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Restrukturyzacja Szpitala Powiatowego w Kraśniku. Część I – Neurologia

Streszczenie

Wstęp. Analiza funkcjonowania Samodzielnego Publicznego Zakładu Opieki Zdrowotnej w Kraśniku doprowadziła do decyzji o głębokiej restrukturyzacji placówki. Jednym z oddziałów, w którym roczny koszt był większy niż przychód był Oddział Neurologiczny. Zdecydowano o daleko idących zmianach w działalności szpitalnej powiększając ten oddział szpitalny, tworząc pododdział Udarowy oraz Oddział Rehabilitacji Neurologicznej.

Cel. Celem pracy było wykazanie zależności pomiędzy restrukturyzacją Oddziału Neurologicznego, a wielkością kontraktu z Narodowym Funduszem Zdrowia. Dodatkowo celami było wykazanie związku pomiędzy przeprowadzoną restrukturyzacją, a zmianami wartości takich wskaźników jak: liczba osobodni, koszt osobodnia, liczba hospitalizacji, koszt hospitalizacji oraz przychody i koszty analizowanej jednostki.

Material i metody. Badaniem objęto lata 2006-2012. Analizowano wartości umów z Narodowym Funduszem Zdrowia w rodzaju leczenie szpitalne w zakresie neurologia oraz w rodzaju rehabilitacja lecznicza w zakresie rehabilitacja neurologiczna. Badaniu poddano liczbę osobodni i hospitalizacji, jak również wartość kosztu i przychodu osobodnia i hospitalizacji.

Wyniki. Punktowa liczba świadczeń zawartych w umowach w rodzaju leczenie szpitalne od roku 2006 stale powiększa się i na przestrzeni sześciu lat wzrosła o 78,82%. Uzyskano w tym czasie także ponad trzykrotne zwiększenie ilości środków z NFZ dla chorych leczonych stacjonarnie neurologicznie.

Wnioski. Restrukturyzacja Oddziału Neurologii przyniosła efekt w postaci wykonania znacząco większej liczby świadczeń neurologicznych, zarówno w rodzaju leczenie szpitalne, jak również w rodzaju rehabilitacja lecznicza. Działanie poprawiło dostępność do świadczeń opieki zdrowotnej o profilu neurologicznym, jak również spowodowało kompleksowość tych świadczeń.

Słowa kluczowe: oddział neurologiczny, oddział udarowy, rehabilitacja neurologiczna, samodzielny publiczny zakład opieki zdrowotnej, restrukturyzacja.

Restructuring of District Hospital in Kraśnik. Part I – Neurology

Abstract

Introduction. Analysis of functioning of the Independent Public Healthcare Centre in Kraśnik led to the decision on the deep restructuring of this institution. One of departments, in which the annual cost was bigger than the income was Neurological Department. Far-reaching changes in hospital activity were introduced by enlarging this medical ward, establishing the stroke sub-unit and the Department of the Neurological Rehabilitation.

Aim. The research aimed at demonstrating the relation between the restructuring of the Neurological Ward, and the size of the contract with the National Health Fund. Additionally establishing the relationship between the conducted restructuring, and changes of the value of such indicators as: the number of man-days, the cost of the man-day, the number of the hospitalizations, the cost of the hospitalization and the income and costs of the analysed unit were additional goals.

Material and methods. The research covered 2006-2012. Values of agreements with the National Health Fund were analysed in hospital treatment in neurology and in rehabilitation in the scope of neurological rehabilitation. Numbers of man-days and the hospitalization, as well as a value of the cost of both the income of the man-day and the hospitalization were examined.

Results. Scores of benefits entered in agreements in the type of the hospital treatment from 2006 constantly expands and in the course of six years it grew by about 78.82%. at that time also three-fold increase in the amount of funds from National Health Fund for stationary treatment of neurological patients was obtained.

Conclusions. The restructuring of the neurological ward produced the desired effect in the form of exercising considerably substantial amount of neurological benefits, both in the type hospital treatment, as well as in the type of rehabilitation. The action improved the accessibility to benefits of the health care of the neurological profile, as well as caused the complexity of these benefits.

Keywords: neurological department, stroke unit, neurological rehabilitation, autonomous public healthcare institution, restructuring.

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INTRODUCTION

Every citizen in Poland, irrespective of his material status, has a legally ensured equal access to financed health benefits from public means. The act on treatment activity provided for public units a peculiar organizational-legal form in the form of the autonomous public healthcare centre [1]. These units are obliged to grant health benefits to everyone entitled, without the simultaneous warranty of the payment for performed medical services. It causes the financial incompetence of the units, what may lead to reducing the level and quality of granted benefits [2]. Also an obligation of adapting oneself to regulations concerning meeting the conditions of the realization of medical benefits is a great problem financed from public means, but challenges put forward to our country with membership in European Union structures result in the need of infrastructure improvements of units and raising the level of services provided by them. Local self-governments became mainly Burdened with these enormous tasks. Acts on poviats self-governments and voivodeships imposed for them numerous tasks, including healthcare services [3]. Self-government authorities drew up and implemented a lot of restructuring programmes in their healthcare centres. An Independent Public Healthcare Centre in Kraśnik is one of such units, of which a Kraśnik District is the founding body (Lublin Voivodeship). Authorities of the poviat had a difficult task associated with the decision making about functioning of the health care in the poviat [4,5]. Based on own analyses and the program presented by the external entity, a decision on the deep restructuring of the supervised medical institution was made.

The concept of restructuring means the system reconstruction or reconstruction of the economic structure of the given unit. Its aim is achieving the alternative state in the relationship to the existing one. In the event of the reconstruction of the reorganized entity action is taken in order to increase the competitiveness and the value of the entity. However the restructuring may not have only rectification character it must take into consideration, a developmental aspect of the entity. This challenge is very material in the case of the health care institutions.

In spite of very well trained medical staff, good results in the treatment, performing many medical services, Independent Public Healthcare Centre (SPZOZ) in Kraśnik is a unit whose profit did not suffice for covering the cost of functioning. Many factors were responsible for that:

- great dispersal of hospital buildings
- SPZOZ is situated in three building complexes distant from one another at about 6 kilometres. The hospital at the Chopin street occupies 3 pavilion Departments of general surgery, traumatology, internal diseases, neurology, intensive care, hospital emergency, operating block, hospital pharmacy, laboratory, X-ray laboratory, serology, sterilization, kitchen, boiler room, room with sheets distribution, are located in the main building. The other pavilion is occupied by the Nursing-Caring Unit (at present 36 beds). The third pavilion houses a Department of Pulmonary Diseases and Tuberculosis, Terminal Care and Chemotherapy Ward, Pulmonological Clinic, X-ray lab and the Home Hospice. In the second district of the town at the Alei Niepodległości

in three buildings there are located Department of Cardiology, Gynecological-obstetric Ward and Department of Pediatric and Adolescent Diseases, specialist clinics, X-ray lab. At the Wyszyński Street, there is Department of Neurological Rehabilitation and a day clinic of Centre of the Motor Rehabilitation .

Organizational units located in such a distance may not cooperate in the right way. This problem concerns both surgical as well as conservative departments. Patients treated in the Department of Cardiology must be transported from one district of city to another, to undergo surgeon's consultation. It increases considerably the costs of hospitalization, but above all, obstructs or sometimes makes fast diagnosing of patients impossible, extends the time of implementing the due treatment, leads to numerous conflicts between patients, their families and the hospital staff. Every day many patients are transported both ways for the consultations, performing examinations, or are also transferred to other wards.

Apart from organizational problems hospital dispersal has also a financial dimension. It especially concerns surgical departments. Location of these wards in different parts of the city generates particularly high costs, associated with the need to hold two operating theatres in the constant readiness (up keeping of the premises in the proper sanitary-epidemiological condition, ensuring 24-hour duty of operating-room nurses, anaesthesiological nurses, anaesthesiologists).

- incorrect structure of beds

This applies to generally too few beds for both the long-term needs, as well as in relation to the availability of funds from the National Health Fund. Long-term departments operating in 2006 (nursing – caring, palliative), despite the 100% occupancy were not able to get enough funds to cover operating costs. Even with little real assumption of maintaining the costs of the year 2006, the number of long-term beds should increase at least three times. Only such an amount would enable the acquisition of sufficient funds. It should be remembered here about a very important function these units perform, namely they reduce the workload of „acute bed” units, taking only patients requiring care or rehabilitation and thus allowing to shorten stays in those department.

- technical condition of buildings

In 2006, most of the installations required replacement. There was also the need to build additional installations: central gases (oxygen, vacuum, compressed air), air conditioning and ventilation vents. It was necessary to replace the existing elevators and install elevators in all buildings. The level of funding by the National Health Fund benefits plan did not allow any major renovations or investments, so the main hope of SPZOZ in this regard was Poviats Starosty Office, municipal aid, and above all the EU funds.

- insufficient revenues in relation to the costs incurred.

Despite the constant saving on everything from the smallest piece of gauze and ending on staff salaries, the majority of units in these operating conditions were generating losses. In general, it must be said that the valuation of benefits medical services made by the National Health Fund and imposed upon providers was significantly undervalued in relation to the real costs incurred by health care institutions (especially institutions that are required to provide services around the clock, and the payer does not include the cost of readiness to

provide services). This resulted in a situation in which most of the operating units within the structures of the hospital generated losses.

Department of Neurology (now in accordance with the Statute of the SPZOZ – Department of Neurology with Stroke Subdivision) in Kraśnik District Hospital is located in the main hospital building at Chopin street. In 2006, it had 27 beds, which were used in 97%. This indicator proved that the department was too small and beds did not „rest”. It is believed that this ratio should not exceed 90% and fluctuate around this value. At the same time, despite such good use of beds, there were often problems with the availability of places in this ward. Financially in 2006 year the Department generated a slight loss of 34 817.52 PLN. The conclusions were clear. Any increase in the number of beds on the ward, and at the same time putting an effort to shorten patient-days, would lead to a situation in which the Department should be profitable.

Therefore, it was decided quickly to enlarge the Department as soon as possible. It was located on the second floor of the main hospital building and with the new number of 35 hospital beds, it started functioning from 2008. The big benefit for the department was the launch in 2009 of CT lab in the hospital. This allowed for a significant improvement in Department operation and greatly influenced both the execution of the contract (by shortening the length of stay of the patients and increasing the number of hospital admissions) as well as reduction of costs (by greatly limiting the amount of transport to Lublin). It should be added that the transports in addition to generating high costs, also disorganized the work of the Department, because in most cases any doctor from the ward was involved in transporting the patient. The next step was to create within the department a stroke unit. This unit with 16 hospital beds, including 4 for neurological intensive care, began to pursue a new contract with the NHF – for treatment of strokes. In terms of the organization it is the basic stroke unit, the tasks of which include diagnosis and treatment of strokes in accordance with current recommendations, identifying stroke risk factors and the start of an individual program of post-stroke rehabilitation [6,7]. Decision was also made concerning the Nursing – Caring Unit. It was expanded (from 20 to 36 beds) and 10-bed Rehabilitation Unit was converted into Neurological Rehabilitation Unit. With this action SPZOZ met recommendations of the European Stroke Initiative (EUSI) under which all patients with cerebral stroke should be provided with a comprehensive stroke rehabilitation tailored to the individual needs [8-10]. This department in 2010 was expanded to 26 beds and there was introduced treatment of post-stroke conditions concluding a relevant contract with a public payer.

AIM

The main objective of the study was to determine the relationship between the restructuring of the Department of Neurology involving the reconstruction and increasing the number of hospital beds, creation of Stroke Unit and the Department of Neurological Rehabilitation, and the value of the contract with the National Health Fund in these areas. Additional objectives were to demonstrate the relationship

between the above restructuring, and changes in the value of such indicators as:

- number of man-days,
- the cost of a man-day,
- number of hospital admissions,
- the cost of hospitalization,
- revenues and expenses of the analyzed unit.

MATERIAL AND METHODS

The study covers the period 2006-2012. We analyzed the value of contracts with the National Health Fund (NHF) such as hospital neurological treatment from 01.01.2006 – 30.06.2008 and hospital treatment in neurology – hospitalization – and in neurology – hospital treatment – A 48, A 51 (treatment of strokes in the stroke unit) during 01.07.2008 – 31.12.2012. The division into two periods was due to the change in the form of settlements with the National Health Fund, as from July 1, 2008 a new form of settlements with providers was introduced to be homogeneous patient groups (DRG – Diagnosis Related Groups). Thus the amount of services changed. Points conversion of the years 2006, 2007 and the first half of 2008 was divided by 4, and this value was treated as comparable with the values of DRG points. The rationale for this approach is fourfold increase in the value of the settlement point with the NHF in connection with the introduction of DRG (from 12 PLN to 48 PLN). The study also analyzed the value of contracts with the NHF in medical rehabilitation – neurological rehabilitation in 2008-2012 in the Department of Rehabilitation (2008-2010) and the Department of Neurological Rehabilitation (2011-2012). The changes in such indicators as the number of man-days, man-day cost, number of hospitalizations, the cost of hospitalization, were also assessed comparing the results from the Department of Neurology of each year with the average results of the hospital in the years 2006-2011. Finally, the revenues and expenses were compared for Neurological Department before and after the restructuring by analyzing data from the years 2006-2011.

RESULTS

Department of Neurology in 2007, in its structure had 27 hospital beds. After the transfer, conversion, and creation of stroke sub-unit it has 35 beds. There was an increase by 8 beds which is an increase of 29.63%. The Department of Rehabilitation created in 2007 had ten long-term hospital beds; after reconstruction and extension of the Department in 2011 it was reclassified to the Department of Neurological Rehabilitation equipped with 26 beds. In fact it gives over the years 2006-2012 an increase in the number of beds for neurological patients from 27 to 61 beds, i.e. by 34. Proportionally it is 125.92% increase in the number of beds with neurological profile.

Point number of services contained in contracts since 2006, keeps growing steadily and over the six years has increased by 78.82%. Even greater increase was observed in the implementation of agreement for the so-called. over-the-limit services (services performed over the limit specified in the contract) when comparing 2006 with 2011. In this

category, the value of execution of the contract in settlement points in 2011 is by 88.17% higher than in 2006. Data for 2012 are estimates, based on the forecast performance for the first three quarters of this year, but point to a further, significant increase in performance of the contract. Detailed results are included in Table 1.

TABLE 1. Comparison of the amount of services contained in the concluded agreements and the value of the services in the years 2006-2013 in the Department of Neurology of SPZOZ Hospital in Krasnik.

Year	2006	2007	2008	2009	2010	2011	2012	2013
Number of services (points)	42 500	47 694	53 512	62 059	62 019	73 500	76 000	78 500
Execution of contract (points)	40 645	49 830	65 477	77 999	75 228	76 481	87 300	x

During the first years (2009-2011) a contract with the National Health Fund for the provision of health services such as medical rehabilitation – neurological rehabilitation was concluded to a very low number of services. This was due to payer's lack of funds. The situation changed in 2012, when a contract has tripled, and for the year 2013 it was increased by a further 9.71%. Execution of contracts for each year with the over-the-limit services was significantly higher than the concluded contract. A particular change can be observed by comparing the year 2010 with 2011. In 2011 Neurological Rehabilitation Unit was enlarged to 26 beds which increased the performance of the contract by 105.56%. As in the case of the Department of Neurology with Stroke Unit, the results for year 2012 of Department of Neurological Rehabilitation are estimates, based on the forecast performance for the first three quarters of this year, but point to a further increase in performance of this contract. These data are presented in Table 2.

TABLE 2. Comparison of the amount of services contained in the contracts and the value of the services made in 2009-2013 in the Department of Rehabilitation / Neurological Rehabilitation of SPZOZ Hospital in Krasnik.

Year	2009	2010	2011	2012	2013
Number of services (man-day)	399444	426792	411129	1 213910	1 332741
Execution of contract (man-day)	507150	744370	1 530150	1 586267	x

During the analyzed period from 2006 to 2011, there was noted a significant increase in funds acquired from NHF for treatment of neurological patients. In 2006 SPZOZ received for provided medical services in neurology 1 700 964 PLN. However, in 2012, assuming full implementation of agreements such as hospital treatment and medical rehabilitation, it will be the amount of 5 165 910 PLN. In the amount of funds received from the NHF it is an increase of 203.70%, and in the value- this gives the 3 464 946 PLN. Figure 1 visualizes the difference.

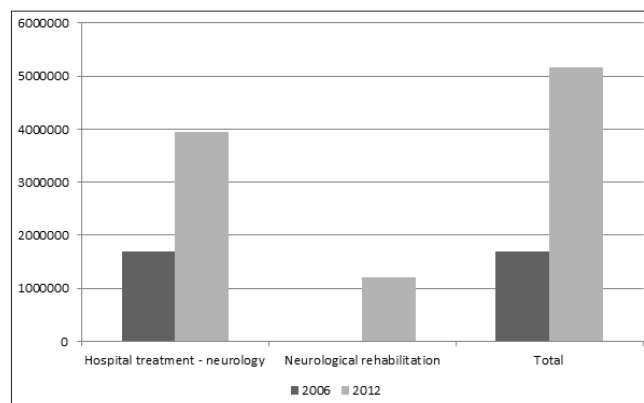


FIGURE 1. The difference between the funds acquired from the NHF for treating patients with neurological disorders between 2006 and 2012.

During 2006-2011 there was an increase in the number of man-days, as well as an increase in the number hospital admissions in the Department of Neurology. The number of person-days in this period increased by 2 272, which is by 25.61% more than in 2006. The number of hospital admissions increased by 263 per year, i.e. by 31.49% more in 2011 than in 2006. Man-days in the Department of Neurology in 2006 accounted for 9.25% of all man-days in the hospital, and in 2011 – already 10.44%. Here there was an increase by 1.19%. Larger increase was observed in percentage of Neurological Department hospitalizations to the Hospital admissions as a whole throughout the analyzed period of time. Here there was an increase by 2.28%. Detailed results are presented in Table 3.

TABLE 3. The number of man-days and number of hospitalizations in the years 2006-2011 in the Department of Neurology and the Hospital in general.

Year	Man-days – Neurology	Man-days – Hospital	%	Hospitalizations – Neurology	Hospitalizations – Hospital	%
2006	8 869	95 877	9.25	835	14 116	5.91
2007	8 021	96 850	8.28	853	14 138	6.03
2008	10 238	105 775	9.67	1088	15 028	7.23
2009	10 399	104 937	9.90	1 054	14 901	7.07
2010	10 723	100 921	10.62	1 050	13 464	7.79
2011	11 141	106 656	10.44	1 098	13 401	8.19

An analysis of costs and revenues attributable to a person-day, shows that over the period of time there is an increase in cost attributable to a person-day, but even more relevant is the increase in revenue. The cost of man-day in 2006 amounted to 195.72 PLN, and revenue per one person per day was 191.78 PLN. It follows that in 2006 for every man-day in the Department of Neurology the sum of 3.94 PLN had to be added. Over the period 2006-2011, both the cost and the revenue attributable to a person-day in the Department of Neurology increased, including the cost – 285.24 PLN and the income – 336.22 PLN. The cost per person per day increased by 89.52 PLN, which is 45.74% of the total in 2006. An even greater increase in revenue attributable to one person per day was noted in 2011 and it amounted to 336.22 PLN. It increased by 75.31%, and in sum – by 144.44 PLN. This resulted in the fact that in the year 2011 one man-day in the Department of Neurology, generated 50.98 PLN profit. Graphically, these changes are shown in Figure 2.

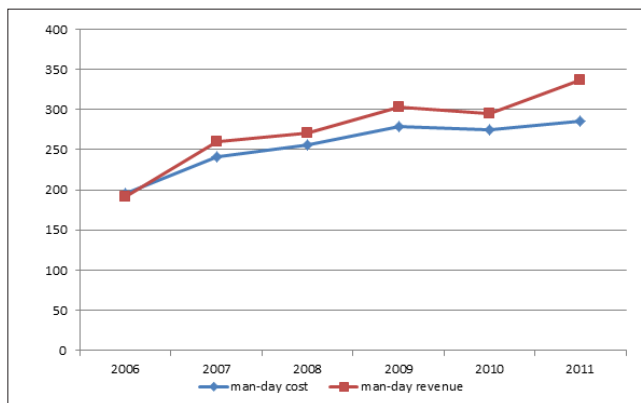


FIGURE 2. Cost and revenue attributable to a man-day in the Department of Neurology in the years 2006-2011 (PLN).

Similar results were obtained by comparing the cost and revenue per one hospitalization in the Department. In 2006, one hospitalization brought loss of 41.78 PLN. This was due to the fact that the income of one hospitalization was 2 037.08 PLN, while its cost was 2 078.86 PLN. A significant improvement of this result has taken place since 2007, and in 2011 one hospitalization gave profit of 516.95 PLN (revenue per one hospitalization 3 411.58 PLN at a cost of about 2 894.26 PLN). Progressive increases in costs and revenues attributable to hospitalizations in the years are presented in Figure 3.

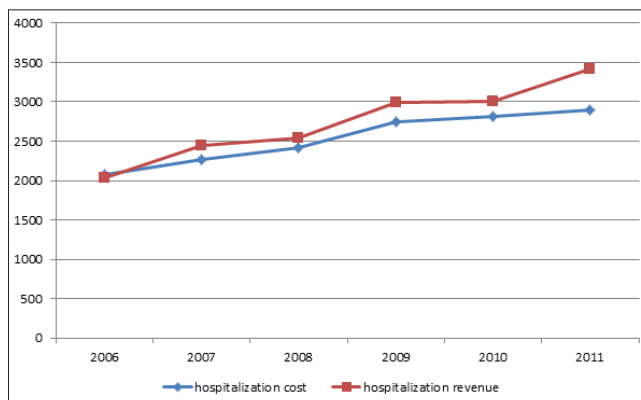


FIGURE 3. Cost and revenue per one hospitalization in the Department of Neurology in the years 2006-2011 (PLN).

The revenue of Department of Neurology in 2006 was 1 700 964.00 PLN, while the cost was 1 735 845.96 PLN. The Department closed the 2006 year with the loss of the order of 34 817.96 PLN. Revenues of the Department in 2009 and 2010 were significantly increased by 85.60% in 2009 and by 85.67% in 2010, respectively, compared to 2006 and amounted to 3 157 060.00 PLN (2009) and 3 158 211.00 PLN (2010). Even greater increase was observed in 2011, a rise of 122.22 compared to 2006. The revenue was 3 745 925.20 PLN this year. In 2009 this gave a profit of 259 924.13 PLN, in 2010 – 205 812.28 PLN, and in 2011 – 586 028.64 PLN profit from the Department operation. These values are revenues and profits for the services performed in the limit of the contract with the NHF. Taking into account, payment for “over-the-limit” services they would be significantly higher. Detailed data for services under the terms of the contract with the National Health Fund limit are shown in Table 4.

TABLE 4. Income and expenses in the Department of Neurology in 2006-2011.

Year	Revenues in department (PLN)	Costs in department (PLN)	Loss/Profit (PLN)
2006	1 700 964.00	1 735 845.96	-34 817.52
2007	2 080 843.00	1 932 949.44	+149 578.94
2008	2 769 036.00	2 624 431.43	+144 604.57
2009	3 157 060.00	2 897 135.87	+259 924.13
2010	3 158 211.00	2 952 398.72	+205 812.28
2011	3 745 028.64	3 177 896.56	+586 028.64

CONCLUSIONS

1. The restructuring of Department of Neurology by increasing the number of beds, the creation of Stroke Unit and Neurological Rehabilitation Unit resulted in the implementation of significantly more neurological services, both in the hospital treatment, as well as in medical rehabilitation.
2. As a result of the restructuring of the Department, indicators such as the number of man-days and hospitalizations have improved, and also significantly better relationship between income, man-day expense, and hospitalization were recorded.
3. Restructuring of the Department could bring about financial impact in the form of more than threefold increase in funding by the NHF for neurological services.
4. Creation of new „long-term beds” (Nursing- Caring Units, Rehabilitation Units) is a necessary part of restructuring changes of powiat hospitals.
5. The restructuring resulted in improved access to health care services with neurological profile, as well as brought the complexity of the services.

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