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The measurement of an organisation's performance in the conditions requiring the elimination of functional organisational barriers

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Abstract

An organisation's performance is determined by means of measures which, through their internal connections, constitute a system. Unfortunately, the measurement of achievements, including processes which create value streams, is frequently conducted fragmentarily, and not comprehensively.

The objective of this article is to analyse the following: (1) changes made in Poland's health care system in the recent years in the context of the manner in which medical processes are organised in health care institutions, (2) the necessity of eliminating functional organisational barriers, and (3) the need to develop a multi-dimensional organisational performance measurement system. Additionally, the coverage of operating costs requires the knowledge of the value of health care services, which results from relevant cost calculations.

The article is based on the analysis of the domestic and international literature on the subject. It has been determined that the current methods of performance measurement used in health care institutions are insufficient, thus requiring reformulation and supplementation. Similarly, it is necessary to reduce barriers between medical departments in view of changes in stakeholders' expectations, especially recipients of services in the areas of personalised or multidisciplinary medicine. This task is not easy, but it is feasible. There are great possibilities of applying solutions typical of business organisations in the area of cost calculation, although the specific character of health care institutions requires an individual approach in each particular case.

Paper type: review article

Keywords: organisational performance measurement system, process orientation, health care institutions, hospitals, health care

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Introduction

Performance measurement systems used in organisations have substantial influence on the management of efficiency and its continuous improvement (Rummler & Brache, 2000, p. 36). Performance measurement of processes is conducted by means of a set of measures which reflect results generated by a process in terms of key success factors (Skrzypek & Hofman, 2010, p. 139). Such process appraisal measures are quantities allowing one to ascertain whether a given process is executed effectively (Bitkowska, 2009, p. 67).

However, performance measurement creates many problems for organisations because it depends largely on organisations' objectives and these are always manifold, frequently competitive with one another and reflecting expectations of various stakeholders. Furthermore, objectives can be formulated according to different concepts. For example, objectives formulated as a function of a subject (e.g. as provision of health care services to patients), as a derivative of objectives of people (groups) creating a given organisation (the basis for such objectives is motives and values, and thus an organisation's mission, its values) or as a resultant of objectives of various stakeholders (e.g. a founding body, payers, patients, employees, managers) or finally as survival and development (Hass-Symotiuk, 2011, p. 66). Unfortunately, the measurement of process results in organisations is frequently performed in a fragmentary, instead of a comprehensive manner; additionally, there is a lack of a methodical approach to the issues related to the planning, measuring, and reporting of process results (Skrzypek & Hofman, 2010, p. 94). Thus the problems of process efficiency measurement constitute a key issue in the area of organisational management.

Inside hospitals, which are the subject matter of this paper, various processes take place with respect to both the creation of value for the customer and the level of their complexity. All such processes require continuous improvement (Bitter, van Veen-Berkx, van Amelsvoort, & Gooszen, 2015, p. 343). Irrespective of this, each of them should be reviewed regularly.

The objective of this article is to analyse the following: (1) changes made in Poland's health care system in the recent years in the context of the manner in which medical processes are organised in health care institutions, (2) the necessity of eliminating functional organisational barriers, and (3) the need to develop a multidimensional organisational performance measurement system.

The article is based on the analysis of the domestic and international literature on the subject.

1. Changes in Poland's health care system and their impact on the organisation of medical processes in health care institutions

The health care system in Poland underwent a substantial change in 1999. That period is a time of transition from the so called Siemaszko model to the insurance model of health care (Nojszewska, 2011, p. 175). It was economic and demographic changes that made the reforms of the health care system necessary. This, in turn, caused changes in the manner of financing the health care sector as one of the elements of Poland's economic system.

The trends visible in Poland comprise, first of all, the ageing of society, i.e. the continuously growing percentage of older people in society, lengthening life expectancy, and the low fertility rate. These phenomena have been observed and are well known in developed countries. The ageing of the population influences the amount of expenditures on the treatment of patients and on the manner in which the very treatment process is organised. The other changes taking place in the environment which have a huge impact on changes in the shape of the health care system include technological changes (related to new diagnosis and treatment possibilities), social changes (different expectations of more conscious and better informed patients), or economic changes. These factors cause the necessity of the growing operating efficiency of health care institutions and making better decisions by managers at all levels (Raulinajtys-Grzybek, 2013, p. 129).

The objective of the 1999 reform was to create a financing system which would function outside public funds, which previously had been provided in the form of subsidies directly from the state budget (Drozdowska, Sikorski, & Zemke-Górecka, 2011, p. 19). It was an attempt to free the state from generated debt. Two changes became necessary in such a situation: separating the financing of the health care system from the state budget and implementing the concept of the independence of health care institutions. Consequently, there appeared Sickness Insurance Funds (monopolists in a given territory – province) which, after a few years, were replaced by a centralised system of financing from the National Health Fund, which was established and became the sole payer in 2003. In this manner, the monopolist position of the payer was maintained. Taking advantage of their monopolist position, the Sickness Insurance Funds determined rates for medical services at the level of current costs, while depreciation costs were to be covered by the founding bodies, i.e. the most frequently local government entities which, however, did not receive public revenues to finance their independent public health care institutions (Drozdowska, et al., 2011, p. 21). In consequence, the indebtedness of these institutions continued to grow. The establishment of the National Health Fund maintained the payer's monopolist position and its advantage over the service provider resulting in the imposition of contractual conditions. In this respect, the balance between

the parties is to be restored by the Agency (previously called the Medical Technologies Appraisal Agency, and now the Medical Technologies Appraisal and Tariff Setting Agency), in accordance with the amendment to the Public Health Care Services Provision Act, effective as of 1st January 2015 (The Public Health Care Services Provision Act, 2004). Among other things, the Agency is responsible for establishing tariffs of services and developing proposals of recommendations for a cost accounting standard (The Public Health Care Services Provision Act, 2004, Article 31n, items 1a and 1b). The objective is to determine objectively the value of carried out processes (medical procedures), so that the established amount is sufficient to cover the factual costs incurred for their performance. Before 1st January 2015 it was the National Health Fund that had appraised the costs of health care services, as well as contracted for and supervised their provision, maintaining complete advantage over the service provider. Currently it is the responsibility of the Agency. The Agency's additional preparation of a cost accounting standard aims at standardising the manner of identifying, collecting, processing, presenting, and interpreting information on the costs of health care services. The undertaken activities result, among other things, from the belief that it is bad management of those running health care institutions that is the source of their indebtedness problem. This problem was to be solved by changes in the ownership form of health care institutions, i.e. commercialisation and privatisation (Nojszewska, 2011, p. 176). In this way, it became possible to transform health care institutions into commercial law companies. Nowadays it is possible to observe the trend towards withdrawal from such proposals.

The specific character of the health care services market depends primarily on a financing system and a service provision structure occurring in particular countries. In Poland, the fundamental relationships influencing the functioning of health care institutions include the following:

- regulations imposed by governmental authorities (at the central and local levels),
- agreements entered into with the public payer (the National Health Fund),
- relationships with the medical personnel (physicians, nurses),
- relationships with patients,
- relationships with representatives of the pharmaceutical sector,
- relationships with representatives of the medical technology industries (Raulinajtys-Grzybek, 2013, p. 16).

In the literature on the subject, authors frequently emphasise that networks of relationships with stakeholders with whom managers have to deal are very important in managing public organisations (Frączkiewicz-Wronka, 2009, p. 106). Although apparently simple, this task is in fact difficult in execution. Patients' expectations of health care services providers are also growing systematically. Developing

healthy and correct relationships with patients is not easy, especially in the situation of intensifying pressure from patients for the manner and quality of providing health care services, and sometimes their unjustified expectations regarding the effects of services and the consequent increase in the number of registered complaints (Raulinajtys-Grzybek, 2013, pp. 17–19).

As a result, health care institutions operating within the framework of the health care system frequently continue to be organised according to the principles characteristic for functional organisational structures, although stakeholders' expectations in this respect changed a long time ago; what they require now is the horizontal (process-based, level) organisation of health care processes. Researchers also raise the issue of the insufficient or just very low efficiency of providing patients with health care services, and in particular the problem of the very weak or non-existent connection between a health care institution's investment activities and its core medical activities, which consequently is very close to the issue of poor utilisation of resources (Krasowska-Marczyk, 2007, pp. 169–179).

Changes occurring in the Polish health care system exert direct impact on the manner in which health care institutions organise medical processes, mainly within the framework of the functional areas of organisations; these, in turn, are inadequate for the needs reported by stakeholders which require that managers orient their efficiency towards processes and not functions. Meanwhile, in the literature there appear more and more references to the paradigm of a so called patient-centred model of care (Liberati, Gorli, & Scaratti, 2015, p. 848).

2. On the necessity of eliminating functional organisational barriers

In an organisation there occur many different processes which can be combined in uniform groups, depending on an adopted criterion. One of the classifications most frequently used in both theory and practice is the classification in which three types of processes have been distinguished with regard to value created for the client (Grajewski, 2007, pp. 62–63). According to Hammer (1999, p. 21), a set of processes of key importance for an organisation is usually small, comprising from 5 to 15 processes. Each organisation needs to identify its typical processes, taking into consideration the unique character of its operations.

Health care activities consist in the provision of health care services, the promotion of healthy living, and the performance of didactic and research tasks in relation to the provision of health care services and the promotion of healthy living. Health care services are activities aiming at the maintenance, rescue, restoration or improvement or health as well as other medical activities resulting from treatment processes or separate regulations determining the principles of performing such

processes (The Health Care Activities Act, 2011, Article 3.1 and Article 2.1, item 10). The legal basis for the functioning of institutions conducting health care activities is the Health Care Activities Act of 15th April 2011, as amended; previously it was the Health Care Institutions Act of 30th August 1991 (Chluska, 2014, p. 17). According to the Act, it is possible to distinguish the following types of health care activities:

- in-patient and round-the-clock health care services,
- outpatient health care services (The Health Care Activities Act, 2011, Article 8).

The health care system is managed on the following three levels: the macro level (the Ministry of Health), the mezo level (e.g. founding bodies) and the micro level (individual health care institutions) (Hass-Symotiuk, 2011, p. 7).

In Polish hospitals, the functional structure occurs the most frequently. Work in such a structure is organised in separate units established on the basis of performed functions: food provision, accounting, medical (bed) wards, a laboratory, diagnostic units, an operating theatre, technical maintenance, etc. (Lewandowski, 2010, p. 161). A hospital treatment process is an example of a basic process which starts with patient registration and hospital bed allocation. At further stages this process comprises diagnostics and drug application; it ends with hospital discharge.

Typical examples of the main processes performed by health care institutions include the following: (laboratory, imaging) diagnostics, outpatient treatment, hospital conservative treatment, hospital surgical treatment, rehabilitation, nursing (*Hospital Portraits*, 2013, p. 16). The establishment of mega processes running horizontally across wards, clinics and other organisational unites requires a change of the functional organisational structure into a matrix structure which allows one to coordinate the work of teams consisting of various medical specialists coming from many wards (Lewandowski, 2010, p. 166).

In many hospitals, the process-based approach used in particular specialities or wards is a standard (Lewandowski, 2010, p. 165). On the other hand, Polish hospitals practically do not design processes necessary in the treatment of patients requiring multidisciplinary interventions or passing through many specialist wards. The lack of such processes is the reason for the fragmentary character of treatment, which may have a negative impact on clinical results and hinders cost optimisation of the whole treatment process. Having the right to convene multidisciplinary specialist consultations, the service owner, or the coordinator of such a mega process, could cause the development of a comprehensive treatment plan, the optimisation of diagnostics and pharmacotherapy (Lewandowski, 2010).

3. Performance measurement in health care institutions

The management of health care institutions entails the necessity of taking relevant measurements and evaluating achievements of such organisations. The performance of a health care institution is the result of its activities in terms of a degree of the achievement of established goals (effectiveness) and the competence of turning resources into services (efficiency) (Hass-Symotiuk, 2011, pp. 63–64). The performance of health care institutions should be appraised with respect to their possibilities of providing health care services to all patients irrespective of physical, cultural, social, demographic or economic barriers as well as with respect to the whole health care system (Hass-Symotiuk, 2011, p. 65). The objective of a performance measurement and evaluation system is to measure progress in pursuing established goals, to clarify, agree and ensure the implementation of a strategy as well as to plan activities and resources necessary for its implementation (Hass-Symotiuk, 2011, p. 76). The source of necessary information is financial and managerial accounting.

In managerial accounting, performance is identified with financial results. However, besides financial measures, health care institutions may appraise their achievements by means of a whole range of extra-financial measures which are not limited to just one perspective reflecting a given organisation's manner of functioning. Irrespective of a large number of perspectives taken into consideration in performance measurement and evaluation in health care institutions as well as the strengths and weaknesses of each of them, financial measures always constitute a basis which no well-functioning entity can afford to ignore.

The most frequently formulated economic (financial) goal is at least to cover operating costs with achieved revenues. But the achievement of this goal requires the knowledge of the costs of health care services provided by a given health care institution. In this respect, it is cost calculation that should constitute a foundation for further actions.

4. Cost calculation of a health care service

In health care entities, accounting is the basic source of economic information. It collects all necessary data characterising performed activities and fulfils the service function for various management levels, providing them with necessary information. It is an important element of the information system in a health care institution. Furthermore, accounting in health care institutions should be characterised by particular diligence in reflecting management processes because they concern the limited resources of public funds available to the health care system (Chluska, 2014, pp. 20–22).

The reasonable management of health care entities requires relevant knowledge of costs (Świderska, 2011, p. 9). Direct and indirect (departmental) costs are posted in the direct and auxiliary activities cost accounts. On the basis of source documentation, direct costs can be allocated to particular types of activities; these are, for example, salaries, social insurance premiums and other benefits, used materials and energy, medicines, reagents, disposable and non-disposable medical equipment, purchase of medical procedures (outsourced services) (Hass-Symotiuk, 2012, p. 339). Indirect (departmental) costs are relatively fixed costs of every organisational unit within a health care institution's organisational structure concerning the performance of a given type of activity which cannot be regarded as direct costs. Overhead costs comprise expenditures related to the management of a health care institution as a whole (Hass-Symotiuk, 2012, p. 339).

The implementation of cost recording based on the place of their occurrence allows one to calculate unit costs of provided medical services. For this purpose, one calculates the so called gross production cost of health care services on the basis of direct costs, variable indirect costs and this part of fixed indirect costs which corresponds to the level of such costs at the normal utilisation of production capacities (Nowak & Nita, 2010, p. 95). An example of the calculation of a total production cost and a unit production cost is presented in Table 1.

Table 1 *The calculation of a total production cost and a unit production cost of a health care service – an example*

Specification	Amount (PLN)
I. Direct costs	**231,000**
1. Direct materials (used medicines, auxiliary supplies, disposable equipment, etc.)	147,000
2. Direct salaries with surcharges (salaries of the medical personnel, social insurance contributions, etc.)	84,000
3. Other direct costs	
II. Indirect costs	**37,500**
1. Variable costs	31,500
a) indirect materials	14,700
b) indirect salaries	16,800
2. Fixed costs	6,000
a) depreciation	5,000
b) other fixed departmental costs	1,000
Total gross production cost of health care services	268,500
Production output (pcs.) – number of provided health care services	1,050
Unit gross production cost of a health care service	256

According to the cost accounting standard for health care services prepared by the Medical Technologies Appraisal and Tariff Setting Agency, there are as many as eight categories of simple costs. Also additional analytical levels have been introduced with respect to core activities, auxiliary activities and management. Pursuant to § 3.3 of the published regulation concerning recommendations related to the cost accounting standard, a set of cost accounts used by service providers in the functional arrangement contains a division into the costs centres of core activities, auxiliary activities and management (The Regulation of the Minister of Health on recommendations concerning the cost calculation standard applicable to service providers, 2015). The regulation presents also detailed principles applicable to the accounting of particular costs.

Conclusions

An organisation's performance measurement system should be a reflection of processes taking place within it. Changes occurring in health care institutions in such areas as effective legal regulations, changing technologies, expectations of various stakeholder groups (owners, service recipients, payers, employees, local communities, etc.) result in modifications in the organisation of treatment processes in health care institutions. Unfortunately, when an institution adapts itself to new conditions, it is impossible to satisfy all interested parties.

Recently we have witnessed particular discrepancies between the way in which health care entities are organised around functional areas, such discrepancies being determined by the manner of financing executed according to specialities, and the expectations of service recipients related to the approach to the provision of health care services in the comprehensive manner oriented towards the customer, in the horizontal (process-based) arrangement. This can be confirmed, among other things, by the more and more frequent demand for the introduction of so called personalised medicine (close cooperation between diagnostics and therapy) or multidisciplinary medicine (coordination of treatment within the scope of many specialities). Eliminating barriers among specialities is not easy, especially in view of the fact that all activities aimed at the reduction of barriers between medical departments are perceived as attempts to undermine the authority of their managers and to introduce chaos to the organisation (Lewandowski, 2010, p. 163).

The basis for the construction of an organisation's performance measurement system relevant to managerial needs is cost accounting. Hence the need to calculate production costs of a health care service, which – because of the unique character of the medical sector – has recently become the focus of attention for both researchers and practitioners of management. The first effect of such work is the developed cost accounting standard.

References

Bitkowska, A. (2009). *Zarządzanie procesami biznesowymi w przedsiębiorstwie*. Warszawa: VizjaPress & IT.

Bitter, J., van Veen-Berkx, E., van Amelsvoort, P., & Gooszen, H. (2015). Preoperative cross functional teams improve or performance. *Journal of Health Organization and Management*, *29*(3), 343–352.

Chluska, J. (2014). *Rachunkowość podmiotów leczniczych*. Warszawa: Wolters Kluwer Polska.

Drozdowska, U., Sikorski, S., & Zemke-Górecka, A. (2011). Determinanty prawne i socjologiczne funkcjonowania systemu opieki zdrowotnej w Polsce – relacja z konferencji. In T. Mróz (ed.), *Uwarunkowania prawne, ekonomiczne i socjologiczne funkcjonowania wybranych systemów ochrony zdrowia*. Białystok: Wydawnictwo Temida 2, pp. 11–31.

Frączkiewicz-Wronka, A. (2009). *Zarządzanie publiczne w teorii i praktyce ochrony zdrowia*. Warszawa: Wolters Kluwer Polska.

Grajewski, P. (2007). *Organizacja procesowa. Projektowanie i konfiguracja*. Warszawa: PWE.

Hammer, M. (1999). *Reinżynieria i jej następstwa*. Warszawa: Wydawnictwo Naukowe PWN.

Hass-Symotiuk, M. (ed.) (2011). *System pomiaru i oceny dokonań szpitala*. Warszawa: Wolters Kluwer Polska.

Hass-Symotiuk, M. (ed.) (2012). *Wzorcowy plan kont a rachunkowość finansowa i zarządcza podmiotów leczniczych*. Warszawa: Wolters Kluwer Polska.

Krasowska-Marczyk, M. (2007). Finansowanie świadczeń zdrowotnych a efektywność lecznictwa szpitalnego: Problematyka zadłużenia i restrukturyzacji szpitali. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Prace Katedry Rachunkowości*, (30), 169–180.

Lewandowski, R.A. (2010). Rozwój zarządzania procesowego w polskich szpitalach. In T. Wawak (ed.). *Komunikacja i jakość w zarządzaniu.* Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, pp. 159–169.

Liberati, E.G., Gorli, M., & Scaratti, G. (2015). Reorganising hospitals to implement a patient-centered model of care: Effects on clinical practice and professional relationships in the Italian NHS. *Journal of Health Organization and Management*, *29*(7), 848–873.

Nojszewska, E. (2011). *System ochrony zdrowia w Polsce*. Warszawa: Wolters Kluwer Polska.

Nowak, E., & Nita, B. (eds.) (2010). *Budżetowanie w przedsiębiorstwie – organizacja, procedury, zastosowanie*. Warszawa: Wolters Kluwer Polska.

HospitalPortraits.../Portrety szpitali – mapy możliwości, czyli monitorowanie jakości usług publicznych i benchmarking zakresu nadzoru nad funkcjonowaniem szpitali, dla których organem założycielskim podmiotem tworzącym jest JST. Metodologia badania, System benchmarking szpitali (2013), retrieved from: http://wartowiedziec.org/attachments/article/18708/Projekt%20Portret%20szpitali_mapy%20mo%C5%BCliwo%C5%9Bci.pdf [accessed: 20.04.2016].

Raulinajtys-Grzybek, M. (2013). *Zarządzanie kosztami podmiotów leczniczych: Rola i zadania pielęgniarek*. Warszawa: Wolters Kluwer Polska.

The Regulation of the Minister of Health on recommendations concerning the cost calculation standard applicable to service providers/Rozporządzenie Ministra Zdrowia z dnia 8 lipca 2015 r. w sprawie zaleceń dotyczących standardu rachunku kosztów u świadczeniodawców, Dz.U. 2015 nr 0 poz. 1126.

Rummler, A.G., & Brache, A.P. (2000). *Podnoszenie efektywności organizacji*. Warszawa: PWE.

Skrzypek, E., & Hofman, M. (2010). *Zarządzanie procesami w przedsiębiorstwie. Identyfikowanie, pomiar, usprawnianie*. Warszawa: Wolters Kluwer Polska.

Świderska, G.K. (ed.) (2011). *Rachunek kosztów w Zakładzie Opieki Zdrowotnej*. Warszawa: Szkoła Główna Handlowa w Warszawie.
The Health Care Activities Act/Ustawa z dnia 15 kwietnia 2011 r. o działalności leczniczej, Dz.U. z 2011 Nr 112, poz. 654 z późn. zm. (tekst jednolity: Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 8 kwietnia 2015 r. w sprawie ogłoszenia jednolitego tekstu ustawy o działalności leczniczej, Dz.U. z 2015 Nr 0, poz. 618).
The Public Health Care Services Provision Act/Ustawa z dnia 27 sierpnia 2004 r. o świadczeniach opieki zdrowotnej finansowanych ze środków publicznych. In Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 8 kwietnia 2015 r. w sprawie ogłoszenia jednolitego tekstu ustawy o świadczeniach opieki zdrowotnej finansowanych ze środków publicznych, Dz.U. z 2015, poz. 581 (tekst jednolity).

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