THE MANAGEMENT OF PATIENT INFORMATION IN POLISH HEALTH CARE SYSTEM

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Abstract: *The purpose of the paper is to comprehensively characterize the implementation and the current use of electronic health records (EHRs) in Poland. The paper presents the conception of the management of patient information in Polish health care system. In this paper author presents the assumptions of the strategies of implementing IT systems in the health protection sector in Poland. It contains a review of IT systems dedicated for health care centers. The author described a system of electronic medical records, taking into account governmental plans for implementing the Health Insurance Card and Polish.ID systems, as well as the Electronic Verification of Beneficiary Entitlements (EVBE) system being implemented by Polish government. The project of the EVBE system is a newest part of Polish health care system. The paper presents also an example of electronic European Health Insurance Card system to management of patient information in Polish health care system supported by the EVBE. European Health Insurance Card was created as a response to the necessity of verification of a patient in the European Union and in the countries of the Schengen area. The aim of the article is to describe the difference between the public electronic patient record system in Poland and the private IT systems dedicated for health care centres. The author described a system of electronic medical report, taking into account governmental plans for implementing the Health Insurance Card and pl.ID systems, as well as e-Prescription system being implemented by the Centre for Health Information Systems.*

Keywords*: IT systems in health care, electronic health insurance card, health informatics, electronic medical records.*

ACM Classification Keywords*: K6: management of computing and information systems*

Introduction

The aim of management of patient information in health care system in such facilities as health care centers (hospitals, clinics), pharmacy's shops and others, is to improve the effectiveness of spending public funds on health care. Such systems should be characterized by integration and capability of extension [Sołtysik-Piorunkiewicz, 2012].

IT systems, which are used to streamline, improve the functioning of health care, are the area of interest as well in Poland [Kawiorska, 2004; Pankowska 2004], as in many countries across the world and Europe, e.g. Germany [Kalkulation von Fallkosten, 2002], Switzerland [Thatcher, 2013], Netherlands [Shekelle et al, 2006]. The transformation, due to implementation of IT systems, into a uniform, integrated and flexible structure, is undoubtedly beneficial for the safety and comfort of patients and streamlining activities in a health care system [Kaplan & Harris-Salamone, 2005]. Benefits from implementing IT systems fulfil the expectations of patients and health services providers, as well as improving the whole process of decision making by participants of the health care system. The research of United States academic medical centers reported generally positive attitudes towards using the electronic health record (EHR) as a structured, distributed documentation systems that differ from paper charts [Han & Lopp, 2013] in the ambulatory setting and significant concerns about the potential impact of the EHR on their ability to conduct the doctor-patient encounter [Rouf et al, 2008]. However

the clinical documentation, an essential process within electronic health records (EHRs), takes a significant amount of clinician time. There are luck of methods to optimize documentation ways to deliver effective health care [Pollard et al, 2013].

The results of a large-scale statewide analysis in 2006 in United States showed the adoption of health information technologies in physician's offices [Menachemi & Brooks 2006; Menachemi et al, 2006]. They discovered that the use of quality enhancing technologies such as PDAs, use of e-mail with patients and EHR was less common. But the state of adoption of health information technologies in physician's offices is still changing. The American Medical Information Association (AMIA) recommendations is based on research and publication, best practices, advocacy, education, certification, databases and knowledge integration. With the United States joining other countries from Europe, e.g. The Great Britain, in national efforts to reap the many benefits that use of health information technology can bring for health care quality and savings, to minimize complexity and difficulties of implementing even smaller-scale systems [Kaplan & Harris-Salamone, 2005; Kaplan & Harris-Salamone, 2009]. The last research about factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy, based on cooperation between RAND Health, a division of the RAND Corporation and AMA (American Medical Association), was published in 2013 [Friedberg et al, 2013]. A major factor limiting efficiency and quality gains from clinical information technologies is the lack of full use by the clinicians [Kralewski et al, 2008].

Projects for implementing IT systems in health care for management of patient information are complex and complicated undertakings. These processes should be carried out in stages. To achieve best effects, individual stages should be implemented efficiently and consistently. Moreover, appropriate legislative changes are required and – importantly – persuading decision makers about necessity of such solutions.

Any IT systems implemented in health care must comply with legal standards in force and be adaptable to changes made to the national law. Due to the mass scale of health care, they must also be efficient both for patient and health protection system [Sołtysik-Piorunkiewicz, 2012].

There are many benefits of health information technology that can be bring more health care quality and savings, sobering reports recall the complexity and difficulties of implementing even smaller-scale systems [Kaplan & Harris-Salamone, 2009]. The ability of EHRs to improve the quality of care in ambulatory care settings was demonstrated improvements in provider performance when clinical information management and decision support tools were made available within an EHR system [Shekelle et al, 2006]. The developers, implementers and certifiers of EHRs should focus on increasing the adoption of robust EHR systems and increasing the use of specific features rather than simply aiming to deploy an EHR regardless of functionality to maximize health care quality [Poon et al, 2010].

Over the past several years, Sittig and others have carried out an extensive qualitative research program focusing on the barriers and facilitators to successful adoption and use of advanced, state-of-the-art clinical information systems based on commercially available EHR vendors and the internally developed EHRs. They concluded that if the well-designed commercially-available systems are coupled with the other key socio-technical concepts required for safe and effective EHR implementation and use, and organizations have access to implementable clinical knowledge, the transformation of the healthcare enterprise that so many have predicted, is achievable using commercially-available, state-of-the-art EHRs [Sittig et al, 2011].

Accelerating the adoption of IT health care systems will require greater public-private partnerships, new policies to address the misalignment of financial incentives, and a more robust evidence base regarding IT implementation [Goldzweig et al, 2009].

The directions of implementing IT systems in Polish health care

EHR implementation is essential to improving patient safety but is still highly heterogeneous across health care systems and providers, and this heterogeneity leads to equally variable implications for patient safety [Sittig & Singh, 2012].

The directions of implementing IT systems in Polish health care are now concentrated mainly on putting into effect the assumptions of the European Commission concerning e-Health. The main issues presented in the „e-Health Poland" plan which require implementation by 2015 include the following [Directions of inf., 2009]:

1. Ensuring citizens easier access to health care information.
2. Improving effectiveness of the health care system with regard to electronic flow of information.
3. Creating procedures and guidelines, gathering and giving access to good practices to improve management of a health care centre thanks to implementing information and communication systems.
4. Modernizing the system of medical information to analyze the demand for provided health services.
5. Practical realization of the development of IT solutions in protection of health in line with the guidelines the European Commission which will allow the Republic of Poland to be included into the area of interpretational Electronic Health Record.

Currently, due to accepting for implementation Programmes financed from structural measures, the following activities are of key importance:

- Implementation of the Programme of Health Protection Informatization;
- Creating the conditions for the development of health protection e-services – especially telemedical systems (teleconsultations, telemonitoring, online patients' registration) e-prescriptions and electronic health records, which will be linked with a new identity card [Sołtysik-Piorunkiewicz, 2012].

Review of Polish health protection IT systems

Health insurance card

Electronic health insurance card was implemented in the Silesia voivodeship about 10 years ago as part of works connected with informatization of Silesia voivodeship department of National Health Fund. Electronic health insurance card is used to verify insurance status of an authorized card holder in the system of Silesia voivodeship department of National Health Fund. It also provides personal data and is used for authorization of the services provided as part of performing a contract with Silesia voivodeship department of National Health Fund [Karta Ubezpieczenia Zdrowotnego, 2012]. This card may be issued to an insured person with a Universal Electronic System for Registration of the Population national identification number who can prove his/her residence on the territory of the Silesia voivodeship.

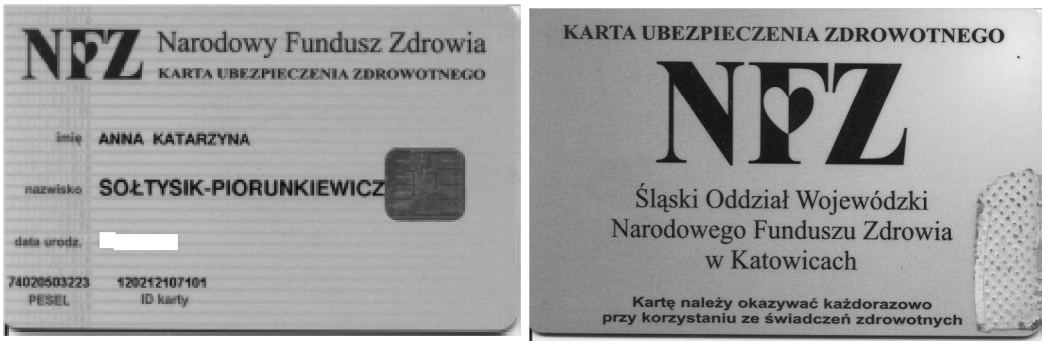

Figure 1. Electronic health insurance card of Silesia voivodeship department of National Health Fund

Since 2004, it has been planned in Poland to implement country-wide Health Insurance Card modelled on the Silesian card. To continue the works ordered by Health Minister on February 8, 2005, a Group was set up to draw up a strategy for the development of a medical information system in health protection and prepare a conception of implementing European Health Insurance Card and Health Insurance Card. The tasks of this group included drawing up a strategy for the development of a medical information system in health protection and preparing a conception of implementing European Health Insurance Card and Health Insurance Card. It was decided that representatives of Health Ministry would be involved in the works of a Group for developing a conception and design of electronic Health Insurance Card (e-HIC), electronic Medical Services Register (e-MSR) and programmes of their implementation, set up by order of the President of the National Health Fund No 40/2004 of 25 November 2004 for the purpose of preparing a functional conception, scope of application and design of e-HIC, linked with European Health Insurance Card, and a conception and design of a system for electronic registration and medical services monitoring (e-MSR) and programmes (strategy, plan, schedule) for implementing e-HIC and e-MSR [Reply of the Secretary, 2013]. Up to now, the implementation has not been completed.

Another proposal of implementing electronic medical report was using the function of a health insurance card in an electronic identity card as part of the implementation of the programme MSR II. This project was described in a publication on the connection between Health Insurance Card and pl.ID. Its basic aim is to ensure the verification of the parties, place and sequence of a medical transaction (patient and professionals) by means of a cryptographic secret carrier. This project was based on the use of a crypto processor card (Health Insurance Card, Professional's Card) in an environment that was safe for creation of electronic signature. It was also assumed that pl.ID would constitute an electronic document which might be used for verifying a person (including limited identification), creating personal and qualified signatures, and entitles to cross the borders of the countries united by the Schengen Agreement, as well as serves the function of HIC. As a result of a decision by National Council of Ministers of December 2009, the project was linked with pl.ID, in which there was a separate space for HIC. The National Health Fund was developing and handing to the Ministry of the Interior and Administration the document „Technical and functional requirements for Health Insurance Card, HIC application and their environment".

Electronic European Health Insurance Card as a part of a Polish health care system for management of patient information

One of the elements of a Polish health care system in managing patient information is electronic European Health Insurance Card. It was created as a response to the necessity of verification of a patient in the European Union and in the countries of the Schengen area.

Figure 2. European Health Insurance Card

Currently the project of Health Insurance Card for the patient developed in connection with the pl.ID system is suspended in Poland. However, the work on the system of European Health Insurance Card is still underway due to the development of a new conception of the system of patient identification in the countries of European Free Trade Association [Departament Współpracy Międzynarodowej Centrali NFZ, 2012]. The most important part of implementation of pl.ID in polish National Registers System is now in the stage of consultation and analysis of future functionalities [National Registers System, 2013].

This card may be issued to an insured person with a national identification number Universal Electronic System for Registration of the Population who can prove his/her residence on the territory of the Silesia province. To continue the works ordered by the Health Minister on February 8, 2005, a Group was set up to draw up a strategy for the development of a medical information system in health care, and prepare a conception of implementing European Health Insurance Card and Health Insurance Card. The tasks of this group included drawing up a strategy for the development of a medical information system in health protection and preparing a conception of implementing European Health Insurance Card and Health Insurance Card. The main aim of the implementation of this solution was to [Ujejski, 2011]:

- Facilitate the process of registration and confirming the right to health services (effectiveness);
- Improve the reliability of accounting data sent to the National Health Fund (integrity and indisputability);
- Secure access to data (confidentiality);
- Increase the chance of a rescue in emergencies;
- Satisfaction of the entitled, possibility of getting remote access to own data;
- Increase the effectiveness of medical centres (automation of activities);
- Decrease the number of frauds, mainly in the area of accounting for services that have not been provided;
- Improve the quality of data.

Ultimately, health insurance card should be an element of the information system in the health protection system in Poland. However, using such a card entails access to sensitive data, thus one of basic requirements is ensuring security of the information system used in medical services. It should also be able to integrate with the medical services register and medication register. It may also be an instrument for checking insurance as part of processing European Health Insurance Card instead of the National Health Fund slip of the monthly report for the insured person. Electronic medical report should be integrated with the information system for pharmacies and health care centres as well as the electronic system for prescriptions and electronic system for medical appointment referrals.

The Electronic Verification of Beneficiary Entitlements for management of patient information

At the same time, the Electronic Verification of Beneficiary Entitlements project is being developed in Poland, i.e. Electronic Verification of Beneficiary Entitlements, in compliance with the law on the healthcare services financed from the public funds. From January 1, 2013 patients visiting doctors should present Universal Electronic System for Registration of the Population number and identity card, driving licence or passport, in order to confirm their entitlement to receiving healthcare from public funds [Do lekarza, 2012]. The tests of the system were conducted from October 15 to the end of 2012, and its aim is to introduce orderliness into the system of confirming the entitlement to receive healthcare services. It also takes from doctors the responsibility for checking whether the patient is entitled. The project was created from the cooperation of the Ministry of Administration and Digitalization with the Ministry of Health, National Health Fund (Polish ZUS), Social Insurance Institution and

Agricultural Social Insurance Fund, and was consulted with, among other things, the Chief Inspectorate of Personal Data Protection.

Thanks to information exchange among the Central List of the Insured of the National Health Fund and Agricultural Social Insurance Fund registers, it will be possible to check online in a hospital or clinic reception whether the patient is insured. There will be no need for the National Health Fund slip of the monthly report for the insured person (although it still will be valid, just like the pensioner identity card and other documents entitling for receiving services).

In the case when the system did not confirm the entitlement to receiving the services (e.g. when the employer did not register the employee for insurance), the statement of the insured person will suffice (art. 7 and 8 of the relevant law).

The introduction of the Electronic Verification of Beneficiary Entitlements system made the procedure of issuing the National Health Fund slip of the monthly report for the insured person more efficient. The citizen doesn't have to produce the monthly report for the insured person slip in the National Health Fund institution, instead he/she can show identity document.

Integrated IT systems for comprehensive service of health care centres and settlements with NHF provided by Asseco Poland SA

Depending on the needs of a healthcare provider with regard to medical services, Asseco Poland SA offers various IT systems for implementation. These are:

- InfoMedica [Infoklient bi, 2014];
- mMedica in versions PS, PS +, Standard and Standard + [Mmedica, 2014];
- Hipokrates;
- SolMed.

The InfoMedica system consists of several modules. These are, among others: medical systems, and administration and management systems. The medical systems include the following packages:

- Package: Hospital;
- Package: Clinic Pro;
- Package: Diagnostics;
- Dialysis unit;
- Workplace infections;
- Package: Laboratory with microbiology;
- Ambulance transport;
- Package: eMedica portal which includes eKontrahent and ePacjent packages.

InfoMedica medical systems are installed in admission rooms, in hospital wards, in diagnostic laboratories, laboratories, in operating blocks, in doctor's surgeries and treatment rooms, in clinics and outpatient clinics, in hospital chemists and medical statistic departments. They enable an efficient gathering and distribution of all medical information connected with the history of treatment of each patient, from his/her admission to the hospital until the treatment is finished. They help doctors to assess a patient's health condition, make it easier to access the data on the health condition of each patient being treated, print all forms used in the treatment process, ensure obligatory statistical reporting for the National Health Federation as well as medical statistics institutions and centres. They streamline the organization of treatment process. The dedicated Clinic Pro package supports the work of medium-sized and large out-patient health care centres. It has got modules to be installed at

reception desks and in doctor's surgeries. It offers specialized functionalities dedicated for supporting occupational medicine surgeries, dentist's surgeries, and rehabilitation centres. Due to full integration, doctors have access in their surgeries to a patient's whole medical documentation, including the history of hospitalization as well as examinations and medical procedures carried out [Informklient systemy medyczne, 2012].

The administration and management systems include the following packages:

- Package: finances and accounting;
- Package: Treatment Costs Bill;
- Package: Sale Service;
- Package: Budgeting – Controlling;
- Package: Managing the trade of medicine and materials;
- Package: Managing Fixed Assets;
- Package: Human Resources and Payroll Service;

The administration and management systems of the InfoMedica package are responsible for gathering and processing all information connected with economic events in a hospital. They are installed in accounting department, Human Resources department, salary calculation, and other departments of a hospital's administration. They are used to maintain comprehensive bookkeeping, manage finances, carry out management accounting, prepare price lists of medical services and offers for, among others, the National Health Federation, and other health care payers, develop plans for the sale of medical services, monitor contracts and agreements, and receipts from their fulfilment, maintain a detailed costing of current activity, calculate costs of patients' treatment, perform economic predictions. All the applications of the InfoMedica package are integrated with each other so as to ensure a flow of information between relevant organizational units of a hospital in which IT system was implemented [Infoklient systemy administracyjno zarządcze, 2012].

The system of electronic prescription e-Prescription

The e-Prescription system is one of the first projects of building a modern IT system in health protection. It is being implemented under the project „Electronic Platform for Gathering, Analysing and Sharing digital resources about medical events", which is part of the country-wide Programme for Health Protection Informatization. The entity responsible for implementing the electronic prescription system is the Centre for Health Information Systems, set up by the Health Minister [Poznaj, 2012]. All the information gathered in the e-Prescription system is protected in accordance with security standards in force. The information in the e-Prescription system is exchanged using encrypted SSL protocol (Secure Sockets Layer), which is a widely used data transmission standard. This allows for the communication in the e-Prescription system to take place only between entitled participants of the prototype and an unauthorized access to data is prevented. Moreover, cryptographic techniques are used to verify and ensure information consistency. The technique of encryption is based on process of transforming plain text or data into cipher data that cannot be read by anyone other then the sender and the intended receiver [Laudon & Laudon, 2011]. Usage of encryption is necessary to protect digital information that are stored, transferred, or sent over the Internet. The capability to generate secure session is built into Internet client browser software and servers. SSL is designed to establish a secure connection between both two computers of the client and the server.

The e-Prescription system allows electronic prescription to function parallel with its formal counterpart in the form of a paper prescription. The use of electronic prescription along with a paper prescription does not disturb the existing model of prescriptions circulation which is based only on paper prescriptions. Currently, due to the lack of

appropriate regulations regarding the functioning of prescriptions only in an electronic form, an electronic document does not constitute a prescription in the light of law.

Writing a prescription in an electronic form takes place by means of a doctor's medical computer program, and in the case when a doctor does not have internal software in his/her surgery, communication with the e-Prescription system occurs through an on-line application.

Pharmacists work with the e-Prescription system directly through their chemist's program, and can also dispense electronic prescriptions through a dedicated on-line application.

Patients get access to information about the history of their pharmacotherapy through the e-Prescription Internet Account.

The prototype of the e-Prescription system was launched in mid-March 2011, but the actual processing of prescriptions using this system started on 18 April 2011. The delays were connected with the need to install and launch the system in the entities that signed a cooperation agreement with the Centre for Health Information Systems, and necessity of providing training to medical personnel and pharmacists on how to operate the system.

The e-Prescription system supported 20 facilities, i.e. 2 clinics, 2 doctor's surgeries and 16 chemist's shops. This implementation can be regarded as a pilot implementation across the country in 2012 [Sołtysik-Piorunkiewicz, 2012]. However, for the system to be successfully implemented across the whole country, electronic prescription should be regulated by new legal regulations, and in the whole country there should be access to the public database of medicines, patient's insurance card and a tool for doctors authentication.

Systems for pharmacy's shops and clinics provided by Kamsoft SA

One of the companies which provide IT systems for health protection sector is Kamsoft SA based in Katowice. The company is developing a lot of projects in medicine and pharmacy, from systems for supporting hospitals (KS-MEDIS), clinics (KS-SOMED) or dentist's clinics (KS-KST), through data security systems in medicine and pharmacy (KS-BDO) and a database of medicine and health protection means (KS-BLOZ), to national system of health protection. The company also implements systems supporting chemist's shops: Integrated System for Managing a Network of Chemist's Shops (KS-ZSA) and IT System for Supporting the Handling of a Chemist's Shop (KS-AOW) and systems for pharmaceutical wholesale outlets (KS-EWD).

The Integrated IT System for Servicing a Clinic (KS-SOMED) is a multi-module tool for supporting the work of medium-sized and large specialist clinics. The system is characterized by an extended functionality which enables the processing of the most important organizational issues:

- Managing doctor's appointments schedule;
- Gathering of medical data;
- Handling of financial settlements with payers.

The NHPS National Health Protection System portal is a free of charge educational and informational platform for all representatives of the health protection market and patients. It enables communication between a patient, doctor and pharmacist, the use of various health services and access to preventive health programs. The central element of the NHPS system is patient and his/her family. Each patient is represented in the system by an Individual Health Account. The Patient Service enables performing various operations on the health account. They include viewing data gathered in the system and entering certain information by a patient himself. This information may be subsequently used by doctors and medical personnel to have a better knowledge about patient's health, and thus it may lead to providing the patient with a better health protection [Strug, 2009].

The Electronic Data Exchange system (KS-EWD) enables direct communication between a chemist's shop and a wholesale outlet by means of the Internet. The unique features include interactive checking availability of goods in a wholesale outlet, together with the option of immediate ordering of the goods on special offer. Due to integration of the KS-AOW and KS-EWD systems, the system designed for chemist's shops includes features ensuring data exchange between a chemist's shop and a wholesale outlet.

The IT System for Supporting the Handling of a Pharmacy's Shop (KS-AOW) is a comprehensive system for supporting the work of chemist's shops, working under the Windows environment. In its work, the system uses SQL databases and Internet technologies. Particular emphasis was placed in the system on an efficient and fast operation. Also, the solutions applied in the system allow using needle printers and their work with the system in a character mode. The KS-AOW system consists of a dozen interrelated modules, which ensure a wide range of possibilities. The features included in the modules comprising the System allow checking sale, orders and purchases, manage the warehouse, create lists, analyses and perform accounting. The KS-AOW system complies with the regulations of the Health Ministry, Finance Ministry, National Health Fund and other entitled institutions and is constantly modernized and adapted to changing regulations.

Integrated System for Managing a Network of Pharmacy's Shops (KS-ZSA) is a comprehensive system supporting monitoring and managing the work of a network of chemist's shops, working under the Windows environment. The central management of chemist's shops enables an optimal warehouse management, rationalization of purchases and a better use of the economies of scale during purchases. The system consists of a dozen interrelated modules which ensure a wide range of possibilities. The features included in the modules allow to place orders and make purchases, manage the warehouse, create lists, analyses as well as accounting for individual chemist's shops. Management of chemist's shops, by analysis and purchase specialist, supported by the KS ZSA system, allows relieving the staff of chemist's shops of many tasks and using the time saved for increasing professionalism of patient care and assistance – which is a more and more important element of competing on the pharmaceutical market [Direction, 2011].

Discussion

There are some lacks of information health care systems in Poland:

- Certain data redundancy – similar data is stored in different registers, kept by two different entities, e.g. Central List of Insured Persons and Central Register of Insured Persons (The National Health Federation and Health Insurance Company);
- Incoherence of data between different registers – the same data in different registers may vary (e.g. change of address is not automatically updated in all registers in which the address appeared);
- Lack of cooperation with reference registers – generally, registers do not refer to base reference registers;
- Lack of cooperation between registers in health protection – registers in health protection do not use source information which already exists in other health protection registers;
- Lack of a uniform data model – registers and databases in health protection do not use a uniform data model;
- Lack of structure and relationships between registers in health protection.

Currently, newer and newer systems for pharmacists' shops are being implemented, i.e. EuroMedica [Apteka Euromedica, 2012], based on modern Internet technologies. Clinics implement InfoMedica or OSOZ systems (Table 1). However, it seems necessary to implement such IT systems in health protection for management of

patient information in Polish health care system e.g. a Health Patient Information System [System, 2013] which will ensure [Directions, 2011]:

1. Creation of information conditions that will allow taking long-term optimal decisions in health policy, irrespective of the adopted organizational model of health protection and principles of financing it.
2. Creation of a stable information system in health protection, characterized by a flexible approach to the organization of the system of health protection resources, including a model of financing services from public funds, and resilience to disturbance in data gathering and archiving, caused by system changes in health protection.
3. Decreasing the information gap in the health protection sector that makes it impossible to build an optimal model of health protection.
4. Organizing an existing system for information gathering, processing and analysing (e.g. in Business Intelligence systems).
5. Building a system ensuring electronic communication and possibility of exchanging documents and reports between health protection entities and the proprietary body.

Table 1. Manufacturers, name of health care systems and features of them

Producers	Name System/Module	Charcteristics of Features
Asseco Poland SA	InfoMedica	Package programs modular registrants health benefits (part white) and administrative and economic events (gray part) and the settlement of the contributors. It has elements of data analysis and business decision support.
	Hipokrates	It covers an area medical (white), administrative (gray) and management support. Implemented electronic medical history. One of the first system in Poland HIS.
	Solmed	The system is dedicated for smaller entities supporting the movement of patients, the primary drug economy and the most important elements of the branch operation and administration.
Gabos Software Sp. z o.o.	Mediqus 3	A comprehensive service system of health care facilities . Supports medical part, including issues related to the management and operation of both hospitals and outpatient units.
Kamsoft SA	KS-MEDIS	HIS system that supports part of the white and gray hospital.
	KS-SOLAB	Laboratory system, serving both small laboratories and hospital units.
	KS-SOMED	The outpatient service.
	KS-ZSA	Pharmacy network management system.
	KS-AOW	Support system for pharmacy.
	KS-KST	A dedicated system for dental treatment.

Conclusion

The paper discusses the difference between the public electronic patient record system in Poland and the private IT systems dedicated for health care centres. The paper presents an intelligent information system of electronic

medical records, taking into account governmental plans for implementing the Health Insurance Card and pl.ID systems, as well as e-Prescription system being implemented by the Centre for Health Information Systems. The assumptions of the strategy of implementing IT systems in health protection in Poland focus on achieving a satisfactory level of informatization in the basic areas of the health protection system. So far, Poland has succeeded the first step in implementing a single system, but the next step should be focused on data redundancies and should be coherent, both for patients and health care centres [Direction of inf., 2009].

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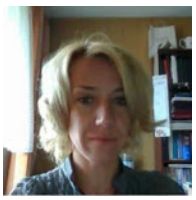

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