

Elvira Csala – Krisztina Filczer-Plósz

A Decade of Controlling and Future Data-Based Opportunities in the Hungarian Public Sector Controlled Inpatient Healthcare Institutions

SUMMARY

The last decade has seen a paradigm shift in the operation and management of public health institutions. Only a controlling system adapting to the changing information needs of management accounting can keep pace with the dynamics of the changing legal environment. Following the pandemic, the ability to accurately identify the costs of each task is a precondition for operations adapting to the territorial development of health care. This study describes the development and the main elements of the tool system for calculating and accounting for the costs of a system of tasks to support the new requirements. Readers will get to know the current situation of the sector and gain insight into the main direction of future development, primarily from the processing of materials based on contemporary literature, domestic and European legal sources, as well as specifications related to professional healthcare methodology.

Keywords: healthcare, management accounting, cost, controlling, date

Jel-code: H5, O15, O29

INTRODUCTION

Alongside profit-oriented business organisations, the process of transforming the health system has led to a particular increase in the demand for information provided by management information systems. Methods and tools typical of the managers' view of management, previously mainly needed in the non-profit sector, have become prominent. Current challenges and needs for the international healthcare workforce revolve around effective cost savings, flexibility to change and human resource management. The role of health managers is expanding to meet these new priorities.

It is crucial to equip staff and managers with leadership responsibilities in the contemporary healthcare sector with the necessary skills to effectively address the challenges of the present situation. While there is no standard definition, the goal of health leadership is to identify priorities, provide strategic direction to multiple participants in the health system, and build health sector commitment to priorities for improving health services. (Figuerola et al,2019)

It is imperative to provide comprehensive training for leaders within various branches of the health sector, transform-

ing them into a proficient team capable of effectively managing intricate health systems, the well-being of the population, and the diverse health workforce. This preparation is essential for successfully navigating current challenges and anticipating and overcoming future societal health concerns. (Ledlow et al, 2023)

While the demand is known, the opportunities for developing healthcare leadership are limited both in Hungary and Serbia, including significant hindrances such as leaders remaining skeptical about incorporating modern business and management elements into healthcare. The ideal solution would involve a combination of early and mid-career development, along with the integration of organizational and leadership development. Although there is insufficient data on the impact of social identity and social identification on the behavior, professional growth, and commitment of leaders in the Hungarian and Serbian healthcare systems, a clear connection can be identified in both countries between the recognition of the need for effective healthcare social insurance system development and efforts to improve healthcare leadership. (Kocsicska-Varga-Kocsicska,2022).

Hungary is a country with a strongly regulated state healthcare system, where the choice among providers is broader, but strong budgetary constraints limit the provision of services.

The problems in the operation of the healthcare system can be derived from the differences in economic conditions, specifically the allocation of GDP, following the 2008 crisis. Among the Visegrád countries (V4), Hungary experienced the most significant decrease in the ratio of per capita GDP to healthcare expenditure, leading to an excessive decrease in the growth rate of healthcare expenses based on GDP decline.

As the management of the budgetary institutions has not real control over how to expand resources within the financing system, and even the lobbying role of sector-level organizations, associations or chambers is not strong enough to achieve short-term practical results in overcoming underfinancing, effective cost management has become more important.

NATIONAL AND INTERNATIONAL THEORIES

Let's begin our exploration with a short review of the research question on the requirement for managerialism and cost-effec-

tive management in healthcare institutions in the European Union.

Over the last decade, large public administrations, especially in the healthcare system, have developed a unified control system, which can be considered in line with the Anglo-Saxon model. In the Anglo-Saxon context, the term ‘management control’ has become widespread, meaning that planning and control are integral parts of management.

Management control is defined as the „process by which managers ensure the effective and efficient allocation and use of resources to achieve the organization’s objectives” (Anthony, 1965, p.5)

The controlling activity is characteristic of the Anglo-Saxon type of management, according to which the accounting system provides data from financial accounting, but it has been further developed (Controlling Manual Book)

The changes in the budget management in 2014 (Government Decree 4/2013) have created the need of operational management alongside the cash-flow perspective at the level of public finances.

As part of the ongoing permanent financial renewal since 2010, a significant milestone is the application of result-oriented accounting introduced on January 1, 2014 (as a European Union expectation) in the budgetary sector.

According to Paragraph (2) of the European Council Directive (2011/85/EU), Member State governments and subsectors of public finances are required to operate public accounting systems that include accounting, internal control, financial reporting and auditing. Thus, they form a coherent system that, as stated in Paragraph (3), ensures comparison between Member States, and provides a prerequisite for generating high-quality statistical data by applying comprehensive and reliable public accounting in all subsectors of general government. (Lentner, 2022)

The characteristic feature of the new accounting system is that the method of bookkeeping supporting the financial statements is double-entry accounting. However, the new public financial accounting consists of two subsystems serving the satisfaction of different information needs: On the one hand, budgetary accounting provides the classic budgetary data (appropriations, cash flow, commitments, revenue requirements) and, on the other hand, the so-called cash-flow-oriented (financial) accounting, which measures information on assets, own costs and profitability (MÁK Rules.)

Financial accounting, by its very approach and nature, forces the management of the institution to evaluate the economics of operations and use this information during operational development (Controlling Manual Book)

The Anglo-Saxon term „management control” is interpreted as planning, monitoring the execution of plans, evaluating performance and providing feedback as part of direct management activities are evaluated as strategic responsibilities (Simons et al, 2003).

Planning and control are two essential roles of management. Instead of the former focus on cost management, managerial accounting nowadays embraces operational effectiveness. In the operation and management of budgetary organisations, especially in the light of the impact of the COVID pandemic, the resilience of organisations is coming to the fore (ÁSZ p. 10).

Attention should be devoted to the regularity of the use of public funds, and the establishment and operation of controls that are best suited to preventing misuse should be encouraged. Technological and digital developments will allow the improvement of the control system in public finances to align with previously referenced international and European Union standards.

The new challenges and operating conditions of the global economy of the 21st century can only be faced effectively by those organizations that can continuously and cybernetically monitor the environmental needs and then, by integrating them into their future-oriented goals, long-term plans and strategies, can create a structure and conditions that guarantee their competitiveness and profitability (Zéman-Tóth, 2018).

Healthcare institutions are engaged in a medical activity characterised by a high degree of heterogeneity: hospitals provide a wide range of healthcare services, due to their multiple specialisations, the variety of care provided and the diversity of patient groups, which cannot be considered as profit-making activities (Krenyácz, 2015).

As a predecessor of the National Hospital Directorate General (OKFŐ), the State Health Care Supply Centre (ÁEEK) undertook the development of a unified departmental controlling methodology within the framework of an EU-funded project. The first step was to assess the controlling practices of the healthcare institutions under its jurisdiction through a questionnaire survey. The questionnaire was sent out to all institutions under the responsibility of the State Health Care Centre, and the number of responses returned and processed was particularly high: 90 institutions submitted data to the questionnaire database, which practically covered all state hospitals. The study was the first to review the controlling practices of hospitals in Hungary, to identify their basic characteristics and to identify and assess the management and control activities in these institutions (Krenyácz, 2017).

TÁMOP-6.2.5-B-13/1-2014-0001 PROJECT AND ITS RESULTS AND THE DIRECTION FOR THE UPCOMING DEVELOPMENTS

With an aim to the renewal of the healthcare system, its sustainable foundation and the establishment of an efficient, quality-oriented, patient-centered healthcare system, the State Health Care Supply Centre (SHSC, as the predecessor of the maintaining organisation, OKFŐ) launched a new project titled „Developing organisational efficiency in the healthcare system – Establishing regional cooperations” under the code TÁMOP-6.2.5-B-13/1-2014-0001.

The programme’s objectives included, among other key objectives, improving the financing of the domestic health system and improving the regularity, consistency and overall quality of management and decision-support information available to the management as well as the maintenance of health care institutions.

To facilitate all of these objectives, the State Health Care Supply Centre, within the framework of the TÁMOP-6.2.5-B-13/1-2014-0001 programme, has set as a priority area the development of management information on the quality of management and services, as well as the control function and set of tools for producing, organising and reporting it to the management in a unified and transparent form. The project’s

focus was on the development and standardisation of control at the organisational level. The results of the project include the reinforcement of the methodological and institutional role of maintaining control and the provision of better quality information to the institutions in order to support management decisions and improve day-to-day operations and management.

Secondly, it is hoped that standardised controlling will further improve the quality of management information and performance management in the national healthcare system. Instead of the varied levels of controlling practices and the different levels or qualities of accounting and controlling systems providing financial data, a so-called departmental controlling methodology is being worked out. It will also make it possible to better monitor performance at national, regional and institutional levels, thus creating the conditions for comparability for managers and system managers. Transparency will help to identify key areas for improvement and improve performance in the longer term. (Controlling Manual Book)

In organizations, where decision-making is not based on an (economic) outcome-centric approach – and domestic health care organizations, usually the so-called expert health care bureaucracies (Antal et al., 1996) can be considered such organizations – there is a much more temptation for controllers not only to support the operational decision makers' decisions on performance and resource use but to make the decisions themselves.

The harder the economic situation of the institution, the more they may feel 'justified' in such decisions, and the more a 'wasteful' decision may have a significant impact on the institution's prospects of survival. To maintain the operational capacity of the Hungarian state healthcare system, it is necessary to carry out certain preventive activities, analogous to preserving human health. The best way to deal with a crisis is prevention, as it prevents the crisis from occurring and instead of solving the crisis, one should think and act in advance for prevention. Analysing continuously ensures that the decision to make changes is thoroughly considered. (Fazekas, 2007) To continuously analyse the situation of a company, early warning systems are needed to anticipate when the risk of bankruptcy arises. (Hegedűs, 2021)

Especially in crisis management, the introduction of business trends in the operation and management of public services has become characteristic among other economic entities, companies and business organisations. This was most noticeable in the so-called NPM-DPM (New Public Management – Decentralisation, Privatisation and Management) model, with its sometimes unrestricted and uncontrollable pursuit of profit objectives before 2010. Regulation was relatively lax, meaning that the state did not sufficiently influence, monitor, or regulate the operation of public utilities. However, these international trends – especially the largest ones in the provision of public services – cannot be implemented in the healthcare system without changes; they need to be properly adopted. Hungary's Fundamental Law (implicitly formulated in the Hungarian Constitution) has replaced the New Public Management philosophy with a new Weberian philosophy, similar to the French ethical model and its economic dimension, the DPM, with a new concept and practice, the so-called CNPG (Centralization, Nationalism, Public Good). In the operation of public service providers, profit

is no longer the primary focus, but rather prices that consider consumer interests and the broad enforcement of the public good. (Lentner-Cseh, 2020)

Taking into account the precedents described above, the next significant milestone is the enactment, effective from January 1, 2022, of certain regulations related to the Central Hospital Integrated Management System (KKIGR) (Government Decree 588/2020 (XII. 17.)). The legislation addresses the establishment and the supportive conditions necessary to develop and support the operation of the integrated system. It includes the following documents to ensure the unified use of certain elements of the KKIGR in the sector: the standard account and controlling manual, the standardised cycle, equipment, tools and material and supplies records, and the standardised methodologies for the management of the central contract register.

PERSPECTIVES ON THE DIGITAL DEVELOPMENT OF THE HEALTHCARE SECTOR IN THE EUROPEAN UNION

The European Union aims to finance the necessary improvements and reforms in public health as a priority area, by introducing the Recovery and Resilience Facility (RRF), which is the key pillar of the EU's policies for the current seven-year budgetary programming period 2021-2027. The Recovery and Resilience Facility is the main component of the NGEU package, which supports the recovery from the COVID-19 pandemic. The Hungarian Recovery and Adaptation Plan, which also promotes a green and digital transition in the field of health sector development, which responds to the economic and social impact of the epidemic, has just been finally adopted by the Council of Finance Ministers (Ecofin) of the EU Member States. A significant part of the programme's budget is allocated to health, education and green transport (Hungary's Recovery and Adaptation Plan).

The Hungarian plan uses non-repayable funds from the Instrument for Recovery and Resilience* across a total of nine components, with healthcare being one of the priority areas. Specifically, it supports the development of the conditions for 21st-century healthcare and the digital transition. Additionally, related to these goals, the component of Modernisation of the State and Public Administration will support efficiency and ensure quality by introducing AI-based technologies and automatable processes in public services and decision-making. Two reforms in particular are related to the improvement of the control system in the area of public services, namely, improving the transparency and efficiency of public spending (Hungary's Recovery and Resilience Plan).

Nowadays, it has become an unavoidable question to determine the most effective and beneficial strategy for utilizing healthcare data for the EU and its Member States. „Data saves lives and saves public money.” said Miklós Szócska, former State Secretary for Health, now professor and researcher at the Institute of Computer Science and Automation, at a meetup event organised by the Kürt Academy.

* The plan was already approved at the end of 2022, but only a year later it was approved at the ECOFIN (Council of EU Finance Ministers) meeting in December 2023, following which the first tranche could be called up as early as January 2024.

Processing a huge amount of patient data (so-called digital footprints) and other important information about the healthcare system in an automated way (using Artificial Intelligence, i.e. AI-based) has made it possible to understand some of the invisible structures. Digitalisation cannot be simply reduced to a technological implementation, or understood in its complexity without understanding its impact on the organisation. The integration of such a concept into an organisation has a potential impact, directly or indirectly, on all aspects of the company's operations. (Zéman-Vajda, 2023) The use of network intelligence tools have been used to optimize patient pathways and to analyse debt data, which has saved nearly 10 billion Hungarian forints after mapping supplier monopolies.

The possibilities are almost limitless and a portion of EU funds are available to build national strategic system capacity, which is essential in an environment that aims to achieve the objective of a unified European data space. In this area, some of the key tasks or sub-goals could include the development of new data channels and the strengthening of a culture of data access to avoid the so-called „data colonisation” by technologically more advanced but data-poor countries. (An example is the connection between financing and accounting (coding) in NEÁK, where a data transfer can be sent back from the other direction through the same channel, the Health Service Space (EESZT) system*, using the same algorithm as the one used for the data transfer for the verification of social security entitlement) (Szócska, 2023.)

CONCLUSIONS

This study summarizes the theoretical and professional approach to the subject of the development and operation of the controlling system in public healthcare institutions as well as the new directions for future development with almost a whole decade of experience. The highlights of the relevant factors include the role of international and European accounting standards and harmonised, domestic legal framework in the introduction of the new accrual accounting approach in 2014 and the development of a uniform departmental controlling methodology in the healthcare sector.

As a result of previously divergent accounting rules and various practices regarding the calculation of the operating results and how social insurance funding was broken down by the institution by sector code (the so-called ‚OEP code’)**, it was difficult to compare the results and therefore to compare the institutions in the sector. At the time of the introduction of the departmental controlling system, IT-related improvements and standardisation in the integrated accounting system helped to achieve this objective.

The experiences of the system's operation show that the data provided based on the government decision on certain regulations related to the central hospital integrated management system, are managed to control the efficient use of revenues

* Electronic Health Service Space (abbreviated as EESZT) is an integrated IT system and database connecting healthcare service processes, which enables the implementation of prescriptive laws for beneficiaries in the Hungarian healthcare system and serves to collect, store and share findings, prescriptions and information related to various health examinations in addition to personal data, until the patient's death (and for five years thereafter).

** OEP: National Health Insurance Fund (currently NEAK National Health Insurance Fund Management)

from the National Health Insurance Fund (NEAK) and for the planning of the healthcare budget.

State-funded healthcare institutions follow the methodology determined by the National Directorate General of Hospitals for coverage and result calculation. Due in large part to the pandemic, the published specifications offered exceptional support throughout the last year, with the remaining balance coming from average finance. It also required a uniform procedure for the yearly consolidation and other modified controlling results. All things considered, it can be said that the controlling system's development has been successful in reaching its objective and producing positive outcomes.

Looking at the main directions for future developments, a national strategic data-based improvement in the healthcare IT system – primarily based on NEAK financing and patient data from the EESZT system – can ensure the highest possible level of system performance. As a result, it is expected that the optimisation of the funding background and the care organisation can be achieved in the shortest possible time frame. The availability of real-time data and the improvement of hardware conditions in certain healthcare institutions can enable a higher level of optimization of managerial control activities in the healthcare sector compared to the European standard. In the coming period, the opportunity to draw down EU funds from the Hungarian Recovery Fund aimed at developing the sector may contribute to ensuring the conditions necessary for the establishment and operation of modern, data-based care organisations.

REFERENCES

- ANTAL, ET. al. (1996): Basic forms of organization, in Organizational forms and leadership, JRC, Budapest, 262 p. ISBN: 963-222-972-X
- ANTHONY, R. N. – GOVINDARAJAN, V. (2009): Management Control Systems, Panem, Budapest ISBN: 978-963-545-512-6
- FIGUEROA, C.A. – HARRISON, R. – CHAUHAN, A. AND MEYER, L. (2019): Priorities and Challenges for Health Leadership and Workforce Management Globally: A Rapid Review. BMC Health Services Research, 19, 239. <https://doi.org/10.1186/s12913-019-4080-7> ISSN: 1472-6963
- HEGEDŰS, M. (2021): Bankruptcy Model Study of Health Care Providers, ACTA CAROLUS ROBERTUS 11 : 1 pp. 13-26. , 14 p. ISSN 2062-8269 DOI <https://doi.org/10.33032/acr.2571>
- KOCSICSKA, I. – VARGA-KOCSICSKA, A. (2022): Identity – an influencing factor in the modernisation of healthcare systems in Hungary and Serbia. *ESI Advantage*, 7,224. https://www.academia.edu/88842517/Identity_an_Influential_Factor_in_Modernization_of_Healthcare_Systems_in_Hungary_and_Serbia pp 325 European Scientific Journal, July 2022 edition Vol.18, No.22 ISSN: 1857-7881 (Print) e – ISSN 1857-7431
- KRENYÁ CZ, É (2015): The controlling system of Hungarian healthcare institutions. STATISTICAL REVIEW 93:(8-9), pp. 823-857. ISSN:0039-0690m DOI: [doi/0025-8555/2004/0025-85550403249Lpdf](https://doi.org/10.1556/204.2018.40.4.8).
- KRENYÁ CZ, É (2018): Controlling in Hungarian hospitals: history and key issues. Society and economy in Central and Eastern Europe, 40:04. pp. 605–622. DOI: <https://doi.org/10.1556/204.2018.40.4.8> , Online ISSN: 1588-970X

- LEDLOW et. sub. (2023): Leadership of healthcare professionals: theory, skills and applications, Jones & Bartlett Learning, 2023, pp: xiii, 470 p ISBN:128425478X, 9781284254785
- LENTNER, Cs – CSEH, B (2020): Certain economic and legislative issues of the operation of state-owned utility companies in the event of an emergency (Economy and Law, 5, pp. 1-4) <https://szakikkadatbazis.hu/doc/5909558> ISSN:1217-2464
- LENTNER, Cs (2022): Some taxonomic elements of internal audit of public finance and experience of teaching at the National University of Public Service. Financial Review, 67(Special Issue 1), DOI: https://doi.org/10.35551/PFQ_2022_s_1_1 pp.7-26, ISSN :0031-496X E)
- PAULIKNÉ-VARGA (2018)): *Intermediate-Europe* 10 (2nd):109-119. “A European method for rating the health systems of the Member States: the change of the European Health Consumer Index in the Visegrad Four countries”. *Köztes-Európa X. évf. 2018/2. No. 24.*pp.109–119. ISSN: 2064-437X
- REICH et sub (2016): “Effective management of health systems”. *Health Systems & Reform*, 2(3):213–221, 2016 Published with license by Taylor & Francis ISSN: 2328-8604 print / 2328-8620 online DOI: 10.1080/23288604.2016.1220775
- SIMONS R. – DÁVILA A. – KAPLAN R. S. (2000): Performance Measurement and Control Systems for Implementing Strategy, Prentice Hall, USA pp50-51, 348 p.,ISBN: 0130219452, 9780130219459
- SZÉKELY, Á. – BODNÁR G. (2004): – Clairvoyance in the management of healthcare institutions using classical controlling methodology, *Management Controlling, Interdisciplinary Hungarian Healthcare (IME) Volume III 4. Number*, (2004) <https://doksi.net/hu/get.php?lid=16573#close> pp.25-28., ISSN 1588-6387
- ZÉMAN, Z. – TÓTH A. (2018): Strategic financial controlling and management (Akadémiai Publishing House, Budapest) first digital edition in Hungarian: https://mersz.hu/dokumentum/dj294spcem_1 ISBN 978 963 454 031 1,
- ZÉMAN, Z. ET. al. (2023): The relationship of foresight controlling methodologies with digital innovation, VI János Bosnyák Memorial Conference , Crisis in the world of finance and accounting professional challenges pp.2-7 Budapest, Magyarország : Corvinus University of Budapest (2023) , 110 p. https://unipub.lib.uni-corvinus.hu/9358/1/Valsagban_a_vilag_2023.pdf ISBN: 9789635039456
- SZÓCSKA, M (2023): Academy meetup lecture entitled “AI in Healthcare – Innovation & Opportunity”, KÜRT Academy, 1051 Budapest, Nádor u. 15., 29.Nov.2023. <https://www.youtube.com/watch?v=JxvWgwUJ2xo>
- 368/2011 of 31 December 2011 Government Decree on the implementation of the Act on Public Finance Act CXCV of 2011 on Public Finance
- Communication from the Commission to the European Parliament, the European Council and the Council A new, modern Multiannual Financial Framework for a European Union that delivers efficiently on its priorities post-2020 Commission contribution to the informal leaders’ meeting of 23 February 2018, COM(2018) 098 final.
- Controlling manual providing the methodological basis of unified institutional controlling for healthcare providers maintained by the AEC (2020), Version: v1.3
- Council Directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States Official Journal of the European Union <https://eur-lex.europa.eu/legal-content/HU/TXT/PDF/?uri=CELEX:32011L0085&from=BG> L 306/41
- Government Decree 4/2013.(I.11.) on public finance accounting [Áhsz]
- Government Decree No 588/2020 of 17 December 2020
- Government Decree No. 4/2013 (I.11.) on public finance accounting <https://net.jogtar.hu/jogszabaly?docid=a1300004.kor>
- HUNGARIAN STATE TREASURY, Regulations (01.10.1919) Regulations of the Hungarian State Treasury on HUF account management services, Budapest, Available at: Official website of the Hungarian State Treasury <http://www.magyarallamkincstar.gov.hu> (read: July 30, 2022)
- Hungary Fundamental Law https://jogkodesz.hu/jsz/alaptoveny_2011_7633003
- Hungary Recovery and Resilience Plan 2023 final version, retrieved 01.12.2023. https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/hungarys-recovery-and-resilience-plan_en#:~:text=Member%20States%20set%20out%20in,content%20into%20legally%20binding%20acts.
- STATE AUDIT OFFICE Parliamentary Report 2022, downloaded: 30.11.2023 https://www.asz.hu/files/ASZ_oroszaggyulesi_beszamolo_2022.pdf
- A European Way To Certify Member States’ Health Systems Change In The European Health Consumer Index In The Visegrad Four Countries <https://www.iskolakultura.hu/index.php/vikekke/article/view/31559>. <https://www.iskolakultura.hu/index.php/vikekke/article/view/31559>.