European Research Studies Journal
Volume XXIV, Special Issue 1, 2021

pp. 76-89

Safety Management System for the People in Water Areas in West Pomerania during COVID-19 Crisis

Submitted 01/02/21, 1st revision 23/02/21, 2nd revision 05/03/21, accepted 20/03/21

Tomasz Czapiewski[1], Maria Adamczyk[2], Tomasz Zalewski[3]

Abstract:

Purpose: *The primary purpose of this text is the extensive appraisal of the modifications in the conditions of people's safety in water areas during the COVID-19 pandemic in the region of West Pomeranian Voivodeship in Poland and the management of the safety of people in water areas in this region from the perspective of the rescue organisation.*

Design/Methodology/Approach: *The publication uses research methods characteristic of the social sciences, including the analytical method relating to the different types of reports and quantitative and qualitative data, and dogmatic method focusing on the analysis of the legal text.*

Findings: *The pandemic situation has notably affected the number of rescue operations being carried out. In 2020, there was observed an increase in the number of incidents supplied by the water rescue units compared to the previous years. At the same time the number of domestic tourists reduced by 7.4%, while the number of foreign tourists decreased by a noteworthy 42.9%. COVID-19 pandemic also resulted in changing the nature of the lifeguard's role from 'supervisor of the swimming area' to 'creator of conscious use of the body of water'. Through water patrols and contact with all water users (sailors, anglers and people practising other water sports), lifeguards can build social awareness and by creating positive habits and focus most of their time on preventive activities, a kind of 'water culture' based on a set of rules for responsible behaviour on the water.*

Practical Implications: *Having an increased group of responsible people on a given body of water, there is a possibility to build a specific 'aquatic community' that not only takes the full responsibility for independent and safe use of water areas, but also becomes a perfect example for other users. In an era of increased awareness of responsibility for one's own health and life, such a solution seems to be socially more effective and economically viable.*

Originality/Value: *The study presents an original approach to the problem of COVID-19 pandemic by including two important subjects, modifications in the conditions of people's safety in water areas during the COVID-19 pandemic and the management of the safety of people in water areas in this region from the perspective of the rescue organisation.*

Keywords: *Water rescue, rescue organizations, COVID-19 pandemic.*

JEL codes: *I12, K32, M12, Z30.*

Paper type: *Research article.*

[1] *University of Szczecin, Poland, E-mail: tomasz.czapiewski@usz.edu.pl*
[2] *University of Szczecin, Poland. E-mail: maria.adamczyk@usz.edu.pl*
[3] *University of Szczecin, Poland. E-mail: tomasz.zalewski@usz.edu.pl*

1. Introduction

The ongoing global COVID-19 epidemic has had a momentous impact on the management of the water rescue system during the bathing season, and its multifaceted nature has been one of the most challenging factors for preparing the procedural changes in the entire history of water rescue. The present alarming state of the SARS-CoV-2 epidemic has forced the rescue organisations to immediately revise the existing procedures for handling tourists.

The primary subject of this text is the extensive appraisal of the modifications in the conditions of people's safety in water areas during the COVID-19 pandemic in the region of West Pomeranian Voivodeship in Poland and the management of the safety of people in water areas in this region from the perspective of the rescue organisation. The West Pomeranian region included in the study is of the size commensurate to the NUTS 2 level as the unit of the administrative division of the second level.

In a broad sense, rescue activities in Poland are assumed to be the responsibility of the government administration; however, because of innumerable limitations, it cannot fulfil all the needs in this regard (Adamczyk *et al.*, 2020). Supporting this structure with the activities carried out by the volunteer lifeguard teams from the Volunteer Water Rescue Organisation (WOPR) and Volunteer Fire Brigades is an indispensable complement. Specialised water rescue is carried out by WOPR intervention groups stationed either at the bathing beaches, marinas or water facilities and coordinated by the Water Rescue Coordination Centres (CKRW). A CKRW dispatcher receives a call for help directly from a witness to an incident at the rescue number 601 100 100 through the 'Ratunek' application or transmitted from the governmental Rescue Notification Centre operating the emergency number 112 or by dispatchers of emergency numbers of other services operating in the country. The dispatcher of the CKRW after receiving the notification dispatches the cooperating rescue units located near the incident.

The safety of people on water in Poland is regulated by the Safety of Persons in Water Areas Act of 18 August, which identifies the mayor (executive body of the local government) as the primary safety manager. Ownership issues of specific water areas are deemed irrelevant. To handle this task in a professional manner, the local authorities often outsource this extensively for the whole year and for all the water areas to water rescue units and create safety structures that allow cooperation between the different entities involved in a particular area. Water rescue activities can only be carried out by rescue entities approved by the relevant minister after fulfilling the criteria set out in the Safety of Persons in Water Areas Act of 18 August. In the studied region, the most crucial entity of this type is WOPR of the Zachodniopomorskie Voivodeship (WOPR WZ). To comprehensively carry out rescue, preventive and prophylactic actions on water areas, the abovementioned water rescue entities cooperate with other professional services, such as the Police, National Fire Service,

Maritime Search and Rescue Service (SAR), Ambulance Service and Helicopter Emergency Medical Service.

A distinctive feature of the system delineated above is its heterogeneity in the institutional dimension. Ensuring the safety of people in water areas in Poland is a task that in a multitude of forms and degrees is the responsibility of the local government, the entities authorised to carry out water rescue, the Police, fire brigades and regional and central government administration (Zalewski and Czapiewski, 2014). As remarked in previous studies (Czapiewski, 2016), after the reform introduced during 2010-2011, this system has been characterised by deregulation and commercialisation, and that concurrently, the state authorities lack adequate resources to carry out the supervisory or even coordinating functions. This reform transferred responsibilities without creating a coherent system of financing and introduced a system of price competition without an effective framework for checking regulatory compliance.

2. Safety of People in Water Areas During a Pandemic

The COVID-19 pandemic has significantly affected the operating conditions of the government security systems. Even the functioning of the water safety system has altered, influencing the process of tourists' decision making. With the restrictions on the international travel during the holiday season, the international tourist arrivals are estimated to drop to 78% (Sigala, 2020; Gosling *et al.*, 2020). The group of people who use water areas, especially during a pandemic, have innumerable distinctive characteristics that can also affect the conditions under which the rescue organisations operate. Owing to the voluntary nature of taking the risk, optimism bias, poor social amplification, lack of reliable information or having no direct experience, they are more likely to underestimate different risks, especially those associated with the COVID-19 infection (Bruine de Bruin and Bennett, 2020). Younger people who are most likely to visit a beach perceive the risk of fatality as much lower. Beaches are plausibly regarded safe as an outdoor place. Furthermore, underestimating the risk correlates strongly with the proclivity to ignore preventive measures (Zielinski and Botero, 2020). Moreover, as the rate of deaths due to COVID-19 and new infections declined considerably and the lockdown restrictions were eased, the risk perception among beachgoers dropped dramatically (Yeginsu, 2020).

In Poland, the opinion polls indicated that younger people were over-represented among those planning a holiday outside their usual place of residence (Komunikat, 2020a). Around 86% of holidaymakers spent their summer holidays exclusively in the country, while 7% spent a part of their holiday in the country and a part abroad. Among the people who declared being extremely afraid of being infected with COVID-19, only 19% went on a holiday with at least two nights' accommodation, while 44% of people were a part of the groups that asserted 'No, I'm rather not afraid' or 'No, I'm not afraid at all' (Komunikat, 2020b).

In July and August 2020 in Poland, 1.5 million tourists stayed at tourist establishments located in coastal areas, with 7.3 million overnight stays. Of the total occupants of the tourist accommodation establishments, 87% (1.3 million) were domestic tourists and 13% (0.2 million) were foreign tourists. In relation to the corresponding period of 2019, the number of domestic tourists reduced by 7.4%, while the number of foreign tourists decreased by a noteworthy 42.9%. At the same time, during the holiday period of this year (in July and August), the coastal areas were reported as more popular than a year ago (GUS 2020). Facilities located in the areas of coastal municipalities hosted 25.9% of overnight visitors to tourist facilities across the country during this period, while in its 2019 counterpart, this percentage was 21.3% (GUS, 2020).

In a few cases, a paradoxical consequence of the COVID-19 pandemic was a reduction in the number of protected water areas in inland areas, where tourism is not the primary economic activity. On the one hand, the motivation (undisclosed) may have been the desire to save money on the part of the local authorities that normally bear the cost of securing these areas. Whereas on the other hand, the issue of curbing the spread of the pandemic was accentuated. The official opening of the bathing sites could have been envisaged as encouraging people to spend time together in the water areas and thus, contributing to an upsurge in the number of cases. Such a perspective was short-sighted because with fewer trips abroad or even at home with an overnight stay, the use of local water areas close to home was in the same as previous years (Serwis and Kąpieliskowy, 2020).

The pandemic situation has notably affected the number of rescue operations being carried out. In 2020, there was observed an increase in the number of incidents supplied by the water rescue units compared to the previous years. The number of rescue operations carried out against the drowning persons increased by 66%. A remarkably significant increase of 500% was recorded in the number of cases of undertaking activities performed as a part of qualified first aid (Article 14 of the Public Emergency Services Act of 8 September 2006) There was also a dramatic increase in the number of rescues carried out by the lifeguards authorised as paramedics, which was twice as high. A similar upsurge of 109% was observed in the number of cases regarding searching for missing persons in water areas. The number of drowning persons rescued also increased appreciably by 76%. The number of rescue operations carried out against drowning persons culminating in the demise of the rescued person increased by 37%. There was no change regarding the percentage for the incidents of transport and transfer of injured persons in 2020 (Sprawozdanie, 2019; Sprawozdanie, 2020).

Changes in the number of bathing sites in particular parts of the region did not significantly change the numbers for the whole of West Pomerania, as shown in Table 1. A total of 119 bathing sites were recorded as functioning in 2020 (only one less than in 2019). It is worth noting that in Poland, the declaration to establish a bathing site is reported in the initial months of the year, i.e., when pandemic was in its incipient

stage. The local authorities that decided to establish bathing sites responsibly carried out the declared obligations, except for Lake Dąbie, which had poor water quality.

Table 1. *Number of reported bathing sites*

	No. of bathing sites	
Powiat	2019	2020
choszczeński	3	2
drawski	8	9
goleniowski	2	2
gryficki	16	20
gryfiński	5	1
kamieński	9	11
kołobrzeski	19	19
koszaliński	15	15
Koszalin	1	1
myśliborski	4	5
policki	2	1
sławieński	21	19
stargardzki	1	1
szczecinecki	5	5
wałecki	2	2
Szczecin	3	2
Świnoujście	4	4
Total	120	119

Source: *Own compilation based on Chief Sanitary Inspectorate (GIS) data.*

Notwithstanding the lack of significant differences in the number of bathing sites, certain exceptions should be noted. Taking advantage of the social distancing related restrictions in place, some local authorities were considering implementing a new safety model in alignment with those used in Australia or the United Kingdom. Managers were willing to contract rescue services to mobile rescue teams, increasing the coverage of the area of responsibility to the entire body of water from the decommissioned bathing site. Based on this example, it can be readily concluded that the ongoing COVID-19 pandemic is leading to the emergence of a new model of conscious water tourism, where people using water areas assume the responsibility for their safety during recreation, and rescue units intervene only as a last resort with their chief duties being prevention and prophylaxis.

There is currently no scientific certainty about the SARS-CoV-2 virus' ability to survive in beach conditions, sand, or water, although partial studies have indicated that this environment is relatively low risk (CSIC 2020). Despite this, the GIS, in a strategy to reduce the risk of infection due to SARS-CoV-2, recommended that those who use the bathing areas (BAs), among others, maintain social distance, avoid crowded places and use personal protective equipment (PPE). Places with increased risk of SARS-CoV-2 transmission, such as bars and showers, were excluded from functioning. However, this did not discernibly alter the distribution of people on the beaches or in the water. BAs are typically visited by families or groups of close friends. For years, a social phenomenon has been observed in which these groups separate their own section of beach with screens. Poles who value their personal space,

behave similarly in water, and choose bathing spots far from the crowded places. This had the effect of further dispersing the people by the water. This could be the potential reason for the increased (4 more) number of drownings during the three holiday months (June–August) (Table 2).

Table 2. *Summary of the drownings during the holiday season during 2019–2020*

Lp.	2019		2020	
	Date	Place	Date	Place
1.	08.06	Darłowo, Wieprza River	18.06	Szczecin, Odra river
2.	11.06	Przytoń k. Drawska Pom.	20.06	Mrzeżyno, Baltic Sea
3.	22.06	Szczecin, Lake Głębokie	06.07	Ustronie Morskie, Baltic Sea
4.	23.06	Goleniów, Ina river	10.07	Stary Kostrzynek, Odra river
5.	30.06	Szczecin, Parnicki channel	15.07	Kołobrzeg, Baltic Sea
6.	13.07	Szczecin, Lake Głębokie	19.07	Łazy, Baltic Sea
7.	17.07	Ustronie Morskie, Baltic Sea	25.07	Szczecin, Lake Dąbie
8.	17.07	Mrzeżyno, Baltic Sea	25.07	Borne Sulinowo
9.	14.08	Dźwirzyno, Baltic Sea	27.07	Chłopowo, Lake Chłopowskie
10.	21.08	Gryfice, Rega river	02.08	Sarbinowo, Baltic Sea
11.	23.08	Szczecin, Odra river	03.08	Smolęcin
12	02.09	Międzyzdroje, Baltic Sea	14.08	Darłowo, Baltic Sea
13.	02.09	Międzyzdroje, Baltic Sea	21.08	Wielin, Wielin lake
14.	14.09	Wałcz, Lake Raduń	23.08	Jarosławiec, Baltic Sea
15.			28.08	Mielenko, Baltic Sea
16.			05.09	Żydowo
17.			11.09	Lake Miedwie
18			15.09	Cegielenka channel

Source: *Own elaboration based on data from CKRW and Provincial Police Headquarters.*

Interviews with water area managers and coordinators of water rescue before, during and at the end of the bathing season indicated that those using designated water areas were more likely to visit water areas near their homes. The increased popularity of smaller BAs was related to the imposed restrictions, the sense of health risk and the financial situation of the visitors.

3. Management of the System for the Safety of People in Water Areas in West Pomerania during COVID-19 Crisis

Taking the previously described aspects into account during the COVID-19 crisis, the rescue organisations as units cooperating with the State Emergency Medical Service (PRM) system individually came forward with their declaration of readiness to extensively support the PRM system in the fight against the SARS-CoV-2 virus, in the following activities:

1. Service of the quarantined individuals, supply of the necessities of life, transportation of quarantined individuals between different centres.
2. Information and prevention campaigns in countering the spread of SARS-CoV-2 virus in cities and smaller towns (in person and with vehicles) and through websites and social media.
3. Support of the units of the PRM in providing qualified first aid.

In connection with the declaration of an epidemic in the territory of Poland, the current operational readiness, and priorities of involvement of the rescue forces and resources of the WOPR of the West Pomeranian Voivodeship have been changed. To support the units of the PRM aiding the people injured in the area of the West Pomeranian Voivodeship has been set as a priority action, taking into account the maximum time for reaching readiness in minutes, while not exceeding 30 minutes. However, for water rescue actions, this time has been extended to 120 minutes. A new structure for management and dispatching of rescue forces and resources in the WOPR of the Western Pomeranian Voivodeship has also been defined by establishing special procedures for CKRW, the Regional Operational Group Manager, the Medical Dispatcher, and the Regional Medical Rescue Coordinator.

Owing to the lack of financial resources to adequately fund the rescue operations and the decreasing liquidity of the rescue operators resulting from the closure of the swimming pools where the lifeguards worked, the operators requested support from the government indicating the following needs, PPE, accommodation, regeneration meal and fuel.

As a result of the outbreak, an unimaginably difficult financial situation was reported by several lifeguards for whom their profession was the only source of income. The closure of facilities has also put the water rescuers in a financially challenging situation. Owing to the epidemic state in Poland, the entities declared a change in the priorities of their activities and asked the Wojewoda to agree for the aforementioned changes in the maximum preparedness. Despite the indicated readiness related to the availability of emergency services, the provincial governor's administration in the Zachodniopomorskie Voivodeship did not find any resources for additional support and the proposal for the adjustment of financial resources designated for the already implemented public task entitled: ‘Organizing and providing help to people who had an accident or are exposed to the danger of losing their life or health on water areas in the year 2020’ could not be modified for the needs of the pandemic.

The amount of targeted grants from the state and local government budgets were the same for the years 2019 and 2020. Within the framework of the concluded agreements, rescue and equipment activities were implemented. Financial support facilitated strengthening of the rescue units, among others, in specialised equipment, means of transport and communication and PPE necessary to perform operational activities planned for 2020.

Authorities of the voivodeship administration displayed remarkable understanding of the difficult financial situation of water rescue and donated a part of the funds dedicated to rescue services and hospitals during the pandemic. Another form of support was created by giving WOPR WZ an opportunity to apply for a special fund for activities of regional nature from the EU funds from the Regional Operational Programme in the amount of 1.5 million PLN. The project implemented from this fund is aimed at preventing, counteracting, and combating the COVID-19 pandemic caused

by the SARS-CoV-2 virus. Through appropriate retrofitting of the unit (including purchase of the equipment and protective measures), the project is anticipated to contribute to the mitigation of the existing epidemiological situation and enhance the quality of the services offered to the public. The target group of the project are WOPR WZ and the local self-government units managing bathing sites in the Zachodniopomorskie Voivodeship. The beneficiary will distribute the purchased equipment in the Zachodniopomorskie Voivodeship. The support will thus be provided to 43 organisers of 119 bathing establishments in the voivodeship.

It is worth remarking that during the ongoing pandemic, the reorganisation of the targeted rescue operations and changes in funding have translated into the way water rescue organisations operate. Leaving aside the issues of financing activities for the functioning of rescue services, the entities have come up with a bottom-up initiative to implement a joint development of recommendations and guidelines that will allow to professionalise the management of rescue teams during the pandemic. A specialised manual has been prepared with specific procedures to be implemented throughout the swimming season, covering activities throughout the pandemic. The manual indicates in its introduction that an additional written risk assessment (risk of infection, especially for the water rescuers) and a hygiene plan (use of cleaning agents, disinfectants, working materials and PPE) ought to be carried out before commencing the activities. In its subsequent chapters, it states that all the rescuers must be informed about the measures taken in the risk assessment and hygiene plan before taking part in the action. This must be documented in writing. All illnesses or the symptoms of illness associated with COVID-19, must be documented (e.g., in a report or work log) and the rescue entity management must be informed immediately. The manual requires managers of the water rescue entity to be in constant contact with the locally appropriate State District Sanitary Inspector and Labour Inspector.

Special recommendations apply to the committed staffing resources, where there is an indication to direct only healthy emergency personnel to duty. Rescuers who develop symptoms of the infection should be isolated and should not participate in the rescue operations. In addition, a health check (with proper documentation in a report or work log) may be conducted prior to being on duty or in action. Individuals belonging to a risk group or living in a household with other individuals in a risk group should not be involved in operations, if possible, and must not have any form of direct contact with the patients.

An additional risk assessment to be done prior to the start of the on-call has been introduced. The fact that the emergency teams are instructed, as documented in the report or journal, is to be confirmed by the team's signature. According to the available space, the organisational arrangements should be made to regulate the distances, hygiene regarding the care of the injured and other persons in need of assistance, etc., so as to perform the tasks without any additional risk to the staff and other people requiring assistance. Personnel should be kept to a minimum and on-call arrangements should be made. Public traffic while on duty and patrols with emergency equipment

shall be limited to only those essential to provide emergency security service. Training and drills are not recommended. The stay of guests, family members of lifeguards and their children is not permitted. Only the on-duty lifeguards and those in need of assistance are permitted to stay. Access to the stations must be restricted, where possible, by barriers (e.g., by chains, bars, and tape) and signs. Information must be prepared in such a manner that it is comprehensible to all the visitors (foreigners, children, etc.), e.g., by preparing them in a pictorial form.

As a part of the activities of mobile intervention groups, the procedures, which were concluded earlier, are to be implemented to minimise the risk of infection. For the arrival at the scene of the action, the rescue teams should, if possible, be divided into several marked vehicles/rescue boats. It has been decided that the care for those requiring assistance at the point of rescue should be kept to a minimum. This is especially true if the care cannot be carried out in a separate room (medical point). Provision of assistance to victims with minor injuries may be carried out outside the medical point provided they are isolated from the public view, e.g., by using screens. Individuals requiring assistance are transported directly to the medical point, avoiding other rooms of the rescue base. One-way corridors, distance markers, waiting rooms, etc. should be used to isolate the injured individuals.

The water rescue procedure has not been drastically altered as the risk of infection during this type of activity is considered as low. The provision of assistance by the rescuers in water should be carried out as far as possible without any contact. The following general rules for drowning rescues should be followed:

1. Keep your distance (possibly 1.50 m).
2. Rescue with rescue aids (e.g., buoy or rescue belt).
3. If possible, rescue from land/boats.
4. In the event of a swimmer rescue, the rescuer should swim from behind the drowning person, if possible.

If rescuing a swimmer necessitates swimming up, the risk of infection can be further reduced by using a mask and snorkel. Victims requiring CPR are attended to by only as many water rescuers as necessary for the treatment, with the rest maintaining a safe distance. Only the indispensable pre- and post-rescue readiness procedures shall be performed to ensure operational readiness.

Several procedures are also outlined for suspected infection among the water rescuers, who should be sent home immediately and contact their family physician and/or the local State District Sanitary and Epidemiological Inspector (SSE). To identify the source and route of the spread of infection, everyone in the immediate vicinity of the infected individual must be noted with contact information. This information must be provided to the SSE upon request. The time of return to active duty is determined by the attending physician or sanitary officer after the appropriate procedure has been implemented. Emergency response teams, even if symptom-free, are not supposed to

be on duty if they have returned from a high-risk area within the last 7 days or have had contact with a person who has been tested positive for COVID-19 infection. This is also applicable if the contact occurred before the infection was detected and up to two days before the initial symptoms appeared.

Definite provisions rule the use of PPE and scheduling its need. Specific instructions have been assigned to each activity relating to the type of protection for the face, whole body, medical equipment, or rescue equipment. All rescuers are required to read the instructions and were trained and instructed in the handling of PPE.

A request was made to GIS to implement a system of limiting the contact between beach users and lifeguards, e.g., through the elimination of lifeguard stations in favour of mobile intervention groups for patrolling, prevention, and prophylaxis. The managers of the rescue organisations have made recommendations to establish a substitute rescue team in case the primary team members catch the infection. The proposal was, however, not accepted by GIS. The major changes are summarised collectively in Table 3.

Table 3. *Summary of major changes in the system for the safety of people in water areas in West Pomerania*

Task	Action	
	Standard	During COVID-19
Pre-action procedures	• Assessing the risk of a life- or health-threatening event • Procurement of the resources necessary to perform the task	• Standard risk assessment • Additional risk assessment before taking action • Development of a hygiene plan • Documentation and information on change in health status • Procurement of the resources required to perform the different tasks • Supply of PPE in accordance with the emergency planning
Forces involved	• In an immediate life-threatening situation, maximise the forces and resources needed and available	• Healthy staff only • Pre-duty health screening • Exclusion of at-risk individuals from activities
Emergency duty	• Daily risk assessment of a life or health threatening event • Full emergency personnel	• Additional risk assessment prior to starting on-call • Organisational arrangements for regulation of distance, hygiene and care • Keeping the staff to a minimum
Intervention Groups	• In an immediate life-threatening situation, maximise the forces and resources needed and available • Three-person rescue teams	• Organisational and hygienic procedures to minimise the risk of infection • Getting to the incident in smaller teams

	• Access to the incident, if necessary, by larger transport	
Caring for those in need of assistance	• Unrestricted care at the medical point • Securing injuries outside the medical point (screen)	• Care at the medical point kept to a minimum • Securing injuries outside the medical point (screen) • Transportation, isolation with limited pass-through rooms
In-water and out-of-water rescue	• Whenever possible, without direct contact by the rescuer • Rescue by assistive means • Rescue from land/boat, if possible • Maintain eye-contact during direct contact • Resuscitation by rescuers in full strength	• Without direct contact from the rescuer, if possible • Maintain suitable distance • Rescue by means of aids • Rescue from land/boat, if possible • In direct contact, swim from behind the drowning person • Resuscitation by minimum team
Training	• Necessary for carrying out activities and enhancing competencies • Each time procedures are changed • Regular	• Only necessary • Additional training not recommended • Regular training in the use of PPE
Suspected infection among rescuers	• None	• Consistent with GIS' recommendations
Other	• Support for crisis operations	• Support for emergency actions • PRM system support in the fight against COVID-19

Source: *Own elaboration.*

The chief responsibility of WOPR WZ during the pandemic is to determine other activities aimed at achieving the predefined goals. The board of the organisation communicated with the Governor declaring operational readiness to support the emergency actions by qualified water rescuers. The operational action entailed passing a resolution by the Board. The document included priorities for funding operations and maintaining operational readiness along with model response times for the designated rescue teams. Information about other possibilities of professional activities was addressed to the Presidents of the WOPR District Branches. Responses and declarations of operational readiness of forces and resources were collected in the database. The rescuers deprived of employment because of the pandemic were recruited to support emergency operations. A recruitment application was created specifically for this purpose. The existing educational and preventive actions, resulting from the statutory obligation, were remodelled. Educational materials (graphics, posters, and films) were developed to further raise public awareness. The issues of health, immunity building, coping with stress in epidemiological threats and techniques for individual care aimed at counteracting virus transmission were discussed.

There were also some functional innovations in the process of optimisation of service activities in epidemiological threats. One of them was Mobile Covid Boxes (MBCs), purchased for reliable measurement of body temperature of those in urgent need of first aid (excluding life-threatening conditions), which also secure the distance of the victim from the rescuers. In bathing conditions of strong sun exposure, the body temperature measurement is not reliable. The MBC allows the injured person to independently enter a shaded area conditioned to room temperature and stabilise the body in resting conditions so that the measurement is reliable. MBCs were in the vicinity of WOPR medical points at bathing beaches in the West Pomeranian Province and out-of-season MBCs were at the disposal of the provincial governor according to separately specified rules.

Based on the literature review and theoretical analysis of the statistical data, it was concluded that the current activities are not fully sufficient. It was realised there is a dire need to introduce further innovative technological solutions for the services, i.e., a medical isolation room being a safe place with limited contact and a regeneration room.

5. Conclusion

The prevailing epidemiological situation has forced procedural and organisational changes in the water rescue services. Scientific committees in the fields of medical science and public health in collaboration with sanitary and safety organisations were formed to develop modified guidelines for those who met potential SARS CoV-2 infected individuals.

In Poland, recommendations for services during COVID-19 were created to optimise service operations in an epidemiological emergency. The resulting documents include procedures for the continued use of PPE, cleaning and disinfecting rescue and protective gear, caring for persons requiring assistance and guidelines for conducting cardiopulmonary resuscitation.

The evolving epidemiological situation has resulted in innovative technological changes, i.e., safe intubation box, body temperature measurement (thermometers, Individual Sanitary Control Point), Mobile Consultation Point and MBCs to increase protection and minimise the risk of SARS CoV-2 infection among staff and victims.

Based on pandemic procedures, the need to reduce contact between the rescue teams and tourists and residents using bathing sites was put into consideration. To create and implement more effective solutions to ensure safety in water areas, a model was proposed to replace the bathing site crew with mobile rescue teams. The optimal location of the Intervention Groups on a given water area introduces a new quality to their functioning and allows to replace the tasks of monitoring only the bathing site with complex tasks related to the supervision of safety over the whole water area. Removal of the duty to operate only in the designated area allows lifeguards to

undertake preventive actions aimed at all other users of water activities. Thus, constructed GI equipped with professional equipment (e.g., motorboats, quads, drones) allows to act as an 'ambulance to water events' and allows rescuers to quickly reach the place of the incident and provide qualified first aid. Implementation of such a model in practice changes the nature of the lifeguard's role from 'supervisor of the swimming area' to 'creator of conscious use of the body of water'. Through water patrols and contact with all water users (sailors, anglers and people practising other water sports), lifeguards can build social awareness and by creating positive habits, stimulate individual responsibility of each user for his/her health and life.

Having an increased group of responsible people on a given body of water, we build a specific 'aquatic community' that not only takes the full responsibility for independent and safe use of water areas, but also becomes a perfect example for other users. Often, those who provide first aid are the first witnesses of an incident and through their attitude, build a grassroots system of universal safety locally for a given body of water. Such an environment concentrates on the realisation of these goals around local rescue leaders who are part of a professional rescue team. Rescue leaders focus most of their time on preventive activities, such as teaching first aid, recognising threats, preparing maps of safe area usage and awareness talks with individual users, creating a kind of 'water culture' based on a set of rules for responsible behaviour on the water. In an era of increased awareness of responsibility for one's own health and life, such a solution seems to be socially more effective and economically viable.

References:

Adamczyk, M., Giza, A., Kurylczyk, A., Terefenko, P., Zalewski, T. 2020. Spatial Distribution Characteristics of Water Safety Services in Poland. Journal of Coastal Research, 95(SI), 733-737. DOI: 10.2112/SI95-143.1.

Bruine de Bruin, W., Bennett, D. 2020. Relationships Between Initial COVID-19 Risk Perceptions and Protective Health Behaviors: A National Survey. Am J Prev Med., 59(2), 157-167. DOI: 10.1016/j.amepre.2020.05.001.

CSIC. 2020. Informe Sobre Transmisión del SARS-CoV-2 en Playas y Piscinas. Ministerio de Ciencia e Innivación. Madrid, Spain.

Czapiewski, T. 2016. Regulacja w celu deregulacji. Polityka bezpieczeństwa obszarów wodnych w Polsce. Wrocławskie Studia Politologiczne, no. 21. DOI: 10.19195/1643-0328.21.11.

Gössling, S., Scott, D., Hall, M.C. 2020. Pandemics, tourism, and global change: a rapid assessment of COVID-19. Journal of Sustainable Tourism, no. 1, 1-20. DOI: 10.1080/09669582.2020.1758708.

GUS. 2020. Turystyczne obiekty noclegowe na obszarach nadmorskich w lipcu i sierpniu 2020 https://stat.gov.pl/obszary-tematyczne/kultura-turystyka-sport/turystyka/turystyczne-obiekty-noclegowe-na-obszarach-nadmorskich-w-lipcu-i-sierpniu-2020-roku,12,4.html.

Komunikat. 2018a. Komunikat z badań CBOS nr 72/2020. Letnie wyjazdy wypoczynkowe w czasach pandemii.

Komunikat. 2018b. Komunikat z badań CBOS nr 125/2020. Turystyka letnia w czasach pandemii.

Public Emergency Services Act of 8 September 2006. Journal of Laws 2020, item 882.
Safety of Persons in Water Areas Act of 18 August 2011. Journal of Laws, item 208.
Serwis Kąpieliskowy. 2020. https://sk.gis.gov.pl/index.php/kapieliska.
Sigala, M. 2020. Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. Journal of business research, no. 117, 312-321. DOI: 10.1016/j.jbusres.2020.06.015.
Sprawozdanie. 2019. Sprawozdanie z działalności w zakresie wykonywania ratownictwa wodnego w 2019 roku przez Wodne Ochotnicze Pogotowie Ratownicze Województwa Zachodniopomorskiego.
Sprawozdanie. 2020. Sprawozdanie z działalności w zakresie wykonywania ratownictwa wodnego w 2020 roku przez Wodne Ochotnicze Pogotowie Ratownicze Województwa Zachodniopomorskiego.
Yeginsu, C. 2020. Lockdown? What Lockdown? Heat Wave Brings Britons out in Droves. www.nytimes.com/2020/06/26/world/europe/uk-coronavirus-lockdown.html.
Zalewski, T., Czapiewski, T. 2014. The impact of processes associated with risk assessment and categorization of bathing waters on the water safety system development on the Polish Baltic coast. Journal of Coastal Research, 70, 551-555.
Zielinski, S., Botero, C.M. 2020. Beach tourism in times of COVID-19 pandemic: critical issues, knowledge gaps and research opportunities. International Journal of Environmental Research and Public Health, no. 19. DOI:10.3390/ijerph17197288.