„Ante Portas – Security Studies”
2022, No 2(19)
DOI: 10.33674/1020231

Leszek MARKUSZEWSKI[1]
Poland
Emilia KLIMASZEWSKA[2]
Poland
Zdzisław JEZIERSKI[3]
Poland

THE IMPACT OF THE COVID-19 PANDEMIC ON CHANGES IN THE POLISH HEALTHCARE SYSTEM

Abstract: *The rapidly spreading SARS-CoV-2 virus in Poland has affected every aspect of the country and society and has become a challenge for the healthcare system. Here we presented changes in the healthcare system induced by the pandemic pressure. We also tried to identify recommendations for further proceedings in the Polish healthcare system after the pandemic to provide it with a more optimal organizational model and greater efficiency of medical services for patients. The need for these modifications has long been well-known to experts, decision-makers, and ordinary citizens who commonly use health services. Although some of the system's shortcomings were obvious, there were several doubts about the priority areas for change. At the same time, the right conditions were lacking, including awareness of the importance of health care among public authorities and the public. Moreover, the pandemic and the lockdown caused a global economic and social disruption, triggering the biggest recession since the Great Depression. These allowed us to see the critical problems of Polish healthcare more clearly than before, which increased a social and political consensus for changes in our country's health policy. The main changes include systematically increasing financial and human resources for health care, shifting patient treatment from inpatient to*

[1] Leszek Markuszewski, PhD, DSc, Kazimierz Pulaski University of Technology and Humanities (Poland). Email: l.markuszewski@uthrad.pl
[2] Emilia Klimaszewska, PhD, DSc, Kazimierz Pulaski University of Technology and Humanities, (Poland). Email: e.klimaszewska@uthrad.pl
[3] Zdzisław Jezierski, PhD, DSc, Kazimierz Pulaski University of Technology and Humanities, (Poland). Email: z.jezierski@uthrad.pl

outpatient treatment, implementing e-health solutions to the fullest extent possible, and implementing value-based healthcare. Essential in the long and challenging process of optimizing healthcare is strengthening awareness of the importance of healthcare for society and the economy. Therefore, it is desirable to consolidate thinking about health as a factor directly related to the quality of social life and the economy. At the same time, looking at the possible return on investment in our health security is necessary, not just the cost perspective.

***Keywords**: pandemic COVID-19, Polish healthcare, financial and organizational problems in healthcare, health security, quality of social life*

Situation in the Polish healthcare system before the COVID-19 pandemic

For many years, the overall level of health care in Poland has been the lowest in Europe. It is generally accepted that the most significant effect on healthcare in countries is the amount of public spending generated from the gross domestic product, the so-called GDP. In Poland, for many decades, state authorities neglected the issue of shaping an effective healthcare system, as they allocated just over 4% of GDP to healthcare in their annual budget spending plans. As recently as 2019, only 4.3% of GDP was spent on health care from public funds. The average in the European Union is almost 8% of GDP, and some countries like Germany and Sweden spend more than 9% of GDP[4]. In contrast, the average GPD spent on healthcare in countries belonging to the Organization for Economic Cooperation and Development (OECD), which brings together 38 countries, is 6.53%. Poland ranks third from the bottom of this group[5].

In 2019, public spending on healthcare in Poland, relative to GDP, was lower than in all of Poland's neighbouring countries. An analysis of current public health expenditures per capita, considering the purchasing power of money presented in U.S. dollars, also shows that Poland's health expenses significantly differ from the European average. In Poland, it amounted to $1568.1. Meanwhile, the average for Europeans is $3270.4, with a median of $3536.5. The distance between Poland and the highly developed OECD countries is significantly increasing instead of shrinking. At the same time, Poland has the lowest index, of all neighbouring OECD countries. The situation is even worse if we consider spending per capita in nominal terms. The

[4] GUS, *Wydatki na ochronę zdrowia w latach 2018-2020*, <wydatki_na_ochrone_zdrowia_w_latach_2018-2020.pdf> (10.09.2022).
[5] B. Skubel, E. Kocemba, R. Rudka, *Nakłady na ochronę zdrowia w Polsce na tle innych państw OECD*, Warsaw 2021, pp. 3-4.

indicator is presented in Polish zlotys and amounts to PLN 2593.4 for Poland. The average for Europe is PLN 11210.9, and the median is PLN 13004[6].

The low level of funding for healthcare in Poland causes many negative phenomena and shortcomings. These include deficiencies in the material base and the health care personnel. Most medical facilities are equipped with outdated equipment and treatment tools, especially in medium and small cities, sometimes also lacking sanitary materials and medicines. Moreover, the staff receives low salaries, discouraging people from working in the medical service. As a result, there are severe staff shortages in all groups of medical personnel[7]. The shortage of staff generates problems with access to healthcare services for patients. Compared to other OECD countries, Poland has one of the worst results regarding the number of medical professionals concerning the number of inhabitants. In 2017, Poland had 24 physicians per 10,000 inhabitants compared to the average of 35 in OECD countries[8].

The problem is even more visible if we look at speciality medical care. It depends not only on the number of medical staff but also on the region's distribution of speciality medical facilities. According to a report by the Supreme Chamber of Control, there are provinces whose residents are deprived of the opportunity to receive the services of certain specialists near their place of residence. It applies to gynaecology and obstetrics, among others. Lack of access to specialists means unavailability of services to patients[9].

The inaccessibility is measured primarily through the waiting times for an appointment. The situation in this regard is worsening – at the beginning of 2019, the average waiting time for a health service (medical visit, diagnostics) was about 16 weeks or 3.8 months. Since 2012, the waiting time to receive service has been increasing, and on average approached three months. The increase in waiting time concerned services in fourteen medical specialities, of which in some amounted to more than two months. This was noted in vascular surgery (2.8), pediatric cardiology (2.3), palliative medicine (2.3), nephrology (2.2), neurosurgery (2.1) and orthopaedics and traumatology of the musculoskeletal system (2.9). Waiting times for services in some pre-2019

[6] *Ibidem*, pp. 9-10.

[7] M. Polak, *Szpitale powiatowe tracą płynność finansową. Wiceminister Miłkowski: strata łączna zmniejszyła się*, <https://www.rynekzdrowia.pl/Finanse-i-zarzadzanie/Szpitale-powiatowe-traca-plynnosc-finansowa-Wiceminister-Milkowski-strata-laczna-zmniejszyla-sie,239235,1.html> (26.11.2022); S. Cofta et. al., *Alert zdrowotny 1 – Szpitale w czasie pandemii i po jej zakończeniu*, April 2020, <https://www.researchgate.net/publication/357151397_Alert_zdrowotny_1-_Szpitale_w_czasie_pandemii_i_po_jej_zakonczeniu> (26.11.2022).

[8] B. Skubel, E. Kocemba, R. Rudka, *op. cit.*, p. 13.

[9] NIK, *Raport: System ochrony zdrowia w Polsce – stan obecny i pożądane kierunki zmian*, Warsaw 2018, pp. 67-68.

specialities did not change significantly, but from the patient's perspective, effective treatment was impossible due to long queues. It applies to endocrinology, where one waits almost a year for a medical appointment or diagnosis, dentistry (8.2 months) or rheumatology (7 months). The waiting time was less than a month only in the case of three specialities – neonatology, lung disease and radiation oncology. Problems with waiting times for services affect public health care and private providers, although the average waiting time in the private sector was lower. The existence of queues in the case of commercially paid medical services may indicate a systemic shortage of medical staff in general and not just problems in the organization of work[10].

The shortage of staff worsens their working conditions. Polish healthcare workers are generally employed in at least two different workplaces, which complicates schedule management and increases stress levels. In addition, medical cadres in Poland are ageing: 24% of doctors and dentists actively practising the profession are of retirement age[11]. A similar problem applies to nurses, whose average age, according to the Supreme Chamber of Nurses and Midwives at the end of 2019, was almost 53. The retirement age has already exceeded 31% of nurses and 27% of midwives[12]. There is also a problem with labour activation in Poland, with as many as 21% of registered nurses lacking employment status. Worrying staffing trends also apply to medical rescuers. For several years, the Polish Central Statistical Office has reported a decline in specialized medical teams and employed medical rescuers. A common form of employment among medical rescuers is sole proprietorship, which promotes exceeding health and safety standards and working hours set by the Labour Law. The transformation of medical-vocational education into higher education should raise the symbolic and actual status of lower medical staff as their competence increases. Meanwhile, they face a lack of recognition and even respect from doctors, which further contributes to their discouragement. In general, in Poland, nurses, midwives and medical rescuers earn very little and are overworked, which significantly reduces the number to enter the profession.

The labour market situation in Polish healthcare is also not helped by the international context. The European Union provides freedom of movement and employment in member countries, at the same time all the associated economies will face or are already facing an ageing population, which increases the demand for medical and care services. Moreover, medical competence is universal regardless of cultural context, encouraging a 'brain drain'. The survey carried out on young doctors undergoing speciality training on a full-time basis

[10] *Barometr WHC. Raport nt. zmian w dostępności do gwarantowanych świadczeń zdrowotnych w Polsce nr 19/15/02/2019. Stan na grudzień/styczeń 2019*, Warsaw 2019, pp. 16-23.
[11] *Ibidem*, pp. 34-35.
[12] *Ibidem*, p. 41.

supported by the state budget showed that 84% of psychiatry residents admitted to emigrating, mainly due to unfavourable working conditions[13]. However, as the Supreme Chamber of Control's latest report on the health service indicates, there is no complex data on the emigration of medical personnel from Poland due to the lack of a developed method to estimate its scale reliably[14]. Nevertheless, it is known that the main obstacle before going abroad for work is the lack of language skills – this is easy and quick for healthcare workers to make up for, however.

In comparison, northern European countries (Germany, Switzerland, Scandinavia) may offer doctors, nurses and medical rescuers attractive working conditions (e.g., housing, training, high salaries, respect for labour laws), and at the same time, their healthcare needs due to the ageing population will grow. It is especially attractive for young Polish medical workers, who in Poland receive low wages and are particularly overworked. It was publicized by young doctors who took strike action in 2015 as part of the National Residents' Agreement – at the time, they called for an increase in wages and a reduction in weekly working hours to 48[15]. In contrast, in 2019, they took organized industrial action to terminate contracts containing so-called 'opt-out clauses', allowing a supervisor to force an employee to work more than 48 hours a week. Employers often do this because, with overall staffing shortages, the only way to ensure continuity of health care services at their medical facilities is to extend the working hours of medical staff. Nurses also publicly manifested their discontent in 2016 at the Children's Health Center in Warsaw. They published the famous 'nurses' strips' on social media, illustrating abnormally low pay levels compared to the number of hours worked[16]. Laboratory diagnosticians and physiotherapists also undertook smaller demonstrations in 2018 and 2019 in protest against their omission from the ministerial salary increase program[17]. These demonstrations should be considered a testament to the dire working conditions in Polish healthcare. Unfortunately, attempts to

[13] E. Kurzyńska, *"Drenaż mózgów" w psychiatrii: wyższe zarobki to niejedyny powód szukania pracy za granicą*, <https://pulsmedycyny.pl/drenaz-mozgow-w-psychiatrii-wyzsze-zarobki-to-niejedyny-powod-szukania-pracy-za-granica-998074> (19.09.2022).

[14] NIK, *op.cit.*, s. 89.

[15] *Porozumienie Rezydentów Ogólnopolskiego Związku Zawodowego Lekarzy*, <http://www.rezydenci.org.pl/> (19.09.2022).

[16] *Ile naprawdę zarabiają pielęgniarki?*, <https://www.newsweek.pl/polska/ile-zarabiaja-pielegniarki-pensje-pielegniarek-strajk-czd/khff5vr> (19.09.2022).

[17] *Diagności laboratoryjni protestują, podwyżki nie dla nich*, <https://www.rynekzdrowia.pl/Finanse-i-zarzadzanie/Diagnosci-laboratoryjni-protestuja-podwyzki-nie-dla-nich,185837,1.html> (20.09.2022); I. Bączek, *Dlaczego fizjoterapeuci przyłączają się do protestu medyków? Pytamy o to prezesa KIF*, <https://www.rynekzdrowia.pl/Polityka-zdrowotna/Dlaczego-fizjoterapeuci-przylaczaja-sie-do-protestu-medykow-Pytamy-o-to-prezesa-KIF,223804,14.html> (20.09.2022).

solve these problems have never been effectively and comprehensively implemented, as reform would require many costly sacrifices.

The low level of healthcare in Poland is also noticeable to patients. The predominant opinion is that it does not provide the proper quality of medical services in cases of health loss, nor the kind of life expectancy found in other European countries. The Center for Public Opinion Research (CBOS) in 2018 surveyed the public's opinion on the functioning of health care in Poland. Only a third of respondents positively assessed the healthcare system. Of the 66% of respondents who spoke negatively, 27% said that health care is terrible. At the same time, in the part of the survey dealing with services and advice received through universal health insurance, 70% of respondents positively assessed the competence of doctors, their availability in primary health care (68%) and their commitment to their work (65%). On the other hand, the healthcare system received the lowest marks for the availability of appointments with specialists (83% of negative votes) and the insufficient number of medical staff in hospitals (70%). Half of the respondents believed that the problem with the quality and availability of services is caused by too little public funding for the healthcare system and the poor disposition of available funds[18].

These opinions prove that before 2020 everything 'somehow' worked – in some areas a little more efficiently, in others worse. It should be added that public criticism is unlikely to cover the clinical side of our health system[19]. There are hospitals in Poland that employ outstanding specialists in various fields of medicine, whose work and achievements are very highly rated not only in our country but also abroad, as evidenced by the ranking of the 48 best Polish hospitals presented on the pages of the American weekly *Newsweek*[20].

Changes in Polish healthcare during the COVID-19 pandemic

Health systems worldwide were not designed and prepared to deal with the SARS-CoV-2 pandemic, which erupted violently and proved to be an unpredictable, large-scale health challenge that required urgent mobilization of resources and affected the entire population. Poland was also not prepared for it. Practical measures to prepare for the pandemic were initiated in our country in January 2020. Special procedures were introduced for passengers arriving from China, and laboratory testing of people suspected of being infected with

[18] CBOS, *Opinie na temat funkcjonowania opieki zdrowotnej. Komunikat z badań nr 89*, Warsaw 2018.
[19] *Reforma systemowa w służbie zdrowia – stan prac i nowe zadania*, <https://archiwum.mz.gov.pl/aktualnosci/reforma-systemowa-w-sluzbie-zdrowia-stan-prac-i-nowe-zadania/> (20.09.2022).
[20] *World's Best Hospitals 2021*, <https://www.newsweek.com/best-hospitals-2021/poland> (20.11.2022).

the SARS-COV-2 virus began. The Chief Sanitary Inspectorate warned against travelling to countries with numerous disease centres, such as Italy and South Korea. Visits to hospitals have been forbidden. Medicines that could help fight coronavirus had to stay in Poland. In early March 2020, Poland joined the European Union's mechanism for joint crisis tenders to purchase protective measures, medicines, and vaccines[21].

The first official case of SARS-CoV-2 in Poland was reported on March 4, 2020, in Zielona Gora[22]. At that time, thirteen laboratory facilities were in the country, where samples were tested for SARS-CoV-2. From March 14 to 20, 2020, an epidemic emergency was in effect in the country, and from March 20, 2020, an epidemic state was introduced in Poland. Subsequent measures taken to combat the pandemic included:

a. a cancellation of mass events of more than 1,000 people in enclosed spaces;
b. a transition of universities to remote teaching mode;
c. closure of schools, kindergartens, nurseries (remote teaching has been introduced in schools);
d. temporary closure of road, rail and air borders, with the introduction of mandatory quarantine for land border crossers;
e. implementation of fines and imprisonment for violations of quarantine rules;
f. introduction of a temporary ban on movement (with exceptions);
g. temporary ban on gatherings of more than two people;
h. restrictions on the movement of public transportation were introduced;
i. temporary closure of boulevards, beaches, parks and playgrounds;
j. order to wear protective masks in enclosed public spaces.

In the last days of April 2020, the Public Opinion Research Center surveyed public attitudes toward restrictions and epidemics. It was conducted among the online community. Nearly 60% of respondents felt that the SARS-CoV-2 pandemic was something unprecedented. The remainder regarded SARS-CoV-2 as just another seasonal disease and did not consider it unusual. Older people, residents of major cities and those with higher education were convinced of the uniqueness of the epidemic. Most respondents (78%) observed restrictions on interpersonal contact and leaving the house, which could indicate their fear of infection. Many surveyed communities approved of the high penalties for breaking the new rules. However, most respondents were

[21] T. Bielecki, *Czy Unia Europejska robi za mało w sprawie koronawirusa?*, <https://wyborcza.pl/7,75399,25786156,czy-unia-europejska-robi-za-malo-w-sprawie-koronawirusa.html> (1.12.2022).

[22] *Pierwszy przypadek koronawirusa w Polsce*, <https://www.gov.pl/web/zdrowie/pierwszy-przypadek-koronawirusa-w-polsce> (1.12.2022).

wary of the rules, believing them to be too vague, which could lead to abuse. In summary, in the initial stages of the pandemic, the public accepted the government's new recommendations[23].

The speed of the spread of SARS-CoV-2 forced the implementation of often chaotic or temporary measures. It caused a drastic change in the lifestyles of many social groups. Due to the particularly adverse impact of the virus on the elderly, seniors have had their life activities severely restricted. Long-term isolation in homes resulted in the deterioration of the health of the elderly, for whom movement and social gatherings are vital to building their health and well-being. The existing procedures and standards for nursing homes were not adapted to the actual function of these institutions. Many outbreaks of epidemics in nursing homes in Poland were noted, which staff could not handle. During the pandemic, disabled people who were deprived of the opportunity to continue occupational therapies also increased. It negatively affected their health and increased the risk of mental crises in families without institutionalized support. The issue of oncology patients was similar. Those who had already been diagnosed had continued treatment. However, patients with cancer suspicion had a more complex situation because the epidemic in Poland has significantly increased the time for diagnostic procedures[24]

The SARS-CoV-2 pandemic has brought chaos to every aspect of state operations. It has forced a reorganization of logistics, transportation, economic relations, and international relations. However, it has triggered the need for numerous organizational changes in the health system, a more outstanding human capacity commitment, securing the necessary personal protective equipment and expanding the capacity of hospitals to increase the number of beds for patients infected with the SARS-CoV-2 virus.

The so-called Coronavirus Special Act (in Polish: *specustawa*) most clearly demonstrates this, or the Law of March 2, 2020, and unanimously adopted by Parliament on March 29, on special solutions related to the prevention, prevention and control of COVID-19, other infectious diseases and emergencies caused by them (OJ 2020, item 1423, as amended). It establishes the principles of preventing and controlling SARS-CoV-2 virus infection, the functions of public administration and citizens against the disease, and the rules for covering the costs of implementing the above activities. In addition, through this act, fourteen other laws were amended, including those on the professions of physician and dentist, the State Sanitary Inspectorate, on the profession of

[23] CBOS, *Opinie o epidemii koronawirusa i związanych z nią restrykcjach. Komunikat z badań nr 58*, Warsaw 2020.

[24] *„Ochrona zdrowia w czasie epidemii" – rekomendacje Rady Ekspertów przy Rzeczniku Praw Pacjenta*, <https://www.gov.pl/web/rpp/ochrona-zdrowia-w-czasie-epidemii-rekomendacje-rady-ekspertow-przy-rzeczniku-praw-pacjenta> (5.12.2022).

physiotherapist, the professions of nurse and midwife, public blood service, the Medical Research Agency, the Pharmaceutical Law, the State Emergency Medical Service, and on the prevention and control of infections and infectious diseases in humans. One of the changes introduced by *specustawa* was to simplify the return to active practice for midwives and nurses with a minimum 5-year career break. It was a response to understaffing, which was additionally depleted by quarantine. The act also introduced changes and additional possibilities in the organization of the work of medical entities:

a. simplification of medical record keeping;
b. the possibility for medical professionals to perform overtime, and additional work in medical entities, including the use of the so-called 'opt-out' clause;
c. employment of a quarantined medical worker in the form of remote work, while not risking the loss of additional care benefits;
d. obtaining sickness benefits at 100% of the salary base by medical employees placed in quarantine due to contact with infected persons as part of their professional duties [25].

The changes in the organization of medical facilities' work were aimed at optimal use of limited human resources. After the legalization of the law, it became possible to extend working hours (and the corresponding salary) not only for employees of medical entities with higher education but also for those with other levels of qualification, as well as for employees of such institutions as regional blood donation centres and the State Sanitary Inspectorate. Under the new law, medical professional examinations and specialization recruitment have been moved. It became possible to refer a doctor-in-training to perform tasks in combating epidemics while counting this time as part of the internship and speciality training period. Pharmacists gained the right to issue the so-called pharmaceutical prescription in the event of a threat to a patient's health and life.

The law also allowed the involvement of soldiers of the Territorial Defense Forces in the fight against the pandemic, who, among other things, were responsible for the initial selection of patients and taking swabs at collection points. It also accelerated and streamlined investments in the health sector by exempting the procedure for giving an opinion on the advisability of investments. Finally, the act introduced an additional ability – home isolation. It is applied to people with a mild course of illness without the need for hospitalization. As a result, it caused an increase in the available base of hospital beds for people with acute SARS-CoV-2. The rules on home isolation and quarantine were based on the ECDC's guidelines for risk assessment of

[25] *Walka z koronawirusem. Sejm uchwalił zmiany w 14 „zdrowotnych" ustawach*, <https://serwisy.gazetaprawna.pl/zdrowie/artykuly> (20.12.2022).

infection control in Europe and EU countries[26]. The CBOS survey from July 2020 illustrated the legitimacy and effectiveness of the changes introduced by the *specustawa* law.

The spread of the SARS-CoV-2 infections significantly affected the use of healthcare services in Poland. In the first quarter of the epidemic (March-July 2020), more than 40% of respondents experienced inconveniences with access to medical care. It was manifested as cancellations and postponements of appointments, treatments, examinations, hospital admissions, problems with obtaining sick leave and prescriptions, and general difficulties in accessing medical services[27]. Comparing data from 2018 and July 2020, CBOS states there was a clear increase in patients who didn't treat or have health checks (from 12% to 30%), and a decrease in patients who use medical services in a 'mixed' form (public and non-public, from 48% to 28%)"[28]. There has been a general decline in the use of primary care doctors, specialists, diagnostic and laboratory tests and dental treatment and a slight increase in people getting examined and treated only by supplementary insurance or with money from the household budget. The above data may respond to the difficulty of accessing medical services under public health insurance.

The SARS-CoV-2 pandemic has contributed significantly to the dissemination of telemedicine worldwide. Although such services have been available in Poland for many years, they were not popular due to telemedicine being treated as a curiosity and referred to with reserve. During the first months of the epidemic, Poles primarily consulted doctors by phone or online. This was due to the so-called e-prescriptions and e-referrals, which are still growing in popularity[29]. The need for telemedicine services was also recognized by the European Commission, which subsidized the e-health platform with PLN 120 million. It allowed the update and expansion of the IT system with new functionalities. One of them is an online project for telemedicine which can be found on the patient.gov.pl website. It was designed for people who suspect infection of SARS-CoV-2 and need a medical consultation. The system allows registered patients to connect with doctors or other medical professionals (both by online form and video consultation). After the consultation, the patient could receive notification via text message or email about the next steps of treatment. At the same time, anonymized data can be reported for the health care system. Furthermore, the system can generate analytical reports to track data on patient service times, waiting times and waiting queues. For analytical purposes, the

[26] *Ibidem*.
[27] CBOS, *Opieka medyczna w czasie pandemii*. *Komunikat z badań nr 88*, Warsaw 2020.
[28] CBOS, *Korzystanie ze świadczeń i ubezpieczeń zdrowotnych*. *Komunikat z badań nr 98*, Warsaw 2020.
[29] CBOS, *Opieka medyczna w czasie pandemii*, *op. cit.*, pp. 4-5.

system also generates data on the distribution of requests with an assignment of their location to a map, which in the future can be helpful in the early detection of subsequent outbreaks, among other things[30].

Restricted access to health services has been particularly felt by people undergoing oncological treatment, patients after strokes and heart attacks, and patients with diabetes and other chronic diseases. Since the beginning of the pandemic, the Patient Ombudsman has received many complaints from the above patient groups. These included the inability to consult about the condition, renew prescriptions, and receive conflicting recommendations. It was associated with the lack of clear recommendations for patients who have not contracted SARS-CoV-2 or are suspected of coronavirus infection but need urgent cardiac or oncological care[31]. A difficult situation was also faced by patients with the suspected oncological disease, in whom the timing of diagnosis is a critical factor in the entire treatment process.

The inconvenience of treating patients with chronic diseases was that the healthcare system focused primarily on countering the spread of the pandemic and providing care for patients infected with the SARS-COV-2 virus. The essential resources of medical personnel and the material infrastructure of the health care system were incorporated into these activities.

Coronavirus vaccines played a breakthrough role in the fight against the pandemic. European Union institutions have also been involved in their development and marketing in Poland. At the end of December 2020, pharmaceutical companies completed the first stages of clinical trials of SARS-CoV-2 vaccines and obtained conditional marketing approval. On 21 December 2020, the European Commission agreed to allow BioNTech and Pfizer to market the vaccine, Moderna received such approval on 6 January 2021, AstraZeneca on 29 January, and a company belonging to the Johnson & Johnson group on 11 March 2021. To date, the European Commission has secured up to 4.4 billion doses of vaccines against SARS-CoV-2[32].

Each European country has prepared its vaccination strategy. On 27 December 2020, Poland launched a national immunization program against SARS-CoV-2. Healthcare workers were given priority for vaccination (the so-

[30] *Telemedycyna wychodzi na prowadzenie*, <https://politykazdrowotna.com/artykul/telemedycyna-wychodzi-na-prowadzenie/830499> (12.12.2022).

[31] M. Zieleniewska, *"Chorzy na nowotwory i serce byli w pandemii pozostawieni sami sobie. Innym wydawano sprzeczne zalecenia". Kto jest temu winny?*, <https://www.medonet.pl/koronawirus/koronawirus-w-polsce,chorzy-na-nowotwory-i-serce-byli-w-pandemii-pozostawieni-sami-sobie--innym-wydawano-sprzeczne-zalecenia--kto-jest-temu-winny-,artykul,01684409.html?utm_source=www.medonet.pl_viasg_medonet&utm_medium=referal&utm_campaign=leo_automatic&srcc=undefined> (20.12.2022)

[32] *Securing access to vaccines*, <https://commission.europa.eu/strategy-and-policy/coronavirus-response/public-health/eu-vaccines-strategy_pl> (20.12.2022).

called ‘0’ group). Cancer patients who received chemotherapy or radiation therapy after 31 December 2019, were also included in the priority group[33].

In the second half of January 2021, Poland's universal vaccination against SARS-CoV-2 began. The program first covered people over 80 years of age. In the following months, subsequent age groups were allowed to receive the vaccine, depending on the vaccination levels of groups previously eligible to join the program and the availability of formulations. By the end of 2021, SARS-CoV-2. Nearly 20 million adults have been vaccinated. However, vaccination rates, especially among the elderly at the highest risk of dying from SARS-CoV-2, remained lower than in many EU countries.

The Polish Minister of Health, on 16 May 2022, officially declared the end of the epidemic state, introduced on March 20, 2020, replacing it with an epidemic emergency. Currently, the epidemic has begun to move into an endemic phase, where infection levels are low enough that people are beginning to learn how to live with the virus, protecting themselves through vaccination, antiviral drugs, testing, and, above all, following basic hygiene rules[34].

Recommendations for changes in Polish health care after the epidemic

The SARS-CoV-2 pandemic showed the healthcare problems in Poland and simultaneously provided an opportunity to discuss the necessary further reforms. The current situation has proven that the state of the population's health should be a priority in the government's activities, as it is a fundamental condition for sustainable socioeconomic development and the stable functioning of the state. Furthermore, weaknesses in the system showed the need for specific measures to optimize its functioning. Here, we attempt to identify the fundamental directions of change that can support medical personnel rebuilding a robust, well-organized, efficient, and crisis-proof healthcare system.

1. A systematic annual increase in funding for the health sector. For many years, experts have underlined that underfunding is the biggest problem facing the Polish healthcare sector. Currently, the level of public financing of the healthcare sector in Poland is one of the lowest in Europe. An increase in healthcare financing should occur in the coming years. Many Polish parliamentarians point to the need to increase public spending on health care to 6% of GDP in 2023. It would be an

[33] *Szczepionki przeciwko COVID-19: kto należy do grupy „zero”?*, <https://www.infodent24.pl/lexdentpost/szczepionki-przeciwko-covid-19-kto-nalezy-do-grupy-zero,117044.html> (20.12.2022).

[34] *Koniec pandemii? Szef WHO: widzimy szansę*, <https://www.medonet.pl/ koronawirus, koniec-pandemii--szef-who--widzimy-szanse,artykul,53174732.html> (21.12.2022).

unprecedented 1% increase, as we only saw a 0.4% increase between 1990 and 2019. The funds would be used to improve the quality of public health care, raise wages in the sector and reduce problems with citizens' access to medical services.

2. Measures to enable more medical personnel. The SARS-CoV-2 pandemic has significantly highlighted the shortage of medical personnel in Poland. It has been pointed out for years that in Poland we have the lowest in the European Union and one of the lowest among OECD countries, the ratio of doctors per thousand inhabitants – 2.415. It is far from the average level of the indicator for the European Union, which amounted to 3.8. Therefore, it is necessary to actively increase the supply of healthcare workers through a modern system of training medical staff and optimizing the use of human resources in the health sector.
3. Healthcare is a prerequisite for economic development and appropriate quality of life. The statement was confirmed by the CBOS examination in July 2021, which showed that the pandemic caused the understanding of the healthcare system's role and importance to increase in our society's minds. Most respondents admitted that healthcare has become of fundamental importance to both citizens and the state.
4. Innovative medicines and countering delays in diagnosis and treatment. The SARS-CoV-2 pandemic demonstrated the need to work on the development of modern and effective vaccines. Unfortunately, in Poland, placing trust in innovative medicines has not been the norm. There are many examples of treating spending on innovative therapies only as a cost to the system and a burden on public finances. As a result, many modern drugs are not on the reimbursement list, which in most cases excludes their use by Polish patients. Meanwhile, effective treatment of patients with modern therapies results in fewer complications and severe ailments, which may reduce health and social spending in the future[35].
5. Strengthening e-health activities. During the pandemic, there was a significant increase in telemedicine consultations. Virtually all primary medical care and a large portion of outpatient speciality care have shifted to this mode. Greater use of e-health solutions was also observed, including e-prescriptions, e-visits, e-referrals, etc., which should be continued in the following years.

[35] A. Rulkiewicz, *Zdrowie Polaków po pandemii. Co możemy zrobić razem*?, Warsaw 2020; A. Rybarczyk-Szwajkowska, A. Staszewska, M. Timler, I. Rydlewska-Liszowska, *Zmiany organizacyjno-finansowe w pracy personelu medycznego podstawowej opieki zdrowotnej w okresie pandemii COVID-19 w Polsce*, „Medycyna Pracy", 2021, No 5 (72), pp. 591-604; *Ochrona zdrowia w czasach pandemii. Zagadnienia publicznoprawne, medyczne i ekonomiczne*, M. Dobska, E. Kosiński, M. Urbaniak (ed.), Poznań 2021.

6. Healthcare as an investment in the future. The impact of the population's health status on the quality of our socioeconomic life occurs over the long term. The effects that are not visible in the short term do not prompt policymakers or the public to support the health area adequately. We should start thinking about supporting health as an economic and social investment.
7. Health security of citizens. The SARS-CoV-2 pandemic has highlighted viewing the healthcare field as a battlefield against disease, which may make it possible to qualify health security as an element of national security. By analogy with military security, the healthcare system should always be in a state of readiness to manage a crisis and, regardless of the situation, keep citizens in good shape through appropriate preventive and therapeutic measures. So that in an emergency, the system's capacity will be as high as possible[36].

Summary

The SARS-CoV-2 pandemic has made us see the key problems of health care in Poland more clearly than before. At the same time has contributed to a significant increase in social and political consensus for the introduction of expected changes in the system. Therefore, we believe that we need to seize the current moment and introduce changes that will improve the quality of citizens' health for the benefit of Poland's socioeconomic situation in the short term and over the next several years.

A key issue in the complex process of optimizing the Polish health service is to continue to strengthen awareness of the importance of health care for society and the economy. It is desirable to consolidate thinking about health as a factor directly related to the quality of social life and the economy. At the same time, looking at the possible return on investment in our health security is essential, not just the cost perspective.

The basic steps to optimize Poland's healthcare system are to increase financial and human resources for healthcare, shift patient treatment from inpatient to outpatient treatment, and implement e-health solutions to the fullest extent possible.

[36] G. Gielerak, K. Obłąkowska, A. Bartoszewicz (ed.), *Jak przygotować polską ochronę zdrowia na kolejne epidemie?*, Warsaw 2021; S. Szalewicz, *Wpływ dostępności do służby zdrowia na skutki pandemii COVID-19 w Polsce – analiza regionalna*,[in:] *Wymiary i determinanty rozwoju przestrzennego*, A. Zakrzewska-Półtorak (ed.), Wrocław 2021, pp. 93-109.

BIBLIOGRAPHY:

1. *Barometr WHC. Raport nt. zmian w dostępności do gwarantowanych świadczeń zdrowotnych w Polsce nr 19/15/02/2019. Stan na grudzień/styczeń 2019*, Warsaw 2019
2. Bączek I., *Dlaczego fizjoterapeuci przyłączają się do protestu medyków? Pytamy o to prezesa KIF*, <https://www.rynekzdrowia.pl/Polityka-zdrowotna/Dlaczego-fizjoterapeuci-przylaczaja-sie-do-protestu-medykow-Pytamy-o-to-prezesa-KIF,223804,14.html>
3. Bielecki T., *Czy Unia Europejska robi za mało w sprawie koronawirusa?*, <https://wyborcza.pl/7,75399,25786156,czy-unia-europejska-robi-za-malo-w-sprawie-koronawirusa.html>
4. CBOS, *Korzystanie ze świadczeń i ubezpieczeń zdrowotnych*. *Komunikat z badań nr 98*, Warsaw 2020
5. CBOS, *Opieka medyczna w czasie pandemii*. *Komunikat z badań nr 88*, Warsaw 2020
6. CBOS, *Opinie na temat funkcjonowania opieki zdrowotnej*. *Komunikat z badań nr 89*, Warsaw 2018
7. CBOS, *Opinie o epidemii koronawirusa i związanych z nią restrykcjach. Komunikat z badań nr 58*, Warsaw 2020
8. Cofta S., et. al., *Alert zdrowotny 1 – Szpitale w czasie pandemii i po jej zakończeniu*, April 2020, <https://www.researchgate.net/publication/357151397_Alert_zdrowotny_1_Szpitale_w_czasie_pandemii_i_po_jej_zakonczeniu>
9. *Diagności laboratoryjni protestują, podwyżki nie dla nich*, <https://www.rynekzdrowia.pl/Finanse-i-zarzadzanie/Diagnosci-laboratoryjni-protestuja-podwyzki-nie-dla-nich,185837,1.html>
10. Gielerak G., Obłąkowska K., Bartoszewicz A. (ed.), *Jak przygotować polską ochronę zdrowia na kolejne epidemie?*, Warsaw 2021
11. GUS, *Wydatki na ochronę zdrowia w latach 2018-2020*, <wydatki_na_ochrone_zdrowia_w_latach_2018-2020.pdf>
12. *Ile naprawdę zarabiają pielęgniarki?*, <https://www.newsweek.pl/polska/ile-zarabiaja-pielegniarki-pensje-pielegniarek-strajk-czd/khff5vr>
13. *Koniec pandemii? Szef WHO: widzimy szansę*, <https://www.medonet.pl/koronawirus,koniec-pandemii--szef-who--widzimy-szanse,artykul,53174732.html>
14. Kurzyńska E., *"Drenaż mózgów" w psychiatrii: wyższe zarobki to niejedyny powód szukania pracy za granicą*, <https://pulsmedycyny.pl/drenaz-mozgow-w-psychiatrii-wyzsze-zarobki-to-niejedyny-powod-szukania-pracy-za-granica-998074>
15. NIK, *Raport: System ochrony zdrowia w Polsce – stan obecny i pożądane kierunki zmian*, Warsaw 2018

16. *„Ochrona zdrowia w czasie epidemii" – rekomendacje Rady Ekspertów przy Rzeczniku Praw Pacjenta*, <https://www.gov.pl/web/rpp/ochrona-zdrowia-w-czasie-epidemii-rekomendacje-rady-ekspertow-przy-rzeczniku-praw-pacjenta>
17. *Ochrona zdrowia w czasach pandemii. Zagadnienia publicznoprawne, medyczne i ekonomiczne*, M. Dobska, E. Kosiński, M. Urbaniak (ed.), Poznań 2021
18. *Pierwszy przypadek koronawirusa w Polsce*, <https://www.gov.pl/web/zdrowie/pierwszy-przypadek-koronawirusa-w-polsce>
19. Polak M., *Szpitale powiatowe tracą płynność finansową. Wiceminister Miłkowski: strata łączna zmniejszyła się*, <https://www.rynekzdrowia.pl/Finanse-i-zarzadzanie/Szpitale-powiatowe-traca-plynnosc-finansowa-Wiceminister-Milkowski-strata-laczna-zmniejszyla-sie,239235,1.html>
20. *Porozumienie Rezydentów Ogólnopolskiego Związku Zawodowego Lekarzy*, <http://www.rezydenci.org.pl/>
21. *Reforma systemowa w służbie zdrowia – stan prac i nowe zadania*, <https://archiwum.mz.gov.pl/aktualnosci/reforma-systemowa-w-sluzbie-zdrowia-stan-prac-i-nowe-zadania/>
22. Rulkiewicz A., *Zdrowie Polaków po pandemii. Co możemy zrobić razem*?, Warsaw 2020
23. Rybarczyk-Szwajkowska A., Staszewska A., Timler M., Rydlewska-Liszowska I., *Zmiany organizacyjno-finansowe w pracy personelu medycznego podstawowej opieki zdrowotnej w okresie pandemii COVID-19 w Polsce*, "Medycyna Pracy", 2021, No 5 (72)
24. *Securing access to vaccines*, <https://commission.europa.eu/strategy-and-policy/coronavirus-response/public-health/eu-vaccines-strategy_pl> (20.12.2022)
25. Skubel B., Kocemba E., Rudka R., *Nakłady na ochronę zdrowia w Polsce na tle innych państw OECD*, Warsaw 2021
26. Szalewicz S., *Wpływ dostępności do służby zdrowia na skutki pandemii COVID-19 w Polsce – analiza regionalna*,[in:] *Wymiary i determinanty rozwoju przestrzennego*, A. Zakrzewska-Półtorak (ed.), Wrocław 2021
27. *Szczepionki przeciwko COVID-19: kto należy do grupy „zero"?*, <https://www.infodent24.pl/lexdentpost/szczepionki-przeciwko-covid-19-kto-nalezy-do-grupy-zero,117044.html>
28. *Telemedycyna wychodzi na prowadzenie*, <https://politykazdrowotna.com/artykul/telemedycyna-wychodzi-na-prowadzenie/830499>
29. *Walka z koronawirusem. Sejm uchwalił zmiany w 14 „zdrowotnych" ustawach*, <https://serwisy.gazetaprawna.pl/zdrowie/artykuly>
30. *World's Best Hospitals 2021*, <https://www.newsweek.com/best-hospitals-2021/poland>
31. Zieleniewska M., *"Chorzy na nowotwory i serce byli w pandemii*

pozostawieni sami sobie. Innym wydawano sprzeczne zalecenia". Kto jest temu winny?, <https://www.medonet.pl/koronawirus/koronawirus-w-polsce,chorzy-na-nowotwory-i-serce-byli-w-pandemii-pozostawieni-sami-sobie--innym-wydawano-sprzeczne-zalecenia--kto-jest-temu-winny,artykul,01684409.html?utm_source=www.medonet.pl_viasg_medonet&utm_medium=referal&utm_campaign=leo_automatic&srcc=undefined>