

Review article

Role of the Polish Armed Forces in combating the effects of the Covid-19 pandemic

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ABSTRACT

This article aims to summarise the involvement of the Polish Armed Forces in combating the effects of the nationwide crisis – the Covid-19 pandemic. Due to the nature of the threat, which has primarily affected the healthcare system, the critical role of the military healthcare system in supporting the general healthcare system is presented. The first part of the study is a description of the powers and resources subordinate to the Minister of Defense assigned to assist the civilian healthcare system with regards to transport of medical products by air and land. The second part of the paper is a presentation of Polish military medical missions to Italy, Slovenia, and the United States, while the third part shows how the experience gained during the missions was used in Poland, within the healthcare system, in the crisis conditions. Moreover, in the third part of the paper, the role that military hospitals and universities played in the fight against Covid-19 is emphasised, particularly the involvement of cadets from military universities in easing the burden on medical personnel and gaining valuable experience by the future members of the Polish Armed Forces. The fourth part of the study is entirely dedicated to the activities of the Territorial Defense Forces as part of the action “Resilient Spring”.

KEYWORDS

military healthcare system, Covid-19, Military Medical Institute, field hospital, Territorial Defense Forces



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Introduction

At the end of 2019, the Sars-Cov-2 virus, which causes a respiratory disease called Covid-19, was discovered in the Chinese city of Wuhan. Disturbing reports of an extremely dangerous course of the disease accompanied by acute respiratory failure and the necessity of application of advanced medical intervention in intensive care [1] started coming initially from China and then from Lombardy, Italy. The massive influx of patients resulted in overcrowded hospitals, a great number of deaths and a shortage of personal protective equipment for medical personnel, the insufficient stock of which was quickly used [2]. The dynamic increase in the number of cases of Covid-19 caused a drastic deterioration of the sanitary

and epidemiological situation, which at that time was beyond the control of the healthcare services of both above-mentioned countries. At that time, it was not expected that a similar situation would soon become part of everyday life, first in other highly developed countries such as Spain, France, the U.K., the United States, and later on, also in Poland. The state of a global pandemic was declared and health systems, that were unprepared for the health crisis of that magnitude, required support from other institutions that deal with broadly understood security such as the Police, the Fire Service and, obviously, the Armed Forces. Special procedures were introduced such as the *Orsan plan* [3] in France, the aim of which was to involve the uniformed services in supporting the general healthcare system. *The Act of 5 December 2008, on prevention and control of infectious diseases in humans* and *the Act of 26 April 2007, on crisis management* provided the guidelines to coordinate the actions of military and civilian institutions in Poland in the fight against the common and invisible enemy which turned out to be the Sars-Cov-2 virus. Military healthcare systems around the world supported civilian healthcare systems at various levels (transport of sanitary equipment, expanding of the number of available beds by setting up field hospitals in cities with the largest inflow of patients to healthcare facilities). In France, planes, helicopters and even a high-speed train (the so-called TGV) [4] were adapted to transport the sick. The USNS Comfort hospital ship [5] was used in New York City and the USNS Mercy arrived at the coast of Los Angeles. What was the action of the Polish Armed Forces in support of civilian healthcare like? Have the Armed Forces provided sufficient assistance to civilians during the crisis of such a huge magnitude?

The pandemic has provided an opportunity for increased cooperation between the civilian and military communities in working together for the benefit of national security. Was it successful?

1. Operation of the military healthcare service with regards to medical transport

1.1. Transporting of patients by air

The mass influx of the patients to hospitals in urban centres such as Warszawa, Kraków or the Silesian agglomeration, where the high population density was the reason for the greatest dynamics of the spread of the virus, made it necessary to relocate patients to medical centres located in other areas of the country with available space on intensive care [6]. The Polish Armed Forces, allocated based on an agreement between the Minister of National Defense and the director of the Medical Air Rescue, rushed to help the civilian healthcare service. Fourteen helicopters and two Casa C-295 transport aircraft along with their crew were selected to help to fight the pandemic. A special procedure was developed to establish rules for the cooperation between CO LPR, the civilian operational centre of medical air rescue service and ASAR, the military air search and rescue service. The procedure specified the principles of allocation, organisation and coordination of military means of transport managed by LZPR, air search and rescue teams. The main assumption of that initiative was to expand the transport ability of Polish Medical Air Rescue services through the use of planes that belonged to the Armed Forces and that could take on board a large number of patients and specialised medical equipment, including Bio-Bag isolation chambers, see Figure 1 [7].

In the procedure, it was mentioned that civilian healthcare support missions must not interfere with the execution of the statutory activities of ASAR, that is search and rescue missions. The Polish Armed Forces made available two W-3WA helicopters (search and rescue) from



Fig. 1. Placing a patient inside the W-3 military helicopter using the Bio-Bag isolation chamber
Source: [7].

the 2nd Search and Rescue Group and the 33rd Transport Aviation Base plus 1 AE helicopter (medical evacuation) from PJEM, air medical evacuation unit. Allocated forces could operate within the whole area of the country. Their advantage was a large range of guaranteed flights, of 400 kilometers, without the need for refueling, which was helpful in the case of medical evacuation missions. Military personnel of LZPR, the air search and rescue teams, was responsible for the collection, placement on board and replenishment of certified LPR equipment (including ECMO equipment, extracorporeal life support for patients with the most severe course of the disease). The civilian personnel from the LPR was required to familiarise themselves with procedures related to military helicopters such as health and safety rules during placing patients on board, management of the space inside the plane and dealing with medical equipment [8]. The planes have not been used in rescue missions so far and rotorcrafts have been used since 17 November 2020 – when the first evacuation was completed. A total of 47 missions have been completed until 8 June 2021, to support the general healthcare system with regards to transport of patients. The most spectacular cases reported in the media were evacuations with the application of the complicated ECMO procedure [9].

1.2. Inland transport

Another example of support of civilian healthcare with regards to medical transport during the Covid-19 pandemic was the evacuation of residential homes (DPS). Due to the age of the residents and their usually long medical history, as well as the necessity of the medical staff to work in several institutions at the same time, there was a high risk that those institutions would become centres of mass infections, additionally burdened with a very high mortality rate. Therefore, evacuation and treatment procedures had to be implemented as soon as

possible to avoid situations beyond control of the healthcare system. Ambulances from the military healthcare system played an important role in achieving that goal. The multi-carriage vehicles were a great asset when a large number of patients had to be transported in a short period of time. An example of such a situation could be the evacuation of 28 infected residents of the residential home in Kalisz, who were transported on the night of 17-18 April 2021 to one of the hospitals in Poznań by medical personnel from the 2nd Military Field Hospital [10]. The ability of military forces to transport several patients at the same time (e.g. 25 the Air Cavalry Brigade) was made use of on 22 April to transport 55 residents of the residential home in Kleszczów (the region of Bełchatów) to hospitals in Radomsko, Bełchatów, Zgierz and Łódź [11].

1.3. Transport of equipment

The transport of medical equipment and materials from abroad was a huge challenge with regards to logistics. The action was organised, i.a., under the SALIS programme which is a strategic transport service for NATO countries. As part of the programme, equipment was delivered (180 thousand of protective suits, 50 thousand of goggles and one million pairs of disposable gloves) purchased by the Industrial Development Agency and it arrived on 9 April 2020 at the military airport in Wrocław [12].

2. Polish medical mission in Italy, Slovenia and the United States

2.1. Italy

Undoubtedly, the Polish medical mission to Italy, organised during the period of 30 March to 9 April 2020, turned out to be a valuable undertaking for the military healthcare and the whole system of general healthcare. The mission was managed by the Military Medical Institute at the peak of overloading of the Italian healthcare system due to the massive inflow of patients into hospitals [13]. The experience gained by the participants of the mission paid off when Poland faced a similar crisis and extraordinary measures had to be introduced to deal with the pandemic. Based on what Italy experienced, it could be concluded that the entire healthcare system – from primary care to specialist hospitals – had to be reorganised. Not all patients required hospitalisation. To avoid an excessive inflow of non-emergency patients into hospitals some persons had to be treated at home and the consultations with doctors were done via the Internet or over the phone, it was symptomatic treatment combined with a system of monitoring changes in the condition of the patient. Important conclusions were drawn based on the observation by the participants of the Polish medical mission of the way of functioning of a hospital in Brescia in which only patients suffering from Covid-19 were treated. Increasing the number of intensive care units was an important task and the biggest challenge was the provide professional staff to manage the units. The high mortality rate among medics, the need to self-isolate and undergo quarantine was the reason for a constant shortage of qualified medical personnel. A huge challenge was to organise work in hospitals in such a way that the possibility of getting the virus was minimised. Hospitals were divided into “dirty” zones, with patients infected with Sars-Cov-2 virus, and “clean” zones where other patients were treated. Restrictive rules for movement between the zones and triage procedures for new admissions were introduced to limit the possibility of patients and staff to become infected with the virus. Another important undertaking to deal with the crisis, which was also organised in Poland later on, was the opening of a temporary hospital in an

exhibition hall in the city of Bergamo. That facility significantly expanded the possibilities of the healthcare system in terms of hospitalisation (approximately 100 beds including 48 intensive care stations) during the time of the greatest increase in the number of the sick in the area. The knowledge which Polish specialists gained with regards to diagnosis and treatment of Covid-19 was invaluable. The scope and possibilities of imaging diagnostics in the assessment of a patient's condition, advantages and side effects of pharmacotherapy, prolonged treatment in intensive care units were the challenges that also Poland faced later on [14].

2.2. Slovenia and the United States

The experience gained during the mission in Italy allowed to organise a training and advisory mission to the Republic of Slovenia during the period from 22 to 24 April 2020, by the Military Medical Institute. The purpose of the undertaking was to exchange experience with regards to the healthcare system organisation under the Covid-19 pandemic, including the role of the armed forces in managing the crisis caused by the massive inflow of patients to hospitals. The participants of the mission visited major public healthcare institutions in Ljubljana and Maribor. Both parties expressed their willingness to establish long-term cooperation in the field of military medicine through scientific research, training projects and exchange of personnel [15].

The next destination of the Polish military medical mission was the United States. During the period from 23 April to 2 May 2020, Polish medics from the Military Medical Institute travelled to Chicago where, as part of the programme introduced in 1993 – the cooperation of the Polish Armed Forces and the Illinois National Guard, they learned about and actively participated in the organisation of the healthcare system of the friendly state under the conditions of the pandemic. The Americans were particularly interested in the experience and opinion of the Poles after their mission in Italy, while the representatives of Poland observed the way in which the American healthcare system was organised, including setting up a temporary hospital in the McCormick conference centre in Chicago. The hospital, built over the course of several days with the assistance of the Illinois National Guard, was designed for 3.000 persons [16].

3. Military facilities and institutions in the fight against Covid-19

3.1. Military Medical Institute

The Military Medical Institute, located in Warsaw at ul. Szaserów, has played a leading role in the military healthcare system for years. The medical personnel of the Warsaw hospital has formed the core of the staff of Polish Military Contingents who gained invaluable experience on the battlefield which was later used to develop procedures in emergency medicine [17]. The institute established the Centre for Medical Simulation and the Postgraduate Training Centre and the knowledge gained under combat conditions was incorporated into their curricula. Soldiers who get injured during foreign missions are sent for treatment and rehabilitation to the institute. It is also no coincidence that the Military Medical Institute played a major role in dealing with the emergency caused by the Covid-19 pandemic.

First, a medical mission to Lombardy, Italy, was organised where, at that time (March 2020) there was the worst epidemiological situation in the world and the healthcare system was completely disrupted. Next, as part of advisory and training missions, Slovenia and the United

States were visited. The knowledge gained during the missions was used to implement the diagnostic and therapeutic procedure in Poland taking into account strict measures to limit the possibility of transmission of the virus. An external infectious area of the Hospital Emergency Department was created in special containers, where patients were diagnostics and treated (including advanced medical activities in the intensive care room) and where contact with other patients and medical personnel from outside the area was limited.

On 23 February 2021, near the Military Medical Institute, a modular hospital was established. The experience and knowledge gained during the missions in Italy and the United States were used and implemented into real-life operations. The facility allocated for the most critically ill patients consists of 5 modules with 66 intensive care beds and there is a possibility to increase the number of beds to 124. The unit is fully self-sufficient with regards to logistics (oxygen, medical supplies and equipment) and diagnostics (the possibility of performing comprehensive diagnostic imaging). The cost of building the hospital was PLN 37 million and it was sponsored by the Ministry of Defense. What is important, the modular hospital will continue to serve the military healthcare and the citizens after the Covid-19 pandemic is over – it is going to be turned into a training centre and used during other emergency situations in the future [18].

A temporary modular hospital was established on the premises of the 1st Transport Aviation Base near Warsaw Chopin Airport in Warsaw, as an extra unit of the above-mentioned hospital at ul. Szancerów, in case the epidemiological situation in Poland worsened further. The 6-module facility created in the aviation hangar, Figure 2 [19], could accommodate 56 patients (including 30 requiring intensive care) and there was a possibility to increase the number of stations to 250. A great advantage was the fact that the facility was located close to the airport and patients could be transported by air in the event that they had to be evacuated from remote areas of the country where the epidemiological situation was beyond the control of the local healthcare system. The growth rate of the pandemic and its so-called “third



Fig. 2. Temporary hospital at Warsaw Chopin Airport ready to receive patients
Source: [19].

wave” also made it necessary to use the facilities during the time of the greatest burden on the healthcare system [20].

The Military Medical Institute was also engaged in innovative telemedicine solutions to reduce the risk of spreading the virus through direct patient-doctor contact. A medical self-monitoring card and a Covid-19 application were designed to monitor the condition of patients. The principle of the operation of the application was regular completion of a questionnaire related to subjective health assessment of the patient and the identification of symptoms that required a medical visit [21].

3.2. Military hospitals

Since the beginning of the pandemic, the medical personnel of two field hospitals was actively involved in fighting its effects: 1st Military Field Hospital in Bydgoszcz and 2nd Military Field Hospital in Wrocław. At the turn of October and November 2020, the medics from the first of the above-mentioned hospitals established a container field hospital in Bemowo near Warsaw for the needs of soldiers infected with the Sars-Cov-2 virus and became involved in the nationwide campaign of protective vaccination against Covid-19 by allocating vaccination teams to the 10th Military Clinical Hospital with Polyclinic in Bydgoszcz (10 WSKzP). The initiative of 10 WSKzP of opening a post-covid clinic under the name “Fast track specialist” is also worth mentioning. The purpose was to reduce the waiting time to see specialists in, i.a., cardiology, pulmonology, otolaryngology, neurology and psychiatry for patients who have recovered from Covid-19 [22].

Soldiers from the field hospital in Wrocław started fighting the Covid-19 pandemic as early as in March 2020, when, for the needs of participants in foreign missions, they set up a container hospital at the military airport in Wrocław. The facility with two intensive care rooms, diagnostic imaging equipment (USG, X-ray) and a laboratory was to receive up to 100 patients. Based on the decision of the Minister of Defense of 17 April 2021, the personnel of the 2nd Military Field Hospital was included in the Crisis Intervention Teams, the main task of which was to support local governments to handle emergency situations in residential homes [23]. The above-mentioned decision coincided with a widely reported in the media day and night evacuation mission of a residential home in Kalisz by the forces and with the use of the resources of a field hospital in Wrocław. In the context of the involvement of Wrocław medics in combating the effects of the pandemic, their actions abroad should be mentioned, e.g., in Great Britain. During the UK-French border crisis in December 2020, and blocking the departure of Polish truck drivers, the medical staff of 2 WSzP took part in the action of testing their compatriots for Covid-19, allowing them to return to Poland as soon as possible. Mobile swab teams from field hospitals also operated across the country, significantly increasing the possibilities of the healthcare system in the field of quick diagnostics, including the organisation of the so-called drive-thru stations (collecting material for testing from persons in their cars).

The 4th Military Teaching Hospital in Wrocław also performed additional tasks in connection with the response to the Covid-19 pandemic. The hospital started the fight against the then-unknown threat on 2 February 2020. At that time, into a ward isolated from the rest of the facility, the hospital admitted 30 persons who required diagnostics to exclude infection with the Sars-Cov-2 virus. The individuals arrived by military air transport from France, after being evacuated from the global epicenter of the pandemic, Wuhan in China. After several days of testing, which ruled out the infection with the Sars-Cov-2 virus, the patients left the hospital [24].

3.3. Military universities

On 16 March 2020, cadets from military universities started to fight the Covid-19 pandemic, supporting local territorial defense brigades in taking care of the most needy members of society, especially during the period of restrictions on movement (the so-called lockdown). The cadets assisted, i.a. veterans, senior citizens, persons in nursing homes, people undergoing quarantine; essentials such as medication, cleaning supplies and food were delivered to them. The cadets also assisted with supplying medical institutions (hospitals, clinics) with the necessary materials and medical equipment, they performed the most arduous work of unloading and reloading products at individual stations [25]. The busiest hospitals could count on cadets to help them with time-consuming tasks that were necessary but did not require medical training, such as temperature measurement and administrative tasks.

A valuable initiative was the allocation of 129 cadet students from the Military Medical Faculty of the Medical University of Łódź, in March 2021, during the peak period of infection with the Sars-Cov-2 virus, to work on the front line of the fight against Covid-19 in the modular hospital of the Military Medical Institute, in the temporary hospital at Warsaw Chopin Airport and the infectious disease ward of the Military Institute of Aviation Medicine in Warsaw. The cadets worked based on two week rotating schedule, they assisted medical personnel depending on their current medical knowledge and advancement in the learning process. Students, who were at the early stages of their education (1st and 2nd year) focused on nursing activities, and those more advanced (5th and 6th year) participated in the most complex activities such as looking after a patient who required intensive care [26]. It should be noted that that initiative has resulted in benefits on several levels. The inflow of support personnel into military healthcare facilities during the most difficult time due to a dynamic increase in the rate of hospitalisation caused by the severe course of Covid-19 was particularly important and had a positive impact on the perception of the military healthcare system by civilian personnel and the public. At the same time, for young medical students trained for the armed forces, it was a very good opportunity to put their skills to the test under the conditions of a mass inflow of patients causing a crisis situation in the healthcare system. In the future, military actions may destabilise the general healthcare system due to the inflow of wounded and sick persons into hospitals. Therefore, the experience gained by the cadets may prove invaluable.

Another type of involvement in the fight against the Covid-19 pandemic, equally important, was the creation of a mobile application for android called H.E.L.P (Health Environment for Living in Pandemic) by programmers from the Military University of Technology and the National Cyber Security Center. The application was designed to increase security by indicating areas at risk of infection with the Sars-Cov-2 virus. Such data as body temperature, saturation, type of cough received based on questionnaires completed by users of the app were analysed. According to the designers of the application, it is possible to create a modern version of the app to allow to collect the data in a fully automated manner using wireless measurement sensors [27].

Students from military universities were also active in other areas. They were actively involved in the production of personal protective equipment such as protective face shields manufactured with the use of 3D printing technology, protective face masks and disinfectant fluid. Thanks to the organised blood donation campaign and voluntary participation of future officers, it was possible to ensure the continuity of work and supply of that life-giving fluid for those in need by blood donation stations throughout Poland. It is important to mention that the pandemic and the restrictions caused a drastic reduction in the number of blood donors as well as shortages of blood and its components on an unprecedented scale [28].

4. Support for the healthcare system and the population by the Territorial Defense Forces as part of the “Resilient Spring” operation

The Territorial Defense Forces were the main support for local governments, the civilian healthcare system and the public during the crisis situation related to the Covid-19 pandemic. The newly created formation has already proved its usefulness in anti-crisis activities in the past (e.g. flood emergency) with regards to cooperation with local self-government bodies, which is one of its main tasks [29]. The soldiers from Territorial Defense Forces started to fight the spreading disease on 12 March 2020, at that time, the mode of operation of the formation was changed from training to anti-crisis [30]. On 18 March 2020, the largest anti-crisis operation, “Resilient Spring”, of the armed forces since 1989 was initiated. Seven areas were identified where the soldiers from Territorial Defense Forces were to support the civilian crisis management system. Administrative activities in hospitals and healthcare services. Patrols with the Police and assistance at border crossings together with the Border Guard. Warehouse and transport works for the Material Reserves Agency and assisting local self-government institutions in the area of looking after seniors. Measurements of temperature at the airports for the Civil Aviation Authority and building the resilience of society through material and psychological support for those in need are the main tasks of “territorials”.

Assistance for the healthcare system was provided mainly in the form of activities that did not require medical training, such as temperature measurement, cleaning and providing information in hospitals, administration tasks, setting up field hospitals or assistance with logistics (transport of medicines, personal protective equipment and meals). Supporting the general healthcare system in the field of diagnostics was also extremely important. The Territorial Defense Forces, as part of the operation “Resilient Spring”, have organised stationary swab teams, mobile swab stations (the so-called test & go) and collected material for testing while visiting people at their homes during the quarantine. Another contribution of Territorial Defense Forces to the fight against the pandemic was the allocation of medically trained individuals to work with patients infected with the Sars-Cov-2 virus in the facilities of the healthcare system particularly in the areas most burdened due to the inflow of patients (specialised hospitals, emergency departments in hospitals, emergency medical teams). In terms of supporting the public, the priority groups, with regards to the provision of assistance, were veterans and the elderly. As part of the support, medications, foodstuff, cleaning products were delivered, medical appointments and psychological support were provided to those in need during the difficult period for seniors due to the restrictions related to the so-called lockdown. For the above-mentioned purpose, the Territorial Defense Forces have launched a free, 24-hour hotline so that people could reach professional psychologists on duty. The Covid-19 pandemic proved particularly dangerous to nursing homes (DPS) due to the large number of persons suffering from multiple chronic diseases staying in one place. An additional factor that contributed to the high risk of getting the infection was the shortage of medical personnel in the healthcare system and their need to work for different institutions at the same time. “Territorials” took care of residential homes as well. Since 20 April 2020, within each brigade of Territorial Defense Forces, there are Crisis Intervention Teams the main task of which is to evacuate infected residents to hospitals. It is also necessary to mention the assistance of Territorial Defense Forces for such institutions as the Police, the Border Guard and the Civil Aviation Authority as part of which the soldiers patrolled the streets, served at the borders of the country and assisted personnel at the airports with temperature measurement and collecting location cards [31].

Conclusions

As can be seen from the above analysis, the Polish Armed Forces have engaged a significant number of persons and a lot of resources to fight the Covid-19 pandemic, supporting the general healthcare system and, in the broader perspective, the entire state emergency management system. The above had a positive impact on the perception of the Polish army by the public, who appreciated their help in difficult moments. The Territorial Defense Forces have made history by getting involved in anti-crisis activities and being a huge support for state institutions and citizens. The support provided to nursing homes was of great importance as the residents were not left alone during the difficult time. The experience gained by the medics from the Military Medical Institute during Polish medical missions to Italy and the United States was extremely valuable. It made it possible to prepare the healthcare system to deal with the crisis situation caused by the Covid-19 pandemic and to gain the necessary knowledge and experience in the management of the healthcare system in the perspective of real threats related to the dynamics of the geopolitical situation on state borders. The mechanism for the inflow of patients into the general healthcare system may change. The outcome, in the form of overcrowded hospitals, may be the same. Therefore, it is necessary to improve procedures and strengthen cooperation between civilian and military environments, so that at the time of crisis all institutions that are responsible for national security are one well-coordinated team acting for the benefit of citizens. Has everything been done to support the crisis management system and society? Could the Polish Armed Forces have allocated other resources that remained unused? It appears that an area where the civilian healthcare system required more support was Emergency Medical Teams. Overburdened with the incoming travel orders, especially in large urban centres, they were unable to perform their statutory tasks. It took hours for an ambulance to reach a patient what caused anxiety and a decrease in trust in medical services in the society as well as the feeling of helplessness and frustration among staff. The military healthcare system has resources at its disposal that could be used to support Emergency Medical Teams in providing assistance to civilians. That would result in gaining more experience by military personnel, strengthening the relationship between the military and civilian medical communities and better public perception of the general healthcare system. There is also much to be done in the area of crisis management. Defining transparent procedures of cooperation and mutual competence. Including soldiers in local crisis management teams, appointing appropriate post-holders on the civilian and military side. These are the areas where the nationwide crisis response system needs to be improved. An important subject for further research is the perception of the military healthcare system by personnel from the civilian healthcare system and local government crisis management units.

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Conflict of interests

The author declared no conflict of interests.

Author contributions

The author contributed to the interpretation of results and writing of the paper. The author read and approved the final manuscript.

Ethical statement

The research complies with all national and international ethical requirements.

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Biographical note

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Rola Sił Zbrojnych RP w zwalczaniu skutków pandemii Covid-19

STRESZCZENIE

Artykuł ten jest próbą podsumowania zaangażowania Sił Zbrojnych RP w zwalczanie skutków sytuacji kryzysowej na obszarze całego kraju, jakim była pandemia Covid-19. Z uwagi na charakter zagrożenia, dotyczący przede wszystkim służbę zdrowia, wskazuje na kluczową rolę wojskowej służby zdrowia we wsparcie powszechnego systemu opieki zdrowotnej. Pierwszy rozdział opisuje siły i środki podległe Ministrowi Obrony Narodowej wydzielone do pomocy cywilnej służbie zdrowia w zakresie transportu medycznego, drogą powietrzną i lądową. Drugi rozdział porusza problematykę polskich, wojskowych misji medycznych do Włoch, Stanów Zjednoczonych i Słowenii, a trzeci pokazuje, jak doświadczenia tam zdobyte, zaimplementowano w Polsce w ramach organizacji służby zdrowia w warunkach kryzysu. W trzecim rozdziale podkreślona jest również rola, jaką w walce z Covid-19 odegrały wojskowe szpitale i uczelnie, w szczególności zaangażowanie podchorążych wojskowych uczelni, które spowodowało odciążenie personelu medycznego oraz nabycie przez przyszłych oficerów wojska polskiego cennego doświadczenia. Czwarty rozdział w całości poświęcony jest działaniom Wojsk Obrony Terytorialnej w ramach operacji „Odporna Wiosna”.

SŁOWA KLUCZOWE wojskowa służba zdrowia, Covid-19, Wojskowy Instytut Medyczny, szpital polowy, Wojska Obrony Terytorialnej

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