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PRIMARY HEALTH CARE IN ALBANIA – TOWARDS FULL DIGITALIZATION

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ABSTRACT

Background: The primary health care (PHC) in Albania is under reforms and towards full digitalization. However, much needs to be done in this direction. **Aim:** This study aimed to provide an overview of the health information technology being implemented in the PHC system in Albania. **Methods:** We reviewed the documents of Compulsory Healthcare Insurance Fund (CHIF) in Albania which describe the digital platforms and structures of health information technology that have been implemented in PHC system in Albania. The information has been summarized. **Results:** There are numerous digital platforms in operation in the PHC system in Albania, including the medical visit form system, electronic prescription, electronic register of residents, e-Drugs, electronic referral system (e-Referral), the pharmaceutical warehouse system, electronic signature, and e-Pharmacy. These developments are in line with the National Health Strategy 2021-2030 and the philosophy of the Albanian Government for going "all-digital". Despite the progress, there is no cost-effectiveness analysis of various digital platforms operating in the PHC system in Albania. **Conclusion:** The digitalization of PHC services in Albania is in line with the digitalization philosophy of the Albanian Government. As such it is likely to continue to expand and improve. However, such decisions need to be based on sound cost-effectiveness analysis.

KEYWORDS: Albania, digitalization, health information technology, primary health care.

INTRODUCTION

The Primary Health Care (PHC) system in Albania is organized on the basis of a network of public health service providers. Each of the 61 Municipalities has Primary Healthcare Centers (HCs), where the HCs in rural areas have satellite ambulances for a capillary coverage of the territory and the population. The staff of the HCs (including ambulances) consists of managers, doctors, nurses, midwives and support staff.[1] The health center is the basic unit that provides primary health care services. Its mission is to provide high-quality, continuous, integrated and accessible health services for all, while its vision is "Healthy people in a healthy community".[1]

In 2022, there were a total of 412 HCs that have signed a contract with the Compulsory Healthcare Insurance Fund (CHIF).[2] So, health care services are not provided in a single building, but through a network of health service providers who work close to the communities.[1] Every commune must have a HC and every village has an ambulance staffed by at least one nurse.[1] On average, each HC serves a population of 8,000 – 10,000 people (this figure fluctuates significantly in urban and rural areas), with a doctor/patient ratio of about 1 to 2,500 and a nurse/patient ratio of about 1 to 400.[1]

In Tirana, the capital city of Albania, in addition to the health centers, there are Specialty Health Centers (SHCs) and the Center of Home Oncology Service (HOC), which are included in the primary health care of the Municipality of Tirana, for their respective residents.[3] HCs provide specialized health services, auxiliary health laboratory services (clinical, biochemical, chemical, bacteriological and imaging examinations) for persons with permanent residence in the respective area they cover, according to the defined list of services, medicines and necessary materials in these structures.[3] In Tirana in 2022 there were 4 specialized health centers.[3]

According to the CHIF, "the Health Center is a health institution under the Regional Directorate of the Operator of Healthcare Services that provides health services in primary care based on Law No. 10107, dated 30.03.2009 "On health care in the Republic of Albania", as amended, and the statute of the HC approved by Ministerial Order".[4]

The Health Center in PHC is under the financial dependence of the CHIF, but also it is dependent on the Operator of Healthcare Services (OHCS) regarding the operation and a number of administrative issues.[5]

The HC is financed by the compulsory health insurance scheme for the provision of health services of the basic package of primary care services, as well as the basic medical check-up for citizens aged 35-70, which HCs provide for residents in their area of catchment.[4] Likewise, the health center is financed by the mandatory health insurance scheme for the provision of relevant services.[3]

In summary, the Health Center at PHC is funded by the Ministry responsible for health, CHIF and other sources according to current legislation.[6]

With regard to the Operator of Healthcare Services (OHCS), it is organized in a Central Directorate of the Operator, which has under its authority 4 Regional Directories of the OHCS (RDOHCS of Tirana, Shkodra, Elbasani and Vlora), which have the Local Health Care Units (LHCUs) under their authority.[5] Each RDOHCS has in its structure the Directorate of Primary Service; in the same way, each LHCU has in its structure the Primary Care Service and Quality Assessment.[5] The Directorate of Primary Service in each RDOHCS has a Sector of Information and Planning of Primary Service.[5]

These structures take over and are responsible for the well-functioning of HCs in primary health care. It is clear that many of these functions and tasks are closely related to the health information system (HIS) and even need HIS to be carried out optimally.

Recently Albania has been investing heavily into the digitalization of public services. In this context, since May 1st 2022 it was announced that all physical counters would be closed and all the services provided by them would, from now an on, be provided only online, through the digital platform e-Albania.[7] This digital revolution has undoubtedly affected many primary health care services as well. In this context, the aim of this paper was to provide an overview of the health information technology being implemented in the PHC system in Albania.

METHODOLOGY

Type of study

This is a review and summary of the available evidence on the implementation of various digital health information technology platforms in the primary health care in Albania.

Source of data

This paper is based on the review of the documents retrieved from the Compulsory Health Insurance Fund (CHIF) of Albania regarding the digital platforms and structures of health information technology that have been implemented and/or are planned to be implemented in the structures of primary health care in Albania.

CHIF is the preferred source for this kind of information since CHIF is the main financial source for HCs in PHC and many of the digital platforms being implemented at the level of primary health care of Albania require indispensably the agreement, cooperation and the commitment of CHIF.

Data processing

The available information was summarized in order for the reader to easily understand the various forms of digital health technology in function in PHC in Albania.

RESULTS

According to CHIF, doctors and other medical personnel in the primary health care have access to and use these information systems (applications):

- Electronic Register of Residents
- Medical Visit Form System (SISHP)
- Electronic Prescription (e-Rx)
- eDrugs
- eReference
- eVisit
- eRm

CHIF has updated the information related to the "Electronic Registry for family doctor visit forms", in July 2020; this is a new version of the system, where family doctors will be authenticated only once in a system through the single-sign-on platform and from there they can use 4 systems:[8]

- e-Rx: electronic prescription,
- e-Reference: electronic referral,
- AHIS: Register of residents, and
- e-Visit: The visit form.

Specialist doctors in the Health Care Center and Polyclinics can be authenticated in the system through the single-sign-on platform and from there they can use these systems:[8]

- e-Reference: Electronic referral
- e-Visit: The visit form

Specialist doctors in Oncolgy Service at Home (HOC) service can be authenticated in the system through the single-sign-on platform and from there they can use the systems:[8]

- e-Rx: Electronic prescription
- e-Visit: The visit form

According to CHIF, following the implementation of the contract with the object "Electronic register for family doctor visit forms" No. Prot 1381, dated 18.03.2019, the Fund in cooperation with the National Agency of the Information Society have developed a new computer system for the registration of patient Visits in the primary service, which carried out the transition of the current system (SCIS) to a system focused entirely online with which work procedures are in real time (CHIF). The project consists of:

- Implementation of the e-visit system for registration, administration and processing of online patient visits

by primary health care providers who report to FSDKSH and MSHMS. Benefits of registering visits in the new system:

- Manual registration of visits on paper forms by Primary Health Care doctors is avoided
- Interaction with other electronic systems increases the accuracy of the data being recorded.
- The history of the patient's visits and health information (vital signs, allergies, etc.) is now stored in the system.
- Real-time reports centered on the data will serve for clinical, managerial and administrative decision-making.

- The family doctor's portal and the "Single-Sign-On" module that makes it possible to access the systems:
  - The Electronic Register for the Insured System (AHIS)
  - Medical Visit Form System (e-Visit)
  - Online Referral System (e-Reference)
  - Electronic Prescription System (e-Rx)
  - Electronic Medical Report System (ERM)

This module facilitates the work of primary health care providers in accessing several IT systems simultaneously with a single login.

During 2019, the training of the staff of the Fund and the Regional Directorates of the Fund for the use of the system began and the extension of the system began gradually, which ended in 2020 (CHIF, unpublished data).

Currently, the system is extended and works in all HSCs in use by family doctors, specialist doctors and HSC operators (CHIF, unpublished data).

The interaction of eVizita with the e-Albania Government Portal enables the following services:

1. Every Albanian citizen can apply to be vaccinated against Covid-19 through their own account on the e-Albania portal. The application appears to the family doctor in his eVizita account.
2. Every Albanian citizen vaccinated with the anti-Covid-19 vaccine can receive the vaccination certificate for Covid-19 at any time through their account on the e-Albania portal.

The visit form (e-Visit) is one of the electronic systems that can be used in the doctor's portal. General information about the patients (age, gender), as well as information about the reason of the medical visit, height, weight, BMI, body temperature, oxygen saturation, glycemia, respiratory frequency and other information, as well as medications, diagnosis and other information can be registered:[8]

The Electronic Register of the Insured (AHIS) is the second system that can be accessed by family doctors on the doctor's portal. The AHIS system enables the registration of residents with the family doctor in the Health Centers of the Primary Health System, as well as the assignment of the patient benefit category based on the interaction with other institutions. Initially, this system was put into operation in 2010. During 2015, it was upgraded, enabling interaction with Civil Registry, Institute of Social Insurance, General Directory of Taxes, etc. for the identification of persons as well as the assignment of some categories of population reimbursement (CHIF, unpublished data). Currently, in the system, the generation of residents' health card is done by the family doctor (CHIF, unpublished data). The AHIS system interacts with at least four other digital systems: e-Rx, e-Referral, e-Visit, e-RM (CHIF, unpublished data).

The electronic prescription system (e-Rx) is a third system that can be accessed by family doctors on the doctor's portal. This was a project of the Ministry of Health initiated during 2015 in cooperation with CHIF. Commenced piloting in Durres Region. In 2017, the extension of the system began in other regions of Albania. The extension of the system ended in March 2018 with the release of electronic prescriptions even in regional hospitals by specialist doctors for expensive drugs in the List of Reimbursable Drugs (CHIF, unpublished data). During 2018, the electronic signature of prescriptions was also made possible by pharmacists of the open market (in the past, only doctors and hospital pharmacists could sign). After that, management and payment for the maintenance of the system was officially transferred to CHIF (CHIF, unpublished data). During the year 2021-2022, the electronic signature nw e-Rx advanced to RSS technology (CHIF, unpublished data).

The electronic referral system (e-Referral) is the fourth system that can be accessed by family doctors on the doctor's portal (CHIF, unpublished data). The system of electronic examinations, which is a project of the Ministry of Health and Social Protection implemented during 2017-2018, makes it possible to schedule an appointment to visit a specialist doctor, perform tests and examinations in a HC of PHC or a hospital. The appointment is scheduled by the family doctor in the system by choosing between the time slots that appear free in the system (CHIF, unpublished data). In each HC of PHC and hospital, the time slots for each doctor, laboratory, etc. are managed (opened) by the staff assigned with these tasks (CHIF, unpublished data).

The electronic prescription system (online) was implemented by InfoSoft in in 2017 (CHIF, unpublished data) whereas the e-Rx offline system has been in use since 2003 (CHIF, unpublished data).

e-Pharmacy is a system implemented by the Fund Advisor starting from 2010 (CHIF, unpublished data).
The *Pharmaceutical Warehouse System* was implemented by Infosoft in 2005 (CHIF, unpublished data).

e-Visit is an electronic system of medical visits, donated by USAID in 2007 (CHIF, unpublished data).
The *Electronic Signature* is a system implemented by Infosoft in 2017 (CHIF, unpublished data).
e-Drugs is a system built by Infosoft in 2015 during the construction of BI (CHIF, unpublished data).

The support offered for the operation and maintenance of the information technology systems that work in the PHC system in Albania includes the following systems:

- Offline prescriptions
- Pharmaceutical Warehouse System
- System of Hospital Costs
- Medical Visits System

These are maintained by the staff of the Programming and Database Management Sector and the Statistics Sectors at Regional Directories of CHIF.

eRx and Electronic Signature has been put into operation by MOH in cooperation with CHIF.

The electronic signature is taken over by AKSHI, while eRx replicates the information to AKSHI.

The internet/intranet service in CHIF and Regional Directories of CHIF is done with optical fiber by the company contracted by AKSHI (ISP Abbisnet).

Despite the many systems in operation, there is no analysis on their cost-effectiveness. Actually, the systems are facing substantial problems that are not being specified (CHIF, unpublished data).

DISCUSSION

The Albanian health system has undergone major reforms, the intensity of which has increased significantly over the last decade. The reform of the health system in Albania has affected virtually all systems and sub-systems, including the primary health care system.

In general, health reform has always been oriented towards several main objectives: strengthening the primary health care system as the gateway and first contact of individuals with the health care system, putting the patient at the center of health care, universal coverage, growth of the autonomy of hospitals, the separation of managerial and administrative aspects from the Ministry of Health and the latter's focus only on the aspects of policy-making in health and regulatory functions of the health system, the re-organization of public health services through the creation of new structures of (the Operator of Healthcare Services with its network of structures at the regional/district and municipal level) that replaced the old structures (Directorates of Public Health), increased autonomy of hospitals, re-organization of the national emergency service, etc. ., in order to improve the quality of health care, improving the health infrastructure through increased investments, providing equal care for everyone and in every part of the territory, reducing health care costs, digitalizing the health system, etc.:[9]

The reform of the primary health care system is based on the National Health Strategy 2021-2030 and more specifically on the Primary Health Care Strategy 2020-2025. One of the pillars of the National Health Strategy 2021-2030 is digital health, outlined in Policy Goal 5: Digital Health (see below) :[9]

The Primary Health Care Strategy 2020-2025 includes the creation of new service models to cover the needs of the population, including models of care through digital technology as well.[10] In the Strategy for the Development of Primary Health Care Services in Albania 2020-2025, Policy 4 is dedicated to the Information System in the PHC.[10] This document presents some of the challenges faced by the PHC information system in Albania, including the lack of data, their low validity in some areas, the low and/or fragmented use of available data, etc.; the data generated by PHC in our country are mainly requested by the CHIF where they are reported most of the time; the LHCUs are also starting to request more and more data from the HCs in the PHC; on the other hand, PHC service providers rarely receive feedback about the relevant results of the information shared, and also rarely use the information for assessing the needs of the community they serve or for planning purposes.[10]

In this context, the PHC Services Development Strategy foresees "the reconceptualization of the object, format and reporting routes for most of the existing information system (the creation of Health Care Operators and the transformation of Regional Health Directorates into Local Healthcare Units is a possibility to reform the information system at the level of PHC). The new Public Health institutions will make better use of the epidemiological data generated in the PHC health centers in terms of monitoring populations at risk".[10]

The general objective of this policy is: the definition and implementation of the Health Management Information System with a focus on the PHC, which includes the assessment of the current status of the Health Management Information System (HMIS) and its adaptation to the new institutional framework taking into consideration health developments; agreement on the data to be collected, reporting format and reporting time, training of staff regarding their roles in HMIS, standardization and regulation of information flow and improvement of data on chronic diseases in PHC, strengthening of the role of LHCUs in the use of information and the continuous improvement of the electronic system of issuing prescriptions and referral and planning for the creation of an electronic patient record starting from the level of the PCH.[10]

All the health system digitalization initiatives in Albania are made under the umbrella of the National Health Strategy 2021-2030 (NHS 2021-2030).[9] The Policy Goal No. 5 of the NHS 21-30 "Digital Health" states that "*The Digital Health Policy Goal of the National Health Strategy 2021-2030 helps accelerate health system reforms, leading to better quality, efficient and accessible patient-centered care, and that .... digital health will be an integral part of health benefits and people will benefit in an ethical, guaranteed, safe, reliable, equitable and sustainable way. This should be developed with the principles of transparency, accessibility, scalability, replicability, interoperability, privacy, security and confidentiality*" .[9] The NHS 2021-2030 foresees the increasing of the role of the citizens in the access and use of digital health services through the empowerment of citizens and their knowledge about using health services, updating of training and educational programs of health professionals about the use of digital health applications, the protection of security and confidentiality of digital health services. NHS 2021-2030 also unveils an ambitious plan to modernize the infrastructure of health technology at the hospital level and other levels, and strengthening health information as a need for decision-making in improving the health and well-being of citizens through strengthening the audit of available data, data sources and data gathering and publication and the implementation of International Classification of Diseases version 10.[9] In addition, National Health Accounts and annual publication of results as well as the strengthening of capacities for scientific research and publication of scientific evidence are other areas where the Government of Albania has shown strong commitment.[9]

CONCLUSION

In summary, the digitalization of the health system, including the primary health care, is a priority of the Government of Albania and the Ministry of Health and Social Protection. These developments are in line with the digitalization of almost all other services in Albania.

DECLARATIONS

Ethic Approval and Consent To Participate

Not applicable.

CONSENT FOR PUBLICATION

Not applicable.

COMPETING INTERESTS

The authors declare that they have no competing interests.

CONFLICT OF INTEREST

There is no conflict of interest.

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AUTHORS' CONTRIBUTIONS

ED conceived the study. ED and LK collected and analyzed the data. ED, LK and ET contributed to the interpretation of results. ED and ET took the lead in writing of the manuscript. All authors provided critical feedback and helped shape and improve the manuscript. All authors read and approved the final version of the manuscript.

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ABBREVIATIONS

AHIS	–	The Electronic Register of the Insured
CHIF	–	Compulsory Healthcare Insurance Fund
e-Referral	–	The electronic referral system
ERM	–	Electronic Medical Report System
e-Rx	–	The electronic prescription system
e-Visit	–	The electronic medical visit system
HC	–	Healthcare Center
HIS	–	Health Information System
HOC	–	Home Oncology Service
LHCU	–	Local Health Care Unit
OHCS	–	Operator of Healthcare Services
PHC	–	Primary Health Care
RDOHCS	–	Regional Directories of the OHCS
SHC	–	Specialty Healthcare Center

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