UDK 616-82.518.1(094.9)

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NORMS OF THE POPULATION'S HOSPITAL BED REQUIREMENT

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Regular norms of provide hospital beds in Ukraine in 1.5-2 times exceed the foreign. Authors propose essentially new approach to reorganisation of hospital care by principle of treatment intensity. This will inevitably lead to qualitatively new changes on demand for beds and staff.

KEY WORDS: **norm, hospital bed, treatment intensity.**

According to the Decree No 640 of the Cabinet of Ministers of Ukraine "On setting the norms for in-patient care requirements per 10,000 people" of 28.06.1997, the norm was set to 80 hospital beds with regional differentiation [2]. The employees of the Ukrainian Institute of Public Health conducted a further large-scale research, setting the population's bed fund requirement to 83,8 beds per 10,000 people. This norm is differentiated for children and adults within specific categories and diseases. Norms of the population's out-patient care requirement in Ukraine have not yet been developed.

The problems of setting the norms for medical care have now been extended to the scale of its standardization. A norm is a legislation that is developed based on the majority of the concerned parties' consent and absence of objections regarding its principle issues, enacted or ratified by the authorized body of power.

The Ministry of Public Health of Ukraine issued 2 orders – No 172 of 24.06.1990 and No 33 of 23.02.2000 "On staff requirement and typical staff of the health care institutions" (with amendments) [3]. Both Orders are little different from the soviet ones [1].

Purpose of the research: developing modern norms of the population's hospital bed requirement.

Data and methods:

Since 1983, the Department of Social Medicine and Organization of Health Care of the State Institution of Higher Education I. Y. Horbachevsky Ternopil State Medical University of the Ministry of Public Health of Ukraine has been conducting dynamic observation of the state of health of the inhabitants of the region totaling 9,872 people. Data shows that between 1981–1983 and 2003–2005, the population's general morbidity increased by 72,7%, or by approximately 2–3% per year. In the year 2012, general morbidity, or prevalence of diseases, made 1820,9 per 1,000 people.

This increase in morbidity will cause expansion of the out-patient and in-patient medical care requirements. The increased volume and modernization of medical services has the same effect. Yet opposite effect can be achieved by the development of medical science due to the increased treatment intensity.

Every case of hospitalization was taken for expert estimation to establish its necessity and time of treatment.

The expert estimation is carried out by heads of departments, doctors of the first and highest categories.

We used the classic formula to calculate the hospital beds requirement:

$$B=M*H*D/O$$

where B is hospital beds requirement;

M is morbidity of the population;

H is percentage of people selected for hospitalization;

D is average duration of treatment;

O is number of days of bed occupancy per year (340 days, maternity – 300 days, infectious – 280 days).

Introduction of family medicine and the improvement of in-patient bed use opened new possibilities for optimization of the system of health care. The essence of this improvement consists in organizing the most complex and money-consuming link of medical care – in-patient care – based on the principle of treatment intensity rather than the professional principle. In the conditions of reduction of bed fund, the professional principle is a substantial obstacle on the way to optimization of in-patient care. For instance, according to the staff list, the smallest department must have 20 beds, proper staff and funding, whereas it's needs are 13 or 8, etc.

Organization of in-patient care based on the principle of treatment intensity is a new and difficult

goal that requires a comprehensive scientific substantiation, foresees fundamental reformation of the whole in-patient process and requires unconventional decisions and strong administrative will of the organizers of health care.

Results of the research and discussion of results: as shown in Table 1, patients presently hospitalized in the secondary-level health care institutions can be classified into three groups based on the acuteness of pathological process: the first and biggest group will include patients with acute course of disease (52,1%), the second – chronic patients in the acute phase of disease (39,0%), and the third – chronic patients (8,9%).

This division has specific features for separate diseases. Acute forms of, say, infectious diseases make 82,7%, diseases of respiratory organs – 83,5%, and diseases of the system of blood circulation – only 16,2%.

The acute phase prevailed in patients hospitalized with diseases of the nervous system (84,8%), digestion organs (60%), musculoskeletal system (77,4%), etc.

As for the structure of different forms of diseases, the majority of acute forms were diseases of respiratory organs (53,8%), infectious diseases (11,7%) and traumas (10,7%); chronic diseases in their acute phase – diseases of the blood circulation system (25,1%), digestion (15,3%) and respiratory organs (12,4%); chronic diseases – diseases of the skin and adipose tissue (28,6%), system of blood circulation (22,2%) and digestion organs (15,9%).

If all the hospitalized at the secondary level are distributed based on type or intensity of treatment, 5,9% of them need intensive care, 5,6% must be transferred to Recovery Departments; 57,5% (majority) can be treated in Departments of Planned Care and Acute Condition not Requiring Intensive Care; one fifth of the hospitalized (22,3%) need social and medical rehabilitation, and almost every tenth patient (8,7%) can be treated in Out-Patient Care Facilities and at home (Table 2).

Types of medical care in departments with different treatment intensity are shown in Table 3. In the Intensive Care Departments, mainly specialists in resuscitation, cardiology, traumatology and surgery (their share in the total volume of care is 75,9%) are needed. In the Departments of Planned Care the spectrum of care is considerably wider, but the majority of specialists are those in pulmonology, neuropathology, surgery, cardiology and traumatology (51,5% in total). The Departments of Social and Medical Rehabilitation need specialists mainly in traumatology (orthopedics), neuropathology, dermatology, cardiology and pulmonology (74,6% in total).

Restructuring of in-patient care based on the principle of treatment intensity brings about radical changes in bed and staff requirements. The requirements decrease, and the organization efficiency increases substantially.

Thus, the number of beds at the secondary level organized on the intensity principle makes 27,35 per 10,000 people. In this respect, the problem of organization of in-patient care arises. The reform taking place in health care requires concentration of different types of departments in hospitals. We are offering a fundamentally different approach

Table 1. **Distribution of the Hospitalized by Acuteness of Disease Course**

Diseases	Acute		Chronic Acute		Chronic	
	per 1,000 people	%	per 1,000 people	%	per 1,000 people	%
Infectious and parasitogenic	4,3	11,7	0,2	0,7		
Neoplasms	–		0,3	1,1	0,2	3,2
Endocrine system	0,4	1,1	0,6	2,2	0,4	6,3
Nervous system	0,3	0,9	2,8	10,3	0,2	3,2
Organs of vision	0,2	0,6	0,2	0,7	–	–
Ear and mastoid process	0,3	0,9	0,4	1,5	–	–
Systems of blood circulation	1,6	4,4	6,9	25,1	1,4	22,2
Breathing organs	19,7	53,8	3,4	12,4	0,5	7,9
Digestion organs	1,8	4,9	4,2	15,3	1	15,9
Urinary organs	1,4	3,8	2	7,3	0,2	3,2
Female sex organs	0,6	1,6	1	3,6	0,3	4,8
Skin and adipose tissue	1,6	4,4	2,6	9,5	1,8	28,6
Musculoskeletal system	0,5	1,4	2,4	8,8	0,2	3,2
Traumas	3,9	10,7	–	–	–	–
Other	–	–	0,4	1,5	0,1	1,5
Total	**36,6**	**100,2**	**27,4**	**100**	**6,3**	**100**

Table 2. **Distribution of the Hospitalized by Departments Based on Treatment Type**

Index	Intensive Care Department	Transfer from Intensive Care Department to Recovery Department	Department of Planned Care and Acute Condition Not Requiring Intensive Care	Department of Social and Medical Rehabilitation	Out-Patient Care Facilities and Home Care
Distribution of Patients, %	5,9	5,6	57,5	22,3	8,7
Average number of health care professionals per patient	2,9	2,2	1,4	1,2	1,1
Acceptable term of treatment, days	2,8	13	12,3	20,9	7,8
Average number of beds per 1 position of doctor	1,1	5	19	38	20
Necessary number of beds for the care of 10,000 patients	0,34	1,51	14,5	9,6	1,4

Table 3. **Types of Medical Care in Departments with Different Treatment Intensity, %**

Specialization	Intensive Care Department	Department for Post-Intensive Care Recovery	Department of Planned Care and Acute Condition Not Requiring Intensive Care	Department of Social and Medical Rehabilitation
Cardiology	19	23,8	8,4	8,8
Gastroenterology	–	–	4,3	2,9
Pulmonology	1,7	2,3	13,5	8,4
Endocrinology	1,8	2,4	2,6	4,8
Haematology	–	–	1,7	–
Psychotherapy	–	4,8	4,6	4,4
Infectious Diseases	–	–	6,9	–
Surgery	13,8	19	10,1	5,9
Traumatology	15,5	19	8,1	25
Neurosurgery	3,4	2,3	0,3	1,5
Urology	–	–	4,3	–
Obstetrics and Gynaecology	5,2	2,4	5,5	2,9
Neuropathology	6,9	9,5	11,5	22,1
Otolaryngology	1,9	4,8	6,3	1,6
Ophthalmology	3,2	4,7	5,5	1,4
Dermatology	–	–	6,1	10,3
Resuscitation	27,6	5	0,3	–
Total	**100**	**100**	**100**	**100**

which consists in treatment intensity. But this causes a new problem – special training of doctors capable of providing care in the Departments of Intensive Care, Planned Care, Social and Medical Rehabilitation, etc. That is, doctors working in these departments must also have extensive training within the specialization of their departments. This, however, needs radical changes of the whole training process, that is why the question remains open.

And the second problem is complete reformation of the staff of doctors who would provide care to patients in different departments. The existing staffing norms are not suited for this purpose.

Research prospects: consist in practical implementation of these ideas and their influence on the final norms of in-patient care.

Список літератури

1. *Голяченко О.М.* Реформа охорони здоров'я в Україні: як вийти з кризи / О.М. Голяченко. – К., ВСВ «Медицина», 2010. – 80 с.
2. *Постанова* Кабінету міністрів України «Про затвердження нормативів потреб у стаціонарній медичній допомозі в розрахунку на 10 тис. населення» від 28.06.1997 р. № 640; [Електронний ресурс]. – Режим доступу: http://search.ligazakon.ua/l_doc2.nsf/link1/KP970640.html
3. *Наказ* МОЗ України - № 172 від 24.06.1990 року і № 33 від 23.02.2000 року «Про штатні нормативи та типові штати закладів охорони здоров'я» (зі змінами) [Електронний ресурс]. – Режим доступу: http://www.moz.gov.ua/ua/portal/dn_20000223_33n.html

References

1. *Golyachenko O.M.* Health Reform in Ukraine: how to get out of the crisis / O. Golyachenko . – K. VSV "Medicine ", 2010. – 80 p.
2. *Order* No 640 of the Cabinet of Ministers of Ukraine "On approval of requirements for inpatient medical care per 10,000 people" as of 28.06.1997, [electronic resource]. – Access: http://search.ligazakon.ua/l_doc2.nsf/link1/KP970640.html
3. *Order* No 172 of the Ministry of Public Health of Ukraine as of 24.06.1990 , and No 33 as of 23.02.2000 "On staffing ratios and typical staffing of health facilities" (amended) [electronic resource]. – Access : http://www.moz.gov.ua/ua/portal/dn_20000223_33n.html

НОРМАТИВИ ПОТРЕБИ НАСЕЛЕННЯ В ЛІЖКАХ

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З 1997 року в Україні діє Постанова Кабінету міністрів України «Про затвердження нормативів потреб у стаціонарній медичній допомозі в розрахунку на 10 тис. населення» від 28.06.1997 р. № 640 та Наказ МОЗ України – № 172 від 24.06.1990 року і № 33 від 23.02.2000 року «Про штатні нормативи та типові штати закладів охорони здоров'я» (зі змінами). Згідно цих нормативних документів, які мало чим відрізняються від радянських, зараз діють штатні нормативи забезпечення в ліжках, які в 1,5 – 2 рази перевищують зарубіжні. На шляху оптимізації організації стаціонарної допомоги, слід впровадити ряд новацій і перша з них – це організація стаціонарів не за принципом спеціалізації, а згідно з інтенсивністю лікування хворих. Це в свою чергу вимагає двох принципових нововведень – кардинальної зміни в підготовці лікарів та їхнього числа, яке припадає на число ліжок в різних відділеннях.

КЛЮЧОВІ СЛОВА: **норматив, ліжко, інтенсивне лікування.**

НОРМАТИВЫ ПОТРЕБНОСТИ НАСЕЛЕНИЯ В КОЙКАХ

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С 1997 года в Украине действует Постановление Кабинета министров Украины «Об утверждении нормативов потребностей в стационарной медицинской помощи в расчете на 10 тыс. населения» от 28.06.1997 г. № 640 и Приказ МЗ Украины - № 172 от 24.06.1990 года и № 33 от 23.02.2000 года «О штатных нормативах и типовых штатах учреждений здравоохранения» (с изменениями). Согласно этим нормативным документам, которые мало чем отличаются от советских, сейчас действуют штатные нормативы обеспечения в койках, которые в 1,5 – 2 раза превышают зарубежные. На пути оптимизации организации стационарной помощи, необходимо ввести ряд новаций и первая из них - это организация стационаров не по принципу специализации, а согласно интенсивности лечения больных. Это в свою очередь требует двух принципиальных нововведений - кардинального изменения в подготовке врачей и их количества, которое приходится на число коек в разных отделениях.

КЛЮЧЕВЫЕ СЛОВА: **норматив, койки, интенсивное лечение.**

Рукопис надійшов до редакції 24.10.2013 р.
Рецензент: д.мед.н., проф. С.Н. Вадзюк