

Improvement of hemodialysis care in the republic of Uzbekistan

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Abstract. Timely and full provision of all patients suffering from chronic renal failure with hemodialysis procedures is one of the priority areas for reforming the healthcare system in Uzbekistan. The article highlights the issues of providing the population with renal replacement therapy and, according to the opinion of the heads of medical institutions, the state of the hemodialysis service in Uzbekistan is disclosed. Keywords: morbidity, chronic renal failure, hemodialysis care, healthcare leaders.

1 Relevance

One of the most common types of pathology of the genitourinary system is chronic renal failure. In the terminal stage, patients need renal replacement therapy (RRT), up to 90.0% of which is hemodialysis [1,2].

Today, every tenth person in the world suffering from chronic renal failure is vital to take 3-4 sessions of hemodialysis per week for life, each of which lasts 4-5 hours. Modern data suggest that each well-conducted hemodialysis procedure contributes to the achievement of blood purification from urea by at least 65%, therefore, regular use of dialysis can significantly increase the life expectancy of patients.

The problem of providing the population with renal replacement therapy is one of the key problems in the modern healthcare system. The quality of medical care in general depends on its decision. In recent years, there have been positive trends in the activities of the domestic renal replacement therapy service, but these changes are clearly not enough to adequately cover the needs of the population [3].

Timely and full provision of all patients suffering from chronic renal failure with hemodialysis procedures is one of the priority areas for reforming the healthcare system in Uzbekistan. To date, hemodialysis services have been organized in the Republican Scientific Center for Emergency Medical Care and in all its regional branches, in regional diversified medical centers, as well as in a number of institutions of the capital, the largest of which is the Tashkent Nephrology Center [4].

The growth of hemodialysis care lags far behind the growth of the population's demand for renal replacement therapy. The main reasons for this are both the underfunding of the renal replacement therapy service on a national scale, and the irrational spending of

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allocated funds due to the lack of a unified program for calculating the cost of specific types of renal replacement therapy, including hemodialysis care [3,5].

In recent years, despite the increase in the number of hemodialysis places, provision of the population with renal replacement therapy has improved slightly. The general increase in the incidence of the population and, consequently, the growth the number of people with kidney disease leads to an increase in the number of patients with end-stage chronic renal failure (CRF) requiring renal replacement therapy [6,7].

All of the above revealed the need for this study and determined its purpose and objectives.

2 Purpose of the work

Studying the organizational aspects of hemodialysis care for the population in Uzbekistan.

Research objectives:

1. To study and evaluate the factors influencing the state, functioning and development of the hemodialysis service.
 2. To study the dynamics of the number of patients and the structure of diseases leading to the development of chronic renal failure.
 3. Develop a system of organizational measures to improve dialysis care for patients
- Materials and research methods. Sociological (questioning), economic, predictive and statistical analysis.

3 Research methods

The work uses modern methods of social and hygienic research: statistical, sociological, epidemiological, direct observation (monographic) and economic.

The object of the study was the hemodialysis department of the Republican Nephrological Center as part of the general system of renal replacement therapy in the structure of the republic's healthcare system with a typical concentration of all the main problems of recent years in it.

Epidemiological indicators were studied on an enriched sample. The following indicators were calculated:

1. primary morbidity (the number of cases of chronic renal failure diagnosed for the first time in a lifetime during the year at the first visit);
2. prevalence (the totality of all cases of chronic renal failure registered in a given calendar year);
3. primary morbidity at the stage of the terminal stage (frequency of newly diagnosed cases of the terminal stage).

Processing of the obtained data was carried out using commonly used methods of parametric and non-parametric statistics. Descriptive statistics methods included the calculation of the arithmetic mean (M), the mean error of the arithmetic mean (m). Statistical processing of the material was carried out on a personal computer.

To study the state of hemodialysis services in Uzbekistan, a sociological survey was conducted among the heads of medical institutions throughout the region of Uzbekistan. The survey involved 43 chief physicians, 21 reserve managers, 25 heads of the department of the family polyclinic and SVP. Our questionnaire consisted of 10 questions, revealing the state of hemodialysis services in Uzbekistan.

4 Results and discussion

As of January 1, 2018, there are 5296 outpatient clinics in the Republic of Uzbekistan, 51.8% (2744) of which are institutions of small enterprises and microfirms. Their number, in comparison with 1991 (3027) increased by 1.7 times. At the same time, the number of hospitals, on the contrary, decreased by 1.2 times. If in 1991 there were 1388 hospitals, in 2017 their number was 1135 units, 43.4% (493) of which are small businesses (Table 1).

Table 1. Number of health care facilities

Number of health care facilities (1991-2017)	1991 y.	1997 y.	2007 y.	2017 y.
Number of hospitals	1388	1230	1162	1135
Number of outpatient clinics	3027	4074	5810	5296

In 2017, the capacity of outpatient clinics increased by 46 percent compared to 1991. If in 1991 outpatient clinics could receive 282.2 thousand people per shift, then by 2017 this figure reached 405.3 thousand people per shift. If in 2000 there were on average 7 visits to outpatient clinics per inhabitant per year, then in 2017 this figure was 9.5 visits per year (Table 2).

Table 2. The capacity of outpatient clinics

Main indicators of outpatient clinics (1991-2017)	1991 y.	1997 y.	2007 y.	2017 y
Number of outpatient clinics, units	3027	4074	5810	5296
Power, number of visits per shift, units	287,1	353,5	414,5	405,3
APU capacity provision per 10,000 population	125,5	65,3	513,3	124,1
Number of visits to outpatient clinics, thousand people	149359,0	193971,3	249919,9	306826,3

In 2017, the number of registered diseases diagnosed for the first time amounted to 16380.3 thousand, per 100 thousand of the population this figure was 50574.4. According to the analysis, it turned out that the highest incidence per 100 thousand of the population falls on the city of Tashkent (106842.5), which is due to the fact that a number of leading medical institutions (institutes) of the republic are located in Tashkent, where residents of all regions of the country are examined.

Khorezm region follows with an indicator of 56206.8, in the Navoi region for every 100 thousand of the population there are 54485.9 cases of diseases, in the Fergana region - 54012, 51763.8 cases for every 100 thousand of the population are in the Andijan region, 48650.9 cases in the Surkhandarya region, 47391.9 cases in the Republic of Karakalpakstan, 43629 2 cases in the Syrdarya region, 42751.5 cases in the Namangan region, 41550.1 cases in the Tashkent region, 40431.1 cases in the Samarkand region, 39383.5 cases in the Kashkadarya region, 39115.5 cases in the Bukhara region and 43629.2 cases in Jizzakh region with the lowest incidence rate among the regions of the country - 3537 7.6 cases for every 100,000 population. As a result of the studies, it was found that the approximate number of patients with chronic renal failure (per 1 million inhabitants) in 2017-2019. averaged 160.5 people. At the same time, the number of people hospitalized for the first time for hemodialysis treatment for the year amounted to 22.6 people per 1 million population. The total number of hemodialysis sessions per seat per year ranged from 257 to

778, depending on the department. The provision of hemodialysis treatment for 2017-2019 averaged 85.3 people.

To analyze the state of the dialysis service in the republic, we conducted a sociological survey among the leaders of a medical institution who are on advanced training courses at TashIUV. The survey involved 89 heads of medical institutions, representatives of various regions of Uzbekistan. Of the participants, 43 (48.3%) are chief doctors, 21 (23.6) are reserve managers and 25 (28.1%) are heads of departments of the family polyclinic and SSP (fig. 1)

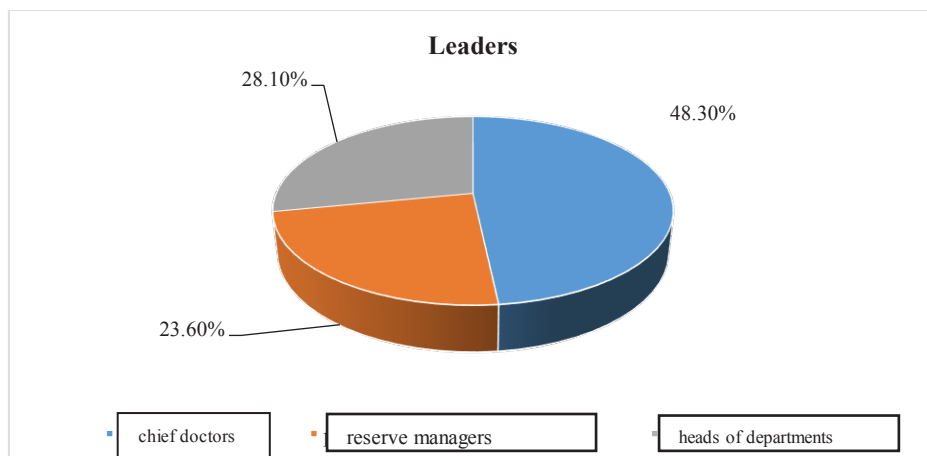


Fig.1. The structure of the heads of a medical institution who are on advanced training courses at TashIUV

According to the chief physicians, significant (54%) have been observed in the healthcare sector in our region over the past 3 years, and 46% answered that there have been minor changes. Most of the respondents assess the state of nephrological medical care in Uzbekistan as unsatisfactory (67%). They believe that hemodialysis is not equally accessible to all categories of patients who need this care. The reserves of managers and heads of the department of the SP, SVP also assess the state of nephrological medical care in the republic as unsatisfactory (58%). To the question "Do you agree that hemodialysis is more affordable for patients with higher income than for patients with lower income" - 64.3% of respondents answered YES, and 35.7% answered -No (fig. 2.)

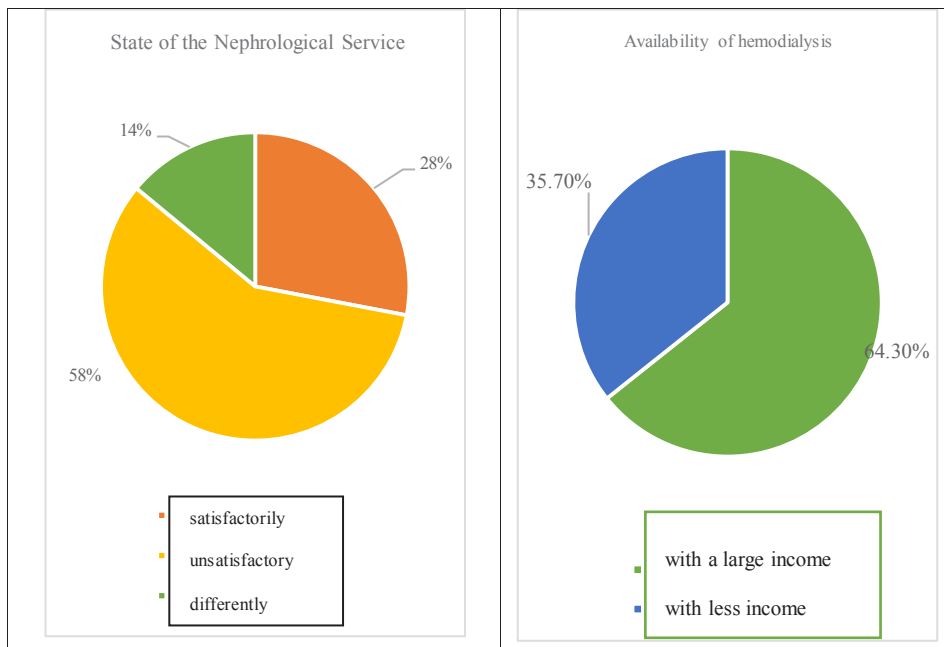


Fig. 2. Assessment of the state of nephrological medical care in Uzbekistan

The study showed that the majority of managers 58.2% believe that the quality of medical care in Uzbekistan during hemodialysis is in an unsatisfactory state. We also studied the opinion of the heads of medical institutions on the assessment of the possibilities of abuse in the provision of hemodialysis services and the following results were obtained (fig. 3).

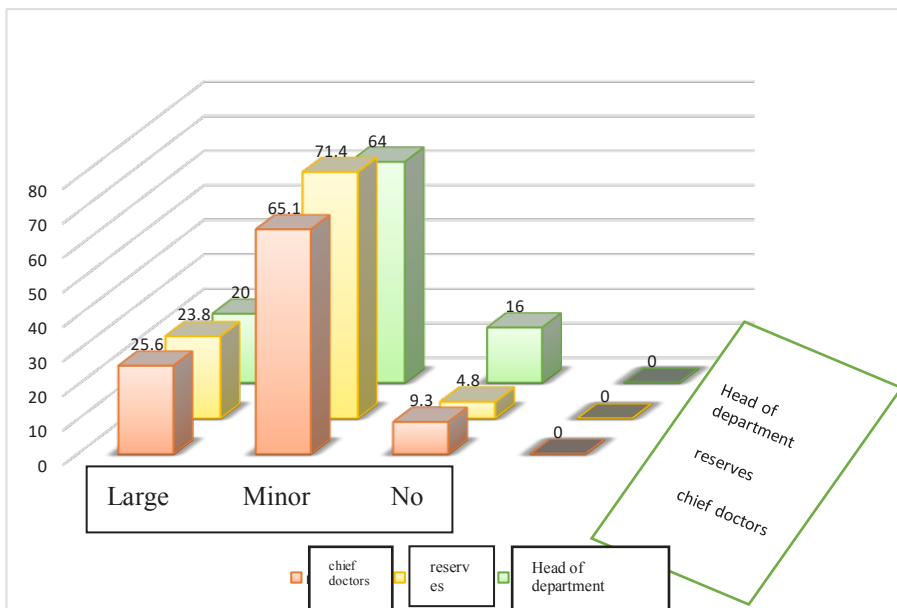


Fig. 3. Opportunities for service abuse

From the above survey, it can be said that the opportunities for abuse in the provision of hemodialysis services are relatively low, 66.8% of managers noted insignificant, and 23.1% of respondents noted that there are large opportunities. In addition, facility managers believe (81.9%) that hemodialysis should be included in the services funded by compulsory health insurance.

The study also analyzed the methodology for selecting patients in need of hemodialysis. To the question: “What method of selection of patients in need of hemodialysis do you consider ethically preferable in the case when the criteria for their selection are unclear?” We have provided the following answers:

- random selection (using random numbers),
- selection based on gender, age, place of residence,
- selection based on social status, income level,
- selection based on merit to the state, the leadership of the country (fig. 4.)

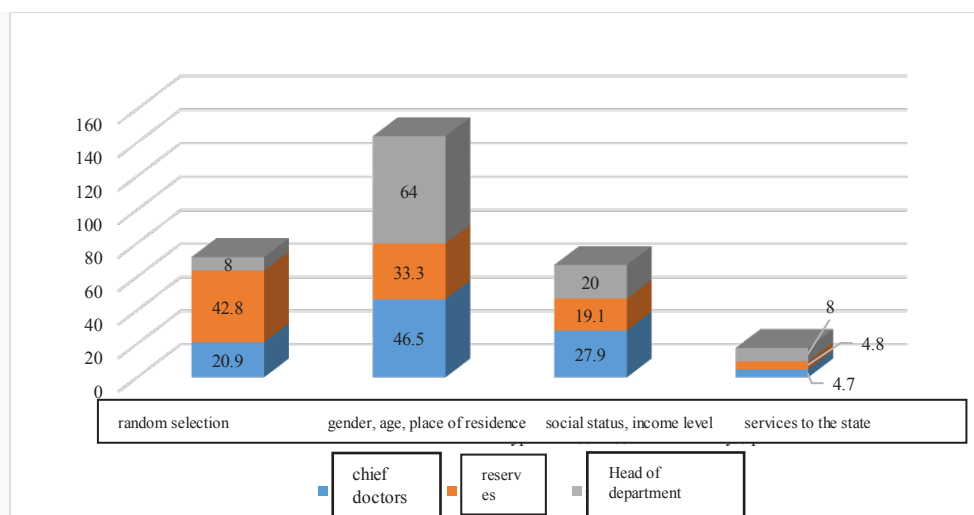


Fig. 4. Selection method for patients requiring hemodialysis

To the question asked, 48.3% of the respondents marked the second answer, i.e. selection based on gender, age, place of residence; half of the respondents marked 1 and 3 answer (22.5% and 23.6% respectively), according to leaders, when the selection criteria are unclear, the selection method based on merit to the state, the country's leadership is insignificant.

In improving the availability and quality of care for patients in need of hemodialysis, private institutions are of great importance. In their opinion, private medical institutions can make a significant contribution to improving the availability and quality of medical care. (fig. 5.)

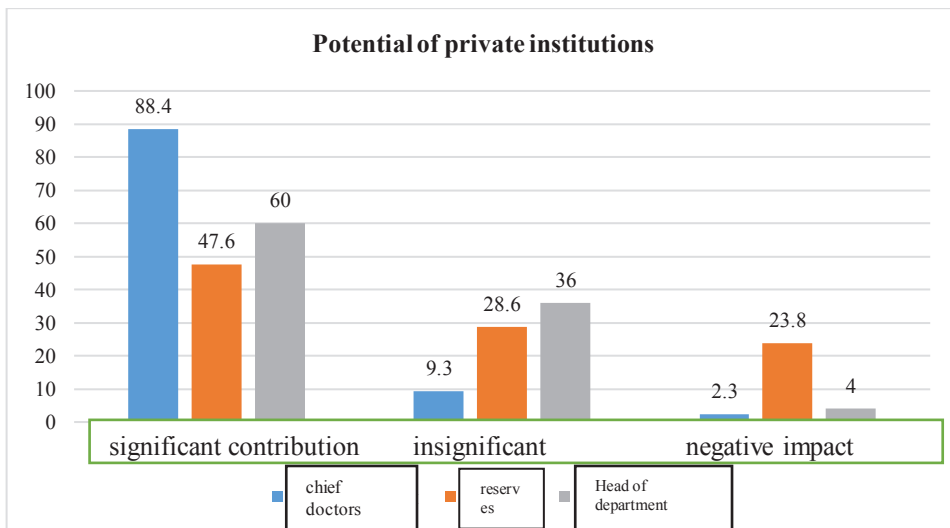


Fig. 5. The potential of private institutions to increase the availability and quality of medical care for patients in need of hemodialysis

As can be seen from the diagram, most of the heads of institutions (85.2%) positively assessed the potential of private institutions in increasing the availability and quality of care for patients in need of hemodialysis.

According to the questionnaire, we received answers to some types of activities that are the most important in the development of the hemodialysis service in Uzbekistan. At the same time, we were offered a choice of answers to the necessary measures for managers given in the questionnaire (fig. 6.).

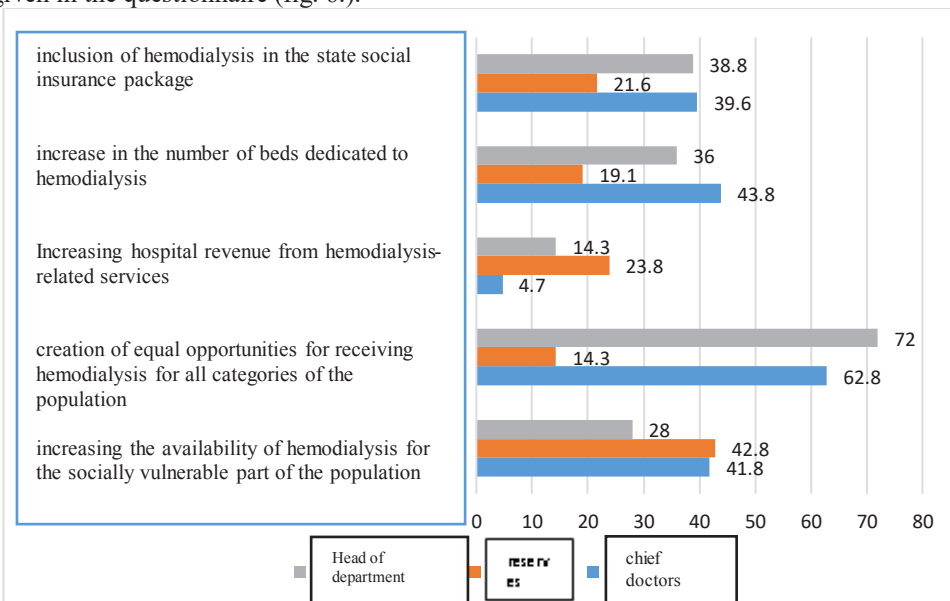


Fig. 6. Organizational measures for the development of hemodialysis service

The figures show that, according to the heads of medical institutions, the most important thing in organizing hemodialysis services in the country is to increase the availability of

hemodialysis for socially vulnerable parts of the population, the inclusion of hemodialysis in the mandatory state insurance package, as well as the creation of equal opportunities for hemodialysis for all categories of the population.

5 Conclusions

The analysis of the study of the state of affairs of the hemodialysis service showed the presence of a number of urgent problems that prevent the provision of full-fledged medical care for patients in need of hemodialysis care.

In particular:

- there is an urgent need for further development of the established specialized medical center with regional divisions to provide highly qualified nephrological and hemodialysis care to the population, as well as kidney transplantation;
- there is no effective system of early prevention, timely diagnosis of nephrological diseases, as well as the procedure for selecting and referring patients for hemodialysis;
- there is a lack of staff of nephrologists and hemodialysis specialists due to the lack of a unified program for the training of nephrologists, hemodialysis doctors and other medical personnel of hemodialysis units;
- Opportunities of public-private partnership are not used in creating a modern medical infrastructure for the treatment of nephrological diseases and solving the problems accumulated in this area, etc.

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