

KNOWLEDGE MANAGEMENT IN THE ROMANIAN PUBLIC HEALTH SYSTEM

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Abstract

The present economic crises imposed additional pressure on a fragile medical system, especially on the public sector healthcare organizations. Therefore, Romania is confronted with major obstacles: overcoming increasing financial costs, the need for reform, facing migration of medical personnel and providing an adequate way to deal with medical malpractice cases, as well as trying to maximize maybe the remaining advantages: competent and resourceful intellectual capital and knowledge management. This study starts from a careful analysis of the literature, as well as of the genuine reality and of the parties involved: medical body, management staff and structures, patients and other stakeholders. Therefore, our research efforts aim at identifying the authentic national pattern of knowledge acquirement and management process, and compare these with the compulsory blueprint as imposed by national legislation. In order to reach our research goals a composite research methodology was developed, involving statistical and econometrical work. A questionnaire oriented towards the evaluation of the current state of the knowledge management for the medical personnel and the results of our previous study in the field of medical malpractice management system in Romania represent some of the key research elements. The findings can be considered of great interest as in 2011 a new national Law of Health was about to be enforced, leading to severe protests due to its content, especially of the privatization of the public health system. However, the legislative initiative was only postponed and currently awaits new amendments for an enhanced version to be made public in the near future. Such a comparison will underline the differences between the reality and the presumed knowledge management existing in the public health system in Romania, offering a solid basis for future improvements at all relevant levels of authority.

Keywords: knowledge management, human capital, medical malpractice, public health.

JEL Classification: I18, D83, O15

1. Globalization and economic crisis

Ever since 1970 when the first meeting of the Rome Club challenged the limits to growth, people all over the world began thinking on matters related to living standards,

possibilities, resources and possible scenarios for the future. Nevertheless, among criticism, different opinions and solutions, there is a certain reality: globalization. In 1999 when Romania was hosting the Rome Club Symposium, on the topic of 'Managing Crisis in Global Economy, a Challenge for the Monetary Policy. The Case of Romania', the president of the Romanian Association of The Rome Club, Mugur Isarescu, Governor of the National Bank of Romania, analyzed among other subjects the idea of globalization and management of crises (Isărescu 2007).

These are major features for the Romanian economy as it is a unique history, marked by spectacular changes that began soon after the communist regime had ended in 1989. Due to the phenomenon of globalization events taking place abroad affect other nations as well; such a situation took place in 2000, when the declining of EUR to U.S. dollar exchange rate imposed additional pressure over the payment balances for countries that were exporting to Europe, Romania included. Therefore the ROL depreciated even more to U.S. dollar, compared to the programmed depreciation, and as a consequence the inflation target was exceeded. Another exterior factor contributing to the negative outcome was the price of oil, which surpassed the price \$35/ barrel, reaching a new historic peak. On the other hand, the Romanian exports benefited from the economic development from the Western European countries (Isărescu 2007).

The present financial and economic crisis affected many economic sectors in Romania. But we are at most interested in this study in the public health system. After a period characterized by little financial support from the national budget and defective management, the actual system is even weaker than before. Due to a severe decrease in the number of employees, from 9 million in 2000 to approximately 5 million in 2007, the National Health Insurance Fund (FNUAS), as the institution that covers 75% of total financing for the public health sector, had to find the means to sustain the same 20 million individuals (Suciu 2011). As the criteria for resources allocation are far from being clarified, many difficulties arise at the level of regional and local authorities' responsibilities. Other financing sources are the local budgets, health institutions own income, external credit and nonrefundable funds, or other type of collected taxes. However, except for the external nonrefundable funds, the rest of these instruments have limited applicability as all are affected by the decrease of national budget. Even more, there are frequent examples of cases when important investments in equipment and facilities are lost as no money exists for employees' training programme or maintenance of the apparatus. According to official evaluations (Romanian Court of Accounts 2010) the Romanian Ministry of Health spent between 2006 and 2010, the amount of RON 16.8 million. But even so the investments and national budget funding is far from the European average.

Under these circumstances, public health system is easily subjected to influences from abroad events, and at the same time not able to cope with the requirements

imposed by international benchmarking due to financial and management deficiencies. Still it must be considered as interacting with the other major economic sectors from the national and international economies.

2. Romanian public health sector

As mentioned above, globalization caused various transformations. At the end of the 80's the health systems were transforming, changes affecting both European and American countries. Causes were related to the need for eliminating or at least reducing problems among end users of health systems, coping with increasing costs, quality requirements, greater than ever daily work, etc. Nevertheless the resulting systems were dynamic and had to face new challenges, integrate new medical practices and technologies, and cope with new social needs.

Three health systems of that period are important as they were implemented by the communist regime in Romania, while other was preferred after 1989 in accordance with the social and economic reality. These models are (Enăchescu, Marcu 1994):

- *Beveridge Model* (healthcare is considered a human right, not a privilege; the government is the owner, being also responsible for offering fair and competent health care services, and full access to all its citizens; it is taxed-based) - Finland, Norway, Greece, Italy;
- *Bismarck Model* (it is based on the insurance system; both the employer and the employees contribute to it; the administration is simplified compared to other systems, while insurances are sold on a non-profit basis; claims are paid, while prices for the insurances are mostly determined by the state. But in cases where insurance is not compulsory certain categories of individuals are left without access to health services) - Germany, France, Switzerland, Belgium, Netherlands or Japan;
- *Semashko Model* (it is a highly-centralized system, created in the former Soviet Union; the health system is entirely financed by the state budget, the state is also owning the monopoly over the institutions under its administration, while the private sector is lacking; general access to medical services).

These models have both advantages and disadvantages. Even if the Beveridge Model enjoys a non-onerous character and a positive influence over the health state, medical personnel is left without incentives, there are long waiting lists for certain medical documents, while for the Bismarck Model the costs are the highest at European level and there is also the risk for adverse selection (the insurance of very expensive groups is refused due to the large volume of required medical services or to the high cost of procedures).

Romania made the first changes in 1989 when the communism ended, and Semashko model was abandoned after five decades. The period afterwards for the public health system can be divided in two: 1990-1996, until the national elections, as the new health legislation was enacted; and from 1997 until present, namely 2011, when a new health reform and laws are prepared. But no matter what system is enforced, there are three objectives that any nation should pay attention to when choosing and designing the health system: 1) universal and fair access to a reasonable package of health services; 2) control of costs of health services, and 3) efficient utilization of resources (Vlădescu, et all. 2005).

2.1. Current issues at a glance

From the Semashko model, extremely regulated, providing healthcare services for all the members of the society, Romania inherited several dilemmas: limited financial support from the GDP for the healthcare sector, still centralized allocation of funds and unclear criteria, bureaucracy and rigid management structure. Therefore, considering the existing infrastructure after 1989, Romania had few possibilities to consider, so that it was preferred the Bismarck Model.

The main reasons for this were connected to the ideological fight between those sustaining government planning and those against it, so that the health insurance system had to be somewhere in the middle. Also, due to technical causes, as the insurance system was considered as a viable solution for satisfying the needs of the health system at that moment (more resources, increasing patients level of satisfaction, quality improvement, etc) (Vlădescu, et all. 2005).

However in 2011-2012 the situation showed that many flaws remain unsolved by the management style or by legislative initiatives. Some of them are reflected by the medical malpractice management system. In the case of Romania, the prevention and solving system applied in medical malpractice situations has not reached an optimum level in terms of developing and implementing an equitable manner, victims' compensation, or in the prevention area of the prejudices caused by errors that take place while carrying out the medical or medical-pharmaceutical act. Another concern is the one of a judicial reform, especially for establishing an extra-judicial conciliation procedure for the medical malpractice cases with no penal implications. This is also compulsory so that Romanian legislation to align to the European and ECHR provisions.

Also our country is confronted with additional pressure caused by the impact of the global economic crisis which led to major and severe transformations within the healthcare system (the migration phenomenon has accentuated lately, causing a severe decrease in the number of doctors, and favoring potential medical errors by over-exhausting those remained in the medical institutions), lesser financial support from budgetary sources and the need for finding an alternative mechanism that will put back on track the medical insurance format.

2.2. Benefits for the future

On the other hand, Romania is making efforts to adhere to modern management and administration instruments applied in the public healthcare system. The first step was taken in June 2011 by enforcing a legislative package that aimed at decentralizing the managerial system in the public health hospitals and at reducing the bureaucracy. It was also presented the National Strategy for Rationalization of Hospitals, which identifies serious difficulties such as medical malpractice, corruption and informal payments, and comes with reasonable solutions.

Therefore here are also possible advantages of which the Romanian public healthcare system could benefit from, especially after entering into force the new national law of health.

Firstly, *the sources of finance*: Romania is one of the European countries with the most reduced healthcare expenses, much below the European average. National Health Insurance Fund (FNUAS) directs almost 50% of its funds to hospitals, while public local authorities limit their financial contribution to minimum. Identifying additional financing sources, such as regional and local authorities, nonrefundable European funds, their own income as a result of delivering additional services for a specific price, could ease the burden from the National Health Insurance Fund (FNUAS) and make available the money that public hospitals and other medical institutions so much need.

Secondly, a major benefit could be represented by *reforming the public medical institutions' management*. According to the independent evaluators who contributed to the National Strategy for Rationalization of Hospitals 2011, the current system is centralized, bureaucratic and rigid, while almost all the managerial and governing decisions have to be taken by the Ministry of Health. Also, the managers lack the capacity to make their own choice with regard to resources or medical staff allocation therefore they cannot adjust quickly to the market demands. Yet the reform will offer them the necessary tools for efficient management.

Public hospitals will implement in the long run a corporatist management system: the manager is selected after winning a competition organized by the administration council of the institution and he/she will have a management contract signed with the institution and not with the Ministry of Health as it had happened before; the same body is going to be responsible for the budget, income and expenses allocation, evaluating and replacing the manager of the institution (according to the performance indicators).

Thirdly, the *human resources policies* will be completely changed. Romania total number of medical staff is much below the European average since 2005. Things have become worse after integrating in the EU; doctors received the right to practice abroad which has led to mass departure of qualified staff, especially younger people or highly qualified ones. And in the long run this will limit access to basic services

(Suciu et al. 2011). But here the bonus can be taking advantage of the freedom offered by the new national health law, and attracting funds for staff training, capitalizing on lifelong learning, and implementing knowledge management strategies both at regional and national level. The investment in human capital, whose fruits are “collected” on medium and long term, should focus on training and professional – scientific preparation of accessible human resources, and on adapting staff to the changes determined by technical-scientific progress, based on competence criteria (Suciu et al. 2010).

Year	Doctors		Dentists		Pharmacists		Nurses	
	RO	UE	RO	UE	RO	UE	RO	UE
1995	1.77	3.13	0.27	0.57	0.12	0.68	4.31	7.32
1996	1.81	3.19	0.26	0.58	0.11	0.71	4.41	7.40
1997	1.79	3.23	0.24	0.59	0.8	0.71	4.06	7.40
1998	1.84	3.26	0.24	0.60	0.7	0.72	4.09	7.47
1999	1.91	3.31	0.23	0.60	0.7	0.73	4.04	7.52
2000	1.89	3.37	0.22	0.60	0.7	0.75	4.02	7.60
2001	1.89	3.40	0.23	0.61	0.7	0.77	4.03	7.67
2002	1.91	3.43	0.22	0.62	0.6	0.78	4.18	7.79
2003	1.96	3.19	0.23	0.60	0.6	0.76	3.99	6.90
2004	1.98	3.21	0.23	0.61	0.6	0.72	4.01	6.94
2005	1.95	3.18	0.22	0.61	0.5		3.72	7.00

Table 1: Professional density (Source: “Un sistem sanitar centrat pe nevoile cetateanului”, Presidential Commission for the analysis and politics formulation in the area of public healthcare in Romania Report, 2008, pp. 53)

3. Human capital and knowledge management in the Romanian public health system

The health system is extremely dependent on knowledge. More precisely, all medical systems have a common feature: knowledge is distributed among diverse people and in different places; finding the right answer or solution to a problem involves coordinating efforts of employees from different medical institutions, both with medical and without medical knowledge, while much of the knowledge required can be easily reached by using the internet and other information technology instruments. A concrete situation is mentioned by the Minister of Health in the 2010 legislative documents regarding the decentralization reform: increase the use of information technology applications and instruments such as databases. For that reason, another major component is E-health for a successfully reform of the healthcare system. It can help reduce frauds, ensuring an efficient and timely control of the medical act, as well as the overall management of specific activities, and not less significant is that it can contribute to conforming to international quality standards.

To know how to capture, store, share, transfer and manage knowledge is vital for public healthcare system. And here we refer to both tacit and explicit knowledge.

For Romania this is vital: as more and more medical staff decides to emigrate, explicit but also tacit knowledge especially is exported along with them. So we have to find the answers to questions. *How to preserve knowledge of doctors, nurses and other experienced medical personnel when they go abroad or retire? Should it be stored on a computer, are there other efficient instruments to be used so that their expertise to be available to new hired and less experienced employees? And how does knowledge management really functions versus how it should?*

3.1. Empirical study: objectives, research methodology and findings

As this paper is part of the research program we are attending, we intend to develop an ample study over the next two years remaining. The research objectives specific for this section are defined in accordance with the major problems of the Romanian healthcare problems in terms of knowledge management, more specific the issues connected to the Romanian medical malpractice system. We chose this particular segment because it one where knowledge management has unlike connotations and also it can have dramatic consequences for the stakeholders involved in the process, more obvious than in other sectors of the public healthcare system.

After the scientific and empirical literature review, we designed a questionnaire, adapting items from similar research initiatives and new ones as to reflect the specific goals of our study. The questionnaire was selected from several reasons: using open and closed questions allowed performing statistical and econometrical analyses; also, the collection process was rapid, and finally due to financial considerations as it minimized the expenses without losing essential information. The items were divided into groups- background information, professional experience and education, medical malpractice, open questions, and opinions on the public healthcare system.

The first target group for this part of the research were doctors and residents from several large public hospitals and institutes from Bucharest, as it is the largest city of Romania and we had access to many medical specializations (such as psychiatry, dentists, resident doctors, forensic medicine, etc.,) and different medical institutions. The second group was represented by patients of public medical institutions.

For extracting the necessary data regarding the medical malpractice system and knowledge management, we worked on a data basis using information and data from the Bucharest College of Doctors, an independent professional organization, responsible for offering guarantees for the medical and pharmaceutical act provided by the members of the Romanian medical body, and for evaluating medical malpractice complaints against medical staff, as well as applying those guilty with professional sanctions (Bucharest College of Doctors 2012). This data basis includes relevant information from medical malpractice complaints registered in 2008-2010, such as the medical or medical-pharmaceutical act, the specialty of the physician, medico-legal expertise or the eventual sanctions.

We included the on-line professional liability insurances data enforced for the period 2008-2010, available on The National Association of Insurance and Reinsurance Companies from Romania - U.N.S.A.R. website (U.N.S.A.R. 2012). According to the legislation, Romanian physicians have to have a valid professional liability insurance enforced in order to be able to practice.

The process of interpreting the collected data aimed at being as systematic and verifiable as possible. We have determined previously the logical steps to follow and the econometrical software to use. The findings were proved against the real facts and observations already gathered, as well as against the working hypothesis.

The findings were quite surprising. The medical malpractice legislation was only recently updated, so that we have practically no juridical doctrine or casuistry. According to the 2011 National Strategy for Rationalization of Hospitals, the only winner are the insurance companies, as all physicians must have professional liability insurances, while being the losers along with the patients. The explanation is simple: money, time and other resources are lost, as doctors and patients have to demonstrate the fault, while doctors at least should have been protected by the professional liability insurances which in fact are unreliable.

Also, many patients have a very bad opinion of the public health system – 79% have serious complaints about it. The grounds are: hygiene in the public healthcare institutions (97%), available infrastructure and medical equipment (85%), also the attitude of physicians and other medical personnel towards them (71%). Other important feature is the schedule of doctors. As for the doctors' dissatisfactions we mention the hygiene in the public medical institutions (88%), available infrastructure and medical equipment (91%), salary (90%) and the promotion system (90%).

Even more relevant is that knowledge codification and sharing is deficient. Only a limited percentage of patients could define correctly medical malpractice, while most of them associated with an error that can be performed almost exclusively by the doctors but not by other medical staff member. This was reflected by the percentages of only 15% who considered compensation level as an equitable measure, while others chose administrative sanctions (2%) or professional reorientation (1%). Most of the respondents did not complete this section of the questionnaire.

The last issue is the one of migration. Most of the medical staff members were fully acknowledging its expansion as a phenomenon. The problem is translated not only as negative impact over the national economy in terms of income and consumption, but it means that the rest of the medical staff has to compensate for those leaving the system, while enduring extra tiredness and over-work. The alternatives are limited, as the current economic reforms do not allow new hidings in the public health care system.

3.2. The compulsory blueprint and the national legislation

When discussing about knowledge management it should mean people (employees), organizational processes and IT infrastructure that facilitates circulation, capturing, codifying, storing, sharing and transferring knowledge and expertise within the knowledge organization, and externally. However, in a public healthcare system the pattern becomes more complicated.

The main cause is that the Romanian medical malpractice system is a ‘court system’ (Essinger 2008). This means that only the court of justice can decide, doctors have to have a professional liability insurance that should cover the costs in case of claims from patients. But this determines a small number of compensated patients, long procedures and high expenditures for all parties, patients and medical staff. The physician or nurse is personally charged, so that he/she has to prove that is not guilty, risking also disciplinary measures.

Why knowledge management can make a difference? Because knowledge management is about improving work process and eliminating mistakes, by ensuring knowledge and expertise transfer from one location to another. Knowledge transfer from and to different location and different multiple users are two features of the medical malpractice system and of the healthcare system as well. Also, knowledge management allows the medical institutions and other organizations involved to react rapidly to changes happening on the medical services market. For proving these affirmations in relation with the public healthcare, namely medical malpractice system, let us look at the figure no.1:

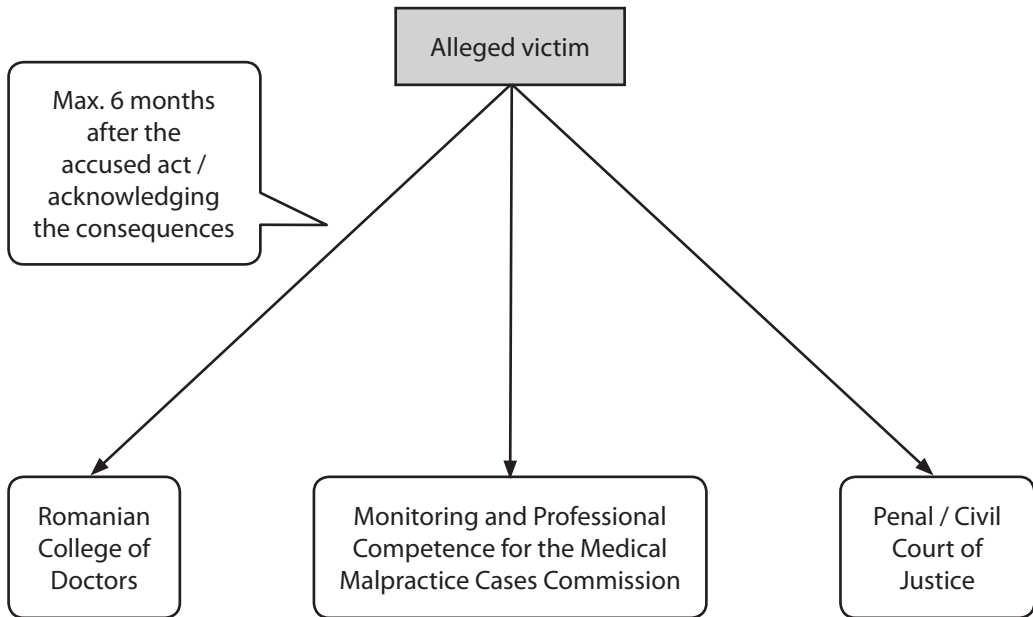


Fig. 1: Alternatives for an alleged victim of medical malpractice

There are three possibilities and each of them is time and money consuming for parties involved. This illustrates once again the importance of the financial driver behind the knowledge management as knowledge assets are special assets under the law of increasing returns, more knowledge being used, more value is produced. Integrating knowledge at the public healthcare system level would enhance the quality of the overall decisional process and diminish expenses and financial losses. But at the present each of these three options is expensive.

A complaint can be filled in at the Romanian College of Doctors, which afterwards asks for the services of an medical expert so that it can offer a solid resolution and apply the eventual sanctions against the incriminated medical staff members. The disciplinary punishments are in accordance with Law 95/2006 – The Reform in the Health System, The Medical Deontology Code, and Law nr. 46/2003 – The Rights of Patients and other legislative documents enforced. The disciplinary sanctions can be admonition, advertisement, blame vote, fine from 100 RON to 1,500 RON, the interdiction to practice his/her profession or certain medical activities from one month to one year, and withdrawing the Romanian College of Doctors membership (this has severe consequences as it can lead to the impossibility of performing the profession in a medical institution). There can be included stipulations such as enrolling to a professional program.

The second option for the alleged victim is the Monitoring and Professional Competence for the Medical Malpractice Cases Commission that charges an expertise tax. Then it randomly selects experts who have the responsibility of writing a report for the medical case and finally decides over the situation: it is no medical malpractice case or it was, and it establishes compensation.

The last alternative is to address the court of justice, but due to the economic crises and reduced number of judicial personnel, law suits are given long terms, up to months or even a year.

What we have not included is that it is possible to establish the indemnity in an amiable manner, involving the insurance company where the physician has the insurance contract (the compulsory professional liability insurance). However, there are only few cases solved this way as the insurance companies are unwilling to participate.

4. Conclusions and final discussion

There are still many aspects to be solved so that knowledge management to work effectively in the public healthcare sector, especially in the medical malpractice area, where enormous amounts of money, time and other resources are wasted.

Also, in order to successfully implement knowledge management a very important element is to make the most of the E-health applications and systems available, as well as working on customizing and designing specific applications

in accordance with the features of the Romanian public healthcare system. For knowledge capturing, codifying, saving, also transferring is important to develop a system that could facilitate the interaction of parties (medical personnel, health services consumers, public sector institutions, legislators, insurance companies, and other stakeholders) for the medical malpractice situations. However, success is in close connection to enhancing and developing human capital.

As the results of our study indicate there is a low level of acknowledgement regarding medical malpractice, possible solutions and what parties involved have to do or what compensation level should be considered fairly. Such an E-health system could centralize standard formulary for a complaint, editable, for all the possible options when a patient wants to address a complaint for a possible medical malpractice case, track-and-trace services of documents uploaded and sent, end-users application for the patient or medical staff member involved in a case and possibility to use decisional support software. Specific protocols could also guarantee a free flow of digital information, but protecting the private data when information circulates between parties involved in the medical malpractice evaluation procedures.

Finally, the present priorities for the success of knowledge management implementation should be:

- Making the national authorities, the public medical institutions and hospitals aware of what knowledge management could offer, advantages and gains for medical staff and management representatives.
- Knowledge assets have to be evaluated – codified and tacit (especially because the migration of medical staff is present in high percentages), at institution and department level. Here investing in human capital and technology are the key-element, especially as E-health has developed so much lately.
- Innovative employees: medical staff has to have support in order to collaborate, as well as with colleagues from the public healthcare system, and with stakeholders from insurance, patients, and authorities. Knowledge assets are at their maximum efficiency only when they can produce innovative results, that later are implemented.

References:

- Enăschescu, D., Marcu, M. Gr. (1994) **Sănătate publică și management sanitar. Note de curs**, All, Romania, pp. 139-141
- Essinger, K. (2008) “*Medical liability alternative ways to court procedures*”, Proceedings of the European Conference “The ever-growing challenge of medical liability: national and European responses”, Strasbourg, June 2008
- Isărescu, M. (2007) **Reflecții economice. Finanțe, bănci**, vol. II, Academia Română, Centrul Român de Economie Comparată și Consens, București, pp. 70-73

- Romanian Court of Accounts, **2010 Annual Report**, [online], Romanian Court of Accounts, <http://www.curteadeconturi.ro/sites/ccr/RO/Publicatii/Documente%20publice/Raportul%20public%20pe%20anul%202010.pdf> (accessed on 20/03/2012)
- Stan, C., Picioruș, L., Imbriscă, C., Purtan, R. (2011) “*Modelling optimal dynamics and architecture design in the medical malpractice system*”, Proceedings of the European Conference on Complex Systems 2011 (ECCS). University of Vienna- AKH, Viena, 12-16 Septembrie 2011
- Stan, C., Picioruș, L., Imbriscă, C., Purtan, R. (2011) „*Trends in the Romanian medical malpractice system: from crisis to reform*”, 19th International Association of Forensic Sciences (IAFS) World Meeting, Organizatori: Institutul Național Portughez de Medicină Legală și Laboratorul Științific al Pliției Portugheze, Madeira, Portugalia, 12-17 September 2011
- Suciu, M. Ch., Ghitiu-Bratescu, A., Picioruș, L., Imbriscă, C. I. (2011), **Reporting on intellectual capital: value driver in the Romanian knowledge based society**, International Journal Of Education And Information Technologies, Issue 2, Volume 5, pp. 215-225
- Suciu, M. Ch., Stan, C., Picioruș, L., Imbriscă, C. I. (2011) “*The post-crisis healthcare system: effects of the economic crisis in Romania*”, Paper red at the ,Cadrul Conceptual Al Economiei Postcriză Sympozion, Bucharest, Romania, November
- The Bucharest College of Doctors, [online], Available at: http://www.cmb.ro/despre/cine_suntem.html (accessed on 20/03/2012)
- Vlădescu, C., Rădulescu, S., Cace, S. (2005) **The Romanian Healthcare System: Between Bismarck and Semashko**, Decentralization in Healthcare, Analyses and Experiences in Central and Eastern Europe in the 1990s, Editor George Shakarishvili, Local Government and Public Service Reform Initiative, pp. 437-485, Budapest, Hungary.

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