Ewa Kosycarz, PhD

Warsaw School of Economics

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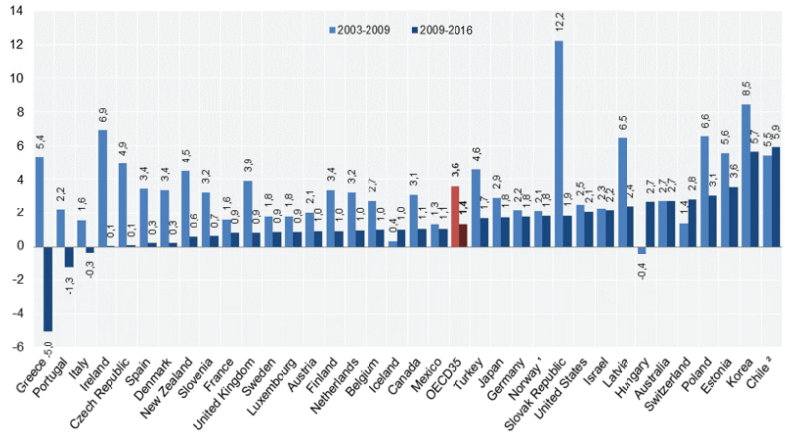
Rehabilitation in the Polish health system and its financing methods

Introduction

Expenditure on health protection is a group of expenditures that is constantly increasing (Figure 1). Demand for financial resources is unlimited due to the development of new technologies of diagnosis and treatment, as well as the consequence of an ageing population and related to the phenomenon of chronic degenerative and civilization diseases.

Figure 1.

Average annual healthcare expenditure growth rate per citizen, real values, 2003–2016 (*or the nearest year*)



1. Mainland Norway GDP price index used as a deflator. 2. CPI used as a deflator.

Source: OECD (2017). Health expenditure per capita. In: Health at a Glance 2017: OECD Indicators. Paris: OECD Publishing. Retrived April 15, 2018, from: http://dx.doi.org/10.1787/health_glance-2017-44-en.

The *Euro Health Consumer Index 2017*, published by the Health Consumer Powerhouse, ranks healthcare systems on the basis of their attractiveness from the patient's perspective. In this publication, the Polish healthcare system ranks 29th out of 35 the countries reviewed, therefore the reasons for such a poor result should be verified in order to introduce some effective improvements. The aim of this paper is to analyse whether the rehabilitation segment is an important part of the entire Polish healthcare system, and if the rehabilitation services are provided with adequate levels of financing and management.

The World Report on Disability 2011 (WHO, 2017) defines rehabilitation as 'a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments'. This definition is quite broad which leads to questions such as whether rehabilitation services should be integrated into the healthcare system or rather other national organizations such as the social protection sector or labour work services.

In Polish literature there is the concept of comprehensive rehabilitation, which coincides with international standards and distinguishes (Konwencja nr 128 Międzynarodowej Organizacji Pracy, 1969; Rozporządzenie Rady (EWG) nr 1408/71, 1971; Konwencja ONZ o prawach osób niepełnosprawnych, 2012; Powszechna deklaracja praw człowieka, 1948; Standardowe zasady wyrównywania szans osób niepełnosprawnych, 1993):

- social rehabilitation,
- vocational rehabilitation,
- therapeutic rehabilitation (Wilmowska-Pietruszyńska, 2015).

It is worth noting that the Polish model of rehabilitation created by Professor Wiktor Dega (and his colleagues) has been recognized by the World Health Organization as a standard worth following. According to the Polish model described by Professor Dega, medical rehabilitation is characterized as being widely available, introduced early, complex and consistent (Lubecki, 2011).

In Poland, vocational and social rehabilitation is financed and supervised by the State Fund for Rehabilitation of Persons with Disabilities (Państwowy Fundusz Rehabilitacji Osób Niepełnosprawnych, PFRON), the Social Insurance Institution (Zakład Ubezpieczeń Społecznych, ZUS) and the Agricultural Social Insurance Fund (Kasa Rolniczego Zakładu Ubezpieczenia Społecznego, KRUS)[1].

On the other hand, medical rehabilitation is financed from the National Health Fund[2] (Narodowy Fundusz Zdrowia, NFZ) and, similarly to the vocational and social rehabilitation, from the Social Insurance Institution (ZUS) and the Agricultural Social Insurance Fund (KRUS). Medical rehabilitation can also be financed from European funds which are available for instance for local government units. All

[1] In the case of ZUS and KRUS, a training benefit is provided to enable the retraining of insured persons who have lost their ability to work in their previously mastered profession.

[2] In addition, the NFZ finances participation in health programs and stays in health resorts.

public funds payers (i.e. NFZ, ZUS, etc.) can buy medical services from the same group of health-care providing entities. Medical rehabilitation services are provided by outpatient and inpatient clinics, day hospitals and home-based care (NFZ, 2018).

The diversity of public payers and their subdivisions involved in rehabilitation financing is very complex, hence the question arises: is the coordination between the funders sufficient to ensure that the delivery of services is effective?

In order to answer the above question, this article investigates and analyses the organization and methods by which various public payers finance medical rehabilitation, nevertheless it has to be remembered that the other two areas of rehabilitation are also important due to the socio-economic situation of the country and its individual citizens.

If public expenditure on social and vocational rehabilitation is effectively implemented it has a positive impact on state finances mainly due to the two reason listed below: effective rehabilitation can prevent spending due to disability living allowances and other types of income-support, which reduces the burden on other areas of public spending. Additionally, if rehabilitation services are delivered effectively, many citizens regain their ability to work and contribute to state funds by coming back into the workforce, paying taxes, etc.

Medical rehabilitation is undoubtedly crucial for individuals to return to health (e.g. Sapuła, Głowacka, Lesiak, Siwek, Mataczyński, 2012) and to the workforce (Bubińska, 2009), however the rehabilitation methods, which should be recommended as the most effective in a given condition, remain debatable (e.g. de Boer et al., 2015; Nieuwenhuijsen et al., 2014; Kamper et al., 2014).

The importance of the effectiveness of complex rehabilitation in terms of public finances is highlighted by the value of expenditure on cash benefits due to incapacity for work, which reached PLN 38,992.7 million in 2014. These were expenses incurred by ZUS, KRUS, the Pension Office of the Ministry of Internal Affairs and Administration, and all the other institutions and their corresponding social pensions (Wilmowska-Pietruszyńska, 2016).

Methods

The study reviews published literature and legal acts, and undertakes the analysis of data acquired from international and national health data repositories.

Results

Expenditure on rehabilitative care in Poland – the main facts

Inadequate and insufficient access to good rehabilitation results in losing the health improvements achieved during treatment in the acute phase of the disease,

therefore attention should be paid to the accurate valuation of medical services to ensure treatment access to patients at every phase of a disease. Consequently, access to medical benefits is largely dictated by their valuation by the public payer. In the case of Poland, this relationship is best illustrated by the valuation of cardiology.

In recent years the valuation of angioplasty services (interventional treatment) was highly satisfactory for medical service providers (i.e. hospitals). As performing angioplasty services was very beneficial for hospitals, they obtained significant income from the implementation of the said services (NIK, 2014) this area of treatment became (and still is) of a high-level and widely available. In contrast, the conservative treatment services were underfunded, and therefore poorly accessible. After both interventional and conservative treatment, the cardiological rehabilitation should constitute the next stage of treatment for the majority of patients (any exceptions depend on a condition). The article, *Prevalence, treatment and secondary prevention of heart attacks in Poland. Assessment based on the National Heart Attack Database*, states that: 'In Poland, only 22% of myocardial infarction patients participate in comprehensive[3] cardiac rehabilitation. This number is insufficient; the vast majority of patients should be rehabilitated' (Narodowy Instytut Zdrowia Publicznego – Państwowy Zakład Higieny, Śląski Uniwersytet Medyczny, Gdański Uniwersytet Medyczny, Warszawski Uniwersytet Medyczny, 2014). Moreover, the importance of rehabilitation in the cardiological treatment process is depicted by the results of the health maps analysis. As it transpires from the cardiological data collected by the Ministry of Health, 'for every diagnosis of Acute Coronary Syndromes (ACS), mortality among cardiac non-rehabilitated patients was clearly higher than mortality in the rehabilitated group of the same age cohort, the differences reach the order of 123%' (Mapa potrzeb zdrowotnych…, 2015). Furthermore, the patients' health is reflected not only in the length and comfort of their lives, but also in the costs of their treatment in later periods, after acute illness incidents. Moreover, it has been proven that comprehensive cardiac rehabilitation in people with heart failure reduces the risk of re-hospitalization by 28%. The above further supports the significance of rehabilitation in the treatment process (Jankowski et al., 2013).

Considering the aforementioned examples and conclusions drawn from the analysis of the cardiovascular treatment process, the data concerning expenditure on medical rehabilitation in Poland in comparison with other countries is disturbing (Figure 2). Even though numerous countries spend smaller or comparable amounts of money on rehabilitation (per patient), funds allocated to rehabilitation in Poland (expressed in PPS) are over seven times lower than in France[4], about

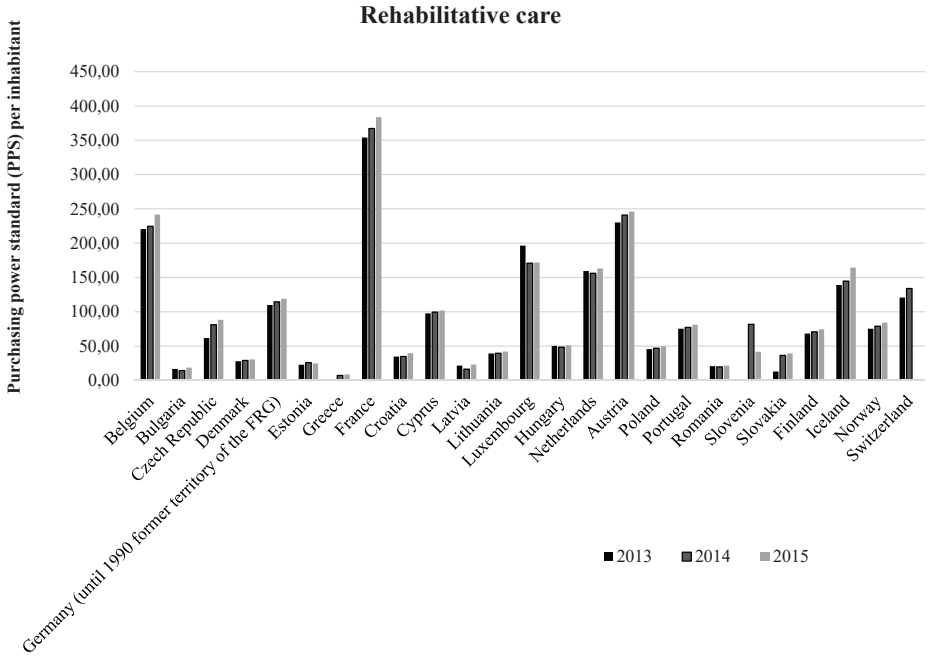
[3] Comprehensive cardiac rehabilitation includes the participation of a cardiologist, dietitian, physiotherapist and psychologist in the process.

[4] 10th in the EHCI 2017.

five times lower than in Austria[5] and Belgium[6], and three times lower than in the Netherlands[7]. It should be however noted that the value of expenses spent on rehabilitation does not constitute the only decisive determinant of quality and availability of provided services as can be proved by the example of Denmark. Its expenditure on rehabilitation per patient is lower than in Poland and yet Denmark ranks very high on the list of national healthcare systems ranked on the basis of their attractiveness from the patient's perspective[8], which is correlated to high standards and availability.

Figure 2.

Expenditure on medical rehabilitation in Poland in comparison with other countries

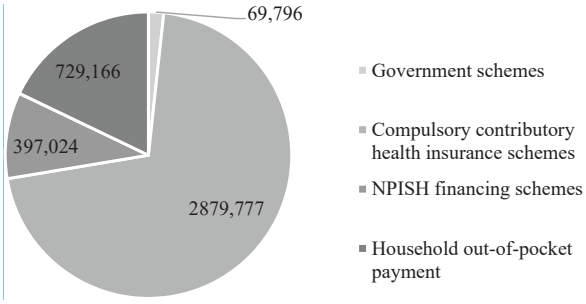


Source: own work based on data from Health care expenditure by function (2018). Retrieved April 13, 2018, from: http://ec.europa.eu/eurostat/data/database.

In Poland (2015), more than 72% of rehabilitative care was financed by public funds, 9% was financed by non-profit institutions and almost 18% was financed by household out-of-pocket payments.

[5] 11th in the EHCI 2017.
[6] 8th in the EHCI 2017.
[7] 1st in the EHCI 2017.
[8] 3rd in the EHCI 2017.

Figure 3.
Expenditures on rehabilitative care in 2015 by financing schemes – in millions of PLN (*the result of the national health account*)



Source: own work, based on data from: Zdrowie i ochrona zdrowia w 2016 r. (2017). Retrieved June 11, 2018, from: https://stat.gov.pl/obszary-tematyczne/zdrowie/zdrowie/zdrowie-i-ochrona-zdrowia-w-2016-r-,1,7.html.

The position of the rehabilitation services in the Polish healthcare system

The authors of *Rehabilitation in health systems* have put forward an interesting question: Should rehabilitation services be integrated into and between the primary, secondary and tertiary levels of the health system or only into selected levels? (WHO, 2017).

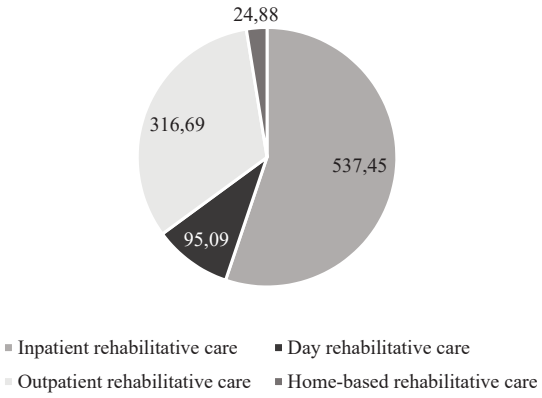
In the case of Poland, there are several health system levels providing rehabilitation services. Currently, we can distinguish inpatient rehabilitative care (tertiary level, which can be delivered in a rehabilitation hospital or general hospital at rehabilitation wards), outpatient rehabilitative care (secondary level, which can be delivered in rehabilitation day centres or ambulatory centres) and home-based rehabilitative care. At present the Polish Ministry of Health is testing a new model of delivering rehabilitative care at the primary level. This is a pilot project called Primary Care Plus. The project is aimed at introducing outpatient physiotherapy dedicated to patients with diagnosed spinal pain syndromes and osteoarthritis changes, to the extent possible to be performed at primary care level conditions (NFZ Białystok, 2017).

Poland has one more additional rehabilitation centre type aimed specifically at various types of patients with chronic (mild) diseases: a health resort facility. Such facilities do not offer the exact same array of curative rehabilitation services as the previously mentioned healthcare providers, even though some of the offered positions are indeed identical.

In 2016, 5.9 thousand patient stays in health resort facilities were subsidized by NFZ; 5.9 thousand were subsidized by ZUS, 6.9 thousand were subsidized by KRUS and 1.7 thousand were subsidized by PFRON (GUS, 2017). The cost of NFZ's patients in 2016 reached over 616 million PLN (NFZ, 2017).

Figure 4 presents a distribution of health care expenses on rehabilitation in 2015. It can be clearly noted that the most costly type of curative rehabilitative care is the one delivered in inpatient circumstances.

Figure 4.
Healthcare expenditures on rehabilitation care in Poland in 2015 (million euro)



Source: own work based on data from *Health care expenditure by function* (2018). Retrieved April 13, 2018, from: http://ec.europa.eu/eurostat/data/database.

Having given examples of numerous sources of funding and various types of institutions implementing rehabilitation services, it can be further stated that Polish rehabilitative care is poorly coordinated between all of these institutions. When a patient receives a referral for rehabilitation they may decide for themselves at which institution the service will be conducted. Such freedom may be very convenient for some patients but highly inconvenient to others, as some individuals may feel confused and overwhelmed.

The complexity of the system (which contributes to its poor coordination) is further increased by the fact that a patient can receive a rehabilitation referral from different kinds of doctors at primary (GP), secondary (medical specialists, such as orthopaedist or cardiologist) or tertiary (hospital) health care level. This may also result in patients receiving more than one (parallel) rehabilitation treatment resulting in no clear knowledge about the outcomes of each of them.

Additionally, there exists no coordination between medical, vocational and social rehabilitation or between the aforementioned and the rehabilitation delivered by the health resort facilities.

The rehabilitation payment methods are also diverse and based on Diagnosis-Related Groups (DRGs) and fee-for-services methods. The type of method depends on the public payer and the product of the rehabilitative services. For example, NFZ uses DRGs to finance inpatient rehabilitative care, however outpatient reha-

bilitative care provided in ambulatory is received as payments for procedures (a kind of fee-for-service).

The structure and distribution of medical payment contributions

The described lack of coordination influences not only the patient's treatment but also makes summarizing the total expenditures on curative rehabilitation more difficult. The summary below presents the distribution of public funds payers' expenditures on curative rehabilitation.

NFZ is the largest public funds payer. As can be seen from Table 1, between 2014 and 2016, NFZ allocated around PLN 6.5 billion towards curative rehabilitation. The total of this amount was distributed between about 2700 individual health care providers (as shown in Table 2). None of this data includes information about rehabilitation provided by the health resort facilities.

Table 1.
NFZ's expenditures on curative rehabilitation, 2014–2016 (PLN millions)

The value of contracted rehabilitation services 2014	Costs of rehabilitation services 2014	The value of contracted rehabilitation services 2015	Costs of rehabilitation services 2015	The value of contracted rehabilitation services 2016	Costs of rehabilitation services 2016
2 096	2 100	2 198	2 203	2 219	2 236

Sources: own work based on data from: NFZ (2017).

Table 2.
Number of curative rehabilitation's service providers in 2014

Number of service providers in 2014	Number of service providers in 2015	Number of service providers in 2016
2 824	2 729	2 703

Sources: own work based on data from: NFZ (2017).

Table 3.
Comparison of the number of patients and the number of services provided in the rehabilitation in the years 2014–2016

2014			2015			2016		
number of patients in thous	number of rehabilitation services out-patient	number of rehabilitation services in-patient	number of patients in thous	number of rehabilitation services out-patient	number of rehabilitation services in-patient	number of patients in thous	number of rehabilitation services out-patient	number of rehabilitation services in-patient
3 309	131 850 980	3 780 176	3 346	133 769 501	3 821 184	3 386	133 979 719	3 895 653

Sources: own work based on data from: NFZ (2017).

Furthermore, the activity of ZUS in the area of medical rehabilitation is well illustrated by the numbers (the data refers to 2016):

- ZUS issued 311.9 thousand decisions regarding the provision of rehabilitation benefits, including 254.9 thousand decisions awarding the benefit (4.29% more than in the previous year – an upward trend);
- physicians issued a total of 99.9 thousand decisions on the need for medical rehabilitation within ZUS's framework of disability pension prevention (an increase of 5.9% compared to 2015) (ZUS, 2016a).
- rehabilitation treatment in 2016 covered 85.4 thousand insured patients, i.e. 4.7 thousand more patients than in 2015. The costs of rehabilitation treatment itself, rehabilitation travel expenses and the total of all local fees amounted to PLN 186 690 thousand and were PLN 7,552 thousand (4.2%) higher than in the previous year (ZUS, 2016b).

In the case of KRUS, the number of people using medical rehabilitation starting from 1999, oscillates around 14,000 people a year with a slight decrease in 2013 and 2014, down to 13,212 and 12,675 respectively. On the other hand, before 1999 the annual number of such services offered by KRUS was significantly lower (Wilmowska-Pietruszyńska, 2016). The Prevention and Rehabilitation Fund (Fundusz Prewencji i Rehabilitacji, FPiR) is one of the component KRUS funds, which is dedicated mainly to financing rehabilitation services for farmers, including the management of KRUS-led rehabilitation centres (NIK, 2011). In 2016, the costs of implementing all the tasks (not only rehabilitation services) of the FPiR amounted to PLN 35 million (KRUS, 2016), meaning that the total amount dedicated to the rehabilitation was lower than PLN 35 million. This amount is relatively small when compared with NFZ and ZUS expenses.

"Almost 50 years ago, the so-called 'Polish school of rehabilitation' was recommended by WHO as a role model for other countries. The concept assumed that rehabilitation should be widely available, introduced early, complex and consistent" (Wilmowska-Pietruszyńska, 2015). Currently, despite the fact that various public fund payers allocate more and more money towards medical rehabilitation, the availability and access to the services is significantly impaired. Finding availability presents difficulties and is manifested in the fact that for certain services, patients have to wait for several years.[9] Taking into consideration the aforementioned problems in access to rehabilitation services, rehabilitative care has been indicated as a priority in health care expenditure in 2019. This may indicate that in the forthcoming years an increase in financing of this area can be expected (Rynek Zdrowia, 2018).

[9] More information: http://kolejki.nfz.gov.pl/

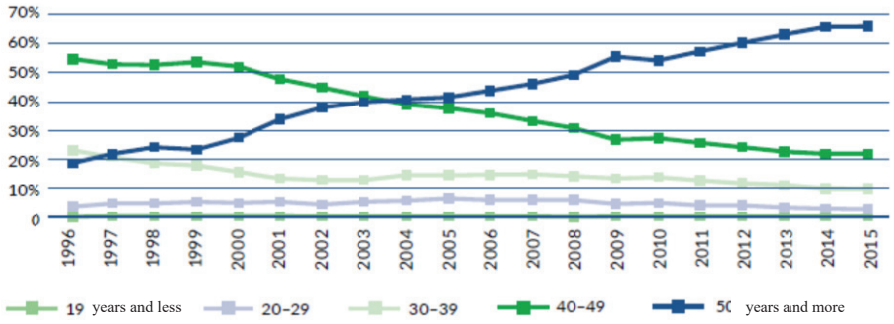
Discussion

Based on the available analysed reports, it is difficult to clearly distinguish the exact amount of public expenditure on medical rehabilitation. This is mainly due to the existence of numerous public funds payers, each of which offers various rehabilitative services defined in different ways. In addition, some fraction of rehabilitative procedures can be classified both as standard medical rehabilitation or health resort facility rehabilitation services.

Challenges for the near future

One of the challenges for the rehabilitation financing system in Poland is its ageing society. This increasing median age in the population is related to the low number of births, and the increasing number of elderly people. People live longer which in turn is related to the increase in the number of years lived with disability (YLDs). According to the authors of the *Strengthening health systems to provide rehabilitation service* report: "Seventy-four per cent of YLDs are the result of health conditions for which rehabilitation may be beneficial" (Krug, Cieza, 2017). The trend of an ageing population can be further spotted when analysing data published by the public fund's payers or data made available by entities providing rehabilitation services. The data shows that the age of the main group of patients is increasing throughout the years. The graph below presents the age structure of patients undergoing rehabilitation financed by ZUS in the years 1996–2015.

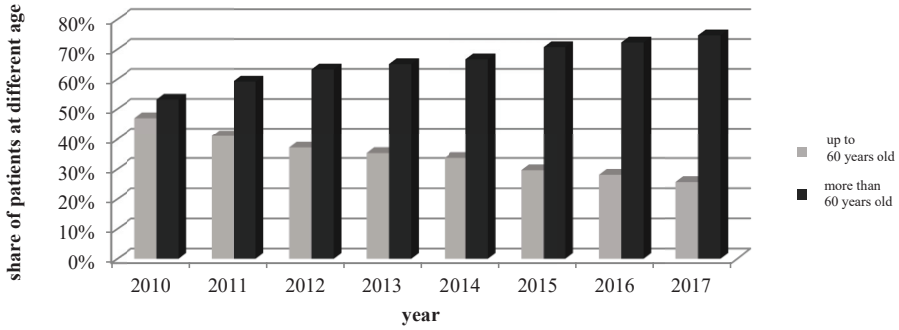
Figure 5.
Structure of the age groups of patients undergoing rehabilitation in the years 1996–2015



Source: Nietopiel, 2016.

Similarly, the trend of increasing number of elderly patients is visible for patients undergoing medical rehabilitation financed by NFZ as can be shown in the example of data presented by the Director of the Provincial Rehabilitation Hospital in Zakopane, Krystyna Walendowicz as shown below (Walendowicz, 2018).

Figure 6.
Structure of the age groups of patients undergoing rehabilitation in the Provincial Rehabilitation Hospital in Zakopane 2010–2017



Source: Walendowicz (2018).

Another challenge with which the Polish rehabilitation system may be faced with is the coordination of care. The distribution of services between healthcare providers can be changed depending on the system's coordinator placement and whether the coordinator will be awarded money with funds designated specifically for rehabilitation or not. The impact of the above factors is reflected, among others, in the currently observed creation of hospital rooms dedicated for the rehabilitation of patients from neighbouring cardiological wards[10]. This is the correct direction to follow, taking into consideration the rehabilitation model propagated by Professor Wiktor Dega. According to one of the model's rehabilitation criteria, rehabilitation should be introduced early, enabled and facilitated by the proximity of the departments. In such a manner, rehabilitation can be started as early as even during the acute phase of a disease. This does not, however, mean that further rehabilitation is not necessary, on the contrary, it is crucial to continue the rehabilitation in specialized rehabilitation centres. Such centres are still irreplaceable in terms of the complex rehabilitation of cases of multiple diseases.

In order for the rehabilitation system to be coordinated efficiently and effectively, the organization and functioning of all health care providers' needs to be analysed in great detail. It has to be remembered that healthcare entities have to pay attention to both the patients' health and financial fluidity.

Conclusions

- The benefits that well-conducted rehabilitation brings are invaluable for patients because the comfort of living is a crucial element in peoples' lives.

[10] This is, among others, the effect of introducing a pilot program of comprehensive care after myocardial infarction, called KOS-zawał.

- The benefits of rehabilitation for the public finance sector come from four sources: limited expenditure on intervention treatment, limited social spending, bigger cash inflows to the public budget in the form of income taxes and social security contributions (patients returning to the workforce after successful rehabilitation are able to undertake a paid job). In addition, assuming that the remuneration of working persons is higher than their income support, higher inflows from indirect taxes can be expected.
- Expenses for rehabilitation in Poland are rather low compared to the countries, which rank high on the list of healthcare systems based on patients' satisfaction.
- The availability of and access to the medical rehabilitation system in Poland is poor, which is reflected in the long waiting time before the service is received. This is due to the fact that money spending on rehabilitation services is limited. If the funding increases, further restrictions may appear and include the lack of infrastructure (including equipment) and/or personnel.
- Expenditure on rehabilitation is low compared to the benefits paid to people with disabilities.
- The healthcare system should be reformed in such a way that all patients requiring rehabilitation receive it. Currently, it often happens that some patients are not even informed that they should be rehabilitated[11]. This requires the creation of a system in which there are incentives for medical entities to quickly and effectively rehabilitate patients after acute disease and treatment. This will allow the minimization of costs associated with the relapse of acute stages of illnesses.
- An attempt should be made to create coordination between the public funds' payers responsible for funding rehabilitation services so that the system for each citizen is transparent and thus easily available.

Bibliography

Bubińska, J. (2009). Ocena efektywności programu rehabilitacji leczniczej rolników w wybranym centrum rehabilitacji rolników KRUS. *Polish Annals of Medicine*, 16(1), 42–56.

de Boer, A.G.E.M., Taskila, T.K., Tamminga, S.J., Feuerstein, M., Frings-Dresen, M.H.W., Verbeek, J.H. (2015). Interventions to enhance return-to-work for cancer patients. *Cochrane Database of Systematic Reviews 2015*, 9 (CD007569).

GUS, (2017). *Health and health care in 2016*. Warsaw: GUS.

Health Consumer Powerhouse the Polish Ltd. (2017). Euro Health Consumer Index 2017.

[11] For example, a patient after cardiac surgery feels much better than before and does not think about the next weeks he/she should spend on rehabilitation in order to maintain the achieved effect for years to come.

Jankowski, P., Niewada, M., Bochenek, A., Bochenek-Klimczyk, K., Bogucki, M., Drygas, W., Dudek, D., Eysymontt, Z., Grajek, S., Kozierkiewicz, A., Mamcarz, A., Olszowska, M., Pająk, A., Piotrowicz, R., Podolec, P., Wolszakiewicz, J., Zdrojewski, T., Zielińska, D., Opolski, G., Stępińska, J. (2013). Optimal model of comprehensive rehabilitation and secondary prevention. *Kardiologia Polska*, 71(9), 995–1003.

Kamper, S.J., Apeldoorn, A.T., Chiarotto, A., Smeets, R.J., Ostelo, R.W.J.G., Guzman J., van Tulder, M.W. (2014). Multidisciplinary biopsychosocial rehabilitation for chronic low back pain. *Cochrane Database of Systematic Reviews*, 9(CD000963).

Karczniewicz, E., Kania, A. (2016). *Wydatki na świadczenia z ubezpieczeń społecznych związane z niezdolnością do pracy w 2014 r*. Warszawa: Zakład Ubezpieczeń Społecznych, Departament Statystyki i Prognoz Aktuarialnych. Retrived January 25, 2016, from: http://www.zus.pl/default.asp?p=1&id=1361&searchString=niepe%B-3nosprawni&zakres=4.

Konwencja ONZ o prawach osób niepełnosprawnych (2012). Dz. U. z 2012 r. poz. 1169.

Krug, E., Cieza, A. (2017). Strengthening health systems to provide rehabilitation services. *Bulletin of the World Health Organization*, 95, 167.

KRUS, (2013). *Informacje podstawowe*. Warszawa: KRUS.

KRUS, (2016). Wykonanie Planu Funduszu Prewencji i Rehabilitacji za 2016 rok. Retrieved May 15, 2018, from: https://www.krus.gov.pl/bip/finanse-i-majatek/2016-r/.

Lubecki, M. (2011). Polski model rehabilitacji medycznej zaakceptowany i zalecany przez WHO. *Hygeia Public Health*, 46(4), 506–515.

Mapa potrzeb zdrowotnych w zakresie kardiologii dla Polski (2015). Retrieved April 20, 2018, from: http://www.mz.gov.pl/wp-content/uploads/2015/12/MPZ_kardiologia_Polska.pdf.

Narodowy Instytut Zdrowia Publicznego – Państwowy Zakład Higieny, Śląski Uniwersytet Medyczny, Gdański Uniwersytet Medyczny, Warszawski Uniwersytet Medyczny (2014). *Występowanie, leczenie i prewencja wtórna zawałów serca w Polsce. Ocena na podstawie Narodowej Bazy Danych Zawałów Serca*. AMI-PL 2009–2012. Warszawa, Zabrze, Gdańsk: [s.n.]. Retrived April 5, 2018, from: http://www.rehabilitacjakardiologicznaptk.pl/wp-content/uploads/2015/02/2014-05-11-Raport-ZS-w-Pl-ost.pdf.

NFZ, (2017). *Sprawozdanie z działalności Narodowego Funduszu Zdrowia za 2016 rok*. Warszawa: NFZ.

NFZ, (2018). Informacje o pozostałych świadczeniach. Retrieved June 1, 2018, from: http://nfz.gov.pl/dla-pacjenta/informacje-o-swiadczeniach/informacje-o-pozostalych-swiadczeniach/.

NFZ. Białystok (2017). Opis programu pilotażowego POZ PLUS. Retrieved June 1, 2018, from: https://www.nfz-bialystok.pl/wp-content/uploads/2017/06/Zał.-1_Opis-pilotażu.docx.

Nietopiel, M. (2014). Rehabilitacja lecznicza w ramach prewencji rentowej ZUS w 2013 roku. *ZUS. Prewencja i Rehabilitacja*, 1 (35), 4–17. Retrieved April 5, 2018, from: http://www.zus.pl/documents/10182/167630/Prewencja_i_rehabilitacja_nr_1_2014.pdf/d39c542f-0214-404a-aefe-d31d91ee23c1

Nietopiel, M. (2016). 20 lat rehabilitacji leczniczej w ramach prewencji rentowej ZUS. *Prewencja i Rehabilitacja*, 2–3 (44–45), 3–13. Retrieved April 5, 2018, from: http://www.zus.pl/documents/10182/167630/prewencja+i+rehabilitacja+2+3+2016+wydanie+specjalne/809feeb4-6f74-42b9-bff7-0d549989df2a

Nieuwenhuijsen, K., Faber, B., Verbeek, J.H., Neumeyer-Gromen, A., Hees, H.L., Verhoeven, A.C., van der Feltz-Cornelis, C.M., Bültmann, U. (2014). Interventions to improve return to work in depressed people. *Cochrane Database of Systematic Reviews 2014*, 12(CD006237).

NIK, (2011). Informacja o wynikach kontroli. Funkcjonowanie systemu rolniczego ubezpieczenia emerytalno-rentowego. NIK. Nr ewid. 91/2012/P11091/KZD, KPZ-4101-01/2011, www.nik.gov.pl/plik/id,4596,vp,6185.pdf.

NIK, (2014). Informacja o wynikach kontroli. Realizacja świadczeń zdrowotnych z zakresu kardiologii przez publiczne i niepubliczne podmioty lecznicze. LKA-4101-039/2014. Nr ewid. 1/2016/P/14078/LKA. Retrieved June 11, 2018, from: https://www.nik.gov.pl/plik/id,10872,vp,13213.pdf.

OECD, (2017). Health expenditure per capita. In: *Health at a Glance 2017: OECD Indicators*. Paris: OECD Publishing. Retrived April 15, 2018, from: http://dx.doi.org/10.1787/health_glance-2017-44-en.

Powszechna deklaracja praw człowieka (1948). Retrieved April 10, 2018, from: http://www.unesco.pl.

Rozporządzenie Rady (EWG) nr 1408/71 (1971). Retrieved April 10, 2018, from: http://eur-lex.europa.eu/LexUriServ.

Rynek zdrowia (2018). Ponad 83 mld zł na leczenie: komisja finansów o projekcie planu NFZ na 2019 r. Retrieved July 3, 2018, from: http://www.rynekzdrowia.pl/Finanse-i-zarzadzanie/Ponad-83-mld-zl-na-leczenie-komisja-finansow-o-projekcie-planu-NFZ-na-2019-r,185464,1.html.

Sapuła, R., Głowacka, I., Lesiak, A., Siwek, W., Mataczyński, K. (2012). Ocena efektywności rehabilitacji pacjentów w zespołach bólowych dolnego odcinka kręgosłupa. *Zamojskie Studia i Materiały. Fizjoterapia*, 1 (35), 34–41.

Standardowe zasady wyrównywania szans osób niepełnosprawnych (1993). Retrieved April 10, 2018, from: http://www.tus.org.pl.

Walendowicz, K. (2018). Realizacja świadczeń gwarantowanych z rehabilitacji leczniczej w aspekcie zmian demograficznych. Retrieved June 10, 2018, from: http://kolegia.sgh.waw.pl/pl/KES/struktura/KS/konferencje/Documents/Zakopane%20demografia%20.pdf.

WHO, (2011). World Report on Disability. Retrieved April 10, 2018, from: http://www.who.int/disabilities/world_report/2011/report/en/.

WHO, (2017). *Rehabilitation in health systems*. Geneva: WHO.

Wilmowska-Pietruszyńska, A. (2015). Rehabilitacja w systemie zabezpieczenia społecznego osób niepełnosprawnych. *Studia BAS*, 2(42), 47–65. Retrieved April 10, 2018, from: http://orka.sejm.gov.pl/wydbas.nsf/0/6D6AC2CFC7C44CDFC1257E7300364B10/%24File/Strony%20odStudia_BAS_42-3.pdf.

Wilmowska-Pietruszyńska, A. (2016). Rodzaje rehabilitacji powypadkowej. In: Polska Izba Ubezpieczeń. *Aktualne zasady finansowania procedur medycznych, w tym rehabilitacji, w systemie publicznej opieki zdrowotnej*, 26–41. Retrieved April 10, 2018, from: http://www.polisynazdrowie.pl/files/Aktualne-zasady-finansowania-procedur-medycznych-w-tym-rehabilitacji-w-systemie-publicznej-opieki-zdrowotnej.pdf.

Zdrowie i ochrona zdrowia w 2016 r. (2017). Retrieved June 11, 2018, from: https://stat.gov.pl/obszary-tematyczne/zdrowie/zdrowie/zdrowie-i-ochrona-zdrowia-w-2016-r-,1,7.html.

ZUS, (2016a). Sprawozdanie z działalności Zakładu Ubezpieczeń Społecznych za 2016 rok. Retrieved April 10, 2018, from: http://bip.zus.pl/documents/493361/494101/sprawozdanie+z+dzia%C5%82alno%C5%9Bci+ZUS+2016.pdf/9100165c-689f-42c0-b680-43632d29cfa6.

ZUS, (2016b). Informacja z wykonania planu budżetu państwa w części 73 oraz sprawozdania z wykonania planów finansowych FUS, FEP i FRD za rok 2016. Retrieved April 10, 2018, from: http://bip.zus.pl/documents/493361/494110/Informacja+z+wykonania+plan%C3%B3w+2016/61f9fc68-4214-4e38-87bf-63bca6f24e9f

Rehabilitation in the Polish health system and its financing methods

Summary

The aim of this paper is to analyse whether the medical rehabilitation segment is an important part of the entire Polish healthcare system, and if the medical rehabilitation services are provided with adequate levels of financing and management.

The study reviews published literature and legal acts, and undertakes an analysis of data acquired from international and national health data repositories.

In Poland there exists no coordination between medical, vocational and social rehabilitation or between the rehabilitation delivered by the health resort facilities.

There is an observed lack of coordination among public fund payers. The described lack of coordination influences not only patient treatments (it is difficult to measure outputs and outcomes), but also makes summarizing the total expenditures on curative rehabilitation more difficult.

Even though numerous countries spend a smaller or comparable amount of money on rehabilitation (per patient), funds allocated to rehabilitation in Poland (expressed in PPS) are over seven times lower than in France, about five times lower than in Austria and Belgium, and three times lower than in the Netherlands.

Key words: medical rehabilitation, curative rehabilitation, health care system, health care spending