euros in funding, according to Dealroom.co's Entrepreneurship Map. According to data from Dealroom. Co on Spanish e-health entrepreneurs (Plataforma ONE), various innovation centers specific to the field have emerged in cities such as Madrid, Barcelona, Valencia and Bilbao, which have incubators or accelerators dedicated to disruptive

projects in the field of digital health. The role of these start-ups is to offer novel solutions with regard to portable devices for monitoring the health of patients or telemedicine platforms that help patients located at appreciable distances to obtain high-performance medical services, regardless of location [39].

According to data provided by SEIS (2018), the most widespread telemedicine specialties in Spain are: teledermatology and teleophthalmology; oral anticoagulant treatment and telecardiology; telenephrology, teleassistance (medical care), teleneurology and telepulmonology. According to the 2018 survey, patient users were questioned about the frequency of video medical consultations and remote control of health indicators (glucose levels, blood pressure, etc.). The results regarding video consultations show that the use of this format is, for now, relatively low (2.61%). Similar results were also recorded in the case of the control of health indicators, which, although it has recorded infinitely better results than in previous periods (10.29%), is still used very little [40].

In fact, telemedicine involves two types of services. The first of the, would be teleconsultation, consisting of performing a specialized medical consultation without the patient having to leave their home [41].

Another is telecare, a remote assistance and monitoring at the patient's home, by means of devices such as bracelets, necklaces or belts that collect information that are transmitted remotely to the supervising medical team [42].

Currently, MediQuo, a platform that offers online medical consultations, has made a name for itself in this area. On the other hand, Biodata Devices is a startup specializing in device monitoring and telemedicine, contributing to more efficient remote health monitoring. Sycai Medical, which helps healthcare professionals, especially in radiology, combat non-invasive cancer through advanced algorithms based on artificial intelligence and Big Data [43].

CONCLUSIONS:

As can be seen from the above, European health systems strive year after year to promote telemedicine and online consultations or other forms of e-health, although there are still many obstacles regarding their implementation or functioning. The old health

systems are still cautious or even refractory to the new solutions that telemedicine brings. Instead, there is a sustained effort by the private sector or start-ups that have allocated substantial amounts of European funds to meet patients through innovative telemedicine methods. The best-looking part so far is the online remote consultations, which benefit patients who live in very remote areas or who could not afford to travel to a specialist doctor, and this represents one of the most obvious benefits felt by citizens from vulnerable categories.

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