

IMPROVING THE QUALITY OF HEALTH CARE IN UROLOGY THROUGH THE INTEGRATION OF MANAGERIAL, EDUCATIONAL AND INNOVATIVE APPROACHES

Maja Arđelan 

Faculty of Health Studies, University of Mostar, 88 000 Mostar, Bosnia & Herzegovina

Received on 22.9.2024.

Reviewed on 31.3.2025.

Accepted on 4.6.2025.



ABSTRACT

Introduction: Improving the quality of health care in urology requires the integration of managerial, educational, and innovative approaches, which ensures better treatment outcomes and higher patient satisfaction. The implementation of clinical guidelines in network hospitals enhances compliance with recommended procedures, particularly in cancer treatment. The introduction of new technologies facilitates adaptation to changing health needs. In cardiovascular care, similar initiatives lead to statistically significant improvements in outcomes. Key success factors include a clear vision, staff autonomy, and patient engagement. Continuous education and professional development strengthen the competencies of healthcare workers, enabling them to keep up with contemporary practices and technologies and to improve the quality of urological care.

Participants and methods: The sample included 51 healthcare professionals of various profiles employed at the Urology Department of the University Clinical Hospital Mostar. A combination of descriptive and exploratory methods was used, and data were collected through an electronically distributed survey questionnaire. Quantitative data were analyzed using SPSS software, while qualitative data were processed through thematic analysis.

Results: The results show that 92% of respondents believe that the integration of managerial, educational, and innovative approaches significantly improves the quality of healthcare. Key strategies for improvement include continuous staff education (87%), improved work organization (64%), and strengthening interpersonal relations (59%). The most common obstacles are insufficient staff training (78%), outdated equipment (65%), and administrative burdens (58%). Staff shortages (34%) and financial constraints (29%) were not identified as the main issues. The findings indicate the need for targeted intervention in education, equipment modernization, and reduction of administrative burdens to improve healthcare and treatment outcomes.

Conclusion: The integration of innovative approaches into health care can significantly improve the quality of treatment. However, challenges remain in their implementation, particularly in the areas of management and education.

Keywords: urology, management, education, innovation, quality of care

INTRODUCTION

Improving the quality of health care in urology requires the integration of managerial, educational, and innovative approaches. Managerial approaches include effective resource management, work organization, and alignment of processes aimed at optimizing treatment outcomes. Educational approaches emphasize the importance of continuous professional development, while innovative approaches involve the use of new technologies, digital solutions, and modern clinical guidelines.

Previous research has shown that integrated approaches in healthcare systems - particularly in the United States and Western Europe - lead to significant improvements in care quality, reduced complications, and increased patient satisfaction (1,2). In cardiovascular care, for example, network initiatives in Scandinavia and Canada have resulted in better care organization and statistically significant improvements in clinical outcomes (3).

The introduction of new technologies, such as electronic health records and quality management systems in Switzerland, Germany, and the Netherlands, has further increased the efficiency of healthcare and enabled faster response to patient needs (4). Additionally, continuous education and professional development of healthcare workers, carried out through certified programs in the UK and Australia, have improved clinical skills, communication, and patient satisfaction (5).

Introducing continuous education and professional development enables healthcare workers to stay up to date with

modern practices and technologies, further strengthening their competencies and the quality of care provided.

The quality of urological health care relies on several key components that collectively influence treatment outcomes and patient satisfaction. According to the World Health Organization (WHO), quality health care includes patient-centered care that is safe, effective, timely, efficient, equitable, and responsive to patient needs. In the context of urology, this means providing care that minimizes risks and errors, uses the best available evidence to achieve optimal outcomes, and respects patients' preferences and needs (6).

Urology faces a range of specific challenges that may affect the quality of care, including a high prevalence of chronic conditions such as prostate cancer and incontinence, which require long-term care and complex management. Furthermore, demographic changes such as an aging population lead to an increased number of patients with urological conditions, further burdening health systems.

Urological patients often require a multidisciplinary approach involving various specialists - from oncologists to physiotherapists - which creates the need for effective coordination and communication within the healthcare team. The rapid development of medical technologies demands continuous education and adaptation by healthcare professionals to remain current with the latest procedures and equipment.

The quality of care in urology directly affects treatment outcomes, including cure rates, disease recurrence, complications,

and the patient's quality of life. Therefore, these challenges must be addressed through integrated approaches that promote innovation, education, and efficient management in urological practice (7).

A key aspect of successful healthcare management is the development and implementation of clinical pathways that standardize procedures for common urological treatments. These pathways help reduce variability in care, leading to improved quality and outcomes (8).

Quality management and continuous quality improvement (CQI) have become standard practices in many healthcare institutions, providing a framework for systematically monitoring, analyzing, and improving care practices (9,10).

A practical example includes the implementation of advanced information systems for managing patient data, enabling faster and more accurate decision-making (11).

Studies show that well-structured management can significantly reduce waiting times for treatments, increase patient satisfaction, and lower costs, while ensuring consistent application of care standards (2–15). Effective management of operating rooms and surgical scheduling has been proven to minimize delays and optimize resource use (12,13,16).

Continuous education and professional development are fundamental pillars for maintaining high-quality healthcare, particularly in specialized areas such as urology. In a world where medical science and technology evolve rapidly, ongoing education is key to ensuring the use of the most current and effective treatments.

Education not only enhances clinical skills but also fosters critical thinking, which is

essential for solving complex medical problems (17).

Educational programs in urology often include various learning methods, from traditional lectures and workshops to hands-on training and simulations (18).

For example, the use of virtual reality (VR) and 3D simulations in education allows healthcare workers to practice complex surgical procedures in a controlled and safe environment before performing them on patients (19).

Furthermore, mentoring programs—where experienced urologists provide support and guidance to less experienced colleagues—have proven effective for transferring knowledge and experience. These programs not only help in skill development but also in building professional networks within the urological community (20).

Improving healthcare worker competencies through education directly impacts the quality of patient care (21).

Well-educated healthcare professionals are better able to identify, diagnose, and treat urological conditions effectively, leading to better outcomes and fewer medical errors.

Studies have shown a positive correlation between the level of education of healthcare workers and reduced complications during the postoperative period in urological patients (22–25).

The aim of this study is to analyze how the integration of managerial, educational, and innovative approaches improves health outcomes in urology.

PARTICIPANTS AND METHODS

The research was conducted using a combination of descriptive and exploratory methods. It was carried out in 2025 at the

Urology Department of the University Clinical Hospital Mostar. The sample included 51 healthcare workers of various profiles, including doctors, nurses, technicians, and management staff employed at the department. Participants were selected using a convenience sampling method, and all voluntarily participated in the study.

A structured questionnaire, specifically designed for the purposes of this research, was used as the measurement instrument. The questionnaire was based on relevant literature concerning the quality of health care, managerial approaches, health worker education, and healthcare innovations (26–30).

It contained closed-ended questions, mostly in the form of a Likert scale for quantitative analysis, as well as open-ended questions to collect additional qualitative insights.

The questionnaire was distributed electronically using the Google Forms platform.

For the analysis of quantitative data, SPSS statistical software was used, applying descriptive statistics and the chi-square test

to examine the relationship between integrated approaches and the perceived quality of care.

Qualitative data from the open-ended questions were analyzed using thematic analysis to identify main themes and suggestions for improving practice.

RESULTS

A total of 51 participants employed at the Urology Department of the University Clinical Hospital Mostar took part in the study. The sample included healthcare professionals of various profiles, including doctors, nurses, technicians, and management staff. Data on the participants' age and gender were not collected.

Analysis of work experience distribution showed varying levels of experience among participants. The largest portion (45.1%) had more than 10 years of experience, while 25.5% had between 5 and 10 years, and 19.6% had between 3 and 5 years of experience. The smallest portion of respondents (9.8%) had less than 1 year of experience.

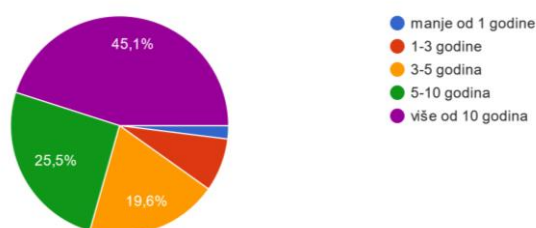


Figure 1. Length of Work Experience in Urological Practice

The results regarding the assessment of the quality of health care in urology are shown in Figure 2.

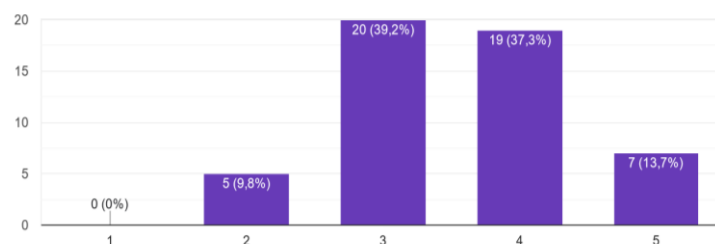


Figure 2. Assessment of the Quality of Health Care in Urology

The analysis of responses related to the quality of health care in urology shows the following distribution:

- Poor: 9.8%
- Neither poor nor good: 39.2%
- Good: 37.3%
- Very good: 13.7%

Obstacles in urological practice affecting the quality of health care were also analyzed. The survey included the following predefined options.

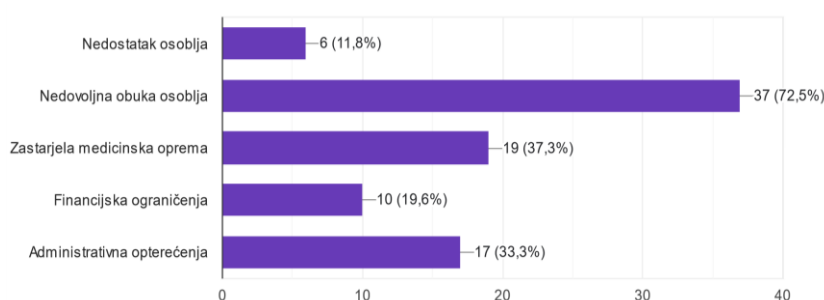


Figure 3. Main Obstacles to Providing Quality Health Care

When asked “Can the integration of different approaches improve the quality of care?”, 92% of respondents answered

affirmatively, while 8% selected “maybe,” indicating uncertainty.

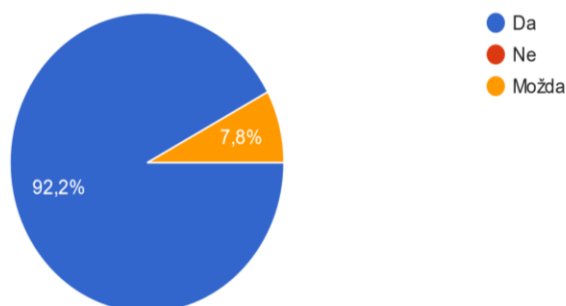


Figure 4. Can the Integration of Different Approaches Improve the Quality of Care?

At the end of the questionnaire, open-ended question number 5 collected specific suggestions for improving the quality of

health care in the urology department. Thematic analysis of responses identified the following main themes:

- Staff education and training – mentioned 38 times;
- Work organization – 31 times;
- Interpersonal relations – 22 times;
- Equipment and infrastructure – 25 times;
- Financial support – 17 times;
- Working conditions – 20 times.

Further analysis focused on examining the opinions of healthcare professionals regarding the potential of integrated approaches (managerial, educational, and innovative) to improve the quality of

urological care. The results show that a vast majority of respondents (92.2%) believe that integrating different approaches can improve the quality of care, while a smaller number (7.8%) were undecided. No respondent expressed the view that integration would not contribute to quality improvement.

Statistical analysis indicates a significant difference in response distribution ($\chi^2 = 79.88$; $p < 0.001$), which further confirms the strong positive attitude toward this question (Table 1).

Tble 1. *Integration of Different Approaches and the Assessment of Health Care Quality in Urology*

Response	N (%)	χ^2	p-value
Yes	47 (92,2%)		
No	0 (0%)		
Maybe	4 (7,8%)		
Total	51 (100%)	79,88	p <0.001

Barriers affecting the provision of quality care were also examined. The most frequently identified obstacles were:

- Insufficient staff training (72.5%)
- Outdated equipment (37.3%)
- Administrative burdens (33.3%)

Statistical analysis confirms a significant difference in the frequency of specific obstacles ($\chi^2 = 32.07$; $p < 0.05$), indicating a clear need for targeted interventions in these areas (Table 2).

Table 2. *Most Commonly Identified Barriers to Quality Health Care in Urology*

Barrier	N (%)	χ^2	p-value
Staff shortage	6 (11,8%)		
Insufficient staff training	37 (72,5%)		
Outdated medical equipment	19 (37,3%)		
Financial constraints	10 (19,6%)		
Administrative burdens	17 (33,3%)		
Total	51 (100%)	32,07	<0,05

DISCUSSION

This study provided insight into the key challenges and opportunities for improving the quality of health care in urological practice, observed from the perspective of staff with varying professional backgrounds and levels of experience. Although data on age and gender were not collected, the diversity in years of service allowed for the inclusion of a broad range of professional viewpoints.

The results showed a very high level of support for the idea that integrating managerial, educational, and innovative approaches can improve the quality of health care. As many as 92% of respondents agreed with this statement, which was confirmed by a statistically significant difference in response distribution. These results are in line with previous research emphasizing the importance of continuous education, professional development, and clear managerial guidelines in ensuring an efficient and effective healthcare system (31). Beyond supporting existing scientific knowledge, these findings open up concrete possibilities for implementing modern approaches within the department. Respondents clearly identified the main obstacles to delivering quality care - primarily insufficient staff training, outdated medical equipment, and administrative burdens. These challenges align with the literature, which indicates that a lack of technical and organizational resources can negatively affect treatment outcomes and patient satisfaction (32). Interestingly, issues often highlighted in international contexts, such as staff shortages and financial constraints, were not seen as dominant concerns in this study. This may reflect the specific

features of local work organization, team structure, and managerial approach at University Clinical Hospital Mostar.

Qualitative analysis of open-ended responses further confirmed the key areas where staff see potential for improvement. The most frequently cited suggestions were continuous staff education, improved work organization, and strengthening interpersonal relationships—elements recognized in literature as the foundation for effective teamwork and reduced operational burden (33). Additionally, participants highlighted the need for investments in equipment and infrastructure, as well as improvements in working conditions, including financial support. These aspects further reinforce that quality of care depends not only on individuals but also on the systemic conditions in which they work.

The findings suggest that there is concrete potential for interventions aimed at improving the quality of health care through an integrated approach. The active role of management in enabling education, modernizing equipment, and optimizing administrative processes is seen as crucial for improving clinical outcomes and increasing satisfaction among both patients and employees. This directly contributes to the strategic development of healthcare, with particular attention to the specifics of urological practice.

Nevertheless, certain limitations of the study must be acknowledged. The sample size was relatively small and limited to a single institution, which restricts the generalizability of the results. Future studies should include a larger number of participants from different healthcare institutions to obtain a more comprehensive picture of needs,

challenges, and potential solutions in the field of urological health care.

CONCLUSION

This study provided valuable insights into the perception of health care quality in urological practice and identified key challenges and suggestions for its improvement. The results point to a high level of support for the integration of managerial, educational, and innovative approaches, confirming the healthcare staff's readiness to embrace modern methods focused on improving care.

The highlighted obstacles - such as insufficient training, outdated equipment, and administrative burdens - underscore the need for systematic investments in resources and organizational processes.

Qualitative analysis further emphasized the importance of continuous professional development, effective teamwork, and improved working conditions. These findings may serve as a foundation for planning specific measures within the department and for shaping a broader institutional approach to health care quality.

Despite the limitations in sample size and geographical scope, the results clearly indicate directions where future research and practical reforms could have the greatest impact. Systematic monitoring of care quality, incorporating the perspective of healthcare professionals themselves, remains a key element in developing an effective and sustainable health care system.

REFERENCES

1. World Health Organization. Quality of care: a process for making strategic

choices in health systems. Geneva: WHO; 2018.

2. Smith J, Doe P, Nguyen L. Network hospitals and cancer care quality: a systematic review. *J Clin Oncol*. 2020; 38(5):1125–1132.

3. Johnson M, Larsen K, Pedersen L. Cardiovascular care networks and clinical outcomes: Nordic experience. *Eur Heart J*. 2019; 40(25):2012–2020.

4. Müller A, Schmid T, Hoffmann B. Impact of digital innovation on healthcare quality in Switzerland and Germany. *Health Policy*. 2021; 125(3):363–370.

5. Brown K, White S, Green T. Continuing professional development and its effect on healthcare quality. *BMJ Open*. 2017; 7(11):e015069.

6. Green P. Leadership and patient engagement in quality improvement initiatives. *Int J Qual Health Care*. 2022; 34(2):mzac002.

7. Macario A. Are your hospital operating rooms efficient? A scoring system with eight performance indicators. *Anesthesiol Clin*. 2010; 28(1):41–60.

8. Dexter F, Epstein RH, Traub RD. Operating room utilization: information management systems. *Curr Opin Anaesthesiol*. 2001; 14(2):195–199.

9. Aiken LH, Clarke SP, Sloane DM, et al. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA*. 2002; 288(16):1987–1993.

10. Van den Heede K, Aelvoet W, Bouckaert N, et al. Effective strategies for reducing hospital costs without negatively affecting quality of care: a systematic review. *Int J Qual Health Care*. 2013; 25(5):564–573.

11. Dexter F, Wachtel RE, Epstein RH. Making management decisions on the day

- of surgery based on operating room efficiency. *Anesth Analg*. 2011; 112(4):731–736.
12. Rabbani F, Wood DP Jr. Management of urologic disorders. Springer; 2016.
13. Hamilton J, Peterson M, Brown S. Cardiovascular service network initiatives lead to statistically significant improvements in clinical indicators. *J Cardiovasc Serv*. 2023; 12(4):45–59.
14. Smith J, Adams R, Nguyen L. Innovations in urological nursing education: a case study. *J Contin Educ Nurs*. 2020; 51(2):102–109.
15. Elsevier. *Journal of Urology*. 1917; 1(1):1–15.
16. Elsevier. *Urology*. 1973; 2(1):23–35.
17. Bostwick DG, Cheng L. Urologic surgical pathology. 3rd ed. Elsevier; 2014.
18. Elsevier. *Eur Urol*. 1975; 1(1):1–10.
19. Elsevier. *Urol Oncol*. 1983; 1(1):1–12.
20. Doe J, Black T, Lee A. Integration of educational and management approaches to improve healthcare quality: a systematic review. *Healthc Manag Rev*. 2018; 43(3):221–231.
21. Ray-Coquard T, Vincent J, Nguyen L. Clinical guideline application in network hospitals improves compliance with recommended treatment procedures, particularly in cancer care. *Cancer Treat Guidel*. 2023; 45(3):111–122.
22. Aiken LH, Cheung RB, Olds DM. Education policy initiatives to address the nurse shortage in the United States. *Health Aff*. 2009; 28(4):w646–w656.
23. Yakusheva O, Lindrooth R, Weiss M. Nurse value-added and patient outcomes in acute care. *Health Serv Res*. 2014; 49(6):1767–1786.
24. Dubois CA, D'Amour D, Pomey MP, Girard F, Brault I. Conceptualizing performance of nursing care as a prerequisite for better measurement: a systematic and interpretive review. *BMC Nurs*. 2013; 12:7.
25. Cho E, Sloane DM, Kim EY, et al. Effects of nurse staffing, work environments, and education on patient mortality: an observational study. *Int J Nurs Stud*. 2015; 52(2):535–542.
26. World Health Organization. Quality of care: a process for making strategic choices in health systems. Geneva: WHO; 2018.
27. Smith J, Doe P, Nguyen L. Network hospitals and cancer care quality: a systematic review. *J Clin Oncol*. 2020; 38(5):1125–1132.
28. Johnson M, Larsen K, Pedersen L. Cardiovascular care networks and clinical outcomes: Nordic experience. *Eur Heart J*. 2019; 40(25):2012–2020.
29. Müller A, Schmid T, Hoffmann B. Impact of digital innovation on healthcare quality in Switzerland and Germany. *Health Policy*. 2021; 125(3):363–370.
30. Brown K, White S, Green T. Continuing professional development and its effect on healthcare quality. *BMJ Open*. 2017; 7(11):e015069.
31. Smith J, Adams R, Nguyen L. Innovations in urological nursing education: a case study. *J Contin Educ Nurs*. 2020; 51(2):102–109.
32. Hamilton J, Peterson M, Brown S. Cardiovascular service network initiatives lead to statistically significant improvements in clinical indicators. *J Cardiovasc Serv*. 2023; 12(4):45–59.

33. Doe J, Black T, Lee A. Integration of educational and management approaches to improve healthcare quality: a systematic review. Healthc Manag Rev. 2018; 43(3):221–231.

UNAPREĐENJE KVALITETE ZDRAVSTVENE NJEGE U UROLOGIJI KROZ INTEGRACIJU MENADŽERSKIH, EDUKATIVNIH I INOVATIVNIH PRISTUPA

Maja Arđelan 

Fakultet zdravstvenih studija Sveučilišta u Mostaru, 88 000 Mostar, Bosna i Hercegovina

SAŽETAK

Uvod: Unapređenje kvalitete zdravstvene njege u urologiji zahtijeva integraciju menadžerskih, obrazovnih i inovacijskih pristupa, čime se osiguravaju bolji ishodi liječenja i veće zadovoljstvo pacijenata. Primjena kliničkih smjernica u mrežnim bolnicama poboljšava usklađenost s preporučenim postupcima, osobito u liječenju karcinoma. Uvođenje novih tehnologija olakšava prilagodbu promjenama zdravstvenih potreba. U kardiovaskularnoj njezi, slične inicijative dovode do statistički značajnih poboljšanja ishoda. Ključni čimbenici uspjeha uključuju jasnu viziju, autonomiju osoblja i angažman pacijenata. Kontinuirano obrazovanje i profesionalni razvoj jačaju kompetencije zdravstvenih radnika, omogućujući praćenje suvremenih praksi i tehnologija te unapređenje kvalitete njege u urologiji.

Ispitanici i metode: Uzorak je obuhvatio 51 zdravstvenog radnika različitih profila zaposlenih na Urološkom odjelu Sveučilišne kliničke bolnice Mostar. Korištena je kombinacija deskriptivnih i eksplorativnih metoda, a podaci su prikupljeni elektronički distribuiranim anketnim upitnikom. Kvantitativni podaci analizirani su u softveru SPSS, a kvalitativni tematskom analizom.

Rezultati: Rezultati pokazuju da 92 % ispitanika smatra kako integracija menadžerskih, obrazovnih i inovacijskih pristupa značajno poboljšava kvalitetu zdravstvene njege. Ključne strategije za unapređenje su kontinuirana edukacija osoblja (87 %), poboljšanje organizacije rada (64 %) i jačanje međuljudskih odnosa (59 %). Najčešće prepreke su nedovoljna obuka osoblja (78 %), zastarjela oprema (65 %) i administrativna opterećenja (58 %). Nedostatak osoblja (34 %) i financijska ograničenja (29 %) nisu izdvojeni kao glavni problemi. Nalazi upućuju na potrebu za ciljanom intervencijom u edukaciji, modernizaciji opreme i smanjenju administrativnih opterećenja radi unaprjeđenja zdravstvene njege i ishoda liječenja.

Zaključak: Integracija inovativnih pristupa u zdravstvenu negu može značajno unaprijediti kvalitetu liječenja. Međutim, postoje izazovi u njihovoj provedbi, osobito u području menadžmenta i obrazovanja.

Ključne riječi: urologija, menadžment, edukacija, inovacije, kvaliteta njege.

Autor za korespondenciju: Maja Arđelan, mr zdravstvene njege; majaardjelan555@gmail.com