

Beyond Performative Compliance: Mapping the Use of Standards and the Institutional Behaviour in the Romanian Healthcare Procurement

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Abstract

This study examines the interplay between the use of technical standards and institutional behaviour in the public procurement of medical devices in Romania. It is based on an analysis of a longitudinal dataset of approximately 600 procurement files (2019–2024), to identify the various levels of maturity and the actual trends in the Romanian ecosystem. The paper offers in the end potential solutions for closing the identified gaps and reducing performative compliance.

Quantitative findings reveal a 225% surge in medical management contracts during the 2021 pandemic peak, which authors consider to be a manifestation of reactive isomorphism, followed by a significant maturation pivot in 2022. The nearly perfect correlation between Public Administration and County Hospital procurement cycles suggests a tendency towards mimetic isomorphism ("copy-paste" logic) which is proved also by the prevalence of "Ghost Standards" (withdrawn or obsolete references) in the procurement documentation, demonstrating a tendency towards performative compliance to mask institutional void.

The article concludes that closing the standardization gap and achieving solid maturity in the public procurement system requires a transition from performative "check-box compliance" towards a substantive quality framework. By leveraging national technical repositories and expertise, based on the already increasing performance in certain segments of the public procurement system, Romania can move forward maintaining the overall framework, but investing more in knowledge management and avoiding performative compliance.

Keywords: Public Procurement, Medical Devices, Standards, Technical Specifications

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1. Introduction

Standards serve as an essential tool in defining the technical requirements that publicly funded medical equipment, and devices must meet to ensure safety and quality of what is purchased. They provide a clear, objective, and harmonized framework for conformity assessment, contributing to the transparency, efficiency, and safety of the procurement process. Especially in the context of medical devices - a harmonized field at European level - the correct and consistent use of standards to define technical specifications is not only recommended but necessary to comply with legislation and protect public interest. Public procurement of medical devices represents a critical intersection of healthcare delivery, regulatory compliance, and institutional efficiency. Accounting for the significant portion of public funds spent in this area, procurement carried out by public institutions in Romania shapes markets but also drives hospital innovation, patient safety and institutional resilience.

However, an analysis of a sample of approximately 600 public procurement files conducted in Romania from 2019–2024 reveals a variety of practices in using recognised technical standards for detailing the procurement specifications. Some contracting authorities explicitly reference relevant European or international standards, while others completely omit this aspect or use vague technical specifications, incorrect or withdrawn standards, which can lead to ambiguities, unjustified restrictions, or even preferences toward certain suppliers.

This diversity of approaches indicates a clear need for professionalization and standardization of practices in the public procurement of medical devices. Public authorities should pay greater attention to the role of standards, not only for legislative compliance but also to improve the quality and efficiency of procurements.

Sustainable development and maturity could be achieved also by sharing best practices developed in different countries, such as knowledge management, AI-enabled transparency, green criteria enforcement, multi-criteria evaluation, digital platforms, and trained personnel to align procurement specifications with life-cycle costs and innovation.

Standardization is a strategic tool for innovation, safety and competitiveness. Using it in a smart way gives the opportunity to better align national practices with European requirements, thereby contributing to a more transparent and efficient public procurement system.

2. Theoretical Foundations and Strategic Dynamics

The procurement of medical devices is no longer viewed as a peripheral administrative task but as a strategic function that has an impact on patient safety, innovation, and financial responsibility. At the heart of administrative behavior in public procurement lies the concept of **institutional isomorphism**. As articulated by DiMaggio and Powell (1983), organizations within the same field tend to become increasingly similar not necessarily because of efficiency, but because of pressures to conform to perceived norms.

In the context of the Romanian healthcare sector, two specific manifestations are particularly relevant. First, **reactive isomorphism** occurs during periods of high environmental uncertainty, such as a global pandemic, where institutions surge toward similar emergency-driven management models (Ahmed et al., 2020). Second, **mimetic isomorphism** describes the "copy-paste" logic often found in public administration, where authorities model their technical specifications on peer organizations to reduce perceived risk and administrative burden. This "mimesis" often leads to what Meyer and Rowan (1977) describe as **decoupling**, where the formal structures and standards cited in a tender are disconnected from the actual technical requirements of the medical staff.

Healthcare procurement is uniquely complex due to the rapid life cycle of medical technologies and the life-critical nature of the products. Recent research emphasizes that "strategic procurement" requires moving away from the "clerical" logic of lowest-price auctions toward value-based frameworks (Sforza and Cimini, 2020). Achieving this transition requires significant institutional capacity. Gavurová and Kubák (2021) argue that when authorities lack specialized technical expertise, they default to "lowest price" as a defense mechanism, which often results in the procurement of low-quality equipment that endangers patient safety. This tension between **administrative compliance** and **substantive quality** is a recurring theme in Eastern European procurement reforms, where the "professionalization" of the workforce remains an ongoing challenge (European Commission, 2017).

Standards serve as a common language in procurement, intended to ensure interoperability and safety. However, in systems characterized by an **institutional void**, standards can take on a performative role. "Performative Compliance" occurs when an organization cites standards primarily to project an image of legitimacy and technical rigor to auditors, rather than to actually define the technical needs of the project. The phenomenon of "**ghost standards**", that is the citation of withdrawn or obsolete technical references, is a specialized form of this performative behavior. It suggests that the procurement documentation is not actively managed by technical experts but rather recirculated among various institutions. This signals a

lack of real-time engagement with the market and the current state of clinical innovation, creating a gap between the legal validity of a tender and its technical relevance. It can also be the case that mimesis leads to technical specifications that are not entirely linked to the local needs and even if correct technical standards are being used in tenders, the overall outcome may or may not be effective.

The COVID-19 pandemic acted as a "stress test" for procurement systems globally. Garzotto et al. (2020) noted that during the peak of the crisis, the need for speed often overrode traditional competitive safeguards. In Romania, this manifested as a shift in power dynamics, where public administration bodies took a more dominant role in medical management than during periods of stability. This shift highlights a "hierarchical pull" where generalist authorities intervene in specialized medical procurement, further exacerbating the risk of technical inaccuracies and the misuse of standards.

The literature is unequivocal: referencing and enforcing standards in public procurement is central to achieving safety, efficacy, and market improvement. As evidenced by the collective findings of Tasleem et al. (2017) and Ahmed et al. (2020), the integration of rigorous technical and quality standards is vital for achieving operational excellence and improving patient safety in healthcare procurement. From ISO 9001's governance benefits to industry-specific safety benchmarks (e.g., ISO/IEC 60601, ISO 15189), standards assure minimum performance and drive suppliers toward higher compliance, innovation, and reputational investment.

International and European standards play a dual role: driving supplier compliance and providing public procurement authorities with technical anchors. Countries like Germany or Sweden systematically cite technical standards, accreditation frameworks (EFQM, JCI, etc.), and voluntary sustainability standards (VSS), creating incentives for suppliers to adopt best practices and raise product quality. As highlighted in the University of Geneva's comparative analysis, "the main barriers for SPP—lack of capacity, lack of guidance material and practical tools... require both legal and institutional reforms" (Lambert, 2020).

The European Parliament briefing underlines that "public authorities need more information on international standards, so that they can generalize their use in the technical specifications of tenders" (Vernadaki, 2010). Expert reviewers also note that "minimum acceptable performance may be all that is available during emergencies, but hospitals must strive to keep care above essential safety thresholds, supported by robust technical protocols, staff training, and manufacturer engagement" (Garzotto et al., 2020).

ISO, IEC, and EN standards dominate technical requirements, with ISO 9001 and ISO 15189 serving as benchmarks for quality management and laboratory competence. Medical device tenders should reference device-specific standards (ISO/IEC 60601 for safety, ISO 25424 for sterilization, ISO 15190 for infection control). Sustainability standards, such as ecolabels, ISO 14001 (environment), ISO 20400 (sustainable procurement), voluntary frameworks like GPP, are increasingly important, though not yet mainstream in Romanian tenders.

In summary, the literature reveals a fundamental paradox in healthcare procurement: while technical and quality standards are universally recognized as essential drivers of safety and innovation, their effectiveness is strictly contingent upon the **institutional maturity** of the procuring authority. In environments characterized by high administrative stress or specialized expertise gaps, standards often shift from being "technical anchors" to becoming tools of **performative compliance**. As the following empirical analysis of **600 Romanian procurement files** will demonstrate, the findings related to **"ghost standards"** and the high correlation between generalist and specialist procurement cycles serve as quantifiable markers of this standardization gap. The analysis also shows a positive trend in the adoption of standards in public procurement of medical equipment and increased use of technical standards, while the gaps are yet to be fully covered. By examining these longitudinal trends, this study provides the evidence-based foundation needed to fully move beyond apparent compliance toward a matured, strategically integrated procurement ecosystem.

3. Methodology

The quantitative analysis of the procurement landscape (2019–2024) aims to move beyond accidental observations or induction of administrative inefficiency to provide a data-driven map of institutional behavior. By examining a longitudinal dataset of procurement files, this section identifies how the pressure of external factors, such as the COVID-19 pandemic and shifting EU mandates, have shaped the behaviour of contracting authorities.

Procurement data of medical equipment for the last 6 years, exceeding 270.130 RON (~55.000 EUR), were identified in the Romanian portal for public tenders (SICAP). Due to limited data processing capacity of SICAP, authors selected a yearly average of 100 awarded public tenders, considering a variety of contractors with a large geographical spread. Secondly, all the references to standards were extracted from the procurement documentation, considering the types of standards referenced, their validity (which allowed for identification of 'ghost standards'), and the typology of the contractors, to identify patterns of behaviour in different types of organizations, and potential trends.

Standards and other technical specifications were classified as:

- *General management standards* - standards providing frameworks for organizations to enable consistent decision-making, risk management, control and continuous improvement of their core processes and operations (ex. ISO 9001 (quality), ISO 14001 (environment)).
- *Medical management standards* - outline frameworks for healthcare organizations to ensure high-quality, safe, patient-centered care (ex. ISO 13485 (medical devices), ISO 45001 (occupational management)).
- *Technical standards* - establish specifications or requirements for products, processes, materials, testing methods and performance criteria (ex. EN 149+A1:2010, EN ISO 80601-2-61:201).
- *Dual standards* – simultaneous use of management and technical standards.

4. Results and discussion

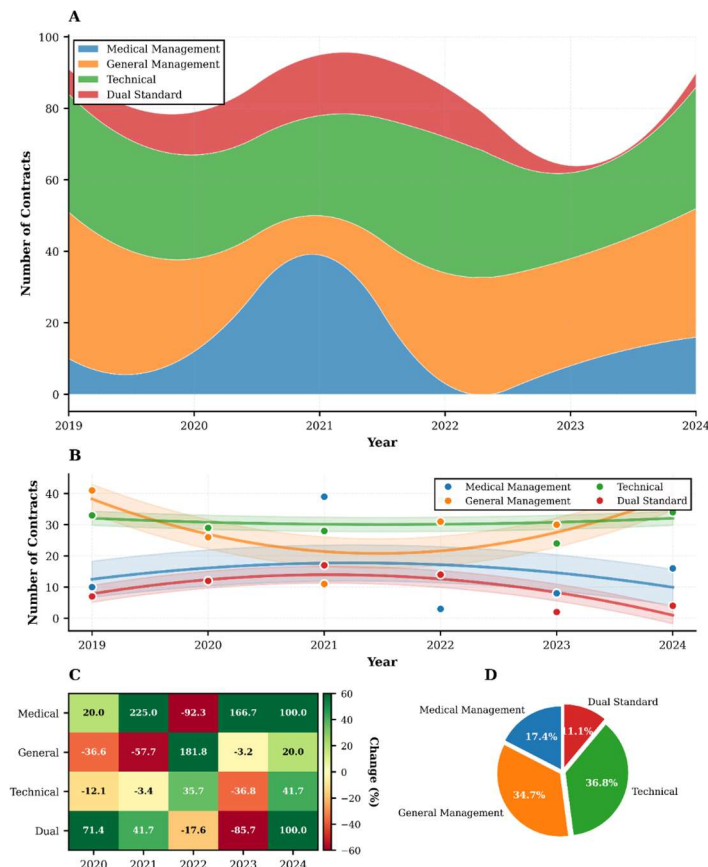


Figure 1. Temporal evolution and distribution of contract types (2019-2024)

Source: Authors' data processing

Figure 1 provides a multi-layered analysis of the temporal evolution and distribution of contract types over a six-year window.

The cumulative trends recorded in the stacked area visualization (1A) reveal a clear systematic instance of *reactive isomorphism*. This is most visible in the medical management category, where more frequent standard referencing was triggered by the COVID context and increased attention to safety, leading to a peak in 2021, where it experienced a 225% year-over-year surge (1C). Under the extreme pressure of the pandemic, public authorities were forced to act. However, the data shows that this action was often more in the realm of performative compliance. The massive increase, followed by a 92.3% correction in 2022, indicates that the system's initial response to the pandemic was not a permanent shift in strategy, but an emergency-driven behavior, which we coin as *reactive isomorphism*.

The polynomial regression analysis (1B) provides a clearer view of the post-pandemic trajectory. While medical management follows a parabolic curve of sudden raise followed by decline, general management displays a U-shaped recovery. This recovery, starting in late 2022, suggests a normalization phase, where the system transitioned away from emergency medical responses back toward a stable, administrative baseline.

Despite the volatility of medical management standards references, the cumulative distribution (1D) proves that the Romanian medical procurement system remains infrastructure-heavy. References to technical standards represent the largest share (36.8%), maintaining consistent performance throughout the analyzed period, without spectacular changes during the pandemic. This stability demonstrates that while management priorities may fluctuate wildly under pressure, the technical requirements of the sector act as a stabilizing operational backbone.

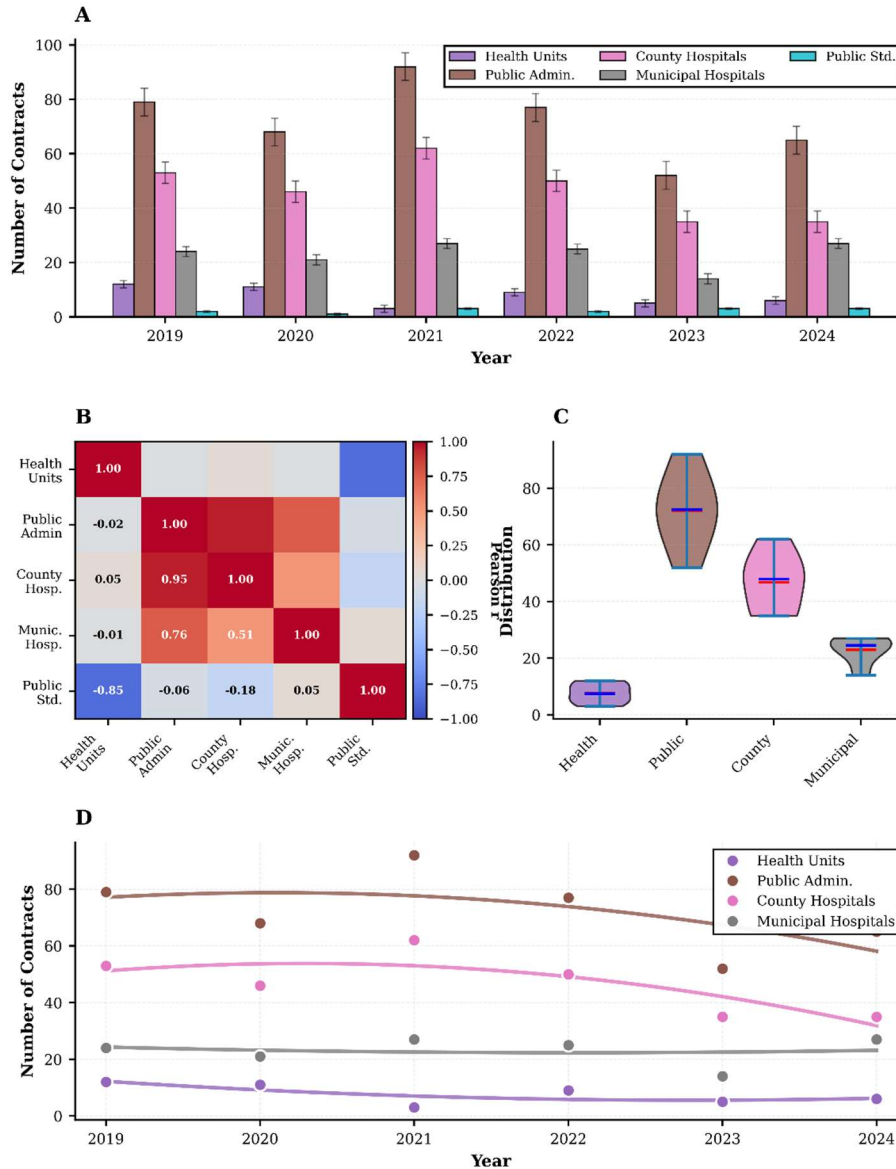


Figure 2. Statistical analysis of institution types (2019-2024).

Source: Authors' data processing

While Figure 1 mapped the temporal shocks to the system, Figure 2 explores the structural landscape of the Romanian medical procurement ecosystem. The objective is to map the true performers in the system, the organizations that have the strategic approach and the institutional capabilities to achieve effective outcomes through public procurement, and the degree of coordination across the

system, identifying the types of contractors that are more inclined towards performative compliance, mostly manifested through mimetic isomorphism. By analysing the correlation and distribution patterns, we can determine if decentralized procurement functions properly, being expertise-driven and truly adapted to local needs, or to what extent it remains mimetic.

The distribution by institution type (2A) highlights a significant structural characteristic of the system, where the public administration (municipalities and central authorities) dominates the landscape, maintaining a 9:1 ratio over specialized health units. Thus, the majority of medical equipment in Romania is not procured by the end-users (doctors and hospital technicians), but by administrative generalists, which can account for the slow adoption of standards and the mis-referencing of obsolete standards, due to lack of specialized knowledge of personnel. The narrow error bars across most categories indicate that this is not a random occurrence, but a systematic procurement pattern.

The Pearson Correlation Matrix (2B) provides the grounds for our identification of the tendency to manifest *mimetic isomorphism*. The nearly perfect correlation between public administration and county hospitals suggests that these entities are not acting independently based on specific technical needs, but rather operate in synchronous procurement cycles, most likely engaging in mimetic isomorphism, by "copy-pasting" technical specifications of larger, more specialized hospitals. This creates a high risk for the administrative errors in a central tender to be carried on in public tenders across the respective county.

The probability distributions (2C) reveal behavioural patterns of each institution type. Public Administration displays a distinct bimodal distribution, indicating two separate procurement regimes, with a pre-pandemic low-volume and a post-pandemic high-complexity peak, whereas municipal hospitals show a concentrated, narrow distribution, reflecting highly standardized and predictable protocols. The 3x wider spread in public administration compared to municipal hospitals suggests a much higher level of flexibility, but also a higher risk of inconsistency in centralized decision-making.

The polynomial regression analysis (2D) shows that the 2021 peak was a system-wide phenomenon, but the recovery trajectories differ for the two major types of public bodies. While public administration and county hospitals are on a continued moderate decline, municipal hospitals have shown resilience, displaying a better knowledge management capability and a higher determination to continue good practices that most likely had been triggered by an emergency context. This suggests

a subtle shift in the market: as large-scale central funding stabilizes, smaller, more agile municipal institutions are beginning to take a more active role in infrastructure maintenance.

Figure 2 demonstrates that the Romanian system is still slightly dependent on a "copy-paste" logic and progress is driven mostly by external pressure. The correlation (2B) and the bimodal volatility of public administration (2C) indicate a tendency towards administrative mimesis, rather than systematically localized technical assessment, which reinforces the need for better knowledge management and training of workforce involved in public procurement, to reduce the heterogeneity of tender outcomes at various levels and to prevent the viral spread of errors from central authorities to the rest of the tiered system.

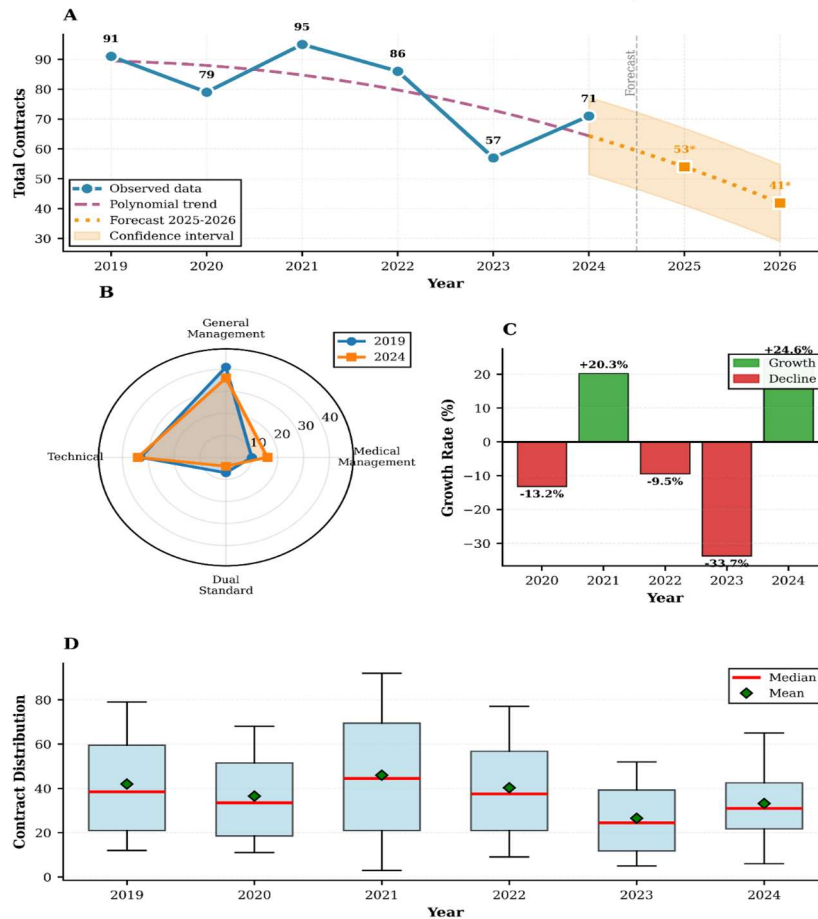


Figure 3. Comparative analysis and forecasting (2019-2024)

Source: Authors' data processing

The final stage of the analysis transitions from historical tracking to predictive modelling and comparative benchmarking. The intent of Figure 3 is to evaluate the long-term sustainability of the procurement ecosystem and to determine if the *standardization gap* is narrowing. By synthesizing forecasting data with radar-mapped compositional shifts, we can identify whether the observed system contraction is a sign of budget fatigue or a shift toward administrative efficiency and technical maturation.

The historical performance reveals a highly elastic system, recording the dataset's largest reversal between 2023 (-33.7%) and 2024 (+24.6%) (3C). However, the polynomial forecast (3A) predicts an overall downward trajectory toward 41 contracts by 2026. We can infer that rather than launching numerous small, fragmented tenders, the system is probably moving toward fewer, high-value multi-year contracts, which can have a good impact in reducing administrative noise and performative compliance, and leverages economies of scale.

The radar chart comparison (2019 vs. 2024) provides a visual map of the system's strategic pivot (3B). While the overall area of the 2024 pentagon is smaller, reflecting system contraction, the technical vertex remains stable. The most significant shift is the 43% proportional decline in dual standard contracts. This suggests that the *institutional void* of overlapping and ambiguous technical-management requirements is slowly being filled by clearer, more specialized specifications, also validating the hypothesis that the system tends to reduce performative compliance and moves toward a more disciplined, technical-first logic.

The annual distribution statistics (3D) show a progressive narrowing of the Interquartile Range (IQR) and a shortening of the upper whiskers (from 80 in 2019 to 65 in 2024). This statistical compression indicates that the system is becoming more uniform.

Figure 3 highlights a transition from a reactive, crisis-driven behaviour to a more consolidated and standardized professional approach. The forecast (3A) and the radar shift (3B) suggest that while the volume of tenders may be decreasing, the quality of those tenders is potentially increasing.

5. Conclusion

The data proves that the dilemma in Romanian procurement is not a lack of intention, but a symptom of insufficient management capabilities. The 225% surge in activity during the pandemic was not matched by a surge in technical expertise.

The high incidence of *ghost standards* and the identified *mimetic isomorphism* indicate insufficient performance in knowledge management, where lessons learned in one specialized hospital are not being converted into national standardized repositories.

To close the gap of performative compliance and move towards locally tailored, efficient public procurement of medical equipment focused on outcome, the transition must move from *check-box compliance* to a *substantive quality framework*. Without a national technical specification library and a knowledge management strategy where lessons learned are captured and personnel is properly and continuously trained, the 2024 mandates for Green Procurement risk being a stage for superficial display of apparently compliant behaviours, with insufficient real impact.

6. Recommendations

To move beyond performative loops and achieve true system maturity, the research proposes the following strategic interventions:

1. Establishment of a National Technical Specification Repository. The current practice of "re-inventing the wheel" at the municipal level leads to inefficiency and the use of obsolete standards. Romania requires a centralized, rigorous education on the use of technical specifications for medical equipment. By standardizing the *technical core* of tenders at a national level, the system can eliminate mimetic errors and ensure that all authorities, regardless of their size, have access to high-fidelity, up-to-date technical requirements.
2. From Administrative Training to Technical Professionalization. The expertise gap identified in the data cannot be solved through legal training alone. There is an urgent need to build internal management capabilities, specifically focused on medical technology. This includes creating inter-disciplinary procurement teams that combine legal expertise with clinical and engineering insights. Professionalization should focus on the ability to conduct life-cycle cost assessments rather than just verifying "check-box" certificates.
3. Implementing a Robust Knowledge Management Strategy. The identified lack of knowledge management performance is a critical bottleneck. Lessons learned from successful, specialized hospital tenders are currently lost to the wider system. A formal mechanism must be established to capture these "best practices" and convert them into actionable guidelines for generalist authorities.
4. Substantiating the "Green Revolution" 2024 mandates for minimum ecological criteria represent a significant opportunity. However, to avoid becoming another layer of *performative compliance*, these criteria must be supported by clear, measurable technical benchmarks. Authorities must be trained to evaluate

environmental impact (energy consumption, circularity) as a core quality metric rather than an optional administrative add-on.

The journey towards a matured procurement system in Romania is a transition from quantity to quality. While the volume of tenders may be stabilizing or even decreasing, the qualitative density and technical precision of those tenders must increase. By addressing the structural hierarchies and the "copy-paste" culture through centralized knowledge management and technical repositories, the Romanian healthcare system can ensure that public funds are not just spent according to law, but invested according to standards. In the medical sector, the gap between performative compliance and substantive quality is not just a financial concern, it is a direct determinant of patient safety and institutional resilience.

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