Public Health Service

Resources and Indicators of Activity of the Urological Service of the Ivano-Frankivsk Region in Dynamics for 2008-2017

Oryna Detsyk, Dmytro Solomchak*, Nadiya Scrobach, Vira Vyshyvanyuk

Abstract
According to the national system of medical-statistical accounting and reporting, data on human resources supply, network, staffing, structure, logistics and indicators of the activity of the urological service in Ukraine and Ivano-Frankivsk region were analyzed.

It is shown that the urological service of the Ivano-Frankivsk region is characterized by the sufficient provision of qualified personnel, a wide infrastructure in health care institutions of different forms of ownership, the equipment of which allows performing modern mini-invasive interventions only in certain public medical institutions of the secondary level, in the Regional Clinical Hospital and in some private health care institutions.

It has been determined that despite the performance of the network optimization over the past decade and the reduction of urological beds, their average use continues to decrease, and the average duration of patients’ treatment remains high, indicating irrational use and excessiveness of inpatient urological care.

Keywords
uroolithiasis; resources; urological service

Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine
*Corresponding author: dsolomchak@ukr.net

Problem statement and analysis of the latest research

Nowadays in Ukraine the transformation of the health care system continues. The reform of specialized outpatient care is scheduled for 2019, and inpatient – for 2020 [1]. In the conditions of the future autonomy of healthcare facilities (HCF) and the creation of a competitive market environment, it is important to assess the competitiveness of the existing network, on the one hand, and the ability to meet the needs of the population in accessing the modern medical services – on the other hand [2].

Since urolithiasis – is one of the most common diseases of the urinary system, medical assistance in which currently requires high-value equipment and highly skilled specialists, the organization of medical assistance in this pathology can serve as a model for assessing the capacity of the urological service in the region to provide it [3, 4, 5, 6].

The objective of the work – is to evaluate the rational use of the resources of the urological service of the Precarpathian region and the ability to provide modern medical care (at the example of urolithiasis).

1. Materials and Methods
On the basis of the advisory-statistical materials of the Center of Medical Statistics of the Ministry of Health of Ukraine and the replication for the period of 2008-2017 regional "Reports on medical
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"Reports of the medical-preventive institution" (form #20), the data on the supply of personnel, network, staffing, structure, material-and-technical support and indicators of urological service activity in Ukraine and Ivano-Frankivsk region. Totally the 54 initial reporting documents were analyzed.

2. Results and Discussion

The scientific and organizational-methodical center for the urological service of the entire country, as well as the center for providing highly specialized urological assistance, is the SE “Institute of Urology” of the National Academy of Medical Sciences of Ukraine.

In the system of the Ministry of Health of Ukraine, the provision of urological assistance to the population is mainly focused on the secondary and tertiary levels [7].

In particular, in the Ivano-Frankivsk region, in the selected scientific-research base, outpatient urological assistance is available to adults in all communal district and city health care facilities (HCF) and in the regional clinical hospital (RCL). Stationary urological assistance is provided in 15 out of 18 central district (CDH) and central city hospitals (CCH), as well as in RCL. At the same time, some Urology departments in the HCF of secondary medical care are in the Ivano-Frankivsk Central City Clinical Hospital, Kalush, Kolomyya and Kosiv Central District Hospitals, and in the rest – there are specialized beds in the surgical departments.

In addition to communal services, in the region there are medical institutions of private ownership – 16 in Ivano-Frankivsk and 3 in Kolomyya. Most of them provide a urologist counseling, two have a day care facility and three more – a round-the-clock hospital.

It should be noted that in accordance with the national tendencies the network of communal urological units considered for the analyzed ten-year period (2008-2017) has undergone some optimization: there were liquidated the ambulatory reception in Kalush CDH, in regional perinatal and phthisiopulmonary centers, as well as urological units in two low-capacity hospitals and urological bed fund has been reduced (totally, from 280 beds in 2008 to 230 in 2017). However, as one can see in Fig. 1, despite the reduction of the population’s coverage of hospital urological beds both in the region and in Ukraine in general, regional levels remain high. Thus, if in Ukraine this figure decreased from 1.44 beds per 10 thousand people in 2008 to 1.20% in 2017 (at 16.7% in the indexes of visibility), then in Ivano-Frankivsk oblast – from 2.03% totally only to 1.67%, respectively (at 17.7%). By contrast, the population’s availability of urologists (Fig. 2) for the period under consideration in Ukraine remained...

Figure 1. The availability of urological beds (per 10 thousand people) in Ukraine and Ivano-Frankivsk region in dynamics for 2008-2017.

Figure 2. The availability of doctors-urologists (per 10 thousand people) in Ukraine and Ivano-Frankivsk region in the dynamics of 2008-2017.
unchanged (from 0.41 doctors per 10 000 of population in 2008 up to 0.41 in 2017), while in Ivano-Frankivsk region it has significantly increased (from 0.43 to 0.49, respectively).

In absolute numbers, the amount of urologists in Ukraine during this period decreased from 1879 in 2008 to 1576 in 2017 (at 16.1% in the indexes of visibility), and in Ivano-Frankivsk oblast – from 60 to 67 people (at 13.3%), respectively.

The main reason for the overabundance by the doctors-urologists of the population of Precarpathia is the presence of medical university in the region, resulting in constant updating and replenishment of regional HCF with the specialists.

The above-said is also confirmed by the data of the analysis of the level of urologists’ qualification. As one can see in Fig. 3, although the percentage of proven specialists in the urological profile during the ten-year period increased also in the Precarpathian region (from 78.3% to 86.6%, respectively), and in the state as a whole (from 80.1% in 2008 to 85.5% in 2017), but by 2017 the proportion of urologists of higher qualification in the oblast is 1.7 times less than in Ukraine (29.9% vs. 51.3%), and of the second qualification – 1.5-fold higher (14.9% vs. 10.3%).

At the same time, it has been established that the urological subdivisions of the HCF in oblast have no proper equipment for the minimally invasive interventions and, accordingly, qualified medical personnel to carry them out, especially at the district level (Table 1).

In particular, the possibilities to perform the ESWLT in the Kalush CDH and in a specialized private enterprise (PE) in Ivano-Frankivsk; PNLT – only in a limited liability company (LLC) “Clinical medical-diagnostic center “Simedgrup”, which is located in the regional center; ULT and open operations – in the Kolomyia Central District Hospital, Ivano-Frankivsk Central City Clinical Hospital, RCH and in the LLC; CLT – in RCH and in the LLC; laparoscopic – in Ivano-Frankivsk CCCH, RCH and in the LLC.

In any medical institution of the region there is no possibility to perform ureteronephrolithotripsy.

HCF of the Ivano-Frankivsk region are insufficiently provided by the modern equipment for diagnostics of urolithiasis. Despite the 100% availability of ultrasound devices, the possibilities for CT are available only in Kalush Central District Hospital, Kolomyia Central District Hospital, Ivano-Frankivsk Central City Clinical Hospital, Regional Clinical Hospital and in the LLC.

The analysis of the indicators of the functioning of the in-patient urological units showed that in the structure of the hospitalized morbidity the diseases of the genitourinary system in recent years occupy a stable fifth place, both in Ukraine in general (8.1%-7.8% of all in-patients) and in Ivano-Frankivsk region in particular (7.5-7.8%, respectively).

However, in spite of the better population provision in the region with urological beds and urologists, the average occupancy of these hospital beds, as opposed to the general Ukrainian, tends to decrease (Fig. 4), which indicates that the beds are not filled or misused in the region.

The average duration of stay of a urological patient in the in-patient hospital in accordance with world trends tended to decrease, both in Ukraine and in the region (Fig. 5), however, by 2017 it remained significant – 9.45 days in the state and 9.68 days in the region.

It is quite logical that with the decrease in the average duration of treatment, the bed turnover interval increased (Fig. 6). At the same time, the
Figure 4. Dynamics of the average rate of urological beds occupancy in Ukraine and in Ivano-Frankivsk region for 2008-2017.

Figure 5. Dynamics of the average duration of in-patient treatment of urological patients in Ukraine and Ivano-Frankivsk region for 2008-2017.
growth of rate in the Ivano-Frankivsk region was somewhat lower than in Ukraine as a whole, which explains previously determined lack of capacity for urological beds in the region.

In the analysis of operational activity (Fig. 7), it was found that during the analyzed period of time the number of urological operations per 1000 population was constantly increasing: both in Ukraine from 6.61 ‰ in 2008 to 10.08 ‰ in 2017 and in Ivano-Frankivsk region – from 4.32 ‰ to 6.62 ‰, respectively.

On the one hand, it is positive, and indicates the public’s access to the latest technologies. Moreover, an increase in operational activity was accompanied by a decrease in postoperative lethality both in Ukraine and in Ivano-Frankivsk region (Fig. 8).

However, in the HCF of Ivano-Frankivsk oblast, there are still fewer operations on the kidneys and ureters than in Ukraine in general (Fig. 7), apparently, due to the already inadequate equipment of HCF, necessary for performance of modern surgical interventions (Table 1).

### References

Figure 6. Dynamics of the average urological bed turnover interval in Ukraine and Ivano-Frankivsk region for 2008-2017.

Figure 7. Dynamics of the index of number of operations on kidneys and ureters per 1000 population in Ukraine and Ivano-Frankivsk region for 2008-2017.
Figure 8. Dynamics of postoperative lethality in operations on kidneys and ureters in Ukraine and Ivano-Frankivsk region for 2008-2017.


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