

# IMPACT OF THE COVID-19 PANDEMIC ON THE MANAGEMENT OF A SELECTED TREATMENT FACILITY

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**Introduction/background:** Following the SARS-CoV-2 virus outbreak, the goals of the health care system had to be adapted to the changed environment to meet the health care needs of patients and the expectations of Polish health care workers for safe working conditions in emergency situations. The need for change concerning the health workforce, is mainly due to organisational and economic changes affecting health care systems worldwide and affects all forms of health care. The aim of this paper is to determine the impact of the COVID-19 pandemic on the operation of a selected treatment facility. The research resulted in the author's master's thesis.

**Aim of the paper:** The aim of the paper is to determine the changes that may have occurred in the operation of the treatment facility under investigation, influenced by the events taking place as a result of the COVID-19 coronavirus pandemic, and to analyse the assessment of the staff of the treatment facility before and during the COVID-19 pandemic.

**Materials and methods:** Literature analysis, analysis of source materials (internal), survey method - technique: indirect survey, tool: survey questionnaire.

**Results and conclusions:** The COVID-19 pandemic showed the state of the treatment facilities and the measures taken to cope with the new operating conditions. It is important to address staff shortages: nurses, doctors, economists trained in health system administration. Deficiencies in the health care system were revealed. Working in an environment with a lack of equipment and personnel forces changes in treatment methods. The application of standard treatment methods, developed under normal conditions, turns out to be either suboptimal to protect life and health or impossible. The most obvious conclusion is the lack of equipment, which occurs when the practitioner does not have the necessary tools or protective equipment that are formally authorised for medical use. Another of the identified frailties is the lack of adequate preparation of staff to work under stressful and even 'combative' conditions, contributing to staff overload, which may result in staff wanting to change jobs. Another finding is the lack of a developed procedure in terms of storage policy, which has a significant impact on the shortage of medical equipment in the medical facility. In addition, the sudden increase in the number of patients could have been a reason for employees to feel increased stress or a desire to change jobs. Such feelings, on the other hand, may have been the result of a lack of knowledge regarding the medical management of SARS-COV-2 coronavirus patients, in which certain risky emergency procedures were reserved for specialists or specially trained persons (e.g. intubation).

**Keywords:** treatment facility, COVID-19, pandemic, change management, public management.

## 1. Introduction

The World Health Organisation (WHO) on 11 March 2020 announced that the SARS-CoV-2 virus, which causes COVID-19, i.e. acute respiratory distress syndrome leading to severe pneumonia, is pandemic in nature.

The aim of the paper is to show the changes in the management and functioning of the selected treatment facility, based on the introduced legal acts, orders and recommendations - since the announcement of the pandemic - which influenced the working conditions of the medical staff in the studied facility. The changes and conclusions formulated on the basis of the analysis may contribute to the introduction of sustainable changes in the functioning of other medical facilities in Poland and facilitate possible adaptation to future health threats.

## 2. Characteristics of the chosen treatment facility

Centrum Medyczne Silesiana Sp. z o. o. in Zabrze is a group of specialised medical facilities. It has been operating in the medical market for over 20 years, expanding the scope of its treatment activities from year to year. At present, the Medical Centre "SILESIANA" is one of the largest units specialising in medical care on the territory of Silesia. The company employs about 150 people, has qualified personnel, and modern equipment; it also cooperates with many private medical care entities.

Centrum Medyczne Silesiana Sp. z o. o. provides its services in three main areas:

- **Zabrze Hospital**, which has within its structure: Ward of Orthopaedics and Traumatology of the Musculoskeletal System, Ward of General Surgery and Ward of Gynaecology;
- Outpatient Clinic Zabrze, including: Gynaecology Outpatient Clinic, Urology Outpatient Clinic, Cardiology Outpatient Clinic, Orthopaedics and Traumatology Outpatient Clinic, General Surgery Outpatient Clinic and Otolaryngology Outpatient Clinic. The Silesian Proctology Centre is also located in Zabrze, as well as the following laboratories: X-ray, ultrasound, cardiac ultrasound, exercise testing, HOLTER;

- Outpatient Clinic Bytom, including: Primary Health Care Outpatient Clinic for children and adults, Gynaecology Outpatient Clinic, Neurology Outpatient Clinic, General Surgery Outpatient Clinic, Vascular Surgery Outpatient Clinic, Paediatric Surgery Outpatient Clinic, Otolaryngology Outpatient Clinic, Dermatology Outpatient Clinic, Orthopaedics and Traumatology Outpatient Clinic. The following laboratories are also located in Bytom: ultrasound, ECG and Spirometry. Consultation services with a dietician are also provided here.

Both of the above Clinics also provide laboratory testing services.

These services are provided both commercially and under contract with the National Health Fund.

### **3. Research methodology**

In order to determine the impact of the COVID-19 pandemic on the operation of the selected treatment facility and to investigate how the treatment facility is currently functioning, it was necessary to develop an appropriate theoretical research model from which a research tool was developed.

#### **3.1. Research model**

The model developed consists of four variables: background variables (also known as input variables), independent variables, dependent variables and catalysing variables.

In the presented model, background variables include such elements as: legal regulations for the operation of treatment facilities in Poland, peculiarities of the operation of public organisations in Poland, specificities of the operation of treatment facilities in Poland, modification of rules during the pandemic.

Independent variables in the developed model included: work organisation in treatment facilities during the COVID-19 pandemic, the number of on-call duties, perception of the performance of professional duties by treatment facility staff, crisis management rules during COVID-19, and the quantity of staff employed.

The following elements were used as dependent variables: staff attitudes towards the profession, attitudes of treatment facility staff towards the profession, staff stress levels, management actions of treatment facilities as dictated by the COVID-19 pandemic outbreak, introduction of measures to prevent the spread of the virus, analysis of impediments to the operation of treatment facilities during the COVID-19 pandemic, level of work disorganisation at treatment facilities during the COVID-19 pandemic, problem of staff shortages at treatment facilities as a result of the COVID-19 pandemic.

In contrast, the following were taken as catalysing variables: size of the treatment facility, activity profile, number of employees, legal status of the treatment facility.

The development of the model was aimed at facilitating the work involved in the preparation of marketing research and, in particular, the design of the research tool.

### **3.2. Preparation of the research**

Due to the fact that the "Silesiana" Medical Centre in Zabrze has not to date conducted research on the impact of COVID-19 on the operation of the facility, as well as research determining customer perceptions of the facility, there was no secondary data that would be useful for the research undertaken. It was therefore necessary to obtain data from primary research.

The aim of the research conducted was:

- to identify changes that may have occurred in the operation of the treatment facility under investigation, influenced by events occurring as a result of the COVID-19 coronavirus pandemic,
- analysis of the assessment of treatment facility staff before and during the COVID-19 pandemic.

Four scopes of research were distinguished:

- subject of the study is employees of the "Silesiana" Medical Centre treatment facility,
- scope of the research is the treatment facility, which is a group of specialised medical facilities in Zabrze,
- spatial scope of the research is the province of Silesia, specifically the cities of Zabrze and Bytom,
- timeframe of the study covers the period III-IV 2022.

Based on the analysis of the company's internal documentation and on the basis of the theoretical research model, the following research hypotheses were put forward:

H1: There has been disorganisation of work at the selected treatment facility.

H2: Online consultations has become an alternative to existing service provision.

H3: The pandemic has contributed to many difficulties in doing the job.

H4: The pandemic period highlighted staff shortages.

Primary sources were used in the research. A survey was considered the most convenient research method, while a survey questionnaire was the research tool. The units of the study were employees of the treatment facility (30 people).

### 3.3. Research tool

The research tool was a questionnaire developed on the basis of the following research questions:

Q1: Have the changes introduced due to the COVID-19 coronavirus pandemic caused disorganisation of work? This group of questions related to hypothesis H1 and included questions numbered 1-10 (1: The concept of work is familiar to you; 2: Working on a ward with COVID-19 patients significantly reduced the quality level of your work; 3: After the outbreak of the COVID-19 pandemic, the scope of your responsibilities changed; 4: The length of your on-duty time was extended; 5: The workplace adjusted the workplace to ensure safety; 6: Your salary before the pandemic period was satisfactory; 7: Your salary is adequate for the scope of your duties; 8: The pandemic period significantly affected your salary; 9: The number of patients hospitalised in the ward has increased; 10: The workplace has trained its employees on the safety of working around SARS COV-2 patients).

Q2: Have online consultations become an alternative to the existing service provision? This group of questions related to hypothesis H2 and included questions number 11-20 (11: You provide online consultation services in exchange for a traditional appointment; 12: You are willing to provide online consultation services; 13: The workplace has provided training on how to provide online consultation; 14: You have used online consultation services; 15: Online consultation has replaced most traditional medical appointments; 16: Patients reported their dissatisfaction due to the deterioration in the quality of services/lack of availability of medical services; 17: Online consultations are an efficient way of providing services; 18: Online consultations have reduced the waiting period for medical advice; 19: It is possible to replace the traditional visit with an online consultation in the future; 20: By providing an online consultation service you feel safer).

Q3: Did the COVID-19 pandemic contribute to a number of difficulties during your work? This group of questions referred to hypothesis H3 and included questions number 21-30 (21: The safety measures used, e.g. masks, suits do not allow for proper work; 22: The medical facility lacks basic materials and tools to perform work; 23: The medical equipment is missing from the workplace; 24: More fatigue is felt at the end of the shift than before the outbreak of the COVID-19 coronavirus pandemic; 25: Due to work during the pandemic, the amount of medical documentation has increased; 26: There has been an increase in the amount of medical work with patients during the pandemic; 27: You have been seconded by your employer to another workplace; 28: You often encounter deaths in the workplace; 29: You have felt a deterioration in your mental state due to working during the pandemic; 30: You have been provided with psychological support due to working under pandemic conditions).

Q4: Did the duration of the COVID-19 pandemic contribute to staff shortages? This group of questions related to hypothesis H1 and included questions numbered 31-40 (31: Your level of motivation to work is the same as it was before the pandemic outbreak; 32: You have thoughts of changing job; 33: Working in a "covid" ward is characterised by greater responsibility; 34: Duties in a "covid" ward are associated with increased stress; 35: You fear

infection with the SARS COV-2 virus while on duty; 36: You have used sick pay more often than usual in connection with your work in the "covid" ward; 37: Your use of sick pay has been related to your fear of contracting the SARS COV-2 virus; 38: You work in several workplaces; 39: Your employer tried to recruit new employees during the pandemic period; 40: The following feelings accompany you during your shift in the "covid" ward: nervousness, satisfaction, anxiety, irritation, fear, helplessness, commitment).

The main questions were preceded by metric questions.

A pilot study to verify the research questions and hypotheses posed, as well as the construction of the final version of the survey instrument, was carried out on paper and distributed at the facility at the beginning of March 2022.

When the responses were analysed, it was noted that 30 questionnaires were correctly completed, so the effectiveness of the survey tool was 100%. No incorrectly completed or unfilled questionnaires were collected. The questionnaire consisted of four sections, each consisting of 10 closed questions in the form of a Likert scale: respondents answered by marking an answer on a five-point scale, choosing the answer that was most truthful in relation to the statement asked previously.

### 3.4. Characteristics of the research sample

The final survey questionnaires were presented to respondents in March 2022 and the completed response sheets collected in April 2022. The survey was conducted on a group of 30 people. The respondents were divided into four professional groups: doctors, nurses, administration and registration.

Table 1 shows (numerically and in percentage terms) the aggregate breakdown of respondents by: gender, age, place of residence, education, position held and length of service.

**Table 1.**  
*Metrics*

		[N]	[%]
Gender	Woman	17	56.6
	Man	13	43.4
Age	26-40 years	4	13.3
	41-60 years	15	50.0
	Over 60 years	11	36.7
Education	Vocational	1	3.3
	Medium	9	30.0
	Higher	20	66.7
Position held	Registration	3	10.0
	Administration	8	26.7
	Nurse	12	40.0
	Doctor	7	23.3
Length of service	5-10 years	3	10.0
	Over 10 years	27	90.0

Source: Own study.

#### 4. Verification of research hypotheses

Based on the analysis of the company's internal documentation and on the basis of the theoretical research model, four research hypotheses were set.

Table 2 shows the aggregated distribution of responses to questions verifying hypothesis H1: "There was a disorganisation of work in the selected treatment facility". The questions included here referred to the quality of the respondents' work, the scope of their duties, their working hours, their working conditions, their earnings before and after the pandemic outbreak, the number of patients and the company's training.

**Table 2.**

*Distribution of responses verifying the first hypothesis*

Question No.	I strongly agree		I rather agree		Difficult to say		I rather disagree		I strongly disagree	
	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]
1	21	70	5	16,7	3	10	1	3,3	0	0
2	9	30	10	33,3	5	16,7	5	16,7	1	3,3
3	16	53,3	9	30	1	3,3	1	3,3	3	10
4	13	43,3	10	33,3	3	10	2	6,7	2	6,7
5	10	33,3	11	36,7	4	13,3	1	3,3	4	13,3
6	11	36,7	8	26,7	6	20	0	0	5	16,7
7	7	23,3	5	16,7	7	23,3	7	23,3	4	13,3
8	9	30	6	20	4	13,3	8	26,6	3	10
9	20	66,7	4	13,3	2	6,7	2	6,7	2	6,7
10	13	43,3	7	23,3	3	10	5	16,7	2	6,7
Av.		<b>42,9</b>		<b>25,0</b>		<b>12,7</b>		<b>10,6</b>		<b>8,8</b>
Av. sum	<b>67,9</b>				<b>12,7</b>		<b>19,4</b>			

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H1: "There has been a disorganisation of work in the selected treatment facility" has been confirmed, since - with the omission of neutral responses (12.7%) - there is a predominance of positive responses (67.9%) over negative responses (19.4%).

Table 3 shows the summary distribution of responses to questions verifying hypothesis H2: "Online consultations have become an alternative to existing service provision". The questions included here referred to the provision of telephone consultation, respondents' willingness to provide online consultation, in-house training, use of online consultation, incidence of online consultation, reception by patients, reception by staff and issues of feeling safe with this form of medical service.

**Table 3.**  
*Distribution of responses verifying hypothesis two*

Question No.	I strongly agree		I rather agree		Difficult to say		I rather disagree		I strongly disagree	
	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]
11	3	42.9	2	28,6	0	0	2	28,6	0	0
12	4	57.1	1	14,3	1	14,3	1	14,3	0	0
13	1	14.3	1	14,3	0	0	4	57,1	1	14,3
14	4	57.1	1	14,3	0	0	0	0	2	28,6
15	5	71.4	0	0	2	28,6	0	0	0	0
16	2	28.6	1	14,3	0	0	2	28,6	2	28,6
17	1	14.3	1	14,3	3	42,9	1	14,3	1	14,3
18	0	0	2	28,6	4	57,1	1	14,3	0	0
19	2	28.6	2	28,6	1	14,3	1	14,3	1	14,3
20	5	71.4	1	14,3	1	14,3	0	0	0	0
Av.		<b>38.6</b>		<b>17,2</b>		<b>17,2</b>		<b>17,2</b>		<b>10,0</b>
Av. sum	<b>55.8</b>				<b>17.1</b>		<b>27.1</b>			

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H2: "Online consultation has become an alternative to the existing service provision" has also been confirmed, since - with neutral responses (17.1%) omitted - there is a preponderance of positive responses (55.8%) compared to negative responses (27.1%).

Table 4 shows the aggregated distribution of responses to the questions verifying hypothesis H3: "The pandemic contributed to many difficulties during work performance". The questions included here referred to the safety measures used, the availability of materials and tools to do the job, the level of fatigue of workers, the amount of extra work, the mental state of workers, psychological support in the workplace and the occurrence of deaths in the workplace.

**Table 4.**  
*Distribution of responses verifying hypothesis three*

Question No.	I strongly agree		I rather agree		Difficult to say		I rather disagree		I strongly disagree	
	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]
21	11	36.6	7	23.3	4	13.3	5	16.6	3	10
22	8	26.6	8	26.6	5	16.6	4	13.3	5	16.6
23	6	20	8	26.6	4	13.3	8	26.6	4	13.3
24	12	40	13	43.3	3	10	2	6.6	0	0
25	17	56.6	10	33.3	2	6.6	1	3.3	0	0
26	15	50	9	30	6	20	0	0	0	0
27	4	13.3	4	13.3	2	6.6	10	33.3	10	33.3
28	4	13.3	10	33.3	2	6.6	4	13.3	9	30
29	8	26.6	16	53.3	5	16.6	1	3.3	0	0
30	4	13.3	9	30	3	10	7	23.3	7	23.3
Av.		<b>29.6</b>		<b>31.3</b>		<b>11.9</b>		<b>10.6</b>		<b>9.3</b>
Av. sum	<b>60.9</b>				<b>11.9</b>		<b>19.9</b>			

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H3: "The pandemic has contributed to a lot of difficulties during the execution of work" is also confirmed, since - with the omission of neutral answers (11.9%) - there is a preponderance of positive answers (60.9%) compared to negative answers (19.9%).



Table 5 shows the summary distribution of responses to questions verifying hypothesis H4: "The pandemic period highlighted staff shortages". The questions included here referred to employees' level of motivation for work and willingness to change it, level of responsibility at work, employees' level of stress, fear of SARS-CoV-2 infection, the issue of sickness benefits, the amount of work an employee has, and the employer's attitude to the pandemic situation and employees' accompanying emotions in the workplace.

**Table 5.**

*Distribution of answers verifying the fourth hypothesis*

Question No.	I strongly agree		I rather agree		Difficult to say		I rather disagree		I strongly disagree	
	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]	[N]	[%]
31	12	40%	8	26,6%	6	20%	5	16,6%	0	0%
32	9	30%	12	40%	3	10%	5	16,6%	1	3,3%
33	17	56.6%	5	16,6%	6	20%	2	6,6%	0	0%
34	16	53.3%	8	26,6%	7	23,3%	0	0%	0	0%
35	9	30%	14	46,6%	4	13,3%	1	3,3%	2	6,6%
36	4	13.3%	6	20%	3	10%	13	43,3%	4	13,3%
37	4	13.3%	8	26,6%	1	3,3%	10	33,3%	7	23,3%
38	5	16.6%	11	36,6%	1	3,3%	6	20%	7	23,3%
39	6	20%	7	23,3%	13	43,3%	3	10%	1	3,3%
40	2	6.6%	13	43,4%	15	50%	0	0%	0	0%
*	5	16.6%	20	66,6%	3	10%	2	6,6%	0	0%
	2	6.6%	11	36,6%	17	56,6%	0	0%	0	0%
	3	10%	10	33,3%	16	53,3%	1	3,3%	0	0%
	3	10%	11	36,6%	15	50%	1	3,3%	0	0%
	3	10%	10	33,3%	16	53,3%	1	3,3%	0	0%
	1	3.3%	7	23,3%	20	66,6%	2	6,6%	0	0%
Av.		<b>27.8</b>		<b>30,5</b>		<b>19,5</b>		<b>14,9</b>		<b>7,3</b>
Av. sum	<b>58.3</b>				<b>19.5</b>		<b>22.2</b>			

\* Respondents had a choice of nervousness, satisfaction, anxiety, irritation, fear, helplessness, involvement, respectively.

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H4: "The pandemic period highlighted staff shortages" has also been confirmed, since - with neutral responses (19.5%) omitted - there is a preponderance of positive responses (58.3%) compared to negative responses (22.2%).

## 5. Conclusions and recommendations

Based on the analysis of the company's internal documentation and on the basis of the theoretical research model, four research hypotheses were set.

Conducting research on the impact of the COVID-19 pandemic on the functioning of a selected medical facility, which was the medical facility "SILESIANA" Sp. z o. o. with its registered office in Zabrze, allowed us to get an idea of how the SARS-COV-2 virus affected

its current functioning. The use of an appropriate tool made it possible to collect information from selected employees working in the studied facility. The responses collected made it possible to determine whether the hypotheses adopted earlier were confirmed in the research conducted.

The respondents' answers confirmed all the hypotheses. The majority of the respondents gave corroborating answers to the questions asked, thus confirming the disorganisation in the organisation. The vast majority of the respondents know what the concept of work is. The occurrence of disorganisation at the workplace is also confirmed by the fact that more than half of the respondents confirmed that their working hours had increased, their responsibilities had increased and the number of hospitalised patients had increased significantly.

Respondents' answers also confirmed that online consultation has become an alternative to the existing service provision. A significant proportion of respondents provide a service such as online consultation in exchange for a traditional appointment. A larger group of respondents eligible to provide online consultation indicated that they do so willingly because they feel much safer through this form. However, when asked whether the workplace had given prior training on how to provide a service such as online consultation, respondents were not unanimous, but most of them answered in the negative, meaning that only some of respondents had received training in this area.

Respondents answering further questions confirmed the emergence of a number of impediments during the pandemic period when performing their work. One of the impediments that emerged included masks and protective suits that had to be worn while performing duties. The majority of respondents confirmed that this had a negative impact on the quality of their work performance. The lack of basic materials, tools in the medical facility can also be seen in the respondents' answers, which largely contributed to the difficulties during service provision. The extended working hours of the staff resulted in greater fatigue at the end of the shift, which in turn translated into a deterioration of the mental state of the staff.

Based on the respondents' answers, it can be concluded that there was a problem of staff shortage in the facility. A significant proportion of the respondents are thinking of changing jobs, as working in a covid ward is characterised by greater responsibility. In addition, a greater proportion of the respondents fear infection with the SARS COV-2 virus, which is also associated with increased stress. Some of the respondents admitted that emotions such as nervousness, anxiety, irritation, fear and helplessness accompany them at work, which may make them want to change jobs.

Referring to the research carried out, the results, the conclusions confirmed earlier, the following recommendations can be proposed:

- Provide training to all staff covering the scope of the provision of the online consultation service covering staffing, personnel issues. This will reduce the number of dissatisfied patients with the quality of services provided.

- Enabling psychological support for any employee of a treatment facility working in the era of the pandemic. Providing psychological support would significantly improve the psychological state of employees, reduce the level of perceived stress and ensure their better work performance.
- Develop/revise existing procedures in terms of stock policy so that there is no shortage of basic medical equipment needed to do the job.

## Acknowledgements

The results presented in the paper are the part of the statutory work 13/040/BK\_22/0107 carried out at the Department of Management, Silesian University of Technology. The paper is the result of the seminar entitled “Areas of project management in organizations” that took place on December 13, 2022 in Zabrze.

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