HEALTH CARE ECONOMICS IN ROMANIA – DYNAMICS AND EVOLUTION

B. I. Tamba, Doina Azoicăi, Daniela Druguș *
University of Medicine and Pharmacy “Grigore T. Popa” – Iasi
Faculty of Medicine
Department of Preventive Medicine and Interdisciplinarity
*Corresponding author. E-mail: ddrugus@dirgen.umfiasi.ro

HEALTH CARE ECONOMICS IN ROMANIA – DYNAMICS AND EVOLUTION (Abstract): Health economics refers to the analysis of medical institutions considering their economic and social efficacy, but also the regularity and the relationships that govern the phenomena and the processes from the field of health with the final purpose of achieving better results with the minimum of resources; it represents the study of health price in its complexity. The economics of the population’s health needs and in particular the health needs in case of the poor groups of the population, consider health to be the main component of global human vulnerability. Health economics tries to change the simple interpretation of health price and disease cost into a wider consideration of a system administration similar to educational and social economics and the study of health in the context of the multiple specializations of the macro economy of the national group, as it is an instrument in the country’s great economics symphony. Keywords: MANAGEMENT, HEALTH ECONOMICS, HOSPITAL SERVICES.

Health economics appeared as a result of the interest the economists showed in all social life’s fields, starting with industry and agriculture and finishing with education and health.

In general, it is considered that the population’s state of health deteriorates and the mortality increases when the macroeconomic situation gets worse. Nonetheless, nowadays, there are more and more data indicating the fact that physical health and not psychical health, actually improves in this type of periods (1).

In the middle of an age of interdisciplinarity, economists see health as an economic good. It is determined by biological factors (heredity, sex, and age), environmental factors and life style factors. But since prevention and early identification of diseases can be accomplished with huge financial investments and because health is quantified in terms of efficiency and efficacy, it becomes an object of economic study.

This is only one of the arguments that place health in its position of segment of the national economy. Consequently, the economists wander to what extent it answers to the supply and demand relationship, what the society wants, what it is offered to it and what it gives in return. The answers are difficult and relative because health, just like education, provides long-term services. But precisely this type of
observations confirms the efficacy and social utility of the health care system. Naturally invaded by numerous and different diseases, in its need of preservation, the society formulates requests that cannot be postponed.

Medicine represents a dynamic field if we consider the technology it works with, but completely inert if we refer to its financial situation, as the reform of the health care system requires time and the answers to macroeconomic shocks take numerous years, even decades. Even if the population presents a better state of health which generates higher incomes and vice-versa, the improvement of life standards leads to a better state of health in people, the relationships between the state of health and economics remain difficult to quantify and even study (2).

As an answer, the health care system comes with a diverse offer of services. The national level and its economic fund generate the value a society invests in health. Human value health is a right of man protected by medical science but also by economic resources and means.

**ETHICS AND HEALTH CARE**

Decades ago the differences between health economic analyses and clinical practice were significant, with the physicians and patients who defended Hippocrates’ Oath on one side and policy makers and health economists on the other side. It was the policy makers the first ones to have to solve the difficult allocation problem: the health care budget was growing faster than any other public spending. Later, the economists came in trying to make the optimal decisions in limited financial situations. Then, health policy makers decentralized their budget, which was an intelligent political move, as the responsibility for the healthcare budgetary allocations was now shared. However, clinical quality concerns started to appear: waiting lists and insufficient care, these rapidly becoming hot subjects in the public eye, with patients claiming their right for health care by law or by public indignation. It became clear that budget policy had to be justified by more arguments than just financial constraints.

In this context, the health’s base results to be economic, and its management consist in obtaining maximum performances with the minimum (often limited) investments. This is how health economics was born, a science that can be mastered only by those with a dynamic, flexible thinking manner and endowed by the ethics of the health care system (5).

Ethical rationale for publicly financed health insurance rely on four logically related issues: (1) the ultimate purpose of a human life or human society; (2) the role of health and its distribution in society in advancing this ultimate purpose; (3) the role of access to or utilization of health care in maintaining or improving the desired level and distribution of health among members of society (4) the role of public financing in ensuring the ethically justified access to and utilization of health care by members of society.

It is true that economics must not prevail over the medical act, but it is equally true that the physician cannot ignore the efficacy of his actions (maximum results with minimum of resources) and their efficiency (health days, recoveries, years of life regained, lives saved). Deriving from political economics, health economics is part of a triad, along with education economics (medical education, in particular) and science economics (medical scientific research).

All the three entities work together un-
under the auspices of economics, according to the law based on maximum efficacy with the minimum of effort. The collaboration between physicians and economists results a necessity that can only be fulfilled through interdisciplinarity. Health economics contributes to economic health (6). C. Gastmans (cit. by 6) pleads for economists and ethicists to try and approach each other so that the tool of cost-effectiveness analysis is further developed to combine the two most important goals of health care systems: health maximization and the reduction of health inequalities.

In Romania, because the allocation of resources does not yet represent a purpose in itself, this necessity (for health economists) is less present. Nonetheless, there is hope for a rational perspective that might, at least support, if not impose, a decision and a smooth regulation of the decisional process.

**HEALTH CARE ECONOMICS AND HTA**

Romania spends approximately 6 percent of GDP (*gross domestic product*) on health (public and private) vs. the EU average (all EU countries) of 9.8 percent. Among current challenges are lagged health outcomes, patient dissatisfaction, lack of access to quality care by the poor and other vulnerable groups, and poor financial performance.

Romania had the highest infant mortality rate in the EU (3). Furthermore, the life expectancy gap between Romania and EU15 (EU countries on December 31, 2003) has increased 2 times since 1970, mainly due to the rising incidence of non-communicable diseases (NCDs).

Romania’s health infrastructure and its service delivery system have not adjusted to modern technologies and do not meet the current needs of the population, which has suffered both a demographic and an epidemiological transition in last two decades. The hospital network in Romania is large and fragmented, with over 350 public hospitals that have been mostly been decentralized. Except for SMURD (*Mobile Emergency Service for Resuscitation and Extrication*) and several maternities, no other significant investments have been made in the last 20 years in medical infrastructure.

The rhythm of health care sector reform has been slow due to the lack of financial resources required to support the new policies.

*Health technology assessment* (HTA) is the ‘systematic evaluation of medical technologies regarding their effectiveness, appropriateness, efficiency as well as social and ethical aspects and implications’(1). Its main purpose is to inform technology-related policymakers in health care and thus has a decision-support role in pricing and reimbursement. HTA provides the responsible bodies and organizations with timely, accurate, and sound information on new medical technologies (3, 4).

HTA focuses primarily on pharmaceuticals and medical devices (standardized technologies with clear ownership) as these constitute a high financial cost and their social impact and visibility are significant (7).

As pharmaceutical expenditures grew rapidly over the past decade and the 2008 crisis posed a major financial risk, the Romanian government, financed by the World Bank, contracted as consultants NICE International (*The National Institute for Health and Care Excellence*) (UK) to provide recommendations on how to reform the health care system. The legal framework for HTA in Romania was created
through Government Decision 351/2012. The responsibility of the HTA unit is broad: HTA can be applied to all existing medical technologies such as pharmaceuticals, medical devices, health policies and public health.

According to an HTA guideline, the assessment of innovative drugs is made using a 6-item scoring chart where the maximum number of points is 10, and for a positive reimbursement recommendation, the pharmaceutical product has to score at least 6.

The decision on reimbursement is reached by assessing two distinct types of evidence:

1. Reimbursement recommendations given by HAS (Haute Autorité de Santé) France, and 3 HTA bodies in the UK (NICE - The National Institute for Health and Care Excellence / SMC - Scottish Medicines Consortium / AWMSG - All Wales Medicines Strategy Group), and reimbursement status in other EU member states;

2. Clinical profile of the intervention: relative efficacy, relative safety and patient reported outcome (PRO).

The family physician, being well informed about the social and demographic dimensions of health care and on the extremes of medical consumption because he deals with patients of all ages, must be aware of the balance between promoting health and treating diseases, the amount of services provided, their cost and efficacy.

Applying the cost-advantage and cost-efficacy (benefit), he obtains the monetary value, the result of the relationship between the value of the resources invested and the value of the program made. Analysing the correlation advantage-unit and time unit, the physician observes that efficacy represents an economic manner of achieving a well-defined purpose.

The role of reason in using health resources eases the difficult action of keeping records of the cost-advantage. For example, the role of personal hygiene in preventing infectious-contagious diseases, especially digestive ones, represents a logical, cultural, scientific and concise resource used rationally as an investment for health. Its absence generates higher costs in treating the inherent diseases. The quantitative decrease of the number of these diseases reduces the number of the ones who get ill, as well as the financial results (costs) due to the logical and positive use of the resource in question.

Of course, if the group it is addressed to is well analysed from multiple points of view: the members’ cultural level, receptivity period, logistical and support component of theoretical investment etc.

The high costs in health represent one of the biggest problems. High quality medical services, the production of medical science with sophisticated means, the consumers’ request for more and more sophisticated devices and solutions that are mainly logistical, contribute fully to this phenomenon. The cost-efficacy relationship is always relative, depending of the results of other programs or of a general rule.

In order to make an informed choice about if and how much to pay for a medicine, it requires evidence beyond the classical safety and efficacy data from the clinical trials. Compiling huge amounts of economic data, electronic health records (EHRs), genomic data, labor statistics etc., business players can better illustrate the value of their products. Two studies showed that half of American consumers are willing to pay more for personalized medical products but at the same time, are divided about paying for the tests that enable these treatments (cit. by 6).

The analysis of the relationship between
cost and utility is measured in precise results: the effect of treatment on the patient's life quality; years of life won depending on the quality of life; number of days without getting ill; number of lives saved, early identification of cancer etc. Considering this multitude of advantages at human level, we understand that the moral aspect of the problem comes first (6, 8).

But providing an etiological treatment, apart from its efficacy, it also induces the advantage of diminishing the financial value of those treatments that are difficult to define, reducing the labour incapacity period, the hospitalization period etc. When referring to maximum efficacy with the minimum of resources, by minimum we must not understand “insufficient” or “cheap”, but a scientific, rational, attentive use of resources.

Returning to preventive investment, it proves to be less financially demanding than curative investment, although none of the components can be pointed out in the detriment of the other as they create a logical balance. Prevention interventions are not necessarily more effective than the ones that focus on treating. The prevention and curation % worldwide are almost equal. The idea is that the damage once created brings along a lot of human suffering and medical effort, including material and financial effort.

Considering its efficacy, any treatment program must be subjected first to a keen examination: to what extent it is feasible; if it prevents complications effectively; if it justifies itself from a humanitarian (reduces pain, deaths) and economic (reduces the number of patients) point of view; to what extent it influences life quality. The decrease of the number of deaths, of irretrievable biological losses that are impossible to compare and label depends on preventing and counteracting the avoidable factors of post neonatal mortality with the aid of the managerial conception and intervention of health care services in correlation with social, economic, political and legal factors.

It results that any physician is invested with economic responsibilities even if he only writes down a recipe. Economic assessment is professionally necessary but also out of respect for the patient, as it represents a fundamental part of the decision making process. A good, useful, efficacious and effective use of resources depends of rational, scientific thinking that is the prime self-resource of total management. Resource management taken into custody must be credited with purpose, as an action, always compatible with similar activities.

HEALTH CARE AND INFORMATION TECHNOLOGY

While IT (information technology) has the potential to greatly improve the quality of health care, the evidence that IT improves important health related outcomes is limited. Some authors (9, 10) argument that while HIT (health information technology) has the potential to lead to a dramatic transformation in healthcare delivery, the empirical research showed limited results supporting HIT benefits. Their recommendations on a successful HIT implementation require a system that is intuitive to use and that requires little training for users; a system that can be modified and developed easily.

The authors also note that although there is an increasing number of a HIT solution designed to be used directly by the patient (for example, internet self-help sites), very little is known in terms of use and outcomes. Also, the main HIT implementation barriers are cost and overcoming misgivings from physicians due to per-
ceived adverse effects on their time.

The Integrated Health Information System of the Social Health Insurances goal is to ensure the computerized management of the economic and medical data necessary for an efficient Romanian health insurance system. Thus, it contributes to the development and improvement of the medical and pharmaceutical services.

System’s coverage area: National Health Insurance House, all the County Health Insurance Houses, Physicians, Family Doctors, Medical assistants, Hospitals, Providers of ambulance services, Providers of homecare services, Out-patient recovery, Providers of medical devices, Providers of rehabilitation sanatoria services, Providers of pharmaceutical services.

IHIS (Integrated Health Information System) in Romania aims at improving the social health insurance system among others by collecting and managing the economic and medical information, ensuring the transparency regarding the control and management of the budgetary funds, creating and administering the National Registry of Insured Persons and the National Registry of Medical Services Suppliers. The main functionalities of IHIS include the management of the social health insurance funds, the management of the insurer, the management of the medical and pharmaceutical service providers, the evidence of taxpayers and control of the medical services.

However, the drive for more health data and integration comes also from the private sectors, as both consumers and physicians cheer the dramatic expansion of the personal medical kit, with wearable tech, smartphone-linked devices and mobile apps becoming increasingly valuable in health care delivery.

Personal medical kits could help diagnose illness, detect early signs of disease, and facilitate the recovery and rehabilitation closer to home. Clinicians seem more open to using these tools than consumers, according to HRI (Health Research Institute) survey findings. One-fifth of consumers said they would use a home urinalysis device. But nearly half of physicians said they would use data from such a device to prescribe medication or decide whether a patient should be seen. Nearly 90% of MDs said that patient devices and apps will be important to their practices in the next five years.

The app market – filled with 50,000 free and nearly-free products – is highly saturated. The Romanian market of smartphones had around 2.5 million units sold in 2014, and the tablets reached 700,000 units with at least as many potential users for health care apps.

**PRIVACY AND SECURITY**

*All that may come to my knowledge in the exercise of my profession or outside of my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal. (The Hippocratic Oath, 4th Century BC) (11).*

The number of websites and social networks providing health care related information and opportunities for patients to both share information and meet other patients is growing fast. For example, Yahoo health or WebMD, have around 20 million unique visits every month while in Romania, romedic.ro has over 1.5 million (1).

Several studies have showed the benefit of using Internet to share health-related information. Patients use the information to self-diagnose symptoms, understand the treatments and the medication devices (12) create or improve relationships (13), and deal with symptoms.
As the volume of personal information captured and digitized continues to grow at exponential rates, the concept of privacy has also been put on the top of the list of concerns for the public opinion. Recent research highlighted the significance of privacy concerns over the internet sharing of health or intimate data or how individuals deal with threats to their electronic privacy. Another author believes that privacy concerns could be the greatest threat to successful rollouts of EHRs.

At the same time with the increased shared and “in the cloud” patient and health data, the proliferation of medical devices in patients’ homes, and apps on their phones points to an even more pressing need for strong information security systems.

In summer of 2014 alone, over five million US patients had their personal data compromised in health system privacy breaches. As for the mobile eco-system, the US Department of Homeland Security issued a warning to police officers, firefighters, emergency medical services and security personnel about the security issues in Android. The report says Android accounts for 79 percent of mobile malware, while Apple’s iOS accounts for 0.7 percent. According to analysis company Stat Counter, Google’s Android platform is the clear leader in Romania, reaching 62.73% market share in September 2014.

Still, the consumers want one-click access to their data and the challenge is to find the right balance between privacy, security and ease of use. Over 65% of respondents in a research said data security was more important to them than convenient access to imaging and test results, doctor’s notes, diagnoses and prescriptions. For fitness data, the reverse was true. However, the consumers could agree to share health data if they would see social or increased care value in doing so.

Future cyber security safeguards will have to focus on what consumers look for – health data that is private, secure and one click away.

HEALTH CARE ECONOMICS – FUTURE DIRECTIONS AND CONDITION OF SUSTAINABLE HEALTH

The complete confidence with which a physician establishes the correct diagnosis determines the number of hospitalization days, the cost of the treatment, the number of recovering days, briefly, the efficacy of the medical act which is an important indicator for economic sciences.

Consequently, in spite of the fact that the economic factor is not the one guiding health, its decisive role cannot be ignored. From this point of view, Romania is facing severe problems. This situation will become even worse considering that the health care system confronts itself with three different pressure sources: the justified expectations of the population, which asks for a fundamental right of human beings; the progress of medical technology represented by equipment’s, therapies and drugs, research studies in this field, which require important investments; population ageing (the costs with an older patient are 5-10 times higher than with a younger patient) (12, 14).

Seen from the economist’s point of view, health, although it does not have a material meaning, is absolutely necessary for social and economic development, the economic activity being, by excellence, a support for protecting and conducting health care activities.

Health must be included in the political, economic, social, environmental and institutional context, the strategic frame being oriented toward accomplishing actions for
improving the state of health and assessing the impact of health care.

The economic principle applies to all the dimensions of the disease (apparition of pathogenic agents; their adjustment to the organism’s defence mechanisms, to the artificial antimicrobial means; recombination of viruses; multi-causality and multi-diversity) and of health (preventing complications, premature death, disabilities, infirmities, diseases) (12).

Promoting health endows people with the best ways of ensuring and improving their own state of health. Health is not the purpose of life but one of its resources and it must be promoted through social responsibility, more investments and partnerships and the development of an appropriate infrastructure.

The promotion of health includes flexible models, adjusted to the present and future demographic situations, all of this in the general frame of the principles applicable to all people and all parameters that condition health care.

The health price and the disease cost are established based on an analysis that has at its base the medical and economic principles of efficacy and efficiency. The health price requires a longer period of time, even decades to be accomplishes. It is cheaper if moral investments are made, first of all, common sense in promoting health for the individual’s physical, mental and social state of good. The disease cost refers to the disadvantages it brings at human level (13).

The priority for health economics in the process of providing health care services resides in the economy of human lives. Promoting health is an economic segment of the financial – material investment, and on the other hand, health structure’s relies on efficacy and efficiency.

Any attempt of restructuration of the health care system in Romania must begin from the analysis of the way in which the ones financially supporting the health system think and react; the health subsystem, as part of the global social system, relies on market economy, on the contributor’s financial effort. The quality and the efficacy of the ones coordinating the professional destinies of the health care system must provide a convincing answer, based on the criteria and the methodology of an economic analysis at the level of health care services and individual practice. It is very important to be aware of the utility, the purpose of the activity, the patient’s satisfaction and the contribution to the global health of the two essential factors: ethics and economic under-layer.

In Romania, decentralization and the reform of the financing system were made without a serious analysis of the consequences on the population in terms of territorial inequity and of the availability of the infrastructures and implicitly of the services. Pros and cons (pro et contra) for decentralization of the health care system:

- **Pros (advantages):**
  - Subsystems can be organized considering the local values, available infrastructure, diseases, preferences and services;
  - Increase the income in the community (local) level and the efficiency in resources allocation
  - Decentralized units can be used as “laboratories” for national policies.

- **Cons (disadvantages):**
  - Possible additional costs;
  - System fragmentation;
  - Decisional centralism vs. Administrative decentralization;
  - Misappropriation of national programs or institutions redundancy.
NSPHHSMPD (SNSPMS - National School of Public Health and Management Bucharest) contributes to improving the performance of health care services and improving the health of the population in Romania by consulting services and technical assistance to decision makers and providers of healthcare services, offered in order to optimize health policies and health services and developing health promotion programs with the purpose of responsibility and increasing health education among population.

Main actions include providing scientific evidence to support health decisions and policies; evaluation, application and dissemination of research results to improve health practices; conducting studies and operational research in order to increase health system performance; educating and informing the population on attitudes and behaviors related to health, healthy lifestyle and public awareness about the importance of individual involvement in the maintenance and/or improvement of the health status.

Short and medium-term steps for health care system reform in Romania should focus, among others on:

a. Streamlining hospital services, implementation of regional hospitals networks, and reducing redundant capacity for inpatient services;

b. Enhancing primary health care services at the community level;

c. Implementing specialized secondary ambulatory care;

d. Increasing sector governance and stewardship to: strengthen the implementation of HTAs improve the management control mechanisms; implement health system continuous quality improvement and health system performance assessment; adjust the DRG (diagnosis-related groups) payment mechanism; streamline the National Health Programs; create the conditions for increasing the participation of private funds and private services; develop a Human Resource Strategy; strengthen the communications strategy.

Examples of Public Health Schools with HTA dedicated departments or programs: University of Alberta, UMIT (University for Health Sciences, Medical Informatics and Technology, Tirol, Austria), Harvard School of Public Health, University of Birmingham, University of Adelaide, Aarhus University, and National University of Singapore.

REFERENCES

CLOSER AND CLOSER TO THE IDEAL BIOMARKER IN INFLAMMATORY BOWEL DISEASES

The role of the intestinal microbiota in the pathogenesis of inflammatory bowel disease (IBD) is more and more taken into consideration. Biomarkers obtained from alterations in the gut microbiome may be an alternative marker of disease presence and severity. A recent study showed that Trimethylamine-N-oxide (TMAO) production is dependent on the metabolism of GI tract microbiota. A case-control study carried out for 106 IBD patients and 373 non-IBD controls from southwestern Ontario found plasma TMAO levels to be significantly lower in patients with IBD. With further research, plasma TMAO levels may become a relevant, cheap, noninvasive means of diagnosing IBD. (Wilson A, Teft WA, Morse BL, Choi YH, Woolsey S, DeGorter MK, Hegele RA, Tirona RG, Kim RB. Trimethylamine-N-oxide: A Novel Biomarker for the Identification of Inflammatory Bowel Disease. Dig Dis Sci. 2015 Dec;60(12):3620-30. doi: 10.1007/s10620-015-3797-3)