The Perception and Plans for Implementation of e-health Solutions Among Hospital Managers in Poland

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Abstract

The paper brings the results of the survey carried out among hospital managers in order to study their perception of e-health domain and plans for development of e-health systems. The questionnaire used in the survey was designed for the study. It was distributed by mail and responses were collected anonymously. The analysis presented in the paper was performed on 179 filled questionnaires received after contacting of 300 potential respondents representing managers of Polish hospitals enlisted in the Registry of Health Care Providers. The analysis of the results of the survey revealed that hospital managers nearly uniformly appreciate the value of e-health systems for management of health care institutions and health care system itself. However, the opinions about feasibility of e-health systems for delivery of medical services directly to patients were more diversified. It applied to such applications like Internet-based consultations by physician or access to electronic health record for patients. In summary, it seems that the exploitation of full potential of e-health environment should be accompanied by the promotion of various types of e-health strategies among managing staff of health care institutions.

Keywords: *e-health, telemedicine, hospital managers*

1. Introduction

The use of e-health systems may bring many advantages including increased accessibility of medical services, improved quality of care, higher patient safety and efficiency of expenditures. The use of information and communication technologies (ICT) is frequently perceived as one of key remedies for challenges faced by modern health care systems [1]. The stage of development of e-health in specific countries is highly diversified. It depends usually on many factors, internal and external to health care sphere. The awareness of the importance of e-health strategies among managerial staff in health care provider organisations is of key importance for successful implementation of new services based on e-health solutions [2]. After radical political and economy changes in early 90-ies of XX century, Polish health care system underwent several reforms. They triggered the interest in the use of ICT in order to improve managerial processes in health care institutions. The accession to European Union in 2004 and possibility of the use of structural funds opened also new prospects for shaping e-health environment in new member states including Poland [3].

The main objective of the study was assessment of the opinions of hospital managers about the meaning of e-health systems in health care and plans for their development and implementation in Poland.

2. Material and Methods

The survey was carried out among managers of Polish hospitals responsible for provision of medical services. In the first stage of the survey, the questionnaires were distributed to 300 managers of hospitals identified in Central Registry of Health Care Providers, developed and maintained by the Centre for Information Systems in Health Care at the Polish Ministry of Health. Managers were identified on the basis of the information available in the Registry and confirmed with the information available on hospitals' websites or directly by phone with secretariats of hospitals. The questionnaires were mailed in the beginning of November 2011.

The questionnaires were accompanied by invitation to join the study with information about its details and with an envelope with return address of the Institute of Public Health, Jagiellonian University Medical College. The responses to the questionnaire were collected anonymously. The study protocol was accepted by the Bioethical Committee of the Jagiellonian University (Decision No KBET/226/B/2011 issued on October 27, 2011). This paper presents the results of analysis performed on data obtained from questionnaires filled and returned till December 31, 2013. Statistical analysis was realized with Statistica v.10 Pl (StatSoft Inc, Tulsa, OK, USA).

3. Results

3.1 Views on importance and use of e-health systems

The responses to items related to the views of respondents about importance of e-health systems were included in Table 1. Respondents confirmed nearly univocally the important of e-health systems in modern health care (96.6% of opinions: "decidedly yes" or "rather yes") and their value for efficient management of health care facility (95.5% of responses in agreement). However, 86.1% of respondents pointed out that the use of ICT provision of medical services is not sufficient in Poland.

The use of Internet/e-mail for provision of communication between patient and physician was more controversial issue. Only 37.6% of respondents agreed that physician may provide advice to concrete patients via Internet and/or e-mail. Furthermore, only 51.9% of them revealed opinion that patient should have access to his/her electronic health record (EHR) in hospital or clinic via Internet.

Table 1 Views about use of e-health systems in modern health care

Questionnaire items	decidedly no [% (n)]	rather no [% (n)]	difficult to say [% (n)]	rather yes [% (n)]	decidedly yes [% (n)]
E-health systems have essential meaning for modern health care	0 (0)	0 (0)	3.4 (6)	22.9 (41)	73.7 (132)
IS are of key importance for efficient management of health care institutions	0 (0)	1.1 (2)	3.4 (6)	21.8 (39)	73.7 (132)
The use of ICT for provision of medical services in Poland is not sufficient	2.2 (4)	2.8 (5)	8.9 (16)	40.8 (73)	45.3 (81)
Physician can provide advice to patient via Internet/e-mail	15.2 (27)	31.5 (56)	15.7 (28)	30.9 (55)	6.7 (12)
Patient should have access to his/her medical record in hospital/clinic via Internet	8.9 (16)	23.5 (42)	15.6 (28)	33.5 (60)	18.4 (33)
Medical services based on the use of telemedicine/e-health systems should be reimbursed by National Health Fund	2.2 (4)	10.1 (18)	11.2 (20)	27.9 (50)	48.6 (87)
Health-related and medical information in the Internet is reliable	3.4 (6)	22.9 (41)	32.4 (58)	40.8 (73)	5.6 (1)

3.2 Current availability and plans for development of e-health systems

The feedback on availability of specific IT solutions in hospitals employing respondents were presented in Table 2.

Table 2 Availability and plans for development or implementation of e-health solutions in hospitals employing respondents

Type of system	Current availability [% (n)]*	Plans for implementation or further development [% (n)]*	
		Next 12 months	Later than in 12 months
website	95.0 (170)	50.8 (91)	11.7 (21)
hospital information system	60.9 (109)	44.7 (80)	31.8 (57)
application for polyclinic	51.4 (91)	33.5 (60)	33.0 (60)
Internet access to electronic health record for patients	5.0 (9)	13.4 (24)	34.1 (61)
Internet-based appointment for ambulatory visit	14.0 (25)	28.5 (51)	52.5 (94)
radiological information system	47.5 (85)	30.7 (55)	27.4 (49)
teleradiology	34.1 (60)	28.5 (51)	31.8 (57)
second opinion telemedicine	18.4 (33)	20.1 (36)	50.8 (36)
teleconsultations for patients	3.9 (7)	10.6 (19)	33.0 (59)
telemonitoring for chronic patients	5.6 (10)	7.8 (14)	44.7 (80)

* Availability and plans of implementation of development in relation to all centres represented by respondents (n=179)

Websites were maintained by 95.0% of hospitals. Hospital information system was implemented in 60.9% of them and radiological information system in 47.5%. Interestingly, 34.1% of respondents declared that their hospital has access to teleradiology. Other types of telemedicine consultation solutions ("second opinion") were available in 18.4% institutions. Internet-based appointments for visits in physician office or clinic were available in 14.0% centres. Finally, teleconsultation service for patients was available in only 3.9% hospitals, and telemonitoring solutions for patients with chronic diseases were used by 5.6% of them.

The Table 2 brings also feedback from respondents about development or new implementation of specific e-health systems in one year or longer time frame. The most definite plans for development (12 months) were revealed in relation to hospital website (50.8%), hospital information system (44.7%), software for clinic (33.5%) and radiological information system (30.7%).

4. Discussion and Conclusions

The results of the survey demonstrated undisputed acceptance of importance of e-health systems in management of health care among hospital managers. However, the attitudes towards the use of e-health solutions for provision of services to patients were not so uniform. Considerable percentage of respondents did not agree or was not sure if physician should provide patients with consultation in Internet. Furthermore, Internet-based access to EHR to patients was not obvious choice for many of them. The survey revealed also that the investments in e-health systems in close time frame are focused mainly on development of comprehensive hospital information systems and associated applications, and implementation of systems supporting directly patients is considered only in later stages.

In conclusion, it seems that the exploitation of full potential of e-health environment should be accompanied by the promotion of various types of e-health strategies among managing staff of health care institutions.

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