

The Financial Situation of the Hospital After the Introduction of the Law on the Hospital Network

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Abstract

Purpose: Changes in the health care system introduced in the fourth quarter of 2017 with the entry into force of the so-called “Hospital networks” constituted a huge challenge for managers of medical entities. The assumption of this work is to present, based on the example of the provincial hospital in Łódź, how the changes in legal regulations introduced over the last few years have influenced the financial condition of the institution and its organization.

Design/methodology/approach: The financial results of the audited entity were analysed from 2014 to 2019. The most important legal changes (mainly the implementation of the hospital network) as well as their impact on the income from the National Health Fund (NFZ) are presented. The probable (expected) financial result for 2019 is estimated.

Findings: From 2014 to 2016, there was a systematic increase in revenues from the NFZ and a positive financial result (about 10 million a year). From 2017, along with the Act on basic hospital security, there was a reduction in profits. Medical staff strikes (payroll claims) in the second half of 2018 additionally contributed to the reduction of revenues from the NFZ. As a consequence, it was necessary to implement,

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from 2019, a series of corrective actions aimed at reducing costs and increasing savings (employment reduction, organizational changes).

Research limitations/implications: Implementation of cost-reducing measures.

Originality/value: Original work.

Keywords: risk management, financial, hospital networks.

JEL: D81

Sytuacja finansowa szpitala po wejściu w życie sieci szpitali

Streszczenie

Cel: zmiany w systemie ochrony zdrowia wprowadzone w IV kwartale 2017 roku wraz z wejściem w życie tzw. sieci szpitali stanowiły ogromne wyzwanie dla menedżerów podmiotów leczniczych. Założeniem niniejszej pracy jest przedstawienie na przykładzie szpitala wojewódzkiego w Łodzi, jak istotnie wprowadzone na przestrzeni kilku ostatnich lat zmiany przepisów prawnych wpłynęły na stan finansowy placówki i jej organizację.

Metodologia: przeanalizowano wyniki finansowe badanej jednostki od 2014 do 2019 roku. Przedstawiono najważniejsze zmiany prawne (przede wszystkim wdrożenie sieci szpitali), jak również ich wpływ na wielkość przychodów z NFZ. Oszacowano prawdopodobny (zakładany) wynik finansowy na rok 2019.

Wyniki: od 2014 do 2016 roku widoczny był systematyczny wzrost przychodów z NFZ i dodatni wynik finansowy (ok. 10 mln rocznie). Od 2017 roku wraz z ustawą o podstawowym zabezpieczeniu szpitalnym nastąpiło ograniczenie zysków. Strajki (roszczenia płacowe) personelu medycznego w II połowie 2018 roku dodatkowo przyczyniły się do obniżenia przychodów z NFZ. W konsekwencji konieczne było wdrożenie od 2019 roku szeregu działań naprawczych mających na celu redukcję ponoszonych kosztów i zwiększenie oszczędności (redukcja zatrudnienia, zmiany organizacyjne).

Ograniczenia/implikacje badawcze: wdrożenie działań redukujących koszty.

Oryginalność/wartość: praca oryginalna.

Słowa kluczowe: zarządzanie ryzykiem, finansowanie, sieć szpitali.

1. Introduction

The hospital network act (Act of 23 March 2017) introduced new solutions which were intended to improve the organization of the provision of health care services by hospitals and by hospital outpatient clinics, and to improve patient access to specialist treatment in hospitals. It was intended to optimize the number of specialist departments and to enable better coordination of hospital and outpatient services. The Act was also aimed at facilitating hospital management.

The solutions included in the Act were supposed to guarantee appropriate level and continuity and stability of the financing of hospitals which need to provide health care to the people of Poland. Hospitals which met the qualification criteria specified in the Act and the Regulation of Minister for Health have created a primary hospital health care services guarantee

system (PSZ). The operation of this system was assigned approximately 93% of funds which have been so far used to finance hospital treatment (Ministry of Health, n.d.). The qualification of the hospital in the PSZ is a guarantee of being awarded a contract by the National Health Fund (NFZ), without having to participate in a tender procedure.

These were the assumptions behind the change of organization of the health care system and the introduction of the hospital network. Were they achieved and did they translate into measurable effects – this question can only be answered by a participant in the system.

In this publication, the authors would like to present the results of a financial analysis for a hospital in Łódź, based on general data from 2014 until 2019.

2. Material and Methods

In this publication, the authors would like to present the results of a financial analysis for the Mikołaj Kopernik Provincial Multidisciplinary Oncology and Traumatology Centre in Łódź, based on general data from 2014 until 2019.

3. Results

The hospital is one of 14 trauma centres in Poland and the largest oncology centre in the Łódź Province. It annually hospitalizes almost 70 thousand patients and provides over 300 thousand of outpatient consultations. The centre has had a signed contract with the NFZ for many years, the total value of which ranks us at 5th place in Poland for NFZ income (Jakubiak, 2017), currently over PLN 400 thousand (Figure 1).

The unit has 32 wards, over 50 specialist outpatient clinics and fully equipped diagnostic facilities with magnetic resonance, PET laboratory and isotope therapy. Its structure also includes the Korczak's paediatric centre and the Early Cardiac Rehabilitation Centre, located under other addresses.

Before the Primary Hospital Health Guarantee Act was passed, every unit had been required to apply for a contract with the NFZ and for the funds to provide services. The bid filing period was very difficult and troublesome. Many facilities did not know whether they would win a contract and what type of contract it would be.

Under such conditions, hospital management was very difficult. Today, when every unit that is in the network has a guaranteed constant income from the NFZ, the issues of financing should seem simpler.

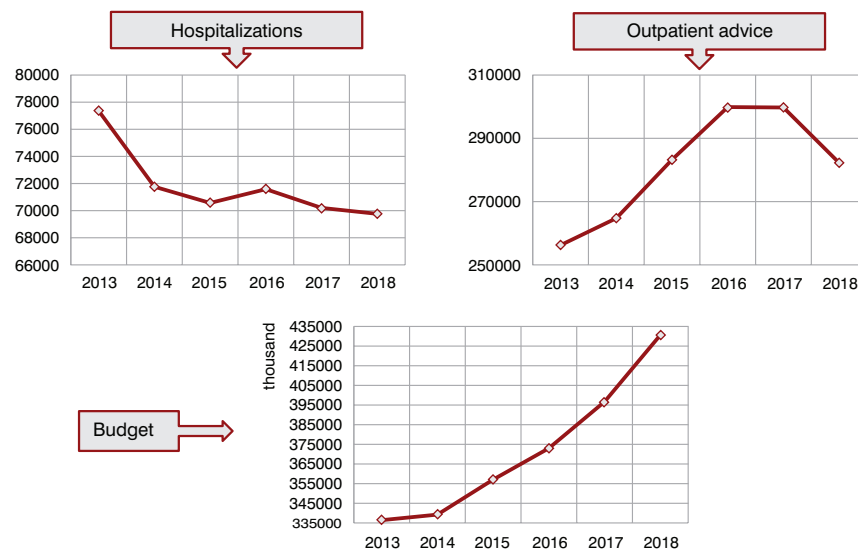


Fig. 1. Centre's activity in numbers. Source: Own research.

Let us assume that the year 2013 is the cut-off point for the comparison. From 2014 onwards, financial results were improving year on year. The average annual increase of revenue exceeded PLN 10 million until 2016. In 2015, it even exceeded PLN 18 million (Table 1).

No.	Year	Increase compared to the previous year (PLN)
1	2013	0.00
2	2014	10 743 099.18
3	2015	18 250 904.21
4	2016	14 182 786.54
5	2017	1 414 566.42
6	2018	-21 382 552.69

Tab. 1. Financial results in 2013–2018. Source: Own research.

At the end of 2017, the Mikołaj Kopernik Provincial Multidisciplinary Oncology and Traumatology Centre in Łódź qualified with the network at the 3rd of 6 possible levels, in accordance with the provisions of the Act of 23 March 2017 amending the Act on health care services financed from public funds.

In the last quarter of 2017, after the Act was introduced and the financing method was changed (lump-sum financing), it turned out that the revenue dropped 10-fold, amounting to a little more than 1 million.

The formula used for the first lump sum calculation appeared to be very complicated (Minister for Health, 2017a) (Figure 2).

$$R_0 = \sum_{i=1}^n \frac{(L_i - W_i)K_i C_i}{r} + \sum_{g=1}^0 \frac{(A_g - V_g)C_g}{r} + R_x$$

$$R_{i+1} = C_{i+1}L_{i-1} \left(A \frac{kL_i}{L_{i-1}} + B \right) \left(1 + \sum_{j=1}^m Q_j \right) + R_x$$

Fig. 2. The formula used for the first calculation of the lump sum. Source: Minister for Health, 2017a.

The next, updated formula, however, proved even more difficult. It contains a series of elements the amount of which is calculated by the payer and that we, service providers, found out about shortly before the proposal was calculated (Minister for Health, 2017b).

So, is financial management of a medical facility easier today, since the legal regulations assume such extensive formulae? The year 2017 also brought a change in the valuation of services compared to 2016 for selected scopes (Table 2).

Change of NFZ President orders	Difference 2016–2017
orthopaedics	-760 538.69
magnetic resonance	-385 384.49
palliative care	814 606.93
PET laboratory	-1 608 899.49
vascular surgery	-1 456 358.89
cardiology	98 648.68
neurosurgery	-1 022 385.00
oncological surgery	-2 299.09
chemotherapy	59.25
gynaecology	-254.72
internal diseases	133 020.72
urology	-28 212.60
	-4 217 985.51

Tab. 2. Change in the valuation of services for selected scopes. Source: Data from the Controlling Department.

We can see that the highest losses in our hospital were related to the Vascular Surgery Department, Neurosurgery Department and the PET Laboratory. Detailed calculations of tariff changes are presented in Tables 3–6.

Procedure	Procedure name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Points 2017 x 1.2	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
81.512	Total hip reconstruction	1	52.00	165	8 580.00	199.71	239.652	52.00	12 461.90	3 881.90
		41	52.00	234	498 888.00	199.71	239.652	52.00	510 938.06	12 050.06
		102	52.00	383	2 031 432.00	250.15	300.180	52.00	1 592 154.72	-439 277.28
81.521	Partial primary hip replacement – bipolar prosthesis	8	52.00	165	68 640.00	199.71	239.652	52.00	99 695.23	31 055.23
		22	52.00	234	267 696.00	199.71	239.652	52.00	274 161.89	6 465.89
81.542	Primary endoprosthesis of the knee – two-compartment	34	52.00	234	413 712.00	230.00	276.000	52.00	487 968.00	74 256.00
		38	52.00	383	756 808.00	230.00	276.000	52.00	545 376.00	-211 432.00
81.543	Primary endoprosthesis of the knee – three compartments	30	52.00	234	365 040.00	230.00	276.000	52.00	430 560.00	65 520.00
		23	52.00	383	458 068.00	230.00	276.000	52.00	330 096.00	-127 972.00
00.711	Revision surgery of the hip joint – replacement of the acetabulum	2	52.00	257	26 728.00	211.17	253.404	52.00	26 354.02	-373.98
00.721	Revision surgery of the hip joint – replacement of the femoral element	1	52.00	257	13 364.00	211.17	253.404	52.00	13 177.01	-186.99

Table cont.

Procedure	Procedure name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Points 2017 x 1.2	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
00.723	Revision surgery of the hip joint – replacement of the stem and bone head prosthesis	1	52.00	257	13 364.00	211.17	253.404	52.00	13 177.01	-186.99
00.732	Revision surgery of the hip joint – replacement of the femoral head prosthesis	1	52.00	257	13 364.00	211.17	253.404	52.00	13 177.01	-186.99
00.701	Total hip revision surgery	4	52.00	490	101 920.00	258.75	310.500	52.00	64 584.00	-37 336.00
00.703	Revision surgery of the hip joint – replacement of the acetabulum and femoral head prosthesis	8	52.00	490	203 840.00	258.75	310.500	52.00	129 168.00	-74 672.00
00.722	Revision surgery of the hip joint – replacement of the femoral element and acetabular insert	2	52.00	490	50 960.00	258.75	310.500	52.00	32 292.00	-18 668.00
00.731	Revision surgery of the hip joint – replacement of the acetabular insert and prosthetic femoral head	2	52.00	490	50 960.00	258.75	310.500	52.00	32 292.00	-18 668.00

Table cont.

Procedure	Procedure name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Points 2017 x 1.2	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
00.811	Knee revision surgery – replacement of the tibial plate and insert	2	52.00	490	50 960.00	300.69	360.828	52.00	37 526.11	-13 433.89
00.84	Knee revision surgery – replacement of the tibial plate and insert	1	52.00	257	13 364.00	300.69	360.828	52.00	18 763.06	5 399.06
81.582	Partial revision surgery after replacement of other specific joints in the lower limb	1	52.00	305	15 860.00	300.69	360.828	52.00	18 763.06	2 903.06
00.801	Knee revision surgery – replacement of the femoral, tibial or patellar part (all elements)	2	52.00	490	50 960.00	345.27	414.324	52.00	43 089.70	-7 870.30
00.822	Knee joint revision surgery – replacement of the femoral element and the tibial insert	3	52.00	490	76 440.00	345.27	414.324	52.00	64 634.54	-11 805.46
										-760 538.69

Tab. 3. Change of tariffs in orthopaedics. Source: Data from the Medical Controlling Department.

Procedure	Procedure name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
5. 03. 00. 0000076	MR: examination of a different anatomical area without contrast enhancement*	95	5.60	55.00	29 260.00	44.20	5.60	23 514.40	-5 745.60
5. 03. 00. 0000107		374	8.00	55.00	164 560.00	44.20	8.00	132 246.40	-32 313.60
5. 03. 00. 0000079	MR: examination of another anatomical area without and with contrast enhancement*	249	5.60	70.00	97 608.00	58.56	5.60	81 656.06	-15 951.94
5. 03. 00. 0000109		924	8.00	70.00	517 440.00	58.56	8.00	432 875.52	-84 564.48
5. 03. 00. 0000076	MR: examination of one section of the spine or sacroiliac joints without contrast enhancement	391	5.60	55.00	120 428.00	38.67	5.60	84 671.83	-35 756.17
5. 03. 00. 0000111		1394	8.00	55.00	613 360.00	38.67	8.00	431 247.84	-182 112.16
5. 03. 00. 0000079	MR: examination of one section of the spine or sacroiliac joints without and with contrast enhancement	39	5.60	70.00	15 288.00	53.04	5.60	11 583.94	-3 704.06
5. 03. 00. 0000113		186	8.00	70.00	104 160.00	53.04	8.00	78 923.52	-25 236.48
									-385 384.49

* except for examining one section of the spine or sacroiliac joints

Tab. 4. Change of tariffs in laboratory of magnetic resonance. Source: Data from the Medical Controlling Department.

Procedure	Procedure name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
5. 10. 00. 0000042	Positron emission tomography (PET) with the use of group I radiopharmaceuticals*	1356	3 900.00	1	5 288 400.00	236.22	11.43	3 661 192.68	-1 627 207.32
5. 10. 00. 0000103									
5. 10. 00. 0000042	Positron emission tomography (PET) with the use of group II radiopharmaceuticals**	183	3 900.00	1	713 700.00	349.96	11.43	732 007.83	18 307.83
5. 10. 00. 0000104									
									-1 608 899.49

* includes radiopharmaceuticals: ¹⁸F-FDG, ¹⁸F-NaF

** covers other radiopharmaceuticals: ¹⁸F-choline registered in Poland or unregistered in Poland and introduced as direct import or produced for own needs by the service provider's laboratory in accordance with the Atomic Law.

Tab. 5. Change of tariffs in PET laboratory. Source: Data from the Medical Controlling Department.

Procedure	Procedure name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
03.091	Decompressive Laminectomy	245	52.00	223	2 841 020.00	142.75	52.00	1 818 635.00	-1 022 385.00
03.094	Foraminotomy								
03.099	Spinal canal decompression – other								
03.093	Spinal nerve root exploration								
									-1 022 385.00

DRG A27

Tab. 6. Change of tariffs in neurosurgery. Source: Data from the Medical Controlling Department.

Subsequent announcements and projects in 2017 and the introduced changes have additionally increased losses and have contributed to the final level of contract performance (Table 7).

Health Technology Assessment Agency – announcements	Difference	PROJECTS	Difference
oncological surgery	- 1 591.89	cardiology	9 440.60
CT	-510 616.17	orthopaedics	-143 719.16
MR	186 911.34	nephrology	6 655.86
vascular surgery	24 279.84	endocrine surgery	21 663.20
stroke	4 511.97	neurosurgery	-12 422.28
endocrine surgery	-655.20		-114 500.70
paediatrics	-390 728.00		
gynaecology	-45 774.22		
cardiology	146 799.12		
internal diseases	6 296.52		
allergology	1 194.96		
orthopaedics	-154 045.32		
	-733 417.01		

Tab. 7. Declarations and projects in 2017. Source: Data from the Controlling Department.

Examples of analyses are presented in Tables 8–9.

Diagnosis (ICD-10)	Diagnosis name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)	
I33.0	Acute and subacute infectious endocarditis	3	52.00	173.00	26 988.00	250.32	52.00	39 049.92	12 061.92	DRG E51
I33.9	Acute endocarditis, unspecified	2	52.00	173.00	17 992.00	250.32	52.00	26 033.28	8 041.28	
									20 103.20	
I46.0	Cardiac arrest with successful resuscitation	2	52.00	46.00	4 784.00	62.50	52.00	6 500.00	1 716.00	DRG E59
I46.1	Sudden cardiac death as described	1	52.00	46.00	2 392.00	62.50	52.00	3 250.00	858.00	
I46.9	Cardiac arrest, unspecified	1	52.00	46.00	2 392.00	62.50	52.00	3 250.00	858.00	
									3 432.00	
R55	Fainting and collapsing	7	52.00	27.00	9 828.00	30.83	52.00	11 222.12	1 394.12	DRG E71
I10	Spontaneous hypertension	1	52.00	80.00	4 160.00	100.75	52.00	5 239.00	1 079.00	DRG E86
I10	Spontaneous (primary) hypertension	6	52.00	60.00	18 720.00	67.97	52.00	21 206.64	2 486.64	DRG E87

Table cont.

Diagnosis (ICD-10)	Diagnosis name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)	
37.82	Single chamber pacemaker implantation	10	52.00	120.00	62 400.00	143.88	52.00	74 817.60	12 417.60	DRG E31
37.86	Replacing a single chamber starter	7	52.00	120.00	43 680.00	143.88	52.00	52 372.32	8 692.32	
									21 109.92	
37.83	Implantation of a dual-chamber pacemaker	31	52.00	149.00	240 188.00	175.88	52.00	283 518.56	43 330.56	DRG E32
37.87	Replace the double-chamber starter	33	52.00	149.00	255 684.00	175.88	52.00	301 810.08	46 126.08	
									89 456.64	
37.751	Electrode replacement	1	52.00	59.00	3 068.00	88.76	52.00	4 615.52	1 547.52	DRG E37
37.753	Electrode revision with or without repair	1	52.00	59.00	3 068.00	88.76	52.00	4 615.52	1 547.52	
37.793	Revision or change of the place of making a pocket for a pacemaker, defibrillator or other implantable device for the heart	3	52.00	59.00	9 204.00	88.76	52.00	13 846.56	4 642.56	
									7 737.60	
									146 799.12	

Tab. 8. Cardiology – Health Technology Assessment Agency announcement. Source: Data from the Medical Controlling Department.

Diagnosis (ICD-10)	Diagnosis name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)	
81.45	Knee cruciate ligament plastic surgery – different	19	52.00	85.00	83 980.00	70.90	52.00	70 049.20	-13 930.80	DRG H21
81.47	Knee arthroplasty – different	22	52.00	85.00	97 240.00	70.90	52.00	81 109.60	-16 130.40	
81.82	Habitual dislocation surgery – shoulder	1	52.00	85.00	4 420.00	70.90	52.00	3 686.80	-733.20	
81.839	Shoulder arthroplasty – different	5	52.00	85.00	22 100.00	70.90	52.00	18 434.00	-3 666.00	
83.63	Rotator cuff surgery	1	52.00	85.00	4 420.00	70.90	52.00	3 686.80	-733.20	
									-35 193.60	
80.6	Knee meniscectomy	7	52.00	55.00	20 020.00	38.79	52.00	14 119.56	-5 900.44	DRG H22
80.76	Synovectomy – knee	1	52.00	55.00	2 860.00	38.79	52.00	2 017.08	-842.92	
80.81	Other local excision or destruction of the joint lesion – shoulder	3	52.00	55.00	8 580.00	38.79	52.00	6 051.24	-2 528.76	
80.86	Another local excision or destruction of the joint lesion – the knee	41	52.00	55.00	117 260.00	38.79	52.00	82 700.28	-34 559.72	

Table cont.

Diagnosis (ICD-10)	Diagnosis name	Number of patients	Price 2016 (PLN)	Points (National Health Fund) 2016	Realized value 2016	Points (National Health Fund) 2017	Price 2017 (PLN)	Realized value 2017	Difference between 2016 and 2017 (PLN)
80.87	Other local excision or destruction of the joint lesion – ankle	1	52.00	55.00	2 860.00	38.79	52.00	2 017.08	-842.92
80.91	Another excision of joint tissues – shoulder	6	52.00	55.00	17 160.00	38.79	52.00	12 102.48	-5 057.52
80.96	Another excision of the joint tissues – knee	39	52.00	55.00	111 540.00	38.79	52.00	78 666.12	-32 873.88
80.97	Another joint tissue excision – ankle	1	52.00	55.00	2 860.00	38.79	52.00	2 017.08	-842.92
81.47	Knee arthroplasty – different	39	52.00	55.00	111 540.00	38.79	52.00	78 666.12	-32 873.88
81.49	Ankle surgery – different	1	52.00	55.00	2 860.00	38.79	52.00	2 017.08	-842.92
81.832	Arthroscopic decompression of the subacromial space	1	52.00	55.00	2 860.00	38.79	52.00	2 017.08	-842.92
83.391	Baker's cyst excision	1	52.00	55.00	2 860.00	38.79	52.00	2 017.08	-842.92
									-118 851.72
									-154 045.32

DRG H22

Tab. 9. Orthopaedics – Health Technology Assessment Agency – announcement. Source: Data from the Medical Controlling Department.

The year 2018 brought more changes, e.g. in the manner of reporting and settling transfusions of blood and blood components (the way blood is reported and billed changed). Those changes were also related to the addition of a series of new services which had not theretofore been financed (e.g. thrombectomy, comprehensive care for a patient with a heart attack). As the first year financed entirely in accordance with PSZ principles, only 2018 can be compared to the previous and following years to establish the impact of the financing method change on the economic situation of the medical entity. Many doctor and nurse strikes were also a very important and significant problem for the hospital, since they required a significant increase of the remuneration of these professional groups.

The percentage share of remuneration increased in the hospital from 30–35% of total costs to over 50% (Copernicus Hospital in Łódź, n.d.).

The year 2019 commenced with an enormous financial loss, at a level of over PLN 21 million. The proposals of changes to the orders issued by the NFZ President and published at the end of May, concerning an increase of the value of services, were to improve the financial situation of hospitals. The managers of medical entities, required to assign the increase of funds to pay rises, were then calculating what impact the new regulations would exert on the hospital's financial situation, since the expectations of the personnel were really very high.

The presented table demonstrates initial simulations concerning the financing provided to the Centre (Table 10).

	Scope of treatment	Estimated increase in the valuation (PLN)
1	hospital treatment	1 770 179.00
2	outpatient specialist care	236 423.64
3	healing rehabilitation	22 503.96
4	chemotherapy	211 749.68
5	comprehensive care	124 952.33
6	services separately contracted	125 132.70
	sum	2 490 941.91

Tab. 10. Changes resulting from the orders issued by the President of the National Health Fund regarding the increase in the valuation of benefits. Source: Data from the Controlling Department.

Unfortunately, we estimate that the additional funds, although seemingly considerable, are not sufficient to cover the negative budget balance created (PLN 22 million).

4. Conclusion

As one can see, from 2014 until 2016 a systematic increase of NFZ income and a positive financial result were visible (approximately 10 million per year). Changes to the healthcare system introduced in the 4th quarter of 2017 with the introduction of the “hospital network” were an immense challenge to the managers of medical entities. Management of medical facilities in such variable and uncertain conditions required knowledge, experience and ability to deal with difficult situations. An appropriate assessment of the planned income generated by individual organizational cost units and the creation of reliable and credible financial plans taking into account the assumed changes to the system were the starting point to ensure accounting liquidity of each medical entity. Today, more than one year after the implementation of the network, hospitals are still struggling with financial difficulties and are counting the funds at their disposal. Changes to the NFZ catalogues, and the wage demands of the hired medical personnel (including mainly rises for doctors and nurses) are very worrying for every hospital director, increasing the already significant debt. As a consequence, our hospital required implementing a series of remedial actions intended to reduce the costs and to increase savings (employment reduction, organizational changes).

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References

- Act of 23 March 2017 amending the Act on health care services financed from public funds (Journal of Laws (Dz.U.) of 2017, item 844).
- Copernicus Hospital in Łódź. (n.d.). Data from the Medical Controlling Department. Copernicus Hospital in Łódź
- Jakubiak, K. (2017). Lista 500 największych szpitali w Polsce w 2016 r. (List of 500 largest hospitals in Poland in 2016). *Puls Medycyny*, 19(350). Retrieved from <https://pulsmedycyny.pl/500-najwiekszych-szpitali-w-polsce-901378>.
- Minister for Health. (2017a). *Regulation of the Minister for Health establishing the method for calculating the lump-sum payment in the primary hospital health care services guarantee system during the first settlement period* (Journal of Laws (Dz.U.) 2017, item 1242).
- Minister for Health. (2017b). *Regulation of the Minister for Health establishing the method for calculating the lump-sum payment in the primary hospital health care services guarantee system* (Journal of Laws (Dz. U.) of 2017, item 1783, and of 2018, item 1587), as amended (Journal of Laws (Dz.U.) of 2018, item 1812).
- Ministry of Health. (n.d.). *Hospital network*. Retrieved from <https://www.gov.pl/web/zdrowie/siec-szpitali1>.