

Costing and Pricing in Healthcare Private Firms*

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This article analyzes the development of an activity-based costing (ABC) system in a private Italian healthcare firm. Findings shed light on the role of the cost accounting system in price assessment: It outlines new opportunities for the identification of the service mix offered as well as for price optimization. Because private companies provide services both within the public system—where the National Health System (NHS) provides fixed reimbursement fees—and within the private system—where prices are defined by each company. Accurate cost information is extremely important to support managers in the analysis of the service mix profitability offered in each system. For the business segment in which companies do not have flexibility in setting prices, cost information enables managers to identify services which may present profitability problems. For the business segment where price flexibility exists, cost information supports the identification of pricing errors so that charges can be better defined.

Keywords: healthcare company, cost accounting, activity-based costing (ABC), pricing

Introduction

The issue of cost containment in healthcare has been defined by literature as one of the main problems in the fields of management and accounting (see, for example, the seminar work of Smith, Fottler, & Saxberg, 1981). In order to achieve this objective, different strategies have been defined by governments, both at macro level (i.e., emanation of specific public policies and regulations) and at micro level (i.e., development of internal managerial activities aiming to improve the organization's effectiveness) (Smith et al., 1981). Within these perspectives, the introduction of new financing mechanisms as well as new management systems in most Organization for Economic Cooperation and Development (OECD) countries has been one of the most important reforms occurred in the last 20 years in the healthcare area.

In line with this pattern, even the Italian National Health System (hereafter INHS) developed many important changes: They included the implementation of a “quasi-market” system (with the introduction of new forms of competition among various suppliers, both public and private), the adoption of new funding rules, and the implementation of new management control systems within each organization (Lega & Vendramini, 2008). The main aim of these reform activities was to encourage an efficient and effective use of resources (Ellwood, 1996; Paolucci, 2011) both within the national and local systems. “Quasi-market” competition between public hospitals and private companies leads to improved efficiency (Ellwood, 1996), because various providers should find the most efficient internal processes to obtain a competitive advantage. In this context, healthcare companies have a new role because, operating within the National Health System (NHS), they actively

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contribute to improving the quality of services by providing shorter waiting time for specialized health services, or to increasing the number of providers available so patients can choose the closest facility. For private companies operating within the NHS, prices are fixed, because they are set by regional authorities.

The combination of new financing rules (macro perspective) and new cost accounting systems (micro perspective) brings healthcare firms to a new context where the sustainability of the business depends strictly on the right mix of services and prices. In fact, while managers of private companies working for the NHS have no power over price, they can determine charges for screenings and influence the mix of services supplied outside the NHS. Clearly, cost information arising from a specific cost accounting system is essential in order to support decision-making processes regarding the profitability of each service provided.

The focus of this article is mainly on this aspect, that is, to analyze how a cost accounting system allows management in private companies to assess the profitability of services provided. Therefore, one contribution lies in describing how the cost accounting system based on the activities (hereafter activity-based costing (ABC)) allows properly measuring the cost of services provided by a healthcare company. Although originally developed for manufacturing processes, ABC is extremely useful in service companies, particularly where overhead costs are very high, and it is necessary to attribute them to services provided in order to calculate their costs. The second contribution of this article involves the opportunity offered by the ABC to support the effectiveness of the funding rules defined at the national (or regional) level. Given the possibility to know the detailed cost information, each organization could define its business segments in order to pursue great efficiency and effectiveness; this should also allow an increase in the effectiveness of the overall healthcare system, because resources are allocated to the most efficient organizations. The third contribution concerns the pricing process, because this article sheds light on the degree of service unit cost covered by the fixed rate defined by region (when services are paid by the NHS) or by the price defined by each company (when services are offered outside the NHS). Therefore, cost measurement is extremely important, because it allows healthcare firms to:

- (1) Know the unit cost of each service provided;
- (2) Improve the efficiency of provision processes;
- (3) Define the price on the basis of correct cost information;
- (4) Know and manage the profitability of each service, business area, and customer;
- (5) Assess the level of cost coverage of fixed NHS reimbursement rates.

This article is planned as follows. The next section analyzes the cost accounting system adopted by healthcare organizations; in particular, a detailed literature review is presented in order to highlight arguments in favor of adopting an ABC system in place of a traditional cost accounting system. In Section 3, a brief overview of the changes in OECD health systems is provided with a specific focus on the new role of healthcare companies, and the specific features of the ABC method applied to an Italian healthcare company are described. Section 4 summarizes some discussion points, while the main findings and conclusions are provided in the last section.

Measuring the Costs of Healthcare Services

The debate on the use of cost information in health services has been presented since the beginning of the 1980s (Herzlinger, 1978; Smith et al., 1981; Llewellyn, 1993; Garattini, Giuliani, & Pagano, 1999; Arai, 2006; Scarparo, 2006; Devine, Ealey, & O'Clock, 2008; Chandra, Kumar, & Ghildayal, 2011; Stock & McDermott, 2011) due to increased concerns over the allocation and use of scarce public resources. The development of cost

accounting systems in healthcare services (Carey & Burgess, 2000) has been reinforced by shedding light on their multiple benefits; these benefits include, for example, the opportunity to measure and improve the operational efficiency through a detailed monitoring of resource consumption, the support in budget setting and product costing information in order to promote choices within decision-making processes, and the voluntary or mandatory disclosure activities based on external reports.

In particular, many studies looked at the application of an ABC system, because its characteristics seem to confirm it as a powerful cost accounting system for healthcare organizations. The basic idea of ABC is that resources are consumed by the activities carried out by the company and activities are consumed by the products or services (Brimson, 1998). While traditional costing systems assume that products or services determine indirect costs by consuming the cost determinants, ABC states that the activities, consuming resources, create costs. Therefore, products and services consume costs because of the activities required by them (Johnson, 1988). Since ABC allows a greater control of industrial companies' structural costs of the support functions, or "tertiary" activities, it is extremely useful even in service companies, because it supports a detailed control of internal processes and overhead costs.

Nevertheless, despite literature presents many studies on ABC, the evidence is still inconclusive. Some studies gave support to the idea that hospital costs could be correctly analyzed and controlled by an ABC system and that its results are, both from the theoretical and methodological points of view, better than results of traditional cost techniques based on costs centers (Chan, 1993; Greene & Metwalli, 2001; Ross, 2004; Negrini, Kettle, Sheppard, Mills, & Edbrooke, 2004; Lin, Chao, Yao, Tu, Wu, Chern, Chao, & Shaw, 2007; Waters, Abdallah, & Santillan, 2001). On the contrary, other studies found that the potential role of ABC is not confirmed by empirical analyses; this could be due to some limitations in the implementation process (King, Lapsley, Mitchell, & Moyes, 1994; Garattini et al., 1999; Lawson, 2005) or to the attended benefits (Arnaboldi & Lapsley, 2004; 2005).

The first studies on ABC in healthcare are those of Chan (1993) and Upda (1996). They recommended ABC for hospitals basing their works on a comparison between ABC and traditional cost accounting methods. The case of the rural United States (US) hospitals is described by Greene and Metwalli (2001), whose analysis underlines the positive impact of ABC on capital investment decisions. They claimed that, because ABC represents a great opportunity to detail indirect costs, it can be a valuable tool in hospital financial decision-making processes. Moreover, the accuracy in the cost measurement could also support managers in budgeting and negotiations.

Waters et al. (2001) analyzed the application of ABC in a Peruvian non-profit organization. They highlighted the value of an ABC system over the traditional one, due mainly to the allocation process of overhead and indirect costs. Results show that service costs could be different between two clinics owned by the same hospital. Ross (2004) argued that the various reimbursement constraints have increased the need for providers to know their cost structures in depth. In this way, ABC not only can provide appropriate information to determine the cost of service with a particular focus on each payer's patient profile, but it also allows the operational improvement through an analysis of activities.

Negrini et al. (2004) focused on the European context and proposed a critical review of 11 studies on costing in healthcare. They focused on the methods of cost allocation, highlighting a generally poor specification in the classification of direct and overhead costs. Given these studies, a lack of standardized methodologies for the determination of accurate costs of hospital wards appeared. They claimed, however, that the value of ABC

should involve the determination of resource usage by each patient according to the “activities of care” delivered to him/her. Moreover, Lin et al. (2007) presented the application of ABC to the Department of Colorectal Surgery in a public teaching hospital which uses ABC to describe the cost structure of in-patients with surgical procedures. They found that ABC was able to accurately calculate costs and to identify several missing pre-surgical and post-surgical nursing educational activities. The advantages of ABC are also identified with a better price negotiation between healthcare providers and third-party payers such as insurance companies. In the Italian context, where a recent survey shows that the traditional cost accounting methods are in general perceived as “slightly useless” for decision-making and control by top managers of healthcare organizations, the value of ABC in specific settings is shown by studies published in national journals.

Besides these researches, other studies underlined some difficulties in the development of ABC in healthcare organizations. King et al. (1994) presented four case studies of ABC application focusing on its potential role both in covering the gap in existing accounting information systems and in meeting management information needs, such as the analysis of customer profitability. Despite its technical merits, the cases showed a partial application of ABC probably due to its resourcing needs and other organizational difficulties.

Garattini et al. (1999) presented a cost analysis method based on cost centers in order to calculate the full annual cost for an Italian hospital ward. They used a detailed allocation basis trying to follow the real resource consumption by the department units. Their conclusion was quite interesting: The new Italian reimbursement system based on Diagnostic Related Groups (DRG) provides an “ideal setting for ABC” (Garattini et al., 1999, p. 80), but because a limited accounting culture, rough cost information, and allocation basis are often used. In the same line of reasoning, Waters et al. (2001) claimed that, “ABC is particularly appropriate for calculating reimbursement levels for healthcare services that are billed based on DRG” (p. 5). Other authors raised the debate on the adoption of ABC by healthcare services (Arnaboldi & Lapsley, 2004). They complained not only of the technical complexities of its implementation (Arnaboldi & Lapsley, 2005), but also of the reasons of its adoption, mainly viewed as a “legitimization exercise” (p. 1) based on the introduction of modern accounting techniques.

Given the debate developed by the recent literature, we claim that the ABC system appears to be a suitable cost accounting system for healthcare organizations, because it provides managers with detailed resource consumption information. Clearly, some difficulties could arise in the introduction phase, due to a lack of competences, but the benefits for the overall organization seem to overcome such problems. The case described in this article shows that, when health services are standardized, there is no significant technical complexity and the results are extremely useful in supporting pricing.

ABC in a Private Healthcare Firm: The Case Study

The evolution of the Italian healthcare follows the patterns of the other OECD countries. Since the late 1980s, great numbers of reforms have been defined aiming to introduce new forms of accountability for organizations operating within the NHS (Lega & Vendramini, 2008). Both at national and regional levels, new financing mechanisms and planning rules were adopted, and a “quasi-market” system was introduced. All these reforms aim to develop new forms of competition among the suppliers of healthcare services, both public and private. In fact, given the increasing constraint of public resources and the rising of health care costs, new forms of competitive market were seen as a way to maintain universal access to basic healthcare services and to improve healthcare quality in overall OECD countries (Paolucci, 2011).

Nowadays, the INHS is region-based. Within the broad national guidelines, each region defines and adopts its plans, budgets, and reimbursement lists. For example, national guidelines define the maximum reimbursement fees for specialized outpatient services, and each region adopts its own reimbursement list within those guidelines. To date, services are provided by a majority of public organizations as well as by a group of private organizations whose amount of services provided within the NHS increases every year. Major public hospitals are self-governing and are funded by their regions, partly on past expenditure and partly on a fee-for-service basis (DRG) (Garattini et al., 1999). The shift from funding based on historical data to funding based (at least partially) on prospective methods (e.g., DRG or fixed fees) focuses attention on the efficiency of services delivery as well as on more accountability concerning the financial performance (Lega & Vendramini, 2008), both for public and private companies.

Therefore, in this context, a private company receives revenues in two different ways. First of all, for all services provided within the NHS, the company receives a fixed price for each screening, as identified by the region through a fee schedule. In this case, the patients, depending on their income, have free access to screenings, or they have to pay a fixed amount defined by the region, called “ticket”. Secondly, for services outside the NHS, companies define their own screening charges. Therefore, it is feasible to say that the revenues for the same service, a screening, provided by the same company, change according to the patient’s choice between a NHS service and a private care. The patient could pay an increased charge for reduced waiting time that comes with a private care. This is important in time-sensitive situations, for example, in the case of pregnancy ultrasounds.

The descriptive case study (Ryan, Scapens, & Theobald, 2002; Yin, 2009; Bryman & Bell, 2003) analyzed in this section aims to provide an insight into the process of development of ABC in a healthcare company. In particular, it allows the researchers to shed light on reasons for the adoption, on specific methodological features, and on results obtained.

This research approach reflects the need to explore and better understand management accounting in practice (Kaplan, 1986; Scapens, 1990) because of the richness of the data obtained (Ahrens & Dent, 1998). In this study, many data sources were used: documentation (income statements, balance sheets, and internal reports), archival records (i.e., organizational charts and personnel timetables), interviews with “key actors” (such as persons in charge of the organizational units), and direct observations of the operating activities for both screenings and their supporting activities, such as reception, administration, and preparation of medical reports.

The services provided by the firm analyzed (hereafter Medical Services or MS) include diagnostic imaging and cardiological screenings. The diagnostic imaging services are: bone densitometry partial (ankle, wrist, and femur) or total body, breast screening, computerized tomography with or without a radioactive contrast medium (referred to 17 different body parts), magnetic resonance (both entire and partial) with open or closed equipment (referred to 11 different body parts), radiology with or without a specific contrast medium, and ultrasonic imaging (UI).

The greatest part of these services has been provided within the INHS system, but for each service, the trends are quite interesting. A huge part of UI is provided within the private system, about 41%, even if these screenings are nearly totally available within the public system. It could be due to the reduced waiting time of private services compared to public services. The most requested screenings within the private system are from the bone densitometry group.

MS is a medium-large firm, whose main shareholders are private investors, which provides outpatient and day-surgery services and a broad range of diagnostic imaging services. It works both in the private and the public systems (nearly 70% of its total yearly revenues) and supplies about 120,000 services to approximately 65,000 patients (about 90% of them need diagnostic imaging screenings). The revenues are more than 10 million (€) and the number of workers is close to 80 (about 40% have independent contracts and the others are employees). In 2012, the most common services provided were UI, radiological screenings, and magnetic resonance, with an incidence of about 20% each one.

As well known in the literature (Cooper, 1989; Turney, 1989; Brimson, 1998; Gosselin, 1997), the traditional steps in the application of an ABC system are the following:

- (1) Identification of the activities of the production process;
- (2) Calculation of the costs consumed by the activities;
- (3) Selection of the activity drivers for the allocation of the cost of the activities to the final calculation item;
- (4) Calculation of the cost of final object of cost calculation.

The steps described above will be displayed in their application to the case study.

Therefore, at the end of the first phase, it was possible to describe in detail the processes provided at MS, from the scheduling of appointments to payment collection. The output of this first phase was a detailed map of the company's activities; it led to a separation of MS's production process into 24 activities: about 12 activities referred to the execution of the screenings (e.g., execution of a simple X-radiation (XR), execution of a computed tomography (CT) without a contrast medium, execution of UI, execution of a cardiological screening, execution of a breast screening, etc.). The remaining activities belonged to the staff and back office, such as the reception of patients, the booking of appointment, the transport of test materials to other departments, the management of the documents issued by (and directed to) the INHS authorizing medical treatments for patients, and the delivery of medical reports and payments.

The second step consisted of calculating the costs consumed by the activities. The costs exclusively concerning the activities were objectively attributed; instead, common costs were attributed using specific resource drivers. The analysis of the common costs was quite complex, because they were not analyzed overall, but one at a time. A brief description of this analysis is shown below, providing the analysis for three kinds of cost: building, work stations, and personnel.

Cost of the building. It is mainly concerned with rentals and shared costs, illumination and heating, cleaning, garden services, and depreciations charges (nearly 1 million euro yearly). It was attributed to each functional area (diagnostic area, cardiological area, reception, back office, administration, etc.) on the basis of the squared meters occupied and in turn attributed to the people and/or activities that use the space, using ad hoc drivers.

Cost of the work stations. Four different types of work stations were identified: the simple work station, the administrative work station, the work station for outpatients' departments and for diagnostic imaging, and the work station for the arrangement of medical reports as a part of the diagnostic imaging area. The difference among the costs of each work station was based on the resources consumed, above all, specific software. For example, the work station for diagnostic imaging consumed resources for more than €12,000, while the simple one consumed a little bit more than €3,000.

Cost of the personnel. The annual cost was obtained by adding together all expenses connected to human resources: basic salary, various additional payments, allowances, overtime, national insurance and welfare contributions, any funds set aside for severance pay, or deferred payments of other kinds. This cost was then divided by the number of total working hours in order to identify a specific hourly cost for each employee.

In order to highlight the specific measurement issues involved in each step, the example of the unit costs for screenings belonging to the CT area is presented. It is one of the main services provided by the company, regarding both the annual revenues (16% of the total revenues) and the number of screenings offered to patients (9% of the total screenings). The CT screenings are very complex and heterogeneous because of the body parts analyzed (17 different areas) and the technology used (with or without a contrast medium). Almost all CT, screenings could be supplied within the INHS or outside it.

The measurement of the unit costs required the identification of the activities associated with the CT ward: activity No. 7, "execution of a simple CT", and activity No. 8, "execution of a CT with a contrast medium". The two activities share some common costs, mainly the costs of depreciations and equipment maintenance.

Table 1 describes the common costs identified for CT activities: The main cost was that of the CT equipment rent.

Table 1

The CT Annual Common Costs (€)

Cost item	Value
CT equipment maintenance	15,419
CT equipment rent	405,596
Other equipment depreciation	4,458
Tools and machinery depreciation	2,224
Total	427,697

In order to calculate the full hour cost, the common costs were added together with the fixed costs of building and of the work station (see Table 2). As it happened with the cost of building, these costs have been allocated to the technicians, because they are the only ones that are always presented during each screening.

Table 2

The Full Hour Cost of Technicians and Nurses for the CT Area (€)

Cost item	Technician	Nurse 1	Nurse 2
Building cost (a)	35,635	-	-
Common cost (b)	427,696	-	-
Work station cost (c)	18,957	-	-
Annual cost of employee (d)	93,563	53,877	41,712
Full cost (total) (e = a + b + c + d)	575,851	53,877	41,712
Worked hours (f)	1,819.5	1,726	1,726
Full hour cost (g = e/f)	316.49	31.22	24.17
Average hourly cost of nurses	27.69		

The next step concerned the identification of the personnel cost consumed by the activities and therefore, it was necessary to measure the time spent by people to carry out each activity. The cost was obtained by adding together:

- (1) The cost of the personnel (as average of cost of technicians and cost of nurses);

(2) A part of the cost of the person in charge of the CT diagnostic area, calculated by dividing his/her total cost among all the activities in which he/she was engaged, based on the time he/she took to complete each activity;

(3) Only for the activity No. 8, a part of the cost of the anesthetist (by law, the presence of an anesthetist for any screening that uses contrast medium is required, therefore, the annual cost of the anesthetists was divided among all the screenings using contrast medium carried out during the year).

At this stage of the application of the cost accounting system, the company had identified the activities and attributed specific and common costs to them. The next step was to calculate the cost of the health services provided to determine the degree of coverage both by the fixed rate defined by region (when services are paid by the INHS) and by private charges.

The cost of each screening was calculated by taking into consideration both the direct costs as well as the costs of all associated activities. Steps for calculating the cost of each screening are summarized below.

First of all, the activity drivers for each screening were identified. These drivers were the criteria used to allocate the costs of activity to the final object of cost calculation (screening). The activity drivers were identified for each activity and assessed for the existence of direct cause-and-effect relationships between the amount of resources consumed by the activity and the cost allocated.

For “supporting” activities, such as scheduling and reception, the activity driver was the total number of screenings carried out in the year. For the “core” activities, such as the execution of CT screenings, the activity driver was the total annual minutes used during the screenings. Therefore, it was possible to determine the unit cost of driver (activity rate), obtained by dividing the annual cost of the activity by the total amount of the drivers chosen.

In the end, it was possible to trace back the costs of activities to the cost objects (screenings). The calculation was determined by multiplying the activity rate for the driver units that represents the consumption of the activity by each screening.

A summary is available in Table 3, which shows the composition of the unit cost and the revenues for some of the CT screenings: variable costs, costs of activities necessary to provide screenings in both the public and private systems, costs of medical personnel (their remuneration is different in the public or private system, because in this company, it is defined on the basis of the regional fee or private charge), the fixed fee reimbursed by the INHS, and the charge defined by the company.

Table 3

Unit Costs and Economic Margins in NHS and Private System (CT Screenings)

	Teeth	Skull	Pelvis	Colon with a contrast medium	Neck with a contrast medium	Total body with a contrast medium
(1) Direct variable cost	3.13	3.13	3.13	8.23	29.47	29.47
(2) Cost of activities (NHS)	35.42	65.94	65.94	200.54	114.23	330.01
(3) Cost of activities (private system)	34.81	65.34	65.34	199.94	113.62	329.41
(4) Direct cost of physician (NHS)	14.81	11.93	12.41	29.63	19.19	66.66
(5) Direct cost of physician (private system)	19.50	12.35	13.00	32.50	19.50	78.00
(6) Unit cost (NHS)	53.36	81.00	81.48	238.40	162.89	426.14
(7) Unit cost (private system)	57.44	80.82	81.47	240.66	162.59	436.88
(8) Fixed fee defined by NHS	113.95	91.75	95.45	227.95	147.60	512.75
(9) Charges defined by HC	150.00	95.00	100.00	250.00	150.00	600.00
Difference (NHS) (8)-(6)	60.59	10.75	13.97	(10.45)	(15.29)	86.61
Difference (private system) (9)-(7)	92.56	14.18	18.53	9.34	(12.59)	163.12

Discussion

The case study shows that an ABC system allows the firm to accurately calculate the cost of each individual screening. In particular, in the analysis of the indirect costs, the application of an ABC system brings different results compared to those obtained by the traditional system based on cost centers. For instance, the costs of the space occupied (building and so on) were analyzed in detail in order to measure the consumption of resources by each activity. There were differences among the reception or secretarial areas with regard to diagnostic wards, because the “use” of the room by each personnel member varies. In these examples, the consumption of costs with a traditional system would have been attributed to the organizational units according to some volume ratios. However, because the focus was on screenings, the ABC system does not consider the organization aspects and concentrates on the activities dimension. Therefore, we observed that in the diagnostic wards, a radiology technician is always present, but a variable number of other specialists may or may not be present. In this case, it would be correct to allocate costs based only on working hours of technicians, while in other areas, costs should be allocated based on working hours of the total number of employees.

As well as the importance of analyzing indirect costs in healthcare companies, reference to the activities which make up the production process is particularly useful for pursuing one of the aims of cost accounting in this type of company: controlling labor costs. With an ABC system, it is possible to understand “why” or “for what” certain personnel costs are incurred.

Moreover, for a healthcare company which provides services characterized by high standardization and payment system diversity, the detailed analysis of indirect costs empowers the company to calculate correct unit costs and to compare them to charges obtained by patients or by region. In fact, in these companies, cost allocation is a very delicate matter, not only because of the consequences on the pricing of services provided outside the NHS, but also because of the assessment of profitability of services reimbursed by the NHS with fixed fees.

The case shows that the comparison between unit costs and fixed fees reimbursed sheds light on some critical reasons for considering ABC verses traditional cost accounting models. For instance, 23% of screenings within the NHS are characterized by negative margins, because unit costs are higher than the fees. For a huge part of these, nearly 40%, the value of the negative margin is quite relevant, because the unit cost is 20% higher than the fee. It is surprising that a similar deficit also occurs when charges are defined by the company. In fact, nearly 20% of screenings analyzed present a negative margin, and for some of these, the unit cost is 20%, or more, higher than the charge that patients pay.

What does this mean? It may mean that, even for services provided within the private system, the traditional cost accounting model adopted by the company calculates a unit cost very different from that measured by the ABC system. After analyzing each diagnostic area, the ABC system found that the most critical situation is that of radiological area (XR) where 65% of screenings have actual costs higher than the fees reimbursed. Even for screenings provided in the private system, the majority are priced lower compared to the actual unit costs.

Given these results, MS faces a challenge in order to improve the profitability of health services, or at best, to reduce losses. For services provided in the private system, MS may try to change the internal processes in order to reduce costs or it may adjust the price lever in order to increase screening prices that present a negative margin. Clearly, it could also consider a change action even for services that have positive margins.

For example, it could reduce prices for some screenings in order to influence its market share and increase the demand from patients. With reference to the services provided within the NHS, MS might redesign internal processes in order to improve their efficiency. Besides, MS might decide to maintain some services with negative margins for specific strategic reasons; here, the ABC system allows MS to know, in a more detailed way, the amount of subsidies required for these services.

Summary and Conclusions

The evolution of national healthcare systems in OECD countries introduced new forms of competition among the suppliers of healthcare services, both public and private.

The introduction of fixed reimbursement rates is clearly one of the most important innovations in the system. This implies that, in order to assess the degree of coverage for public service segments, each private company has to know the correct unit cost, because the value of real cost consumption could be placed over or under the fixed rate defined by each region as the “average cost” for services. In fact, the real cost consumption depends on many reasons. For example, the organization’s internal processes may be different from the processes used to measure the average unit cost in a location where the consumption of resources is different. Or the efficiency of the internal processes may be better or worse than the degree of efficiency used in the measurement of the average cost.

Given these financing mechanisms, companies try to find a balance among the great variety of healthcare services delivered and the mix of sources of revenue. On one hand, the trend towards an increasing demand of private healthcare services implies a great opportunity for the development of highly specialized services in order to increase revenues belonging to the private activity segment. On the other hand, a continuous decrease in public resources is likely to prompt increasing attention to the efficient use of resources in order to face a decrease of a fixed rate reimbursement.

In this article, we argue that, given the increasing attention on healthcare cost containment both at national and local levels, the ABC system seems to be a valuable tool in order to pursue at least two objectives. At the micro level, the first concerns the availability of correct cost information of each organization, both public and private. At the macro level, the second regards the correct functioning of the new financing mechanisms introduced by the healthcare reforms: While the shift to funding based on prospective methods based on fixed reimbursement fees focused attention on the efficiency of delivering services, the overall efficiency of the healthcare system could be pursued if resources are correctly allocated to the most efficient and effective organizations. This means that each organization should know in detail the costs of the production process consumed by the different services provided in order to support the decisions regarding the mix of services offered.

The growing competition in the healthcare sector has raised the utility of service costing, because the correct identification of the costs of treating patients allows maximizing resources (Carey & Burgess, 2000) through services mix management. For private companies, whose revenues belong to two different sources, fixed fees reimbursed by the NHS and charged prices, the establishment of actual costs of treating patients supports pricing policies, because it facilitates the assessment of contracts with NHS and assists managers in price process with reference to private patients. This article proposes the ABC system as a suitable system for accurate price costing and shows its application in the case of a private Italian healthcare company. To the best of our knowledge, this is one of the first complete and detailed studies which examine the application of ABC to overall services provided and not only to an individual service.

Results highlight that when a company does not have flexibility in the price definition, such as for all services provided within the NHS, the unit cost information is relevant in order to define a profitable service mix. In fact, because each service cost may be above or below the price paid or the fee reimbursed, the company needs accurate information to decide how and why the service mix should be changed. For instance, a change in patients' demands could be followed by the decision of interrupting the provision of some kind of services or that of starting a review of internal processes aiming to increase their efficiency. Moreover, the ABC system allows healthcare companies not only to measure and manage the profitability of each service provided, but also to control the service mix. Moreover, results highlight that the ABC provides managers with detailed cost information about services, while the traditional cost accounting system, based on cost centers, does not. An ABC system provides reliable information, because it does not allocate overhead costs on the basis of volume ratios, as the traditional cost accounting system does, but it identifies costs consumed by activities and links them together in the process related to a specific screening.

This point leads us to another fundamental result achieved by the ABC system: the control of the service provision process. Because activities constitute the process of service provision, the analysis of their sequence and responsibility makes it possible to measure their performance, quality, and time taken, in order to identify ways of improvement. For each activity, it is necessary to have information, though not necessarily in terms of money, for explaining the cause of activity execution (cost drivers) and the quality standards reached (performance measures). Knowledge of cost drivers and performance measures helps identify if the activities are carried out in an efficient and effective way.

This study will be valuable to regional healthcare decision makers because of two additional contributions. First, it sheds light on private organizations' management processes and on the possible consequences of a reimbursement system based on fixed fees. Clearly, regional governments must define one unique fee for each service, and the behavior of companies trying to take advantage of the system is not avoidable. Second, the technique used to define average costs and fees has a very significant impact on the results; therefore, the regional government has to assess carefully which should be implemented.

There are at least two limitations that must be considered while examining this study. First, the analysis is based on a case study research design, which has significant advantages in developing reliable models, but is lacking in terms of the generalization of results (Bryman & Bell, 2003). Second, the analysis is focused on the design of the system instead of on the implementation phase. As some studies underlined (Garattini et al., 1999; Arnaboldi & Lapsley, 2004; 2005), difficulties due to a lack of competences or resources could arise in the adoption phase. Nevertheless, this study shows that when services are standardized, such as outpatient services or radiology screens, it is not necessary to frequently revise the activities, because performance activities usually do not change, except for when an extraordinary event occurs.

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