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PRIORITIES OF DEVELOPMENT THE UROLOGICAL MEDICAL ASSISTANCE IN THE REPUBLIC OF MOLDOVA

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In the Republic of Moldova, the surgical practice of urologists among the national hospitals is narrowing with less case diversity and a greater focus on subspecialties. These trends are even more evident among urban urologists compared to rural practice. A quantitative study was carried out, 96 urologists were interviewed out of the total number of 116 people involved in urological healthcare in the Republic of Moldova. The purpose of the study was to evaluate the organization and functioning of urological medical care in the Republic of Moldova for the elaboration and argumentation of recommendations in accordance with contemporary standards in the field. The human resources involved in urological medical assistance in the country were analyzed, the analysis of the functionality of the urological services provided at different levels, both ambulatory and hospital, and various aspects of the field of providing urological medical assistance was carried out. The correlation of doctors' gender with their age, the distribution of work experience by geographical areas and depending on the place of providing urological medical assistance were evaluated. Also, in order to establish the quality of service to patients, the doctors participating in the study were interviewed regarding access to high-performance investigations, the professional load in terms of the number of territorial units served, the number and type of urological interventions performed annually, as well as rate of recorded complications. The majority of urologists - 70.9% provide services in the Center area and the municipality of Chisinau, which reveals a hyper centralization of urologists, it was also established that 59.4% of the surveyed urologists practice minimally invasive interventions, and in outpatient only 17.6% practice this type of intervention, and about 1/3 of those interviewed practice surgical interventions insufficiently. In conclusion, it was established that the current improvement of urological medical care in the Republic of Moldova must be based on the principle of quality, responsibility, modernization and focusing on the patient's needs.

Keywords: urology, medical assistance, medical care, healthcare.

INTRODUCTION

Patient access to urological care is a global, current and growing concern. Projections of population growth and aging suggest an increasing demand for urological services over the next 2 decades. Therefore, maximizing the ability to provide ambulatory visits in due time may become increasingly important [1].

Rural hospitals are more likely to be closed and face economic pressures due to consolidation of hospital systems. Doctors without training were more inclined to practice in urban centers [2].

Policies that encourage health system integration can have downstream effects of facilitating the provision of high-quality care. Finally, studies exploring the financial resources required to build integrated networks and the costs associated with providing high-quality care will inform how wide dissemination of this model can realistically occur [3].

As our health care system continues to evolve in this era of limited resources, there is a growing demand for the delivery of high-quality, high-value, low-cost care with increased patient access [4].

The low use of urological beds in the districts of the Republic of Moldova, as well as the low surgical activity, does not objectively reflect the situation of urological assistance, because, in recent years, both the prevalence and the incidence of urological diseases at the national level are increasing. It should be noted that 1/3 (respectively 12 district centers) of the country's districts do not have urological doctors [5, 6].

THE AIM of the study was to evaluate the organization and functioning of urological medical care in the Republic of Moldova for the development and argumentation of development recommendations in accordance with contemporary standards in the field. To achieve the goal, the following **objectives** have been developed:

1. Studying the literature, national and international practices in the field of urological medical care.
2. Analysis of the resources trained in the provision of urological medical assistance.
3. Evaluation of the functionality of urological services provided at different levels.
4. Elaboration and argumentation of development recommendations in accordance with contemporary standards in the field.

MATERIALS AND METHODS

A quantitative, transversal study was carried out on data collected over a period of 5 months, between 01.11.2021-01.03.2022 in order to achieve the outlined objectives.

The main research methods used during the study were the sociological and statistical methods.

A questionnaire which served as a research tool was developed in order to implement the sociological method in the study. It was submitted and applied to all urologists involved in urological healthcare in the country, a total of 116 people.

The criteria for inclusion in the study were acceptance of completing the questionnaire, specialist urologist, at the time of completion employed in urological healthcare, completion of more than 70% of answers to the questions, completion of the questionnaire in a timely manner during the study period.

Exclusion criteria were: patient's refusal to complete the questionnaire, partial completion of the →

questionnaire, less than 70% of questions answered, late submission of the questionnaire (exceeding the study deadline).

Statistical analysis was performed using Epi Info 7.2 and MS Excel 2019 software. Data were aggregated at different levels (regions, type of surgery, professional workload, etc.) and absolute and percentage frequencies were generated, means, medians, standard deviations (for quantitative variables), respectively correlation analysis was used.

RESULTS

Doctors included in the study were selected after applying the inclusion and exclusion criteria, respectively the study sample was reduced to 96 urological doctors (respondents).

To begin with, the analysis focused on the association between doctors' gender and their age. Thus, according to gender, the average age of the women interviewed (10 people) was 48 years, the youngest respondent was 41 years old, and the oldest 69 years old (the median age was 46 years, and the standard deviation ±8.6 years). Compared to women, the men interviewed had a mean age of 49.5 years, with the youngest being 28 years old and the oldest man being interviewed 73 years old (median age was 51 years, and standard deviation ±10, 9 years). No statistically significant differences were established between the two genders regarding the age of the interviewees. The oldest urologists participating in the study came from the South of the country, where the average age was 57.0 years, and the youngest urologists are from the Center, with an average age of 47.3 years, respectively a difference of almost 10 years, on average.

The distribution of urologists was analyzed in the next stage according to experience in the specialty (work experience), by geographical area; it is noted that, in the Center area, the share of those with 1-10 years of experience was 17.4%, of those with 11-20 years – 21.7%, 21-30 years – 30.4%, 31 - 40 years – 21.7% and 41-50 years – 8.7%. For urologists from the municipality of Balti, these indicators were the following: internship 1-10 years – 14.3%, 21-30 years 42.9%, 31-40 years – 14.3% and 41-50 years – 28.6 %. Compared to the municipality of Bălți, in the municipality of Chișinău the following distribution by age groups of the interviewees was established: internship 1-10 years – 11.1%, 11-20 years – 26.7%, 21-30 years – 24.4% , 31-40 years 31.1% and 41-50 years – 6.7%. In the Northern area, among the 9 respondents, 4 people (respectively 44.4%) were from the 21-30 and 31-40 age groups and only one person with 1 to 10 years of experience. In Transnistria, about 28.6% were representatives of the group with 11-20 years of experience, 42.9% of the group with 21-30 years of experience and 28.6% of the group with 41-50 years of experience. In the South area, practically all groups got a share of 20.0%, except for the 41-50 years old group - 40.0%. Following the data analysis, it was highlighted that in most geographical areas the average length of service between 21-30 years predominates, with the exception of the Southern area, where the greatest weight is given to the length of service of 41-50 years, (however, in this region, the results are not statistically representative due to the small number of observations).

Next, the analysis of the distribution of work experience according to the place of providing urological medical assistance also highlighted the percentage structure/ distribution of urologists who work in outpatient or inpatient settings; thus, in the ambulatory, the share of working experience 11-20 years constituted - 11.8%, 11-20 years - 35.3%, 31-40 years - 23.5% and 41-50 years - 29.4% . Compared to them, the responding doctors who work in the hospital reported a work experience of 1-10 years in 12.1%, 11-20 years – 30.3%, 21-30 years – 27.3%, 31-40 years – 21.2% and 41-50 years – 9.1%. A difference can be noted between the two groups with the trend of longer working experience for those who work on an outpatient basis (31-50 years - 52.9%), in the case of doctors who work in an inpatient setting, the tendency to have an internship was recorded average working age (11-30 years - 57.6%).

In order to evaluate the quality of the provision of specific services to patients, we interviewed the doctors participating in the study regarding the availability and the possibility of accessing/using high performance investigations; in this context, about 56 of the doctors, representing 58.3% (CI 95%, 47.8 – 68.3) answered that they have access to high-performance investigations, about 35 of the responding doctors, representing 36.5% (CI 95%, 26.9 – 46.9) answered that they have partial access, and only 5 people, representing 5.2% (CI 95%, 1.7 – 11.7) answered that they do not have access. In this context, we can conclude that, to a large extent, urologists have access to high-performance investigations, the exception not being the rule for this aspect (Table 1).

Table 1. Access to high-performance investigations of study participants by geographic area

Access to effective investigations	Geografic zone											
	Centre		Bălți		Chișinău		North		Transnistria		South	
	Abs.	(%)	Abs.	(%)	Abs.	(%)	Abs.	(%)	Abs.	(%)	Abs.	(%)
Yes	16	69,6	2	28,6	26	57,8	6	66,7	3	42,9	3	60,0
No	2	8,7	0	0	2	4,4	1	11,1	0	0	0	0
Partial	5	21,7	5	71,4	17	37,8	2	22,2	4	57,1	2	40,0
TOTAL	23	100,0	7	100,0	45	100,0	9	100,0	7	100,0	5	100,0

From the territorial analysis of access to high-performance investigations, it appears that the highest share of doctors who claim that they have access to high-performance investigations is in the Center area of the country - 69.6%, followed by the North area with 66.7 % and the South area with 60.0%. It is gratifying to note that in the municipality of Balti, the Transnistria area and the Southern area, there were no urologists who claimed that they were deprived of access to high-performance investigations.

The professional load in terms of the number of territorial units served is quite high. For a better understanding of this phenomenon, we analyzed the number of territorial units served by urological

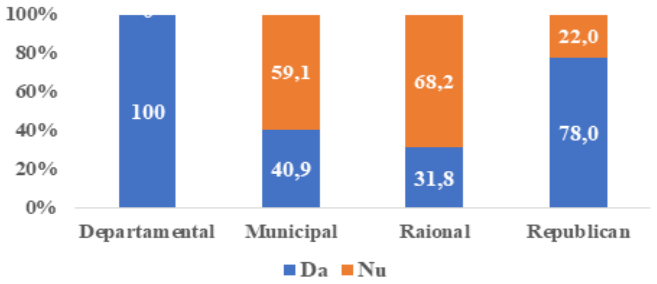
doctors according to the geographical area. Thus we found that 4 and more units are served more frequently by doctors from Balti and Chisinau municipalities, 85.7% and 60.5% respectively; in addition, in the municipality Balti, all 7 respondents reported that they have access to these investigations, in the 3 territorial units and even in extraterritorial ones. In contrast to this situation, there was a steady practice of urologists in the Transnistrian region who, to a large extent, only have access to investigations from a single territorial unit, 66.7% of them notifying this fact. Also, in the Southern region of the country, a minimal workload for urologists is attested, where 60.0% reported that they serve 1 or 2 territorial units.

Next, we investigated the number of profile urological interventions performed annually. In this context, we obtained the following results: 0-50 interventions were reported by 29 of the doctors, which represents a share of 31.2% (CI 95%, 22.0 – 41.6), 51-100 interventions – 18 people or 19.4% (CI 95%, 11.9 – 28.9), 101 – 150 interventions – 10 people or 10.8% (CI 95%, 5.3 – 18.9), 151-200 interventions – 12 people or 12.9% (CI 95%, 6.8 – 21.5) and more than 201 interventions had 24 people or a share of 25.8% (CI 95%, 17.3 – 35, 9). From what has been reported, we can define two practice models: with fewer interventions (between 0 – 100) which have a weight of 50.6% and with a high professional load (151 and more interventions), the latter group returning and a share of 38.7%. Regarding the number of interventions performed according to the activity level of the participants in the study, the data revealed that at the municipal level the lowest professional load is attested, here the share of those who performed up to 100 interventions in the previous year of constituted 71.5%; almost similar is the situation attested for urologists working at the district level, for whom the share of those with up to 100 profile interventions performed in the previous year constituted 57.1%. Compared to these two groups/practices, an opposite phenomenon was revealed among urological doctors at the level of the republic, where almost half of them (48.9%) reported that they perform more than 151 urological interventions per year.

Another indicator of the functionality of the urological services provided is the practice of minimally invasive interventions by the doctors included in the study. In this context, it was found that 57 of the responding doctors "practice minimally invasive interventions", respectively a share of 59.4% (CI 95%, 48.9 - 69.3), while "they do not practice minimally invasive interventions" 39 among urological doctors, respectively a share of 40.6% (CI 95%, 30.7 – 51.1). Among those who practice minimally invasive interventions, 38.2% reported that they perform high endoscopy (NLP, percutaneous puncture, nephrostomy), 96.4% stated that they practice low endoscopy (TUR interventions, ureteroscopies) and 36.4% stated that he practices laparoscopic surgery.

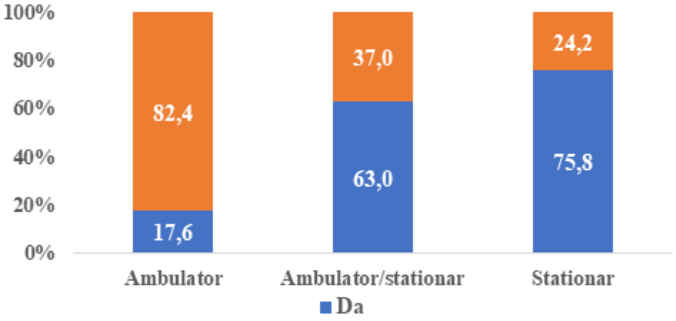
Depending on the level where the participants in the study work, we noted that the highest share of practice of minimally invasive interventions is among those in departmental institutions, 100.0%, however statistically insignificant due to the small number of them. A statistically significant high level of practice of minimally invasive interventions is highlighted among doctors at the republican level, here 39 people representing 78.0% state that they practice such interventions. At the same time, at the municipal and district levels of activity, it is confirmed that the practice of minimally invasive interventions is approximately half compared to the republican level and represents 40.9% and 31.8% respectively (see figure no. 1).

Figure 1. Practicing minimally invasive interventions depending on the activity level of the study participants



Regarding the practice of minimally invasive interventions depending on the place of providing urological medical assistance, the data presented (see figure no. 2) reveal that at the ambulatory level only 17.6% of urologists practice minimally invasive interventions; compared to them, inpatient doctors practice such procedures in proportion to 75.8%.

Figure 2. The practice of minimally invasive interventions depending on the place of provision of urological



An interesting phenomenon emerged when analyzing the data regarding the practice of minimally invasive interventions according to the level of professional qualification of urologists. Thus, if among those without category the practice of such procedures is recorded at 71.4% of urologists, by comparison, this index decreases for those with category II - 69.2%, and for those with category I - 66 .7%, the minimum being attested for those with a higher category, where only 55.2% of them practice minimally invasive interventions. We would note that the fewest doctors who practice minimally invasive interventions are from the municipality of Bălți - 28.6% and from the South area - 20.0%; in the other geographical areas, the degree of practice of these procedures is approximately the same and varies from 65.2% in the Center area, 68.9% in the municipality of Chisinau to 71.4% in Transnistria.

As in the case of the analysis according to professional category, the analysis according to age shows that, with increasing age, the share of those who practice minimally invasive interventions decreases; thus, if at the age of 31-40 years 88.2% confirmed the practice, then at 41-50 years only 57.1% confirmed, and at 51-60 years – 52.9%, the minimum being attested for those aged .

61-70 years where only 33.3% reported that they practice minimally invasive interventions

Another indicator of the quality of the services provided is the recorded complications. In order to reveal this subject, the urologists participating in the study were questioned regarding the complication rate, as a result we found that 0 -5% complication rate was reported by 50 doctors or a weight of 64.9% (CI 95%, 53, 2 – 75.5), 6–10% complication rate was reported by 9 physicians or 11.7% (95% CI, 5.5 – 21.0) and a higher rate of 11% was reported by 18 doctors or 23.4% (CI 95%, 14.5 – 34.4).

Regarding the practice of minimally invasive interventions and their correlation with complication rates, we found that those who practice such procedures have higher rates of complications; thus, rates of up to 5% were reported by 56.9% compared to 80.8% in those not practicing minimally invasive interventions, and rates greater than 11 percent in practitioners of minimally invasive interventions were reported by 31.4% compared to only 7.7% in those who do not practice.

Another aspect for establishing the quality of the services provided was to establish the correlation between the level of complication registration and the professional category of the study participants. In doctors without category, a complication rate of up to 5% was declared by only 33.3%, while in this group more than 11% complication rate was declared by the majority – 66.7%. Compared to them, in those with a higher qualification category, complication rates of up to 5% were declared by 40 doctors or 75.5%, and rates higher than 11% were declared by only 7 people or 13.2%.

CONCLUSIONS

1. The majority of urologists, respectively 70.9%, provide services in the Center area and the city of Chisinau, which reveals a hypercentralization of urological specialists, respectively a reduced accessibility to quality urological healthcare for patients from other regions of the country.

2. Based on the number of surgical interventions performed, we highlighted three groups of urologists: with less than 50 interventions per year, they have a weight of 31.2%, those with 51-150 with a weight of 30.2% and the best performers with more than 151 interventions per year with a weight of 38.7%. Thus, about 1/3 of the interviewed urologists practice insufficient surgical interventions.

3. We found that 59.4% of the surveyed urologist's practice minimally invasive interventions, and in outpatients only 17.6% practice minimally invasive interventions; compared to them, inpatient doctors practice such procedures in proportion to 75.8%. The lowest proportions of urologists who practice minimally invasive interventions were highlighted in the municipality of Bălți - 28.6% and the Southern area - 20.0%.

4. The majority of urologists (64.9%) stated that they experience a complication rate of up to 5% in the process of providing urological care. On the other hand, half of those interviewed (50.0%) reported that they register healthcare-associated infections (HAIs) in more than 3% of cases. At the same time, a maximum declaration level of IAAM (91-100%) was reported by only 63.6% of the interviewed doctors.

RECOMMENDATION

1. Decentralization of urological medical assistance with its transfer to the territories through the formation of centers of excellence within regional hospitals, including the formation of university clinical bases where young specialists could be assigned and trained.

2. Reducing the number of administrative territories served by a single urologist and the hours worked overtime per week through sufficient coverage with human resources due to the distribution of specialists in the territories. Changing the organizational structure and the entire work process by reducing overtime working hours, implementing individual professional development plans will reduce the risk of professional burnout of doctors, cases of "burnout" syndrome among urologists.

3. Revision of the normative and legislative framework with a view to: increasing the share of high-performance investigations financially covered by CNAM and also equipping them with medical equipment. Optimizing the infrastructure for the provision of urological medical assistance will allow to redirect the financial resources saved for the procurement of the absolutely necessary equipment in ambulatory conditions for the provision of minimally invasive services

4. Adjustment of labor remuneration in accordance with the "pay for performance" principle, which would motivate specialists to increase the number and quality of interventions performed annually.

5. Continue to implement standard precautions and prophylactic measures to maintain/decrease recorded complication rates and AIADM levels, plus training to increase AIADM reporting rates. At the same time, by modernizing the conditions in hospitals and improving the medical practice by urologists, it is possible to reduce the rate of infections associated with the medical act, which will influence the decrease in the length of hospitalization of patients and treatment costs.

In conclusion, the listed recommendations for improving urological medical care in the Republic of Moldova are based on the principle of quality, responsibility, modernization and focusing on the patient's needs, and are based on the scientific evidence obtained including in this study.

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