Health Protection Information System in Poland

(System Informacji Ochrony Zdrowia w Polsce)

Sz Jakubowski [1,A,D], A Romaszewski [1,C,F], Z Kopański [1,E], J Strychar [2,B], M Liniarski [2,B], T Kilian [2,A,B]

Abstract – The authors have characterized the importance of identification and authentication in health protection. They emphasized that in the health care process information flow is quite complicated. Depending on the type of information, the flow paths may vary. Currently in Poland the information flow in the health sector is not fully synchronized or structured. However, there are many projects implemented or already implemented, which aim to improve and secure the circulation of information in health care. In theory, there is one system regulated legally called the Health Protection Information System. This system has been the subject of a detailed discussion in the article.

Key words - Health Protection Information System, Poland.

Streszczenie – Autorzy scharakteryzowali znaczenie identyfikacji i uwierzytelniania w ochronie zdrowie. Podkreślili, że w ochronie zdrowia proces obiegu informacji jest dość skomplikowany. W zależności od typu danych informacji, drogi ich przepływu mogą być zróżnicowane. Obecnie w Polsce obieg informacji w sektorze zdrowia nie jest w pełni synchronizowany ani ustrukturyzowany. Jednak istnieje wiele projektów realizowanych lub już zrealizowanych, które mają na celu poprawę i zabezpieczenie obiegu informacji w ochronie zdrowia. W teorii istnieje jeden system uregulowany prawnie o nazwie System Informacji Ochrony Zdrowia. System ten stał się przedmiotem szczegółowego omówienia w artykule.

Słowa kluczowe - System Informacji Ochrony Zdrowia, Polska.

Author Affiliations:

1. Faculty of Health Sciences, Collegium Medicum, Jagiellonian University
2. Collegium Masoviense – College of Health Sciences, Żyrardów

Authors' contributions to the article:

A. The idea and the planning of the study
B. Gathering and listing data
C. The data analysis and interpretation
D. Writing the article
E. Critical review of the article
F. Final approval of the article

Correspondence to:

Prof. Zbigniew Kopański MD PhD, Collegium Masoviense - College of Health Sciences, Żyrardów, G. Narutowicza 35 Str., PL-96-300 Żyrardów, Poland, e-mail: zkopanski@o2.pl

I. IDENTIFICATION AND AUTHENTICATION

Identification and authentication in health protection is one of many elements of the information flow system.

The circulation of information in health care is a complicated process. Depending on the type of data, their flow paths may be different. Now in Poland, the information flow in the health sector is not fully synchronized or structured. However, there are many projects carried out or implemented, which aim to improve and secure the circulation of information in health care. In theory, there is one system regulated legally called the Health Protection Information System (SIOZ) [1].

Nevertheless, there are two systems in practice. First, older based on medical documentation characterized by the act on medical activity and the act on medical professions, shaped by the National Health Fund (NFZ). The second is a new model of a developing system based on electronic solutions such as the Integrated Patient Identification (ZIP) or the emerging Internet Patient Account (IKP) as part of the Electronic Platform for Collection, Analysis and Provision of Digital Content on Medical Events. In addition, there are separate systems for a given sector branch, with separate regulations. Such solutions appear in the areas of transplantology, blood donation or infectious diseases.

The institution which plays one of the most important roles due to the implementation of various ICT projects in health care, thus changing the electronic information flow system is the Health Care Information Systems Center (CSIOZ). The Center was created by the Minister of Health on August 1, 2000 and coordinates many projects including projects P1, P2, P3, P4 [2].

The P1 project called "Electronic Platform for Gathering, Analyzing and Sharing Digital Content on Medical Events" assumes creating a platform containing public services in the field of health protection for public administration bodies and citizens, including foreigners using medical services in Poland. The P1 project is in the implementation phase and the deadline is scheduled for 2020 [3].

In the period 2007-2012, the P2 project entitled "Platform for online access to services and digital resources for medical registers", apart from launching the Medical Register Platform, a Document Exchange System was created. Both the Platform and the System have the function of efficient exchange of electronic documents, access to data from registers by administration institutions and entrepreneurs. In addition, as part of the P2 project, a system was developed whose functionality is to authenticate users and verify electronic signatures from the entire healthcare information system [4].

The P3 project assumed "Improving the quality of management in health care by popularizing knowledge about ICT" and was addressed to medical workers. It aimed to increase the level of knowledge about information and communication technologies thanks to the conducted training and e-learning platform for personnel in health care. The implementation of activities took place in the period from 2013 to 2015 [5].

On the other hand, Project P4 with the full name of "IT systems of information systems in health care" assumed the improvement of the processes of access to statistical information and prevention of the effects of adverse events, marketing of medicinal products, medical staff resources and general health care resources. The goal was to be achieved by launching ICT systems. The project was financed under the Operational Program Innovative Economy 2007-2013 co-financed from the European Union fund. The project was implemented in the years 2014-2015 [6].

According to the concept of the existence of one main system in health care, Polish regulations define the Health Protection Information System (SIOZ) as a place where data are processed to conduct state health policy, improve the quality and availability of healthcare services and finance conservation tasks health. " In addition, three main data groups in the system have been distinguished, about [1]:

1. benefits in healthcare
2. service providers and employees
3. patients.

The main assumptions of creating the system are several aspects. Based o developed standards are aimed at unifying the classification of nomenclature in all subsystems and branches of the health sector. In matters of efficient settlements with the patient and the payer emphasizes the use of electronic invoices. In addition, placing the patient in the center sees the significance of individual data forming a coherent whole of the medical record. However, knowing how important the security and confidentiality of data is, the focus was on the identification and verification of individuals using, among others, PESEL number [7].

In the intention of the creators and according to the current national legal regulations, the information system will be controlled by two platforms [1]

1. Platform for On-Line Sharing of Services and Digital Resources of Medical Registries

The task of the Platform is to gather information about a selected part of the registers in one place - the platform is constantly enlarged with additional registers and functionality. Medical Records Platform was created as a result of Project P2 [4].

2. Electronic Platform of Gathering, Analysis and Access to Digital Resources of Medical Events

Electronic Platform for Gathering, Analysis and Access to digital resources of Medical Events is created in the Project P1. It is going to have a function of processing digital resources of medical incidents based on the law of the health care information system (Official Journal 2011 No. 113, art. 657) (6). In the Platform, it is planned to integrate parts of medical systems and various applications with each other. 17 elements have been planned in total. The most important of them is the Internet Patient Account, e-Prescription and e-Referral [3].

The Internet Patient Account (IKP) is one of the modules of the Electronic Platform for Collection, Analysis and Access to Digital Resources of Medical Events. The scope of information processed on the Internet Patient Account are going to refer to patient data obtained from such sources as the Medical Information Systems (SIM) and the System of the Register of Medical Services of National Health Fund (RUM – NFZ) (Article 1 point 1). With the help of the Internet Patient Account, the recipient will be able to check whether he has the right to health benefits under public health insurance system, he will be able to see the infor-

mation about benefits provided and planned (including prescriptions, referrals, price of services, doctor's and nurse's declarations, queue of the pending the provision of healthcare), make their medical data available to selected users of the Medical Information System or withdraw the consent to them being available (Article 1 point 4) [8].

E-Prescription understood as electronic medical documentation is one of many elements of Project P1 implemented by the Center of Information Systems for Health Care (CSIOZ). Implementation at the national level is planned until the year 2020. Currently, there is a pilotage of the e-Reception system lasting ca. 7 months (starting from mid-February 2018) in Siedlce (Mazowieckie province) and Skierniewice (Łódzkie province). The purpose of it is to check the efficiency of the electronic system and collect user feedback. The electronic prescriptions generate mean better legibility of the formulas. Moreover, now they will be all stored in a more applicable way as electronic documents which we will always have access to thanks to the special website account.

In addition, we may take a better control under the whole medicine turnover [9].

Medical caretakers are now able to give an electronic referral. It will now have to be sent by authorized doctors to a special internet platform (in Polish: Elektroniczna Platfroma Gromadzenia, Analizy i Udostępniania zasobów cyfrowych o Zdarzeniach Medycznych) who puts thereby his analysis for the view of each of the patients. We may also get the referral printed. Actions possible within the e-Referral are its cancellation, adding to the medical documentation, changing the status of implementation and viewing the document both by the patient and the service provider. Health care providers have an obligation to issue electronic referrals from January 1, 2021 [10].
In addition, there are electronic databases in the Information System in Health Protection, based on which there are three main structures [1]:

Medical Information System (SIM)

The Medical Information System is one of the elements of the Health Care Information System. SIM is an ICT system used to process data on granted, granted and planned health care services provided by IT systems of service providers (Article 10 point 1) (6). The Minister of Health, by means of a regulation, regulates issues regarding the format and processing of electronic medical records as well as organizational and technical conditions in the area of access and data sharing [11]. However, part of the data processed by the SIM will be uploaded and collected on the

central level. The remaining data will be archivised after the stage of processing in the place, where it has been created, which means in the medical entity server. Although, SIM is the heart of the system, it is not the medical documentation that will be stored there, but the information that it was created, as well as the basic informations about this particular document [28].

Domain-ICT systems

In accordance to the definition of the Communication and Information System is a system, which supports a distinct area of the functioning of the health care system (art. 2 pkt 5) (6). Additionally, in accordance to the law released on 28 April 2011 considering the Information System in the health care (Journal of Laws 2011 No.113 item 567), the minister responsible for the health care may confide, by agreement, to an other competent minister, to perform tasks connected with delivery, retention, service and maintaining the consistency of the functioning of the Communication and Information Systems (art. 5 No. 5)[1]. Part of the Communication and Information System has been created as within the Project P4, namely the systems: Statistics in Health Care, the Emergency Alert System, Integrated system monitoring trade in medicinal products, Monitoring Training Medical Workers, Registration System of Health Care Resources [6]. Additionally, in Poland there are system like: The Register of Medical Services of the National Health Fund, refeared later to as "System RUM – NFZ", Monitoring System of Access to Health Care Services, Monitory System of Treatment Costs [1].

A good example of the new Communication and Information System is the system called "e-Krew" (i-Blood), which functions within the implementation of IT solutions public blood service and development of monitoring of hemotherapy. The Project has been realised since January 2, 2017 and its termination is predicted to be on December 31, 2019. The aim is to support the field of the blood draft and monitoring of hemotherapy with the use of Communication and Information technology. The forseen solutions are to create a blood donor platform with an access to an individual account thanks to which the user will be able to check the amount of blood donated, make an appointment and fill out a form before donating blood, receive a blood donation, have an access to laboratory test results, receive a communication of demand for a given blood group, get necessary information under the procedure 'look back' and hold immunohematological consultations. Moreover, the system is to facilitate the electronic contact of hospitals with the Center of Blood Donation and Blood Treatment –

it is referred to the transmission of internal data and data of patients [13].

Medical records

Medical record is created on the basis of statutory regulations and separate accompanying regulations. It is understood as a list, record, register or other structured catalogue of personal data or unit data from healthcare [7]. It can discriminate four main groups of medical register : Central List of Customers, Central List of Service Providers, Central List of Medical Employees and Central List of Medical Products [1]. Moreover, the Minister of Health may, with the help of passed regulations create or commission the creation of new medical records. However, a willingness of monitoring of demand for medical services, a control of the health status of patients, prophylactic actions or assessment of the safety of medical research and procedures should be guided [1]. In addition, the act of amending of certain acts in connection with the implementation of Patient's Internet Account makes certain changes. The entities that create medical registers will be required to ensure conformity of their teleinformation systems with the minimal technical requirements of the minister of health matters. The data needed to identify patients, service providers and medical specialists must be integral with the data included in the registers. Each owner of the register will be able to submit an application for joining the Electronic Platform of Collection, Analysis and Access to Digital Resources on Medical Events [8]. Important elements of the Healthcare Information System (SIOZ), which were not created directly for this system, but their functionality is used in health care, is the Electronic Platform of Public Administration Services (ePUAP) and the Platform of Electronic Services of the Social Insurance Institution - Electronic Services Platform (PUE). They are mainly used for electronic signing of documents, identification and authentication.

The Electronic Platform of Public Administration Services – ePUAP is a platform that provides services, on which you can send electronic applications, check the status of official matters, receive and send official correspondence over the Internet. Platform services can be used by anyone who has a PESEL number, an ePUAP account and the ability to confirm the identity online. The identity can be confirmed in two ways: by a free trustable profile or a paid qualified certificate. Currently, a Polish citizen has access to several electronic services in the area of health through ePUAP. In the case of the National Health Fund (NFZ/NHF) it is possible to apply for a European Health Insurance Card (EKUZ/EHIC). In turn, in relations with the Social Insurance Institution (ZUS/SII), it is possible to obtain confirmation of insurance by the employer, browse through issued sick leaves and information on social and health contributions [14].

On the other hand, the E-Services Platform is a tool operating via the Internet, which is to facilitate the availability of services offered by the Social Insurance Institution. The possibilities offered by the platform include access to data collected by the Social Insurance Institution, submission of applications, exchange of correspondence with officials and stakeholder or sending insurance documents. In order to use the services of the E-Services Platform you must be over 18 years of age, set up a platform account and confirm your identity [15]. Identity can be confirmed in 4 ways: by registering with a trusted profile, using a qualified certificate, i. e. a qualified electronic signature (cryptographic card reader and PIN), electronic banking or by registering without confirmation of identity and authenticate an account in Social Insurance Institution unit for up to 7 days [16].

The tool functioning within E-Services Platform of the Social Insurance Institution , important for the health care system is e-medical certificate. An electronic medical certificate called e-ZLA may be issued by physicians interchangeably with the paper version from 1 January 2016, however, as of 1 December 2018, the electronic form (scheduled) will be the only one and obligatory for all physicians. The entire process of writing out e-ZLA, submitting it to the contribution payer, the Social Insurance Institution and a copy for the patient is carried out with the help of the ZUS Electronic Services Platform. However, depending on whether a given entity (patient, insurer, payer) has an account on the platform or not, so far there is a compulsion to print a waiver. E-ZLA is valid if it is signed using a ZUS certificate (valid for five years), a qualified certificate or a trusted ePUAP profile [17].

It is easy to notice that the current solutions in health care are chaotic, non-centralized, generally having their own individual tools which may hinder the coordination and exchange of information. In addition, some functions are duplicated as electronic signing methods, certificates or the availability of online services which can lead to user / patient disorientation.

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