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Financial and Organizational Aspects of the Functioning of Primary Health Care during the COVID-19 Pandemic

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Abstract:

Purpose: *The aim of this scientific study is to analyze selected issues related to the functioning and financing of Polish Primary Health Care units in the initial period of the SARS-CoV-2 virus pandemic.*
Design/MethodologyApproach: *The following research methods were used, the historical-legal method – selected legal acts and communiques issued by public administration bodies during the initial period of the pandemic, the dogmatic-legal method – a systematic and linguistic interpretation of legal acts, reports, and information on websites was carried out.*
Findings: *The research results allow to draw de lege ferenda conclusions regarding the improvement of organizational functioning of Primary Health Care units. These conclusions will be helpful if new infectious diseases appear in the future. Making the rules for financing Primary Health Care units more stable will enable public authorities to better prepare for potential crisis situations.*
Practical implications: *Solutions regarding the financing of healthcare services provided by Polish Primary Health Care facilities in the initial phase of the pandemic had a fundamental impact on the evolution of financing these medical entities in the subsequent stages of combating the pandemic and after its end.*
Originality value: *The article is an original analysis of actions aimed at solving the organizational and financial problems of Primary Health Care units. The article may provide an impetus for an international discussion on the organization and financing of such health care entities.*

Keywords: *Health services financing, organization of primary health care, COVID-19 pandemic, patient reviews.*
JEL Classification: *H51, K32, P34.*
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1. Introduction

The COVID-19-causing SARS-CoV-2 virus was discovered in late 2019 near Wuhan (Hubei Province, China). It became a global threat to public health in January 2020 (Charon and Markus, 2022, pp. 331-354). The first case of the virus infection in Poland was confirmed on 4 March 2020.

The COVID-19 pandemic became the biggest challenge for health care systems around the world, including Poland, where it was a particular challenge for Primary Health Care[6] facilities due to such factors as, a rapidly growing number of the infected, a high death rate, health care staff shortages, insufficient equipment in PHC facilities, a lack of uniform procedures for treating patients with infectious diseases (Płonka-Syroka, Hudaszek, and Kurzyna, 2022).

To make matters worse, the SARS-CoV-2 pandemic overlapped with the aging of the Polish population. In Poland, every fourth person is over 65 years old. It should be emphasized that COVID-19 affected this age group in particular. The health condition of Polish seniors and the quality of the Polish health care system combined resulted in high mortality among such patients. The gradual increase in the number of elderly people translates into increased expenditure incurred on health care addressed to this group of patients.

The situation was further complicated by the fact that from March to May 2020 access to rehabilitation, which is an important element of therapy for elderly people, was also considerably limited. The Polish government decided to shut down rehabilitation and physiotherapy (outpatient, inpatient, spa, daily, private) (Migała, Płonka-Syroka, Rasławska, Skolik, Spielvogel, Piechota, Hołodnik, and Hagner-Derengowska, 2023). Physiotherapists worked only with patients in covid-dedicated wards who were admitted only if no physiotherapy would seriously deteriorate their health.

At that time, PHC doctors, despite the dissatisfaction of patients, did not refer them to physiotherapy. The provision of physiotherapy in medical entities was resumed on 4 May 2020 pursuant to a regulation of the Council of Ministers. This applied to inpatient facilities, outpatient facilities, as well as sole practitioners. PHC doctors resumed issuing referrals for physiotherapy treatments, but from that moment on, physiotherapists could work with only one patient at one time.

These changes further limited the already difficult access to rehabilitation and physiotherapy. Physiotherapists could admit significantly fewer patients daily (https://glosfizjoterapeuty.pl/2020/05/jestesmy-do-dyspozy-naszych-pacjentow/). As a result, patients had to wait even longer. Many of them were forced to give up on rehabilitation. This situation had a negative impact on how patients evaluated the

[6]*Hereinafter referred to as PHC.*

functioning of PHC: first, referrals were suspended, and when it was possible to issue them again, it turned out that the time to fulfill them was even further extended or it was impossible to fulfill them.

The outbreak of the SARS-CoV-2 virus pandemic in Poland forced PHC facilities to set new goals. They had to organizationally adapt to the changing conditions of providing health care services, which affected the fulfillment of patient needs and the expectations of medical staff (in particular doctors) regarding the work safety in PHC facilities. The changes in the functioning of PHC units meant having to modify their financing and the financing of health services provided by doctors.

The authors of the article tackle the issue of the above-mentioned organizational and financial changes in PHC facilities during the SARS-CoV-2 pandemic. The research methods employed in the paper are, the historical-legal method, the dogmatic-legal method. The article ends with final conclusions.

2. The Functioning and Financing of PHC Units

Further considerations should be preceded with defining the concept of "primary health care". This concept appears in international health protection documents, e.g. the Declaration of Alma-Ata developed during the International Conference on Primary Health Care on 6-12 September 1978, https://cdn.who.int/media/docs/default-source/documents/almaata-declaration-en.pdf?sfvrsn=7b3c2167_2, which is part of the World Health Organization's 'Health for All by 2000' report. https://apps.who.int/iris/bitstream/handle/10665/38893/9241800038.pdf;jsessionid=D40F41A0325AEBBFB45DC238318C49DD?sequence=1.

These documents define PHC as "the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process."

The importance of PHC lies in the fact that it brings people closer to the healthcare system and has a significant role in shaping the health awareness of the society (Kosycarz, Garbarczyk, 2019, pp. 129–145). The above assumptions were confirmed and developed in the 2008 World Health Report entitled Primary health care – now more than ever https://reliefweb.int/report/world/world-health-report-2008-primary-health-care-now-more-ever.

Pursuant to Article 3 of the Act of 27 October 2017 on Primary Health Care (Journal of Laws of 2019, item 357), in Poland PHC is aimed at:

- providing health care to the patient and their family;
- coordinating the health care for the patient in the health care system;

- assessing and setting the health needs and priorities of the population to be cared for, as well as implementing preventive measures;
- identifying, eliminating, or reducing physical and mental health risks and problems; providing preventive health care and health promotion tailored to the needs of different groups of society;
- educating the patient about their responsibility for their own health and promoting health awareness.

In the Polish system of financing primary health care, the dominant model is the capitation system (Bem, 2011). Capitation is a system based on payment for the so-called "potential patients" (Sobiech, 2005). This means that a certain number of patients registered with a given doctor is multiplied by a specified coefficient, and based on this, the amount owed to a health care provider for medical procedures and staff remuneration is determined.

From the payer's perspective, this solution has both advantages and disadvantages. The use of this payment method does not require extensive administrative activity, while costs are predictable and constant. The model of patient registration adopted in PHC facilities allows the doctor and the patient to build a special relationship over time, which facilitates continuous and effective care for a specific group of patients.

In the long term, it also enables the development of health prevention programs for the specific area served by a given PHC facility. It should be noted that this financing model allows patients to change their PHC doctor, which undoubtedly serves as a motivating factor for continuous improvement in the quality of health services provided.

In Poland, the capitation system is used to finance health care services provided by general practitioners, nurses, midwives, and transportation of the patient as part of PHC. The funds are transferred from the National Health Fund[7] to individual primary health care facilities providing specific services, and their amount is based on an active patient list and a capitation rate. Capitation rates are modified using correction factors that aim to adjust the rate per patient to the predicted amount of work necessary to carry out given medical procedures.

The aim of using correction factors is to reduce one of the system's drawbacks, that is the "detachment" of financial resources assigned for providing health care to patients from the actual amount of work done to do so. According to the authors, the financing provided by the National Health Fund takes into account the age factor - that patients of a certain age require special PHC services. As a result, financial

[7]*NFZ (National Health Fund) - a state organizational unit that finances health services in the universal health care system. The funds that the National Health Fund allocates to financing health care come from health insurance contributions.*

outlays incurred on such patients are higher. Therefore, the correction factor system is based on a criterion such as the patient's age.

In order to analyze the Polish law further, it is necessary to refer to the Regulation of the Minister of Health of 24 September 2013 on guaranteed Primary Health Care services, which was in force at the beginning of the SARS-CoV-2 pandemic (Journal of Laws of 2019, item 736). This executive act was issued based on the applicable provision of Article 31d of the Act of 27 August 2004 on health care services financed from public funds (Journal of Laws of 2019, item 1373). The said provision introduces the obligation of the Minister of Health to regulate the following issues:

- the level or method of financing a given service guaranteed by the National Health Fund,
- conditions for the provision of a given guaranteed service, including those related to medical personnel, equipment and devices, taking into account the need to ensure high-quality and safety of health care services to be provided.

Guaranteed services – financed by the National Health Fund – included the ones provided by doctors, nurses, and midwives, as well as patient transport services as part of PHC. Order No. 120/2018/DSOZ of the President of the National Health Fund of 29 November 2018 on the conditions for concluding and implementing contracts for the provision of PHC services – refers to the Common Procurement Vocabulary, specified in Regulation (EC) No. 2195/2002 of the European Parliament and of the Council of 5 November 2002 on the Common Procurement Vocabulary (OJ L 340 of 16 December 2002, p. 1 et seq., as amended), therefore the following names and codes were covered by contracts:

1) 85121100-4 General medical services;
2) 85141100-0 Services provided by midwives;
3) 85141200-1 Services provided by nurses;
4) 8512 Medical and related services.

For example, Section 15 (2) of the above-mentioned Order stipulated the capitation rate for PHC doctors. Depending on the age group, the rate for persons (patients) not listed in point 7 was:

1) up to 6 years of age - a coefficient of 2.7;
2) in point 7, aged 7 to 19 years - a coefficient of 1.2;
3) aged 20 to 39 years - a coefficient of 1.0;
4) aged 40 to 65 years - from 1 September 2018 - a coefficient of 1.32;
5) aged 66 to 75 years - a coefficient of 2.7;
6) over 75 years of age - a coefficient of 3.1;
7) a resident of a social welfare home or a socialization, intervention or resocialization facility - a coefficient of 3.1.

As a result of adopting such solutions, the capitation rate increased by more than 5% - from 1 December 2019 to 31 March 2020 it amounted to PLN 162.60 (EUR 35), from 1 April to 30 June 2020 - PLN 166.20 (EUR 36), from 1 July to 31 August 2020 - PLN 168.60 (EUR 37), from 1 September 2020 - PLN 171.00 (EUR 38). Such a financing model resulted in an increase of the capitation rate - in 2017 the National Health Fund transferred PLN 10.2 billion (EUR 2,139,823,844.00) to PHC units; in 2018 it was PLN 11.2 billion (EUR 2,354,000,000.00); and in 2019 it was PLN 12.4 billion (EUR 2,568,000,000.00). The plan for 2020 assumed PLN 13.9 billion (EUR 2,782,000,000.00).

Having analyzed the legal solutions in force during the first wave of the SARS-CoV-2 pandemic, the authors point out that the tasks of PHC units were consistent with those advocated at the international level. The medical advice specified in the annexes to the aforementioned regulation, such as the advice of doctors, medical laboratory diagnostics, imaging and non-imaging diagnostics, as well as services related to the supervision of patients up to 18 years of age and counseling for the prevention of circulatory system diseases, formed a wide range of services available within PHC in Poland.

All of these services were available from 8:00 a.m. to 6:00 p.m. as part of PHC, and after those hours through separately contracted nighttime and holiday care. Together, they created a system of 24-hour medical care in the patient's place of residence.

3. Primary Health Care During the Pandemic

During the implementation of measures aimed at limiting the spread of the SARS-CoV-2 pandemic, taking into account the limited capabilities of the Polish public health system, health services provided by PHC doctors, family doctors, and nurses in PHC facilities became particularly important for patients. Starting from March 2020, a significant number of documents were introduced into the Polish health care system by the National Health Fund, the Minister of Health, and the Chief Sanitary Inspector, which regulated issues related to the financing, functioning, and access of patients to PHC facilities.

In practice, these documents played a regulatory role in the sphere of PHC activity, which should be reserved for legal acts within the meaning of the provisions of the Constitution of the Republic of Poland of 2 April 1997 (Journal of Laws of 1997, No. 78, item 483; of 2001, No. 28, item 319; of 2006, No. 200, item 1471; of 2009, No. 114, item 946).

As the first wave of the SARS-CoV-2 virus pandemic gradually eased off, the President of the National Health Fund issued Order No. 103/2020/GPF on 7 July 2020, which established a team responsible for developing a plan to restore full access to health care services financed from public funds, which had been limited due to the state of epidemiological emergency or epidemic.

Therefore, on 15 September 2020 a new Order No. 140/DSOZ/2020 of the President of the National Health Fund of 10 September 2020 on the principles of reporting and settling healthcare services related to the prevention, counteracting, and combating COVID-19 entered into force. It was concordant with the then strategy for combating the pandemic of the SARS-CoV-2 virus developed by the Ministry of Health.

The newly introduced solutions concerned, among others, the pricing of medical advice and tele-advice provided by doctors to patients with a positive SARS-CoV-2 test, as well as different levels of fees for readiness to perform SARS-CoV-2 virus tests.

The subsequent waves of the pandemic required developing an organizational standard for PHC units. Thus, the Minister of Health issued Order of 8 October 2020 on the organizational standard of health care for patients suspected of being infected or infected with the SARS-CoV-2 virus. The Order regulated model medical procedures for treating patients suspected of being infected by dividing tasks in this regard between individual units of the health care system. In particular, the tasks of the PHC doctor were stipulated.

The changes in the organizational model of PHC required changes in the National Health Fund financial plan. Order of the President of the National Health Fund No. 130/2020/DEF of 25 August 2020 on changing the financial plan of the National Health Fund for 2020, https://www.nfz.gov.pl/zarzadzenia-prezesa/zarzadzenia-prezesa-nfz/zarzadzenie-nr-1302020def,7223.htmlok. The changes are presented in Table 1 below.

Table 1. *Total costs of the National Health Fund*

Item	**Specification**	**Plan for 2020**	**Amended plan**	**Difference**
B2.1	Primary Health Care	PLN 12,694,082 (EUR 2,715,939.95)	PLN 13,559,423 (EUR 2,901,241.94)	PLN 865,341 (EUR 185,305,99)

Source: *Annex to Order No. 130/2020/DEF of the President of the National Health Fund of 25 August 2020.*

The President of the National Health Fund amended the financial plan of the National Health Fund for 2020, in accordance with the rules laid down in Article 129 (3) of the Act of 27 August 2004 on health care services financed from public funds.

The changes were made due to an increase in the anticipated costs of health care services to be incurred by voivodeship branches of the National Health Fund in 2020, which amounted to PLN 1,093,166 (EUR 233,906.92). Those additional financial resources came from the National Health Fund's reserve fund and were used for:

1. financing, in the third quarter of 2020, health care services provided by nurses and midwives on the basis of the provisions of the Regulation of the Minister of Health of 8 September 2015 on general conditions of contracts for the provision of health care services (Journal of Laws of 2020, item 320, as amended),
2. financing health care services provided by PHC in 2020,
3. financing of non-financed (justified) over-the-limit services for 2019.

The distribution of funds for health care services between individual voivodeship branches of the National Health Fund was made by the Central Office of the National Health Fund, taking into account the needs reported by individual branches.

The financial changes also included the capitation rate for PHC units, as shown in Table 2 below. Exemplary capitation rates for PHC doctors have been analyzed.

Table 2. *Exemplary capitation rates and costs of advice in PHC*

No.	**Type of service**	**Unit of account**	**From 1 December 2019**
1.	Services of PHC doctors	Capitation rate	PLN 159.00 (EUR 34.02)
2.	Services of PHC doctors in PHC facilities that have an accreditation certificate	Capitation rate	PLN 160.56 (EUR 34.36)
3.	Services of PHC doctors – in the case of consultations during which e-prescriptions were issued for 5% to 30% of the total number of consultations during which prescriptions were issued	Capitation rate	PLN 159.00 (EUR 34.02)
4.	Services of PHC doctors – in the case of consultations during which e-prescriptions were issued for 30% to 50% of the total number of consultations during which prescriptions were issued	Capitation rate	PLN 160.56 (EUR 34.36)
5.	Services of PHC doctors – in the case of consultations during which e-prescriptions were issued for 50% to 80% of the total number of consultations during which prescriptions were issued	Capitation rate	PLN 162.12 (EUR 34.69)
6.	Services of PHC doctors – in the case of consultations during which e-prescriptions were issued for more than 80% of the total number of consultations during which prescriptions were issued	Capitation rate	PLN 163.80 (EUR 35.05)

7.	Services provided by PHC doctors in the case of urgent illnesses to insured persons outside a given voivodeship branch of the National Health Fund and from that branch, but outside their own or neighboring gmina, and outside of the list of declared patients.	Consultation	PLN 49.00 (EUR 10.48)
8.	Services provided by PHC doctors as part of qualification for "long-distance" transport in PHC	Consultation	PLN 20.00 (EUR 4.28)
9.	Services provided by PHC doctors to female patients qualified for cervical cancer prevention	Monthly lump sum	PLN 300.00 (EUR 64.19)

Source: *Annex No. 1 to Order No. 115/2019/DSOZ of the President of the National Health Fund of 30 August 2019.; Annex No. 1 to Order No. 120/2018/DSOZ of the President of the National Health Fund of 29 November 2018.*

The changes in financing PHC facilities were aimed at increasing the accessibility of these facilities (which did not prove effective in the initial period of the SARS-CoV-2 pandemic) and improving the quality of medical services provided by health care professionals (doctors, nurses). An important rationale behind the changes was the willingness to reduce bureaucracy in PHC (a large number of procedures, administrative activities, certificates, decisions, referrals). Increasing the amount of the capitation rate and fees for providing consultation was aimed at:

1. increasing the number of health services provided in rural areas with low population density and a shortage of PHC doctors, doctors who did not start specialist training within the residency program after passing the Medical Final Exam,
2. improving the funding of PHC facilities that obtained quality certificates from the Center for Monitoring Quality in Health Care after completing the accreditation process,
3. improving the quality of care provided to patients with chronic cardiovascular disease, diabetes, and thyroid disease,
4. encouraging doctors to issue more e-prescriptions,
5. improving the quality of preventive health care services for cardiovascular diseases and cervical cancer,
6. increasing the number of tele-consultations.

Order No. 177/2019/DSOZ of the President of the National Health Fund of 30 December 2019 and Order No. 95/2020/DSOZ of 1 July 2020 on the conditions for concluding and implementing contracts for the provision of PHC services contained Annex No. 1 which stipulated the value of capitation rates, consultations, and lump sums outside the basic capitation rate.

For a PHC doctor, the annual capitation rate was, from October 2020, PLN 171.00 (EUR 36.59), whereas the monthly capitation rate was PLN 14.25 (EUR 3.05) per patient and was adjusted by coefficients appropriate to the patient's age group or place of residence.

According to the authors, the following risks should be taken into account when developing a model for financing the functioning of PHC:

1. possible abuses aimed at achieving greater benefits by PHC facilities,
2. the use of low-cost therapies inadequate for the patient's condition, avoiding ordering tests under the capitation rate,
3. improper treatment of the patient (lack of necessary tests, limiting the cost of treatment at the expense of the quality of therapy)
4. pricing of services not adjusted to the needs of individual PHC facilities, which stems from different costs of therapy at various health care providers, costs that are affected by the characteristics of a given facility, e.g. additional costs of maintaining a historical building, significant diversity of complex disease units of individual patients, management issues (a lack of emphasis on the quality of medical services),
5. problems with ensuring the proper allocation of patients between individual PHC facilities,
6. limiting the general accessibility to health services.

4. Conclusions

The authors critically assessed legal acts and recommendations that had an impact on the working conditions of medical personnel in PHC facilities. Their critical assessment focused on imprecise legislation, lack of coherence in the introduced legal solutions, differentiated implementation of solutions and recommendations by individual PHC facilities.

The analysis of selected measures implemented to ensure the stability of PHC during the pandemic allows the authors to draw the conclusion that the emergence of threats to public health safety revealed the necessity to introduce organizational and financial changes. The changes in the legislation and good medical, organizational, and financial practices resulted in modifications of the Polish health care system that may be long-lasting.

However, it should be emphasized that one of significant challenges in terms of the future responses of the health care system, including PHC facilities, to public health threats is to maintain coherence of organizational and financial changes affecting the fluidity and effectiveness of actions taken by PHC personnel, and therefore also their working conditions The starting point for designing such changes should be an analysis of the solutions which have been introduced since the beginning of the pandemic in Poland.

These may include new organizational requirements regarding premises, organization of work and workplaces, flow of information or patient supply methods, and financial changes such as mobilization of additional financial

resources in various forms. The article presents a number of research questions that are worth considering when identifying problems and setting priorities in the future, because the changes that have occurred and the conclusions drawn from their analysis may contribute to introducing permanent modifications to the functioning of PHC in Poland and facilitate its adaptation to health risk situations.

The first wave of the COVID-19 pandemic revealed a threat to public health security, which forced the authorities to introduce organizational and financial changes in the functioning of Polish PHC. The organizational changes concerned e.g. conditions in PHC premises, organization of work and workplaces, flow of information, or patient supply methods. The financial changes concerned e.g. arranging additional financial resources in various forms.

In concluding the considerations, the authors believe that both the legislator and the persons in charge of the organization of the PHC system should be aware of patients' expectations, of what they can and cannot accept, and what increases or decreases their sense of security. The possible consequences of patients losing their sense of health security due to hindered, impossible, or unsatisfactory access to PHC services should be borne in mind.

The lack of coherent information and legislative policies, as well as the inadequate organization of PHC in the first phase of the epidemic had a real impact on its further course in our country. It is worth noting that people most dissatisfied with the changes in the functioning of PHC live in the largest cities. All of this contributed to the popularization of negationist (the epidemic does not exist) and anti-vaccination attitudes. Left to themselves, patients sought "medical knowledge" on how to solve their health problems on the Internet.

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