



## A Review of Factors, Drivers, and Barriers to Improving Hospital Cost Management

Camelia Florentina Lascu<sup>1</sup>, Cornel Dragoş Cheregi<sup>2\*</sup>, Lavinia Davidescu<sup>2</sup>, Felicia Manole<sup>2</sup>

<sup>1</sup>Doctoral School of Biomedical Sciences, Faculty of Medicine and Pharmacy, University of Oradea, 410087 Oradea, Romania.

<sup>2</sup>Faculty of Medicine and Pharmacy, University of Oradea, 410087 Oradea, Romania.

### ABSTRACT

Cost management is the most important factor affecting the economic performance of the hospital. Good management of costs in the short term stabilizes and balances the operating balance of the hospital and secures the hospital in terms of liquidity. In addition, good management of costs in the long term makes the hospital financially stable. According to the mentioned cases and increasing hospital costs, the present study was conducted to identify and investigate the factors, drivers, and obstacles to improving cost management. All the components identified and extracted from the articles were divided into four dimensions (enhancing factors, prerequisites, barriers, and solutions) for improving hospital cost management. Reviewing the results of each study showed the importance of each component in managing, improving, and controlling hospital costs. In this regard, policymakers at the decision-making level and managers at the executive level should pay attention to the components and dimensions affecting the control and improvement of hospital costs according to the structure, process, and expected consequences, and then make the necessary decision regarding their implementation.

**Keywords:** Hospital cost management, Hospital, Economic performance, Liquidity.

**HOW TO CITE THIS ARTICLE:** Lascu CF, Cheregi CD, Davidescu L, Manole F. A Review of Factors, Drivers, and Barriers to Improving Hospital Cost Management. Entomol Appl Sci Lett. 2023;10(2):50-5. <https://doi.org/10.51847/ZkaN9ofevu>

**Corresponding author:** Cornel Dragoş Cheregi

**E-mail** ✉ [cheregicorneldragos@gmail.com](mailto:cheregicorneldragos@gmail.com)

**Received:** 25/03/2023

**Accepted:** 22/06/2023

### INTRODUCTION

Providing quality, safe, effective, and efficient diagnostic and treatment services to ensure the maintenance and promotion of the health of the people in society is one of the important goals of hospitals [1-3]. Hospitals in all countries as one of the main organizations providing health services and treatment are of special importance in the health economy, but in developing countries due to their infrastructure and economic conditions and their extreme vulnerability in facing the fluctuations of the money and goods market, this importance doubles [4-6]. The costs of the health system are increasing all over the world in such a way that with a one percent increase in GDP per capita, health costs increase by 0.4 percent [7, 8]. In all

member countries of the Organization for Economic Co-operation and Development (OECD), the cost of health care has grown much faster than their GDP [9-11]. There are ongoing pressures in all advanced economies, including rising healthcare costs. In addition, the deterioration of the financial situation of healthcare providers leads to an emphasis on cost reduction for economic survival [12-14]. Since hospitals as an important arm of health service provision account for the majority of the resources of the health system, this rapid and ever-increasing cost of the health sector around the world has led economic experts, managers, doctors, and nurses to find ways to Navin has challenged to limit costs [15-17]. Cost growth in public hospitals is faster than in other sectors. In the country of Iran, about 8.66% of the GDP

belongs to health sector expenses, and hospital care accounts for about 40% of government health expenses [17, 18]. The costs and expenses of these centers are increasing day by day, and it is necessary to provide financial resources to continue the activities and prevent interruptions in the process of providing services. Therefore, medical centers should use costing and cost analysis to use resources effectively [19]. Therefore, hospital managers should think of achieving processes and strategies that provide a clear picture of the hospital's economic and financial behavior and its costs for survival in competitive and dynamic environments [19], because one of the critical success factors in effective health management understanding the correctness of expenses and their control [20]. The increase in the elderly population, the increase in chronic diseases, the use of new technologies and methods of diagnosis and treatment, the ever-increasing demand for hospital services, and medical and human errors have led to an increase in hospital costs [21]. Policymakers and managers of hospitals and insurance organizations emphasize reducing the length of stay of patients as an important factor in controlling hospital costs [22]. Also, factors such as the real increase in per capita income, technological innovations, pharmaceutical advances, comprehensive health insurance against medical services, population increase, and changing the structure of the health workforce have had a significant effect on increasing health costs [23]. According to the results of various studies and the ever-increasing increase in treatment costs, if there is no effective management and control of hospital costs, the continuation of life and the provision of services in hospitals will be interrupted, as well as the necessary infrastructure for informed decisions. It will be accompanied by disruption. Therefore, the importance of controlling, reducing, and improving hospital costs will be clear to everyone. Improving hospital costs can be effective in the optimal allocation of resources, budget reform, and tariff rate, so the current research was conducted to identify the factors, obstacles, and drivers of improving hospital cost management.

## RESULTS AND DISCUSSION

By carefully examining the extracted articles, the obstacles drivers, and solutions for improving hospital cost management were divided into 4 dimensions for review, and each of these extracted dimensions included several factors: (1) Factors affecting costs: factors that directly or indirectly increase costs in the health sector and hospitals. In addition, determining the influencing factors on health costs can be useful and effective in designing and choosing the best measures and policies to manage health costs; (2) Obstacles to controlling or managing expenses: Obstacles that cause the lack of control and improvement of hospital expenses. These barriers may sometimes increase unnecessary health costs; (3) Prerequisites for improving cost management: prerequisites and facilities that must exist so that managers and health policymakers can use them to reduce and control costs and improve costs; (4) Solutions to improve cost management: solutions that can be used by managers in any hospital and any area of the health system and control unnecessary costs and sometimes wasted costs.

The findings of the literature review showed that there are several challenges in improving hospital cost management, the most important of which are: the occurrence of economic crises, changing the age distribution of the population, hospital overhead costs, medical and technological advances, and human resource costs, medical errors, waste of resources, and lack of strong supervision. In a study conducted by Shabani *et al.*, the two factors of urbanization rate and the percentage of the population aged 65 and over had the greatest effect on increasing health costs [24], so with increasing age and especially during old age, the demand in Health care costs will increase significantly. In their research, Masoudi Asl *et al.* factors: increase in inflation, change in consumption towards brand name drugs, creation of induced demands and unnecessary diagnostic and therapeutic interventions, change in lifestyle and adoption of life pattern combined with high-risk health behaviors in the direction of increasing health costs in Iran stated [25]. In his study, Pour Farrokh also listed the lack of necessary knowledge related to costing, the lack of participation and the existence of internal resistance, and the lack of trained human resources as obstacles to cost management [26].

In another study conducted by Heilong Sun and his colleagues in China, hospital budgeting defects lack of internal controls, and incompatibility between the cost accounting system and the financial management system were cited as obstacles and problems of cost management [27]. In Takwang *et al.*'s study, the complexity of the cost system in the hospital was reported as an obstacle to cost management [28]. In the research conducted by David and his colleagues in South Africa, the weak information system and the lack of skill transfer were identified as barriers to cost control and management [29]. In addition, in some of these studies, prerequisites for improving cost management were mentioned. In a study conducted by Hilong Sun and his colleagues, the improvement of the financial management system and innovative measures to control the quality of financial management of hospitals were introduced from the background of cost improvement [27].

In the research conducted by Anderson and his colleagues, creating a competitive advantage in the value chain strongly monitoring performance, and giving feedback are important background factors in cost management [30]. In a research conducted by Tobias and his colleagues, the establishment of risk management in hospitals, the use of clinical guidelines, and the non-prescription of inappropriate prescriptions of control and driving factors for cost management are mentioned [31]. In addition, the use of the activity-based costing method (ABC) has been introduced as a driver [32, 33]. Factors such as a clear picture of the financial-economic behavior of the hospital, creating a monitoring and control system, recording and tracking costs, managing the maintenance of hospital equipment, reduction of insurance deductions, appropriate organizational culture, and regular organizational environment are among the drivers of cost management in hospitals [34]. The optimal allocation of limited resources is also mentioned as a prerequisite for improving cost management [35, 36]. The review of another study indicated that factors such as increasing the efficiency of hospitals, empowering managers and their training, performance-based payment to doctors and health service providers, reforming the budget structure, controlling

hospital infections, changing medical tariffs to Global and Directing resources to high-demand health services can be a prerequisite for improving cost management in hospitals [37]. In addition, employee training and supervision also play an important role in improving cost management [29].

As was said before, the costs of the health sector are increasing rapidly all over the world, and the health and treatment system must have a proper structure, competent management with high productivity, and a correct economic vision to be able to use the various available resources. Among the solutions mentioned in the reviewed articles is limiting the duration of unnecessary hospital stays [38, 39], which will reduce the waste of limited hospital resources and increase the productivity of hospital beds. The next thing is to identify the foci and Cost centers in the hospital [40, 41] because it is necessary to know the places where more costs are spent and the factors that cause more costs to be spent and try to control them. In some studies, outsourcing is mentioned as a way to reduce and improve costs [41]. Outsourcing will reduce operational costs and increase productivity in the organization, reduce overhead costs, flexibility in laws and regulations, and focus the organization on its core processes. In some studies, drug cost control [42] has been introduced as an important factor to control and improve cost management. In addition, drug management in the hospital and the use of generic drugs with higher quality and lower prices are recommended [25, 41, 43, 44]. Payment based on dependent diagnostic groups (DRG) can also be considered as a cost control lever because they can economically help hospitals to rationally use medical resources, reduce operational costs, search for the most rational clinical path, and Encourage avoiding large prescriptions and unnecessary expensive inspections [45]. The next factor to control and improve costs is to reduce errors in medical documentation [40], which itself requires teaching the principles of documentation to the medical staff and monitoring the good implementation of case control in the medical documentation unit [34]. In addition, proper documentation training will reduce insurance deductions, which is considered an important factor in improving hospital costs [41].

The results of some studies indicate that re-examining the internal processes of the hospital and eliminating unnecessary steps can contribute to reducing costs [35] because it will lead to the discovery identification and elimination of activities without added value, and this will lead to Additional costs are reduced [32, 46]. In addition, increasing the efficiency of operating rooms and maximum use of surgical capacities in the hospital will increase income and improve hospital costs [43]. Establishing a costing system in the hospital [47] with knowledge of the total cost of each activity and details of costs [48], accurate cost estimation [46], transparency of costs [31], monitoring of all hospital costs and its analysis It will improve and reduce additional costs in the hospital.

### CONCLUSION

Cost management in hospitals is considered an important and unavoidable issue. Therefore, the factors and obstacles affecting the improvement and management of hospital costs must be discovered and known to improve the economic situation, improve effectiveness, and improve the management of hospital costs. The results of this review study showed that important factors affect hospital cost management. According to the findings of the studies, it is possible to improve the existing situation in hospitals based on different dimensions and angles of management principles and skills and technical and allocation efficiency requirements. According to the strategic plan of each hospital and the conditions and challenges it faces, it is possible to decide on the presented solutions. To manage and reduce costs, solutions can be considered, such as: increasing the productivity of manpower (the issue of empowering the matching of workload with manpower), the correct use of resources (manpower, physical space, investments, equipment, and money), compliance service codes of the book of relative value of services, review of the book of relative values of services in the hospital committee of deductions, application of real deductions in doctors' receipts, use of empty hospital capacities, survey of expert doctors regarding cost reduction strategies, identification of potential and actual capacities in Bringing them such as laboratory, pharmacy outpatient

prescriptions, etc., preparing a list of expenses, prioritizing expenses, compiling the process of monitoring repairs in hospitals, organizing human resources and employing people in appropriate places, reviewing contracts, paying based on the performance of personnel in the department. Etc. Hospital management can use the experiences of specialists and consultants, especially experienced and successful managers in the field of activities in hospitals and healthcare centers.

**ACKNOWLEDGMENTS:** None

**CONFLICT OF INTEREST:** None

**FINANCIAL SUPPORT:** None

**ETHICS STATEMENT:** None

### REFERENCES

1. Mosadeghrad AM. Patient choice of a hospital: implications for health policy and management. *Int J Health Care Qual Assur.* 2014;27(2):152-64.
2. Mosadeghrad AM. A conceptual framework for quality of care. *Mate Socio-Med.* 2012;24(4):251.
3. Keliddar I, Dastoorpoor M, Alaei R, Vahidnezhad F. The relationship between leadership style and organizational health in educational hospitals. *J Organ Behav Res.* 2023;8(1):92-104.
4. Wijaya RE, Ludigdo U, Baridwan Z, Prihatiningtias YW. Paradigm blurred: Opera cake in management accounting information research. *Proc-Soc Behav Sci.* 2015;211:859-65.
5. Gholizadeh B, Nabavi SS, Baghaei S, Zadeh FJ, Moradi-joo E, Amraie R, et al. Evaluation of Risk Factors for Cardiovascular Diseases in Pregnant Women Referred to Golestan Hospital in Ahvaz. *Entomol Appl Sci Lett.* 2021;8(3):40-5.
6. Taha MS, Elbasheir ME, Abakar MA, Ibrahim E, Abdallah MM, Omer AE, et al. The Impact of COVID-19 on Blood Coagulation Profile among Sudanese Hospitalized Adult Patients. *J Biochem Technol.* 2022;13(3):67-70.
7. Potrafke N. The growth of public health expenditures in OECD countries: Do

- government ideology and electoral motives matter? *J Health Econ.* 2010;29(6):797-810.
8. Sadeghi M, Rahimi M, Poornoroz N, Jahromi FF. Patient satisfaction with hospital services after the implementation of the health system. *Arch Pharm Pract.* 2021;12(1):31-6.
  9. Reinhardt R, Oliver WJ. The cost problem in health care. *Challenges and Opportunities in Health Care Management: Springer; 2015.* p. 3-13.
  10. Fodor R, Voiță-Mekeres F, Cheregi CD, Indrieș M, Noor H, Pop NO, et al. Epidemiological study on spinal cord injuries in a hospital from the north-west of Romania. *Pharmacophore.* 2023;14(1):80-6.
  11. Ebrahimi S, Shohrati M, Najafian B. Drug Use Evaluation of Intravenous Immunoglobulin (IVIG) in a Hospital in Iran. *Entomol Appl Sci Lett.* 2021;8(2):57-61.
  12. Drummond M. Pharmacoeconomics: friend or foe? *Ann Rheum Dis.* 2006;65(suppl 3):44-7.
  13. Lalthanpuii K, Kaur J, Saini S, Bhatti K, Nain P. Strengthen the Monitoring and Reporting of Adverse Drug Reactions at a Tertiary Teaching Hospital. *Arch Pharm Pract.* 2022;13(1):61-7.
  14. Radwan AA, Bajouh OS, Almalki MA, Almurashi BK, Alfuraydi MA, Atef M, et al. The success rate of vaginal birth after one previous cesarean section in King Abdul-Aziz University Hospital. *Pharmacophore.* 2022;13(4):125-8.
  15. Sprung CL, Cohen SL, Sjøkvist P, Baras M, Bulow HH, Hovilehto S, et al. End-of-life practices in European intensive care units: The Ethicus Study. *Jama.* 2003;290(6):790-7.
  16. Homauni A, Mosadeghrad AM, Jaafari-pooyan E. Employee performance appraisal in health care organizations: a systematic review search. *J Organ Behav Res.* 2021;6(2):109-21.
  17. Imani E, Jahad Sarvestani A. Evaluation of terminal life cost for patients admitted in teaching hospitals affiliated with Kerman University of medical sciences in 2014. *J Health Based Res.* 2015;1(2):133-43.
  18. Nabavi SS, Gholizadeh B. Evaluation of the Quality of Life of the Patients with Heart Failure in Ahvaz Teaching Hospitals. *Evaluation.* 2022;9(1):26-30.
  19. Ghiyasvan H, Zandiyan H, Moghadam TZ, Naghdi S. Cost of radiology services using the activity-based costing (ABC) method. *Payesh (Health Monitor).* 2013;12(6):595-605.
  20. Ergü FA, Ağırbaş I, Kuzu I. Activity-Based Costing for Pathology Examinations and Comparison with the Current Pricing System in Turkey. *Turk J Pathol.* 2013;29(1):1-14.
  21. Mosadeghrad A. Essentials of healthcare organization and management. Tehran: Dibagran Tehran. 2015;17.
  22. Ravangard R, Arab M, Zeraati H, Rashidian A, Akbarisari A, Mostaan F. Patients' length of stay in women hospital and its associated clinical and non-clinical factors, Tehran, Iran. *Iran Red Crescent Med J.* 2011;13(5):309-15.
  23. Nghiem SH, Connelly LB. Convergence and determinants of health expenditures in OECD countries. *Health Econ Rev.* 2017;7(1):1-11.
  24. Shabani H, Rezaatmand MR, Mohammadi F. Determinants of Health Expenditures in Iran and Other Country Members of Perspective Document of 1404 of Iran. *Health Inf Manag.* 2019;16(1):18-23.
  25. Masoudi Asl I, Bakhtiari Aliabad M, Akhavan Behbahani A, Rahbari Bonab M. Health care costs in Iran and how to control it. *Iran J Health Insur.* 2019;1(4):117-27.
  26. Pourfarrokh M. Limitations of Implementing Activity-Based Costing System in Abadons School of Medical Sciences with Cost Management Approach. *J Sci Eng Elite's.* 2019;21:77-90.
  27. Sun H, Wen D, Sun J, Yang Y, editors. Problems and countermeasures of hospital financial management. *AIP Conference Proceedings; 2019.*
  28. Binh TQ, Thuy VTT. Factors affecting the public hospital's cost management accounting system. *Acad Account Financ Stud J.* 2019;23(3):1-13.
  29. Basu D, Croce D, Porazzi E, Restelli U, Naidoo S. Introduction of the concept of cost center management in a public hospital in South Africa. *J Health Care Financ.* 2010;36(3):88-92.

30. Anderson SW, Dekker HC. Strategic cost management in supply chains, part 2: Execution cost management. *Account Horiz.* 2009;23(3):289-305.
31. Romeyke T, Stummer H. Clinical pathways as instruments for risk and cost management in hospitals discussion paper. *Global J Health Sci.* 2012;4(2):50-9.
32. Lutisky ID, Juroš L. Business Processes in the Function of Cost Management in Healthcare Institutions. Country Experiences in Economic Development, Management, and Entrepreneurship: Springer; 2017. pp. 571-89.
33. Islamzadeh O, Javadi N, Kerdar KZ, Tahsiri M. Explain the problems and solutions of cost management in the public sector. 2015;60:71-92.
34. Olyan Ajam S, Ghasemizad A, Gholtash A. Identifying the main components of the hospital costs management process. *J Health Adm.* 2019;22(3):40-55.
35. Raghuvanshi VP, Raghuvanshi SP. Implications and future strategies on cost management for hospitals during and after COVID-19. *Int J Comm Med Public Health.* 2020;7(6):2405-10.
36. Ghaziasgar M, Vahdat S, Hesam S. Development and Psychometric “Evolution of hospital cost management Scale. *J Health Promot Manag.* 2020;9(5):25-33.
37. Mosadeghrad AM, Esfahani P, Afshari M. Strategies to improve hospital efficiency in Iran: A scoping review. *Health Mon J Iran Inst Health Sci Res.* 2019;18(1):7-21.
38. Jafari M, Lashkari M, Mahmoudi F, Dehnavi R, NooriHekmat S, Izadi A. Effective Factors in Hospitalization Costs of the Public Hospitals: A Qualitative Study. *J Health Based Res.* 2016;2(1):39-54.
39. Yan J, Lin HH, Zh D, Hu Y, Sh R. China's new policy for healthcare cost-control based on global budget: A survey of 110 clinicians in hospitals. *BMC Health Serv Res.* 2019;19(1):1-11.
40. Olyan Ajam S, Ghasemizad A, Gholtash A. Staff Perspective and Hospital Finance Experts on How to Manage the Costs of the Hospital: A Qualitative Study. *Depic Health.* 2020;11(2):159-71.
41. Kulkarni M, Pandit A. Analysis of cost reduction techniques adopted in hospitals in and around Pune. *J Health Manag.* 2014;16(4):481-8.
42. Lewandowski RA. Cost Control of Medical Care in Public Hospitals—a Comparative Analysis. *Int J Contemp Manag.* 2015;13(1):125-36.
43. Perroca MG, Jericó MdC, Facundin SD. Surgery canceling at a teaching hospital: implications for cost management. *Rev Lat-Am Enfermagem.* 2007;15(5):1018-24.
44. Kastanioti C, Mavridoglou G, Karanikas H, Polyzos N. ABC analysis: a tool of effectively controlling pharmaceutical expenditure in Greek NHS hospitals. *J Pharm Health Serv Res.* 2016;7(3):173-9.
45. Su B, Feng SQ, Tao HJ. Public Hospital Cost Management and Performance Evaluation from the Perspective of DRGs. *DEStech Trans Econ, Bus Manag, (icem).* 2019:458-62.
46. Etemadi S, Mohammadi B, Akbarian Bafghi MJ, Hedayati Poor M, Gholamhoseini MT. A New Costing System in Hospital Management: Time-Driven Activity Based Costing: A Narrative Review. *Evid Based Health Policy Manag Econ.* 2018;2(2):133-40.
47. Neriz L, Núñez A, Ramis F. A cost management model for hospital food and nutrition in a public hospital. *BMC Health Serv Res.* 2014;14(1):1-12.
48. Cinquini L, Vitali PM, Pitzalis A, Campanale C. Process view and cost management of a new surgery technique in hospital. *Bus Proc Manag J.* 2009;15(6):895-919.