

# Polish system of education in maritime health care and medical assistance for seafarers

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## ABSTRACT

*The Polish public awareness of the crucial importance of the own maritime economy to the very existence of the national state has its historical reasons. The Polish maritime involvement has seen several dramatic crises, but the Polish nationals have become an established group in the global marine trade workforce and are entitled to the proper health care. In this paper the main maritime health issues are mentioned. To meet the issues, also the national education system provides the opportunities for both seafarers and medical professionals. The Polish doctors can specialise in the maritime medicine. In many cases the general medicine students formations include these topics as well. The psychological aspects are also taken into account, both of the education of the seafarers and the organisational structure of the Polish health care system. Some recent aspects of the Polish participation in the international cooperation in the field of the medical support of the maritime economy are also described.*

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**Key words:** health promotion, medical training, health certificates, medical specialty, maritime medicine, postgraduate education, Polish maritime history

## INTRODUCTION AND GENERAL REMARKS

In the seventeenth century, during the heyday of the territorial expansion, Poland was a major European exporter of the agricultural and forest produce [1]. The export was so lucrative, that the country did not develop its own industry, since much of its products were easily imported. All this export was streamlined via the gateway of the commercial emporium of the port of Gdańsk/Danzig, joined to the Vistula river transportation system. Gdańsk was at that time the only Poland's sea port and its largest city. When, at the first stage of the Partition (in 1772) Gdańsk was lost to Prussia, Poland was incapacitated and rendered unable to prevent the further collapse of its economy, army and statehood, deemed to lose its territory, and finally ceased to exist (in 1795). The trauma of the approaching doom and the following bloody uprisings was well remembered, and the next generation of Poles understood that to have a good chance of existence, Poland has to have a sea access as well as its own marine economy.

At the rebirth of the Polish state in 1918, importance of gaining these assets was publicly understood, but the Treaty of Versailles did not grant the young state neither the city of Gdańsk/Danzig, nor its harbour. Poland gained an inhospitable stretch of sandy beaches, and Gdańsk became an autonomous Free City of Danzig, with its administration dominated by the local Germans, traditionally opposing to the revival of the Polish State, and later by the NAZI party. The Free City got engaged in the customs war against the young Republic, actively blocking war material import (during the war against the invading Soviet Russia in the 1920 ties), and stopping any Polish export.

To avoid this stalemate, instead of forcibly break the blockade of Gdańsk (Danzig), guaranteed by the League of Nations, Poland had to build – urgently and at any cost – its own harbours on the virginal and inhospitable beach. The creation of the city and port of Gdynia (and three other, smaller harbours of minor importance), which started from the total non-existence in 1920 to become in 1938 the largest port of the whole Baltic Sea, belongs to the most heroic

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achievements of the Polish history and is unprecedented in the peace time history of the world.

As there were no harbours and no marine tradition in Poland, similarly to the Ancient Romans, who in preparation for the Punic Wars had to train rowing on the benches posted on *terra firma*, when their ships were being built, also Poland had to train their seafarers and navy personnel on the land. Although the first provisory pier in Gdynia was constructed in 1923, already in 1922 the first Marine High School in Tczew (a river port with no prior marine traditions) was established (afterwards it moved to Gdynia). Later, the growing sea trade had to be reflected institutionally. In 1936 the National Hygiene Institute opened its special branch in Gdynia to monitor health needs related to the cargo ships operation, passenger traffic, migration by sea, and prevention of communicable diseases. In 1939, on the basis of this branch, the Institute of Hygiene and Maritime Medicine was established, adding to the original tasks educating the medical personnel in the maritime economy. The Institute went down together with Poland in the catastrophe of the Second World War, but in 1946 was reestablished and as the Institute of Maritime and Tropical Medicine (IMTM) exists to this day.

Since 1945, as a result of the post-war border changes, and of the significant extension of the Polish shoreline, Polish merchant and fishery fleet has risen remarkably by the general tonnage, the number of ships and the number of the seafarers and fishermen. Between 1970–1990 years there were over 400 merchant ships, around 250 big fishing vessels, over 2000 fishing coastal boats, not to mention the rescue ships, domestic cabotage fleet and many auxiliary vessels registered under the Polish national flag, with 40–50 thousand of crew employed [2]. The maritime economy has become a significant part of the national economy, and, according to the various statistics, it has become either its leading branch or second to the national mining industry.

Due to the socialist economy collapse and the following profound economic system transformation in the last decades of the 20th century, the volume of the Polish fleet collapsed to nearly zero, rendering many Polish marine professionals unemployed, forcing others to continue their career onboard of the ships of foreign flags and/or ownership. As the Polish marine economy started from the scratch in the 1920ties, with the revival of the Polish national state after the First World War, the size of the last collapse was even larger in numbers and more dramatic in impact that that caused by the Second World War. The situation led to the large scale adaptive modifications of the whole economy in Poland, but the maritime part of it was probably the most severely affected one.

The changes forced the dramatic shifts of the whole sea working population, which after initial shrinkages, found

new niches of occupation in the global maritime economy, and lately started to grow again, in spite of the global economy crisis.

Presently the Polish fleet slowly grows again. But many of the Polish owned ships carry the courtesy flags and are manned by the mixed crew. The two largest national operators (PŻM and Pol-Levant) manage about 80 merchant vessels. They are still purchasing and plan to increase the fleet by 40 vessels until 2015 [3]. All their ships operate under the flags of convenience.

Polish seafarers (IMO states that there is about 50 000 Polish nationals professing as seafarers or fishermen [2]) still have to plan their career on the board of the foreign ships, and/or under foreign rules and regulations. According to the largest national classification society, Polish Register of Shipping, presently there are 176 sea-going vessels equal or larger than 100 GT under the Polish flag, and 177 smaller than 100GT. The number of yachts is 305, and the number of freshwater (inland) ships reaches 1083 [4].

The shift to train for the foreign employers forced the far reaching changes in the goals and attitudes of the general maritime education of the Polish seafarers. As the demand for the high skill-level employees turned out to be higher than for less skilled workforce, it led to the important shifts of the training scope. Presently, the proportion of the management-level employees among the Polish nationals is probably higher than during the heyday of the communist era. But as there is no central national registration of the crew, and many seafarers finance their training on their own, all the counts must remain only a mere approximation.

The one fact is beyond dispute: the forced globalization changed the whole system of the marine education in Poland. It also influenced the complementary medical training of the marine professionals.

The situation is also influencing the training of the medical professionals, doctors and the supporting staff. The medical professionals and the educators try to prepare better to manage the situation, in which so many of their patients work abroad and for the foreign employers, and also have foreign medical insurance. And finally, the organisation of the medical and public health institutions, which are providing their services for the crew and for the global marine economy, is struggling to adapt to the emerging situation.

## HEALTH CARE CONSIDERATIONS

Knowing that maritime occupations belong to the most dangerous forms of activity, from the very beginning it was demanded from the marine administration and health service to define, plan and realise the specific system of the health care and medical assistance, complying with the international standards [5]. The list of the medical issues

associated with the maritime occupation is long and continues to grow; it requires multidisciplinary and multi-institutional approach.

The main medical issues in shipping and cruising are as follows [6]:

- providing the quality health care and the medical/psychological assistance for the crew working and living in the specific maritime environment;
- providing the medical care for the passengers;
- determining the main factors of the occupational and non-occupational risks at sea and formulating the appropriate strategies of the challenge management;
- creating and introducing the possible and economically substantiated means and tools of the health protection, life and wellbeing at sea and on the land [7];
- epidemiological, hygiene and preventive measures;
- supporting safety, health and well-being onboard by developing the appropriate methods and techniques, including radio medical or other tele-communication means;
- isolating the potentially contagious cases of the crew members and passenger, quarantining of the whole ships;
- vaccination programs control and implementation;
- drug and alcohol testing, disciplinary measures secondary to drug and alcohol policy of the ship-owners and the ship-operators;
- insurance claim processing and law suit prevention;
- assault investigation;
- anti-terror and disease planning, counseling;
- the administrative management of the medical department;
- surprisingly engaging and time consuming representational duties (a ship doctor as the shipping management representative).

### TARGET OF MISSION

The target of the mission is:

- medical and auxiliary staff, educated and trained in the health care and medical assistance at sea;
- maritime administration and staff, directly involved in the search and rescue actions at sea and on the land;
- sanitary inspectors and port health officers responsible for the management and control of the hygienic and sanitary safety on the board and in the ports;
- seafarers and fishermen, educated and trained in the medical self-assistance, basic life-saving procedures and promotion of the health attitude;
- lawmakers at the institutional, national and international levels.

### ORGANISATIONAL CONSIDERATIONS

Although the above mentioned groups have different priorities and diversified duties, at the same time all of them should demonstrate the common attitudes:

- specific knowledge on the maritime work, life and environment;
- ability to cooperate interdisciplinarily and understand the common goals;
- ability to define the right platform of the communication and the experience exchange.

In this text we would like to concentrate on the first group involved in the task: on the medical staff, only marginally mentioning other target groups. However, it is of paramount importance to stress that the health care issues cannot be dealt by the efforts of the medical professionals only. Only a joint activity of all the mentioned groups gives a chance to reach a common task of ensuring the proper health and safety both of the crew and of the shore side populations.

### FORMATION, EDUCATION AND TRAINING OF POLISH MEDICAL STAFF IN MARITIME HEALTH CARE

In Poland, the first systematic approach to the maritime health care and the extent of the demands related to role of the physician and medical assistance onboard ship was drafted in the two books, published in 1938: 'Lekarz Okrętowy' ('Ship's Doctor') [8] and 'Apteczka Okrętowa' ('Medical Chest') [9].

Since early 50-ies, the medical specialty in the maritime and tropical medicine has been established in Poland as the postgraduate education and certification, to be realized in the two steps/levels, each 3 years long, with an obligatory experience of the 3-months work on the ship and in the tropical country. The specialty was effected within the residency program, under the official administrative and specialised consultants supervision, culminating in an exam taking place in IMTM.

The specialty was oriented directly to the needs and health problems of the people working at sea and port service, and also for people travelling to countries with different climatic and socio-cultural conditions of living.

Following the collapse of the Polish maritime economy, the specialisation was transiently incorporated (along the Air Medicine and other general transportation medical issues) into the specialty of medicine of transport. With the revival of the Polish maritime commitment, the certification in the marine and tropical medicine has restarted in 2013, as the single-step, 5-year postgraduate residential education and certification.

### EMPLOYMENT AND EXTENT OF COMPETENCE

Composed of the elements of various branches of medicine, such as internal diseases, pathology of labour, maritime rescue, infectious and tropical pathology and epidemiology, hyperbaric and underwater problems, travel challenges, psychological disturbances, with some training

in the small surgery, ORL, ophthalmology and dermatology, it gave the specialist of the maritime and tropical medicine the education and training close to the role of the general practitioner in maritime/tropical environment.

Till 2004 over 200 Polish doctors obtained the title of the specialist in maritime and tropical medicine. It entitled them to the preferential employment directly on the ships, or in hospitals, port health service, port sanitary inspection, out-patient ambulatory, occupational health service, overseas missions, especially in the tropical climate, pre-employment examinations etc.

In the period from 2004 to 2013, when the specialty was discontinued, over 40 doctors obtained the title of the specialist of medicine of transport. They work in the niches, previously preferentially occupied by the marine and tropical medicine specialists, but also in general health care system and the occupational health care.

With the slow revival of the Polish marine economy, after 9 years of discontinuation, since 2013 the possibility of the separate specialisation in the maritime and tropical medicine is going to be officially restored. It is commonly hoped, that although there are no plans to restore the Polish cruising lines or passenger ships, and the merchant marine does not employ doctors, many of those specialists can find employment on the board of the foreign lines. Of course the majority of the new specialists will be drawn to the shore side Polish health care system and to the public health institutions.

#### **OTHER FORMS OF POSTGRADUATE FORMATION**

For the doctors specialising in the medicine of labor since 2008 there is a possibility to complete the auxiliary 3-weeks course in the maritime and tropical medicine problems in the IMTM. The course objective is to prepare the participating physicians, experienced practitioners in the field of occupational medicine, for performing competently the pre-employment and periodical examinations of the seamen and fishermen, according to STCW 1975/1995 demands and standards. Every year about 40–50 doctors attend the courses and accede to the final test.

Poland takes part in the international effort of preparing the medical crew for the tropical missions. For instance, in the period from 1998 till 2001, three international courses in the maritime and tropical medicine were organized under the WHO auspices in the IMTM in Gdynia, for doctors from 18 countries. Many more courses of the similar venue were organized for the military personnel of Polish, NATO and UNO peacekeeping missions worldwide.

Since 2010, the IMTM members, in cooperation with the Polish Scientific Society for the Maritime, Tropical, and Travel Medicine, has been organising the advanced up-

dating Travel Medicine courses for the Polish doctors of all specialties, who practice advising to the travellers or work in the travel medicine polyclinics. Their patients are preparing for the holidays the exotic destinations, but also preparing to the exotic type of travel, for instance to the adventure tourism, high mountain trekking or exotic sea diving. Many of these patients asking for the advice are amateur sailors, or rather participants of the sailing holidays. These courses are the part of the certification system for the travel medicine centers, and are very popular, with the attendance over 100 doctors each year.

#### **MEDICAL STUDENTS AND MARITIME/TROPICAL/HYPERBARIC EDUCATION**

IMTM, being a part of the Medical University of Gdańsk, have introduced the elements of the maritime, tropical and hyperbaric medicine as the obligatory subject for the students of the two final semesters of the 6<sup>th</sup> year of the medical faculty in the Medical University of Gdańsk, both Polish and English Division. During two weeks the students obtain in three clinics of IMTM the basic information on specificity of the work at sea, main pathology and epidemiology relevant to the maritime, tropical and hyperbaric medicine, and about the challenges and risk of the maritime professions. It is believed that in the future it may inspire and encourage some of them to choose one of these specialisations.

Since 2003, the advanced medical students have the opportunity to form the Students Scientific Circle for the Tropical Medicine, which, although does not have maritime issues in the name, deals with them intensively. The circle has on average 8 participants each academic year, and the number may expand when some special task is on the agenda. The students publish on the marine topics, participate in the organisation of the research and take part in organising the congresses. Their valuable help was of key importance to the Polish Scientific Society for the Maritime, Tropical, and Travel Medicine, to succeed in organising two major international congresses of the Maritime Medicine – in 2009 and 2012 – the last one on the board of the passenger ferry, in the maritime ambiance. The Society and IMTM in turn support the students activities, for instance their application and participation in the humanitarian voluntary missions abroad and in the international students exchange [10].

#### **NON-MEDICAL STUDENTS, PROMOTION OF HEALTH AND SELF-ASSISTANCE AT SEA**

There are no doctors on the Polish merchant ships anymore. At present there are no Polish passenger or cruising ships. Only a few doctors work on the Polish drilling platforms. Physicians are also employed irregularly on the research ships, usually when they operate outside the Baltic Sea. It imposes upon the seafarers the self-responsibility for their health and safety.

In 1996 IMTM introduced to the future officers, the students of the Marine Academy in Gdynia, 30-hours course on the main medical and psychological threats while working at sea: (1) oriented on the most typical health hazards, medical self-assistance, first aid and – most of all – promotion and creation of the attitude of the healthy lifestyle; (2) the education and training titled “Be the leader of health promotion at sea” [11], to give the participants the basic information of the health risk avoidance, relevant to the work in the maritime environment. The special leaflet was offered to each of the attendants as a recapitulation.

The knowledge was tested before and after the course, and some doubts or specific questions were cleared in the direct personal contacts with doctors and psychologists.

### ADDITIONAL TRAINING AND FORMATION OF CREW IN MEDICAL ASSISTANCE FOR SEAFARERS

According to:

- international standards, recommendations and maritime conventions (including: Directive 92/29/EC from 1992, STCW 1978/1995, ILO 2006 ), several educational units in Poland, mainly managed by the marine agencies or the high marine schools lead the medical training, repeated every 5 years, (the Institute does not participate directly, but frequently delegates the lecturers and trainers to the other educational marine institutions);
- for captains / sanitary officers / crew, according to the program of the first aid and self-assistance in the emergencies at sea, established and recommended by WHO/ILO.

The coastal fishermen are ones of the most at risk, and in Poland rarely may profit from the medical training. In 2011 many of the fishermen attended special formation in IMTM: they reviewed and tested the recommendations given by the European Guide for Risk Prevention in Small Fishing Vessels [12] (The actual guide was first published in Brussels, on October 29<sup>th</sup>, 2009, and the Institute took part in the publishing and evaluation of the final publication in 2011).

### SOME EDUCATIONAL TOOLS FOR MEDICAL ASSISTANCE AND HEALTH CARE PROBLEMS AT SEA

The review of the system should also mention some of the most important medical guides, which are accessible for the seafarers, and have been written or co-written by the Polish authors; they are used practically in case of medical emergency onboard of the Polish vessels or as the basic manual for the medical education of crew: Medical Guide for Ship Captain [13]; Health promotion in Maritime work Environment [14]; International Medical Guide for Ships – WHO [15]; European Manual for Hygienic Standards and Communicable Diseases Surveillance on Passengers Ships [16]; European Ships Sanitation Manual [17].

### MEDICAL RADIO

One of the most effective systems of the medical assistance delivered at distance from the ashore by the telecommunication means, existed in Poland (Gdynia, Szczecin) from 1954 till 1993, serving to Polish and foreign ships with medical consultation, recommendation and advice about health risk evaluation, proposed treatment or evacuation. It has been discontinued in Szczecin since then, due to economic shortages of the transition period.

The radiomedical assistance in Poland was restored and re-organized in 2012 on the base of the IMTM clinical hospital, Academic Centre of Maritime and Tropical Medicine in Gdynia. As the part of the TMAS, it is managed by the team of the qualified clinicians and constitutes one of the most important tools of the direct intervention and possible assistance in case of the medical emergency on the board.

At the same time, it may also be used as the practical tool for the medical formation and education for the crew members, supplementing existing educational internet platforms on the medical problems.

As the new technical communication means are introducing to the ships the open visual contacts and/or the transmission of several medical data (ECG, USG/radiologic images etc.), the limits superimposed on the tele-medical advice are becoming less restrictive and the possibilities of the medical intervention by the medical staff from the shore side are widening. TMAS requires a total approach (advice by phone, cellular phone, VHF, long range radio communication, satellite communication, internet, including voice p2p, data and video transmission) to the medical counseling with the use of all potentially accessible means, and that aim is currently being reached.

### PSYCHOLOGICAL EXAMINATIONS

In the Institute of Maritime and Tropical Medicine, the Laboratory of Occupational Psychology conducts the examinations for the seafarer’s applying for the international health certificate and also for the seafarers referred by the insurance companies such as: American Club or Lloyd’s.

In the extreme cases the physicians direct the seafarers for the additional psychological assessment. It concerns: psychosis, personality disorders, behavior disturbances, depressions, nervous breakdowns, addictions etc. [18, 19].

The Psychological Laboratory also provides the support for the participants of the sea accidents and the other traumatic events (e.g. PTSD).

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