

ORGANISATION AND MANAGEMENT OF A COVID-19 VACCINATION CENTRE AS PART OF THE MANAGEMENT OF HEALTH FACILITY – A CASE STUDY

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Introduction/background: The impact of the pandemic on the management of medical facilities was, and still is, enormous - facilities had to change their thinking and approach to the treatment of patients, as not only did they have to treat patients, but also to protect them and medical staff from falling ill - as quickly as possible. One such measure was the organisation of vaccination centres.

Aim of the paper: The main aim of the paper is to show the impact of the COVID-19 pandemic on the management of treatment facilities and to present the process of organising a vaccination point as part of the management in a selected treatment facility.

Materials and methods: Analysis of legal acts, analysis of internal materials, interview.

Results and conclusions: Compliance with the minimum requirements always influences the level of public confidence in vaccination, and the responsibility for carrying out vaccinations, reporting the adverse event following immunization – AEFI), i.e. the broadly understood safety of vaccinations, etc. always remains with those carrying out the vaccinations. Unfortunately, organizational problems were not avoided at the initial stage of starting the vaccination campaign. The problem concerned the delegation from individual wards of a physician designated to qualify patients presenting themselves for vaccination. However, taking appropriate actions on the part of Hospital Management and signing civil-law agreements with personnel vaccinating at weekends removed the personnel problem in this respect.

Keywords: COVID-19 Pandemic, vaccination, management of a health facility, vaccination centre.

1. Introduction

In December 2019, a new pneumonia caused by a coronavirus emerged in China, specifically in the city of Wuhan. In February 2020, the International Committee on Taxonomy of Viruses classified this virus as SARS-CoV-2, adding it to the already existing coronavirus

family as the seventh member that can infect humans. Four viruses in this family are responsible for mild colds, while SARS-CoV (2003) and MERS-CoV (2012) were already responsible for previous severe outbreaks (Azu et al., 2021). The SARS-CoV-2 virus started to spread rapidly and caused a global pandemic in a short period of time. Infection with COVID-19 leads to respiratory problems and even death, and is particularly dangerous in people over 60 years of age and in people with chronic diseases such as diabetes and hypertension (Wen-Hsiang et al., 2020). The COVID-19 pandemic has irreversibly changed the operation and functioning of medical facilities. Among the many problems faced by medical facilities in dealing with the pandemic, another challenge faced them at the beginning of the year - the organisation of vaccination. More than 200 years have passed since the first vaccine was invented (1796 - the first smallpox vaccine (Balcerkiewicz, Jagodziński, 2021)), but it is still one of the best options for protection against pathogenic microorganisms. The development and dissemination of vaccines is one of the greatest achievements of modern medicine. Vaccines provide a natural immunity that is analogous to that obtained when exposed to a bacterium or virus. After the publication of the SARS-CoV-2 genome sequence, in January 2020, scientists all over the world started working to invent, as soon as possible, an effective preparation that could protect human populations from the virus (Hsin-I et al., 2020), since vaccination against COVID-19 reduces the risk associated with severe respiratory diseases. Vaccine efficacy ranges from 70% to even 90% depending on the type of vaccine (Abdou et al., 2021). Another important aspect is that vaccination helps to create herd immunity for people who cannot receive the vaccine for various medical reasons. The first vaccine was approved in December 2020. Meo et al. (2021), exactly one year after the outbreak of the pandemic, such rapid development of the vaccine was due to scientific research from around the world. From that point on, treatment facilities had to start preparing for the process of vaccinating huge numbers of people.

The impact of the pandemic on the management of medical facilities was and still is enormous, facilities had to change their thinking and approach to the treatment of patients, as not only did they need to treat patients, but also to protect patients and medical staff from becoming ill as soon as possible. This paper attempts to present the organisation of vaccination as part of the management of a medical facility.

2. Impact of the pandemic on the management of a health facility

The COVID-19 pandemic has completely changed the operation of health facilities. The rapid spread of the virus paralysed the healthcare system, not only in second-world countries but also in all developed countries. Within a short period of time, treatment facilities had to accommodate an ever-increasing number of sick patients. Even the best functioning healthcare systems could not cope with the growing number of patients requiring

hospitalisation. During the two years of the global pandemic, more than 5 million people died from exposure to the pathogen. The SARS-Co-2 virus does not spare anyone and leads to a severe condition that requires the patient to be present in hospital. The most dangerous effect of COVID-19 is severe pneumonia, which requires patients to be connected to ventilators, with the need for constant specialised care (Pedersen, Ya-Chi, 2020).

The pandemic had a negative impact on the management of medical institutions. Medical institutions were not prepared for such a large and sudden load on hospital wards, there was not enough space for most patients, and a frequent image broadcast by television stations was of patients being shown in hospital corridors. However, the most important problem was the lack of professional medical staff. Many studies on medical facilities confirm the existing relationship between the number and quality of medical staff and the health status of the population (Kowalska-Bobko et al., 2020). Before the outbreak of the pandemic, most health systems in the world faced shortages of medical professionals, mainly doctors and nurses, due to many factors including low salaries and inadequate human resources management. Without adequate medical care, patients were left on their own, and doctors were forced to select people with higher chances of survival in order to connect them to medical equipment. The least likely to survive according to mortality rates were the elderly, especially men (Kowalska-Bobko et al., 2020). The size of the outbreak exceeded the capacity to provide effective health care to all who required it. There was also a lack of educated management staff. Current regulations in Poland only require a candidate to have a university degree and the length of service specified by the entity. However, managing a medical facility is an extremely complex activity. A person applying for such a position should have a degree in healthcare management and work experience in the profession (Domagała, 2014).

Another important aspect is the fact that the SARS-Co-19 virus did not just affect ordinary citizens, but also medical staff, which caused even greater problems for the operation of hospitals. Doctors and nurses became infected from patients they had previously treated, so staff shortages were no longer just due to previous factors, but also because medical staff themselves needed to be hospitalised. Doctors whose day-to-day job was not to fight pathogenic microorganisms were being deployed to fight the pandemic; COVID-19 patients were being cared for by doctors such as orthopaedists, surgeons and dermatologists (Polly et al., 2021). There was also a shortage of staff in many facilities, due to the fact that staff were only required to work at one place of employment during the pandemic. Managers had to make many changes to the operation of medical facilities in order to fill staffing gaps and also to protect medical staff as much as possible from the disease. In many facilities, rotational work was introduced so that working doctors and nurses would not infect each other and could continue to help those in need. Also, most planned and non-urgent operations have been cancelled. The postponement of operations reduced unnecessary patient traffic in the hospital and ensured less spread of diseases between symptomatic and asymptomatic patients (Søreide et al., 2020), and between patients and staff.

In the fight against the virus, medical personnel use personal protective equipment and observe all the precautions that are necessary in the fight against this microorganism, since even the smallest contact can be dangerous to health (Brindle, Gawande, 2020). Medical facilities already lacked masks, overalls, gloves and other basic protective equipment at the beginning of the pandemic. The health system was not prepared for such a high demand, often if it was not for the help of citizens - collections of protective equipment, medical staff would have been left without basic equipment. The pandemic demonstrated a significant problem with the management of health system funding (Polly et al., 2021). The financial situation of medical facilities was also in a poor state before the pandemic, but the outbreak of the pandemic brought more attention to the issue (Kaczmarska-Krawczak, 2017; Sidor-Rządkowska, 2018). Medical facilities also had to find additional budget for increased disinfection of wards.

The pandemic influenced and accelerated the development of remote working and led to the development of remote medical care (online consultation). In order to protect as many employees of medical institutions as possible, all those whose presence was not necessary in the hospital were sent to work remotely. Most of the hospital administration staff were able to protect their health thanks to this procedure, it is difficult to draw conclusions at this point as to how this affected the operation of the hospital, but it is known that the remote medical care mode had a very negative impact on the health of patients. National legislation allowed medical consultations to be carried out by telephone, many patients, for lack of any other treatment option, used this form (Sohrabi et al., 2020). This has led to a lack of accurate diagnoses and prescribing of drugs without appropriate tests.

Other problems for medical facilities were the excess deaths, and the need for constant relocation of patients, due to lack of space in hospital wards, patients were moved from one hospital to another as hospitals refused to admit patients (Brindle, Gawande, 2020). Only vaccination could help restore medical facilities to their pre-pandemic state, the planning of which was a heavy undertaking for each medical facility.

3. Organisational arrangements for the vaccination centre

On 20 March 2020, by virtue of a Decree of the Minister of Health, an epidemic state was conducted in the territory of the Republic of Poland in connection with SARS-CoV-2 infections.

Due to the declared pandemic state in the country, the National Health Fund in December 2020 announced the recruitment for the National Vaccination Programme against the SARS-CoV-2 virus. Each facility declaring its willingness to participate in this Programme had until 11 December 2020 to electronically submit a declaration of adherence. Priority in participation in this programme was given to medical facilities which have Primary Health Care

(PHC) clinics in their organisational structure and which have a contract with the National Health Fund (NHF) to provide health care services in the field of primary health care. The examination of applications lasted until 17 December 2020, after which the NHF announced the list of facilities entitled to vaccinate against SARS-CoV-2. The condition for the NHF to obtain approval was the performance of vaccinations for at least 5 days a week by one vaccination team, and the ability to perform at least 180 vaccinations a week. A facility seeking to join the vaccination programme also had to have a travel team vaccinating patients who, due to their state of health, could not travel to the vaccination centre on their own.

The aforementioned vacancy **notice specified in detail: the composition of the vaccination team** (a doctor, nurse, midwife or a medical officer, school hygienist having at least 6 months' practice in the field of preventive vaccinations), **the organisational requirements** (in the premises where vaccinations are to be carried out, the following should be provided: examination room, vaccination room, waiting room/waiting area for persons before and after vaccination - whereby the examination room and the vaccination room should be separated by at least a screen, office equipment, computer equipment with internet access and printer, refrigerator/freezer, cabinet/table for sanitary and other medical supplies, table/tray for vaccine preparation, medical first aid kit, including shock kit, including IV fluid transfusion kits), blood pressure measuring device, stethoscope, thermometer, disinfectants, disinfectants for touch surfaces, recommended couch; it **is also necessary to provide**: at least one washbasin with a tap with hot and cold water and a dispenser with liquid soap/quick and easy possibility to wash hands with warm water with soap, dispensers with disinfectant, a container with single-use towels and a container for used towels, a toilet for staff and patients at/near the place of providing the service, containers for medical waste, securing medical waste and its collection and disposal by the vaccinator, and specified the **remuneration and the method of settlement of the vaccination fee**¹.

Vaccinations will be registered in the e-Health Centre (eHC) system and data on their implementation will be transmitted by eHC to the National Health Fund.

The vaccines had to be stored according to the manufacturer's recommendations concerning both transport and storage of immunological products, including vaccines, ensuring the temperature in the range of +2°C to +8°C as a condition of maintaining their durability and effectiveness (if the product requires other temperatures, then the conditions of storage according to the CHPL must be ensured). Vaccines were to be transported and stored in accordance with the cold chain, which means technical measures and organizational solutions aimed at maintaining and monitoring, in accordance with the manufacturer's recommendations,

¹ Cf.: Ordinance of the Minister of Health of December 10, 2020r amending the Ordinance on corona infection with Sars CoV-2 virus (Pos. 2212), Ordinance of the Minister of Health of April 9, 2021 on the qualification of persons conducting qualification tests and immunizations against SARS CoV-2 (Pos. 668) and Ordinance No. 187/2020/DSOZ of the President of the National Health Fund of November 25, 2020 on the principles of reporting and conditions of settlement of health care services related to the prevention, counteraction and eradication of COVID-19 (as amended).

the conditions of storage, transport and distribution of immunological products within the meaning of the Pharmaceutical Law, in order to preserve their durability and prevent a decrease in their effectiveness.

In turn, medical records on vaccination should be kept in such a way as to ensure the confidentiality of sensitive personal data (important in view of, among other things, the confirmation of the qualifying examination, possible consultation and additional examinations in order to qualify the determination of the existence of contraindications to vaccination or indications for a temporary postponement of vaccination, vaccination with the recording of the type and serial number of the vaccine, the reconstruction of information in the event of the occurrence of an adverse postvaccination reaction).

After the vaccination, the vaccinated person is issued with a certificate of the preventive vaccination.

4. Characteristics of the entity selected

The management of the medicinal establishment in question has not agreed to make its full name public. The selected treatment facility operates as an independent public health care institution located in one of Katowice's districts.

The mission of the Hospital is to strive to become a modern service enterprise with a humanitarian message. In implementing the adopted mission, it focuses on high quality of services provided, respect for patients' rights and continuous education of medical staff.

The following organisational units operate within the organisational structure of the establishment:

- reception room (which operates continuously and consists of a registration desk, doctors' offices, a treatment room and a patient observation room),
- wards (general surgery, internal medicine, anaesthesiology and intensive care, and a clinical ward of ophthalmology with a sub-ward of paediatric ophthalmology),
- outpatient clinics (primary care, gynaecology and obstetrics, general surgery, anaesthesiology, trauma and orthopaedics for adults and children, neurology, ophthalmology and night and holiday healthcare),
- offices (community nurse and community midwife),
- laboratories (EEG, EMG, ECG, X-ray, ultrasound, endoscopy, OTC, eye angiography, ophthalmic ultrasound, corneal diseases, electrophysiology of the organ of vision, selection of optical aids for the visually impaired, laser).

5. Description of projects carried out by the establishment for the organisation of the vaccination centre

The presented treatment facility fulfilled the above conditions, so after completing the appropriate application form available at <https://formularze.ezdrowie.gov.pl>, it received permission to implement vaccination against SARS-Cov-2 virus, becoming one of the nodal hospitals implementing this vaccination. The vaccination campaign started in January 2021.

By Internal Order No. 1/2021 of the Hospital Director, a Team was established to organise and ensure the proper course of COVID-19 vaccination, which also included the current vaccination algorithm.

The coordinator of the established team was mainly responsible for ordering vaccines from the Governmental Agency for Strategic Reserves (GASR), through the VDS (Vaccine Distribution System) application, creating external and internal schedules in order to be able to enroll persons from the population indicated for vaccination according to the schedule of the Ministry of Health, and reporting on the implementation of vaccinations to the NHF. The whole team worked in close cooperation in order to carry out the vaccinations properly, as initially the announcements of the Ministry of Health defined specific groups of entitled persons and also the age of particular population groups entitled to vaccinations. An important element was also the rational management of vaccines, so that no vaccines not used on a given day were used for vaccination. Current messages, both from the Ministry of Health and the National Health Fund, were immediately forwarded to the vaccination team. Initially, patients were also vaccinated as part of the outreach team, in accordance with *the Principles for the Organization of Vaccination against SARS-COV-2 Virus in the Patient's Home* posted in the *Ministry of Health Communication on 16 February 2021*. However, on 1 March 2021. The Silesian Governor, in accordance with the assumptions of the Silesian Provincial Branch of the NHF, announced a list of nodal hospitals implementing vaccinations at home, so it was possible to concentrate vaccinations only at the stationary vaccination centre, implementing vaccinations additionally on weekends, in order to make vaccinations available to the largest possible population group.

Due to epidemic restrictions, a vaccination coordinator was appointed at the vaccination centre, inviting individuals to the waiting room/waiting area and keeping an eye on the number of people present. Each person in the waiting room had to cover their mouth and nose with a mask and disinfect their hands before entering the waiting room. It was ensured that there was a distance of 1.5 m between people in the waiting room. The waiting room and vaccination room was aired every 1 h for at least 5 minutes, either directly or indirectly, and the vaccination station was disinfected on a daily basis after each patient.

In addition, a break was taken once an hour, during which elements frequently touched by clients were disinfected: doorknobs, handrails, chair backs, etc., and the waiting room floor. Each person presenting for vaccination filled out *an Adult COVID-19 Pre-Screening Interview*

Questionnaire in the waiting room and, if vaccinating a minor, a *Minor COVID-19 Pre-Screening Interview Questionnaire*.

6. Conclusions

Compliance with the minimum requirements always influences the level of public confidence in vaccination, and the responsibility for carrying out vaccinations, reporting AEFI, i.e. the broadly understood safety of vaccinations, etc. always remains with those carrying out the vaccinations. Unfortunately, organizational problems were not avoided at the initial stage of starting the vaccination campaign. The problem concerned the delegation from individual wards of a physician designated to qualify patients presenting themselves for vaccination. However, taking appropriate actions on the part of the Hospital Management (subsequent Internal Regulation No. 9/2021 of the Director and signing civil-law agreements with personnel vaccinating at weekends removed the personnel problem in this respect.

The main problem for the organization of the vaccination point was the lack of medical services – in particular of doctors. Organizing work schedules for the employed medical staff was a big organizational challenge. Additional duties were initially met with resistance by the staff, who were burdened with subsequent tasks. The solution to this problem was the development and implementation of an effective incentive system in the form of financial allowances.

At the present time, vaccination with a booster dose is still performed in the Hospital by persons who register in person or by telephone - in accordance with the guidelines contained in the *Communication No. 14 of the Minister of Health on vaccination against COVID-19 with a booster dose and an additional dose supplementing the basic scheme, dated 27 October 2021*.

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