

Hospital Financing Based on Standard Costs for Diagnosis Related Groups

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Simona HARAGA (Baculea), PhD, Health Economics Researcher, Market Access Manager, Roche Romania

Eugeniu ȚURLEA ,PhD, Scientific Coordinator, Academy of Economic Studies Bucharest

Healthcare systems are confronted with multiple challenges in the past years due to changes in the political and socio-economic international arena as well as to decreasing quality of healthcare services, decreasing population health status, lack of efficiency of the delivery system, the rigid norms and functioning of the system, lack of competition and of an active role of consumers. These have led to a growing number of healthcare facilities, with overused and outdated medical equipments, with no incentives to provide preventive care, and wide disparities between regions and socio-economic categories regarding access to and quality of hospital services.

The scope of the research was to analyze actual methods of resource allocation to hospitals and to develop an improved allocation model, based on optimal costs of delivering services according to standards of actual medical practice in Romanian hospitals. The model suggests a standardization of care per types of patients (ex. Diagnostic Related Groups - DRGs) by means of developing care pathways. Once developed and implemented, care pathways may be the base for calculating the costs of „standard” care, so that they can provide a realistic image of the financial value of resources consumed in the care processes in Romanian hospitals.

The model of costing care pathways offers a basis for multiple actions in the areas of financing, cost control, quality of services, adapting to international standards of care, organizational culture, patient safety and patient satisfaction. For the impact it may have on the hospital care system, the implementation of this model may be considered a bottom-up reforming of the system.

Keywords: hospital financing, healthcare services costs, management accounting, care pathways, standard costs

BACKGROUND

Romanian hospitals are confronted at present with low levels of services financing, which seem to not account for the evolution in medical technologies, the growing demand for better access and more expensive services, the need for improving payment of providers in the public system, as well as the need to align to European standards of hospital care.

On the other hand, at national level there is a lack of interest and effort to costing hospital services,

and costing studies that have been initiated a few years ago did not generate useful data and results so far that could be used for financing purposes. In the same time, hospital providers did not develop a documented supply of services, with a defined package of care and service pricing, which could help the payer in buying services. In this context, it appears as necessary to create a good liaison between the provider and the payer, by better defining the types of services, the way they are delivered, the quality level, as well as the adequate level of financing.

Usually, in private delivery systems these come first, because the provider needs to know costs before setting prices, whereas in public delivery systems it is not a custom.

In the past 10 years efforts have been made to implement a new hospital financing mechanism based on patient classification in DRGs (Diagnosis Related Groups). In this new mechanism the funds are allocated to hospitals based on type (complexity) and volume of patients treated, and not on physical characteristics of the facilities (such as equipment, no. of beds, no. of personnel etc.), process indicators (such as no. of hospitalization days, optimum length of stay per specialty etc.) or other indicators unrelated to the activity. The mechanism allows a more transparent and equitable resources allocation among hospitals. The next step to be done in the Romanian hospitals is to ensure payment by performance, including dimensions such as quality of care and patients access. Premises for improving the mechanism were created in 2003, when an extended system of electronic data collection from all hospitals became mandatory.

The classification of patients in diagnosis related groups provided, for the first time in the Romanian healthcare system, a clear and complete image of the complexity of pathology of patients treated. Beginning with 2004, all acute care hospitals are financed based on this mechanism, by using tariffs per weighted case (standard case that is a case adjusted for complexity of care). In this way, hospitals know prospectively how much they are reimbursed for a patient, although they do not know the cost of delivering the care to that patient. On the other hand, the insurance houses know what types of patients they are reimbursing, by means of the contracting process, although they do not know the services actually delivered to the reimbursed patients. At last, patients know what services they are entitled to from public health insurance (at least they should know), although in reality they do not know what services they will actually receive at the point of accessing care.

A common solution to the above stated problems is the standardization of care per types of patients (per DRGs), that is developing care pathways. Once developed and implemented, they can form a base for calculating the costs of „standard” care, offering a realistic image of the financial value of resources consumed in the care processes in Romanian hospitals.

There is a wide range of publications in the literature which describe the process of estimating average costs for healthcare services. However, little has been written on estimating *standard costs* for healthcare services, that is what ought to be incurred by treating a patient in an efficient way, by a well managed clinical team and allowing for all realities including insufficient resources to deliver best care. Knowing the standard cost means knowing the „expected” cost for the provider to deliver care to a patient who belongs to a certain care pathway. And so, for calculating standard costs one has to know first the process of care for the pathology, which is the care pathway.

In the research we identified new instruments of measuring clinical activity in hospitals (care pathways) and modern accounting methods for costing hospital services. Knowing the cost of delivering services is useful not only to hospitals for efficiency purposes, but also to insurance houses for better adapting the financing levels, and to health authorities who are continuously looking for new sources of financing. In the past years the public-private partnerships became popular in healthcare sector and increased in volume of activity, for example in the areas of procurement of resources and services from private entities. This is common in some countries, like Great Britain, where a number of interventions for acute care with long waiting lists are bought out from private providers or even international ones. Also, these are common in Italy, where the the National Health System purchases services from private clinics, competing with the public ones. In France, an important part of the providers in the public system are private, and the quality of services is similar between private and public organizations. Worth mentioning, in all of these countries the public-private partnerships are state controlled, being governed by strict regulations. Similar to some EU countries, premises for partnerships were created in Romania as well, so that at present there is an important number of private providers (laboratory networks, clinics and more then 10 hospitals) contracting services with the insurance houses for the insured population. In the next years will be interesting to evaluate which are the benefits of public-private partnerships for the healthcare system, since buying out services with public resources from the private providers means in the same time denying resources to public providers. Basically, the future will show if benefits from improving quality of care due to increased competition among providers will overweigh the significant amount of resources exiting the public health system in favor of the private sector.

THE RESEARCH

First part contains a descriptive research and an analytical appraisal of the financing of the healthcare sector, namely hospital services and the costs of healthcare services delivery in the Romanian context. The second part explores new ways of allocating resources to hospitals, building a financing model based on standardized care paths (care pathways per Diagnosis Related Groups) using cost information from Romanian hospital settings.

The research uses as premises the description of actual status of financing the hospital sector, in terms of volume of resources and performances attained, as well as the description of the actual financing mechanism, its peculiarities and opportunities for improvement, comparisons with international models of financing hospital care. These are presented in first two chapters. The third chapter explores the dimension of costs of hospital care, starting with the theoretical approach on costing healthcare services - definitions, techniques, and costing methods, and continuing with identification of the most useful cost information for comparing costs of hospital services with the level of financing of the hospital services. In chapter IV a new approach for costing hospital services is presented, namely the costing based on care pathways for types of patients (DRGs).

This new approach is aimed to provide a model of financing hospitals based on costs per most frequent Diagnostic Related Groups at national level. In chapter V an application of the new approach is presented by studying the standard cost of hospital care delivered to 217 patients with Acute Myocardial Infarction (AMI) based on a care pathway; costs were estimated

using the ABC method. On the other side, a patient costs comparison for 12 DRGs was performed, using two estimation methods: first is the actual level of financing per DRG from the insurance house, and second results from cost data obtained through a costing project in 2005-2006 from 8 hospitals.

Conclusions are presented as points of view on the proposed model and its applicability in the Romanian context of hospital financing and in view of future public-private partnerships inside the healthcare system.

PERSONAL CONTRIBUTION

The research started with an overview of the healthcare sector resources, and hospital care and a presentation of actual financing methods of hospitals based on Diagnostic Related Groups (DRGs). The scope of research was to identify a new and viable allocation model, which could reflect current medical practice standards in Romanian hospitals, and the necessary levels of financing dedicated to hospital care.

Building such model encompasses the use of new instruments of measuring clinical activity (care pathways) and of modern methods of product/service costing (Activity Based Costing - ABC) in order to estimate a real, standard cost of services delivery.

The model represents a new perspective in costing healthcare services in Romania, its main benefit being that of objectively reflecting the costs of medical practice at current standards of care, as opposed to other estimation methods based on costs from international practice settings or data from individual costing projects.

At national level 10% of the DRGs (51 DRGs) represent the pathology of more than 50% of patients treated in Romanian hospitals.

According to the new model, care pathways for most frequent DRGs in Romania should be developed, so as to reflect actual practice standards, and then costs per care pathways should be estimated using cost data from more hospitals. A case study for Patients with Acute Myocardial Infarction (AMI) is presented as example. Due to complexity of care processes and to the high percentage of indirect (overhead) costs in hospital settings we opted for using the activity-based costing (ABC).

The method is efficient in identifying the non-value-added activities and the inefficiencies in the care processes and helps to better control the costs associated with them. The average cost per DRGs calculated based on similar care pathways in hospitals may become a good proxy for costing future

cases treated for same pathology, and may be a base for modeling the reimbursement level for those cases.

On the other hand, the research explored the actual situation of hospital services financing, by means of cost analysis per patient classified in 12 DRGs using two methods: first estimation for patient cost is the actual level of financing per DRG from the insurance house, and second estimation results from cost data obtained through a costing project in 2005-2006, for 3.400 discharges from 8 hospitals.

The average costs per each of the 12 DRGs calculated in both methods were compared. Results proved to be very different for almost all DRGs analyzed, with variations of their costs between 4-130% from one method to another. This suggests a lack of correlation between the level of financing per DRG and the costs incurred by hospitals by treating patients classified in those DRGs, as well as differences of costs for same DRGs among hospitals.

CONCLUSIONS

Results of the research reveal the deficiencies of actual financing system and show how this can be improved using real cost data from Romanian hospital setting. The suggested model of financing based on standard costs per type of patients (DRGs) presents a number of important advantages and benefits on more dimensions such as:

1. Identifies the *package of services* for a given diagnosis or type of patient. At present, hospitals treating same type of patients are, methodologically speaking, equally reimbursed (by means of the same tariff per weighted case) by the insurance house, although services actually delivered to patients may be different in volume and/or quality.
2. Identifies *costs of services* per type of patient, which can be used for modeling reimbursement tariffs by the insurance house. Knowing the cost of services also helps in building prices for services contracted with private insurers or other external buyers.
3. Shows the efficiency of hospital activity in the contractual relationship with the insurance house, by comparing revenue per case with the cost per case treated; it helps to identify which services can be subcontracted with other providers (outsourcing) for efficiency gains and identifies new opportunities for public-private partnerships.
4. Allows for *cost control* and control of organization's performance. Based on information obtained from managerial accounting and costs calculated with ABC method the hospital may identify and develop those services which are profitable, and resize the non-value-added activities.
5. *Reengineering of process flows and clinical management*. The ongoing benchmarking with own standard of care allows for improving care processes, reorganize activities and perform a better clinical management; allows for identification of medical errors and provides a basis for proactively preventing

them.

6. *Improvement of quality of services and patient satisfaction.* The use of care pathways enhances improvement in quality of care and increases communication among professionals and with patients.

7. Promotes an “open” organizational culture. Care pathways utilization creates good premises for improvement of multidisciplinary team work and helps in understanding responsibilities, and in providing integrated care by all personnel involved.

8. *Instrument of internal control.* Since care pathways reflect actual hospital standards in providing care, all variances from agreed standards are documented and discussed among professionals and with the management. Care pathways may be audited by the insurance house once integrated in clinical practice and in the contracts for services delivery.

9. *Protection against malpraxis.* The degree of conformity of clinical practice to the agreed protocol or care pathway may offer protection to clinicians against complaints, and helps them in preserving the standards of care.

10. *Reform of healthcare system from “inside”.* The model offers a basis for multiple actions in the areas of financing, cost control, quality of services, European standards of care, organizational culture, patient safety and patient satisfaction. In Romania we have a system problem, which, according to systems theory (“system problems require system solutions”), should be addressed by concomitant actions in all of the areas mentioned above. There is no single instrument able to provide the right solution to all problems. However, for all reasons here discussed we can start using care pathways.

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