

EVOLUTION OF EDUCATION SYSTEM OF MEDICAL RESCUE WORKERS IN POLAND ON THE EXAMPLE OF WARSAW MEDICAL UNIVERSITY - GUIDELINES FOR CURRICULA

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Abstract

In Poland, curricula in the major of medical rescue are still being modified due to continuous improvement and quality assurance of education.

The study aimed to present the evolution of education system and curricula of medical rescue workers in Poland on the example of the organisation of teaching in this major at Warsaw Medical University.

Education in the profession of medical rescue worker in Poland was first introduced at post-secondary vocational schools. The first admission to a medical vocational school intended for medical rescue workers took place on the 1st of September, 1992 in the Polish Red Cross Medical Vocational School in Poznań. Vocational curriculum for medical rescue workers in post-secondary schools was based on the curriculum included in Appendix no. 7 to the Regulation of the Minister of Education and Sport of January 21st, 2005 and the Regulation of May 8th, 2004 on the classification of vocational education occupations. The number of class hours of a 2-year training programme amounted to 2100, with a minimum of 580 hours of practical classes. The training lasted at least 4 semesters. First medical rescue workers graduated from medical vocational schools in 1994.

By the time the State Medical Rescue Act was implemented in Poland, this had been the only way to become a medical rescue worker. The State Medical Rescue Act, implemented in 2006, forced the creation of a new profession, i.e. a medical rescue worker. In accordance with the implemented Anglo-Saxon standards, the training that allows for gaining qualifications and the right to practice the profession of a medical rescue worker should be conducted in the form of a 3-year vocational degree course run at university-level schools.

In Poland, education in the major of medical rescue started in the academic year 2000/2001 in the form of a full-time Bachelor's degree programme.

Higher Education Act of July 27th, 2005 and the Regulation of the Minister of Research and Higher Education of July 12th, 2007 on educational standards for particular programmes of study and levels of study as well as the procedures for creating new study programmes and conditions to be met by the university in order to run interdisciplinary studies and combination majors regulate the issue of general education programmes conducted by university-level schools. The minimum number of class hours was established at 3800, including at least 320 practical classes.

A major in medical rescue was introduced at Warsaw Medical University, for the first time in its history, at the Faculty of Health Science in the academic year 2001/2002. This was a 3-year Bachelor's degree course (vocational programme). A 12-year experience with teaching students in this major allowed for introduction of a number of quality-oriented changes. However, due to new guidelines associated with an outcome-based approach in the areas such as knowledge, skills, and social competence, in their strive to ensure the best quality of teaching, universities educating medical rescue workers are about to face further changes in organisation of teaching of this particular group of specialists in health protection.

Keywords: medical rescue, higher education, secondary education, improvement of curricula.

1 PROCESS OF EDUCATION OF MEDICAL RESCUE WORKERS IN POLAND

1.1 Education of medical rescue workers in post-secondary vocational schools

In Poland, the profession of medical rescue worker has a history of only several years [1]. The first admission to a medical vocational school for a 2-year course took place on the 1st of September, 1992 in the Polish Red Cross Medical Vocational School in Poznań [2]. By 1997 (when the Act on Vocational Higher Schools became effective) the issue of vocational education had been governed only by resolutions and regulations [3]. General education programmes in post-secondary schools were based on curriculum-based teaching published as Appendix no. 7 to the Regulation of the Minister of Education and Sport of January 21st, 2005 and the Regulation of May 8th, 2004 on the classification of vocational education occupations. The number of class hours of a 2-year training programme amounted to 2100, with a minimum of 580 hours of practical classes. The training lasted at least 4 semesters [4].

By the time the State Medical Rescue Act was implemented, this had been the only way to become a medical rescue worker. First graduates completed their education in 1994.

1.2 Beginnings of university education for medical rescue workers in Poland

In the academic year 2000/2001, Silesian Medical University and the Medical University of Bydgoszcz introduced a Bachelor's degree programme in Medical Rescue. Next year, such a programme was also offered at medical universities in Warsaw, Cracow, Wrocław, Poznań, and Szczecin. The Higher Education Act of July 27th, 2005 [6] and the Regulation of the Minister of Research and Higher Education of July 12th, 2007 on educational standards for particular programmes of study and levels of study as well as the procedures for creating new study programmes and conditions to be met by the university in order to run interdisciplinary studies and combination majors regulate the issue of general education programmes conducted by university-level schools [7]. The minimum number of class hours was established at 3800, including at least 320 practical classes. The establishment of a new professional group, i.e. medical rescue workers, was an enormous challenge for medical universities in Poland [9]. The model of education, types of internship, and the scope of medical entitlements was taken from Anglo-American standards and modeled after the Emergency Medical Service units that are prototypes of Polish medical rescue units. In compliance with the foreign model, the process of education has to have the form of higher vocational education offered mainly at medical universities or other higher vocational schools. In compliance with the western standards, due to his/her medical entitlements, a medical rescue worker has extensive competencies in advanced emergency medical activities [10].

In western European models, the profession of medical rescuer is divided into three degrees of advancement and a medical rescue worker has the most extensive medical competencies. Previous training in post-secondary schools did not meet a number of international criteria, mostly with reference to the curriculum and teaching staff. Because of that, there was an urgent need to train and prepare a group of prospective introductors of the principles of the State Medical Rescue system (SMR system) [10].

Works on a unified curriculum for a BA programme for medical rescue workers were initiated in the Ministry of Health in 2004 [10]. The new profession is characterized by considerable independence. A medical rescue worker faces excessive requirements. Working for the emergency services involves facing life-endangering situations [11]. A medical rescue worker is supposed to be prepared to undertake and perform emergency medical activities in community units as well as to participate in and perform clinical procedures of emergency medicine in hospital emergency departments [12]. What is more, graduates are supposed to teach first aid and perform health promotion activities. A graduate should also have capabilities relating to managerial, supervisory, and administrative tasks in the health protection and public security system [13].

The quality and model of a university programme are supposed to meet the requirements of emergency medicine. It was also stipulated that university-level education must be compliant with the European Credit Transfer System (ECTS). This is supposed to allow for recognition of diplomas abroad - transfer of curricula, institutions, and academics all over Europe [1].

Leading educational aims of a licensed medical rescue worker were established. The requirement of acquiring proper medical knowledge of general and clinical disciplines in order to be prepared to take

on advanced emergency medical activities in various units of the SMR system was established in the first place. The initial idea determined demand for approximately 3,000-10,000 high-qualified medical rescue workers, depending on the target composition of medical emergency teams and real demand for future organizational structures [14].

Initially, education in medical rescue was supposed to be conducted as a full-time BA programme granting a Bachelor's degree to its graduates. The curriculum consisted of at least six semesters and comprised also 12-week internship in the last year of studies, 40 hours a week [15].

Moreover, the training also comprises 4-week summer internship done after the first and second years of studies, 40 hours a week. Time proportion was set for particular thematic blocks. At the beginning, during the first three semesters, blocks with fundamental sciences were supposed to be dominant. Next, between the third and sixth semesters, blocks with clinical sciences were prevailing. Furthermore, supporting and additional courses were conducted throughout the entire training, evenly distributed in terms of the number of class hours [15].

At least half of all teaching hours of practical classes should be carried out in emergency departments of other SMR system units. What is more, the remaining courses should be taught at clinical departments [12].

It was established that divisions and departments of medical rescue faculties at a particular university should become supreme supervisors of education in medical rescue. Due to the nature of this profession, it was set that it would be appropriate to organize teaching together with e.g. units of the State Fire Service with respect to chemical or technical rescue. At present, education in emergency medicine that is carried out together with the National Emergency and Fire System (NEFS) is based on the Guidelines for the Organization of Emergency Medical Services of NEFS of July 5th, 2004. As a part of the National Emergency and Fire System, medical rescue covers issues devoted particularly to this element of the entire structure. These involve current analyses of the number and type of threats that may lead to the deterioration of health or loss of life, predicting event sequences, and appropriate use of techniques and equipment enabling the maintenance of the continuity of the rescue process [30].

Establishing a part-time course was originally considered for post-secondary graduates. This idea was based on the principle of admitting students who passed the entrance exams to a supplementary programme and later to continue their education in the third year of studies. Admission requirements for this group of students were supposed to be the same as for the remaining candidates. However, this solution has never been implemented into the system of education during its evolution and thus it has been impossible for post-secondary graduates to become a licensed medical rescue worker in such a simplified way [12].

A person is entitled to practice as a medical rescue worker after completing the entire teaching process and passing the vocational examination [1].

It is worth emphasising that there are no regulations concerning differences in the scope of professional qualifications resulting from the form of teaching. This means that, in terms of qualifications, a person graduating from a 2-year course is equal to a 3-year university programme graduate in medical rescue. Despite curricular differences listed in Article 11 of the State Medical Rescue Act, activities performed by a medical rescue worker should be discussed irrespective of their education level. This interpretation of the law has always been controversial for medical rescue workers since this is unfair with respect to university graduates. It was also negatively evaluated e.g. by the Polish Association of Treatment of Medical Emergencies [16]. It seems that maintaining simultaneous forms of education depreciates the value of a BA diploma in medical rescue [17].

The initial thought comprised also an idea of completing a post-graduate internship after obtaining a BA diploma in medical rescue. This internship involved a 6-month training period in a hospital emergency department. Then the internship comprised a 4-month training in Emergency Communication Centres and one-month training in a Regional Emergency Management Centre. One-month post-graduate internship in a medical emergency team constituted the final stage. A medical rescue worker was granted the right to practice the profession only after a verification of the post-graduate internship and the acquired skills [18].

2 ORGANIZATIONAL AND CURRICULAR ASSUMPTIONS FOR COURSES IN MEDICAL RESCUE

At the beginning, education of medical rescue workers was based only on a document called a core curriculum of vocational training for medical rescue workers [19]. In compliance with the Regulation of the Minister of Education of February 17, 2012, a graduate should have a number of skills. These skills are listed in qualifications directory constituting the basic organizational and planned assumptions for the profession of a medical rescue worker.

A graduate should know how to:

- use medical sciences and humanities while performing professional activities;
- identify medical emergencies, which shall facilitate determination of degrees and types of potential threats to the environment and civilization both in a broader (global) and smaller (of a country or local community) context;
- characterize health- and life-threatening conditions occurring in the case of breakdown, accident, or disaster;
- secure persons at the scene of a disaster, accident, or breakdown;
- efficiently prevent an increase in the number of casualties;
- provide medical attention to the participants of a rescue mission and medical emergency teams during the operation;
- anticipate the behaviour of persons in danger and prevent bursts of panic;
- use medical scales to assess the overall condition and severity of injuries, and to perform an emergency evaluation of persons injured in the breakdown;
- define the order in which emergency medical activities shall be provided, perform evacuation depending on the type and intensity of injuries as well as the conditions at the scene of the event;
- co-organize and participate in the evacuation of persons from danger zones;
- perform emergency medical activities at the scene of a disaster, breakdown, or accident;
- recognize the loss of consciousness and its degrees, be able to preserve vital signs of unconscious persons using no equipment as well as using specialist devices;
- perform cardiopulmonary resuscitation without medical equipment as well as using specialist devices and medications used in medical rescue;
- explain the activity of drugs used in medical rescue and their somatic activity following administration;
- provide health services with the total preservation of their medical procedures in any medical emergencies, particularly in public places;
- conduct medical supervision of the affected persons and patients during transportation and at the scene of an event;
- perform emergency medical activities under the public and non-public emergency systems;
- organize and train members of emergency medical services;
- promote the knowledge of rescue procedures in every environment;
- participate in first aid trainings organized in schools and other non-school units;
- conduct first aid trainings, demonstrations, courses;
- be able to maintain full operational capabilities of mobile and stationary emergency medical stations
- communicate with an injured or ill person;
- comply with fire, environmental, and health and safety regulations;
- organize his/her workplace well in compliance with the rules of ergonomics;
- co-operate with nurses, physicians, and other medical personnel while performing emergency medical activities;

- co-operate with professional, non-professional and non-medical emergency services and organizations;
- use any available information sources to improve his/her own professional skills;
- comply with the ethical principles;
- know how to use legal provisions related to the performance of professional activities;
- apply regulations governing business activity [12].

Moreover, it was indicated that it is necessary to develop entrepreneurial attitudes and skills enabling graduates to enter the labour market. Education in this field should be carried out during the "Introduction to entrepreneurship" course and, simultaneously, during the entire process of professional education [12].

2.1 Specific requirements for vocational education

The binding regulations list a number of requirements to be met in the process of education. The above mentioned description is a detailed one and includes admission conditions, among others. Special attention should be drawn to teaching core competencies [20].

The list includes psychophysical specifications required from a medical rescue worker. Performance of emergency medical activities in totally different situations and circumstances demands good physical and mental health that shall allow for carrying out subsequent activities in the proper order. These operations are one of the most important activities undertaken in the entire healthcare system [21].

The process of vocational education should ensure appropriate preparation for performing a number of professional tasks. These include:

- communication with a patient, providing support in medical emergencies;
- securing persons at the place of danger, undertaking efforts to prevent an increase in the number of casualties and degradation of the environment;
- assessing casualties as well as breakdown, accidents, and disasters, undertaking emergency procedures
- performing emergency medical activities in medical emergencies;
- transportation of patients under medical supervision;
- using medical devices and personal protection equipment as well as emergency medical resources;
- preparing and conducting first aid trainings [22].

2.2 Program blocks

Teaching content and the scope of skills set forth in the profile of a graduate describe major program blocks. These are the following:

- emergency medical activities;
- ecological and technical rescue;
- foundations of professional activity;
- foundations of law and economics in healthcare system.

It was established that this shall constitute 95% of the teaching content and the remaining 5% was to be at the disposal of the authors of curricula in order to adjust the teaching content to the labour market needs. Educational aims that should be achieved by students during the course of studies were precisely specified for each thematic block [22]. Figure 1 shows the percentage distribution estimated for particular course blocks.

Medyczne czynności ratunkowe – Emergency medical activities

Ratownictwo ekologiczne i techniczne – Ecological and technical rescue

Podstawy działalności zawodowej – Foundations of professional activity

Podstawy prawa i ekonomiki w systemie ochrony zdrowia – Foundations of law and economics in healthcare system

Treści do dysponowania – Content at disposal

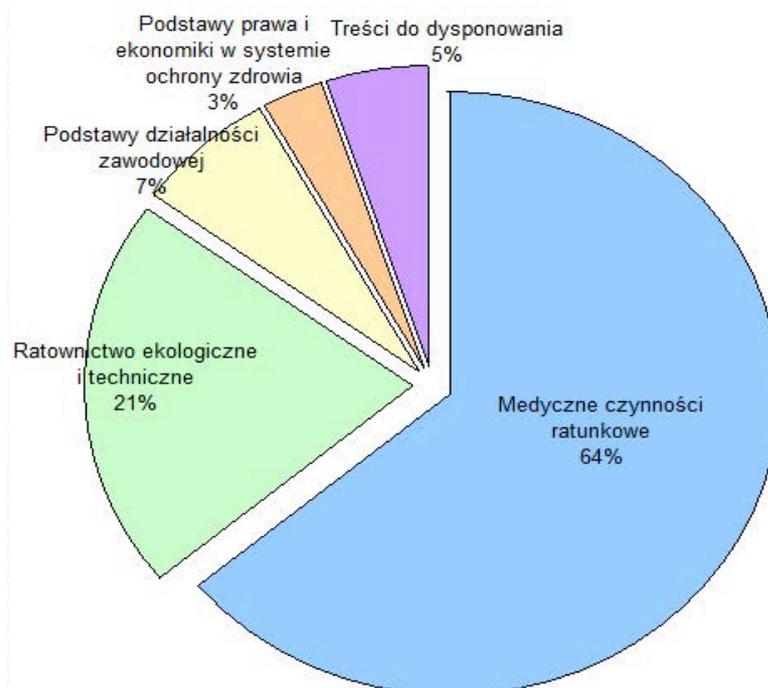


Fig. 1 Program blocks- distribution of teaching hours in the process of education [22]. Own elaboration on the basis of The teaching standards for the major in medical rescue, Appendix no. 88 to the Regulation of the Minister of Research and Higher Education of July 12th, 2007 on educational standards for particular programmes of study and levels of study as well as the procedures for creating new study programmes and conditions to be met by the university in order to run interdisciplinary studies and combination majors.

3 UNIVERSITY EDUCATION IN MEDICAL RESCUE OFFERED AT WARSAW MEDICAL UNIVERSITY

The analysis of organization of education in medical rescue at Warsaw Medical University was performed through a preliminary verification of meeting the requirements imposed by the legal acts specifying limitation criteria for major studies. The further stage of this analysis involved a development of a detailed description of forms of teaching used for particular courses. The present study highlights the most important issues covered during particular courses that strongly influence the process of acquiring professional skills. A teaching guidebook developed for this major constituted the basis for the analysis. The study was supplemented by the assumptions for development of teaching included in the protocols of the Programme Board made in the years 2011-2013. This was conducted in compliance with the development strategy aiming to improve the quality of teaching that was introduced at Warsaw Medical University.

Thus, education at Warsaw Medical University, as an example of research process, is described as precisely as possible. Becoming familiar with the above mentioned assumptions allows for an insight in a variety of fields that are unique in the country. The present study is a kind of research process of educating medical rescue workers and their development over the years. This may influence the necessary skills that are essential in practising this profession.

4 GUIDELINES FOR CURRICULA FOR MEDICAL RESCUE WORKERS

The Programme Board meets several times during each academic year. Deputy Dean of Nutrition and Medical Rescue at WMU is the chairperson of the Board. What is more, the Programme Board comprises academic teachers, representatives of the Dean's Office and students represented by their government board members. A multidimensional dialogue allows for continuous improvement in order to maintain the leading position in educating medical rescue workers in Poland. Corrections in the

schedule of courses are conducted precisely according to the arrangement made by the Board. Therefore, some courses were moved from one year of studies to another one, e.g. the "Clinical Anatomy" course was moved from the first year to the second one and the "Diagnostic Imaging" was moved from the third year to the second one. Owing to such analyses, some courses are removed from the schedule or are combined, e.g. in 2013 the "Public Health" course was combined with the "Organization of Healthcare with Economics" course.

The process of evaluation of education also led to the introduction of philosophy and history of medicine to the curriculum as regular courses. Introduction of humanistic grounds determining the need for the profession of a medical rescue worker is also justified.

It was because of the efforts of Warsaw Medical University that professional training of students was started to be performed at the new Emergency Department of the Prague Hospital in Warsaw in order to maintain comprehensiveness of experience obtained during internship. This also solved the problem of too high number of students being on duty at the Emergency Department of the Bielański Hospital in Warsaw.

Moreover, the Programme Board provides students with a possibility of participating in decision-making process concerning their major at a high level. Students present various proposals of changes, e.g. in 2011 they wanted to remove internship in the units of the State Fire Service from the curriculum. However, it was rejected because of a legal requirement of performing such a professional training during vocational higher education.

In subsequent years, new legal regulations were implemented on introduction of educational fields and educational aims as divided into categories of necessary professional competencies. The discussion demonstrated that noticeable changes shall be introduced within several years.

The Programme Board agreed on purchasing equipment necessary for water rescue classes conducted in the swimming-pool. The issue of low availability of teaching aids was indicated by students participating in the Programme Board meetings. It was also decided to attempt to co-operate with the Main School of Fire Service with reference to climbing conducted within the physical education classes.

Students can also present their opinions concerning the organization of particular courses. In the academic year 2011/2012, students asked to increase the number of teaching hours of the "Pathophysiology" course by 20 additional hours. A division into 5 hours of lectures and 30 hours of seminars was agreed on at the Programme Board meeting.

Possible directions of further improvement of the major so that it maintains a high level of teaching were suggested at these meetings, too. This concerns, for example, an increase in the number of teaching hours of paediatric rescue. Looking for further adjustments to the curriculum, students came up with a suggestion of expanding the scope of knowledge of paediatric dosing, which, so far, had been only briefly discussed during the "Pharmacology" course.

The University Authorities, with an unanimous support of students, decided to introduce a new course to the curriculum, i.e., the "Physical Examination" course.

The academic year 2012/2013 brought about another changes, proving that the education of medical rescue workers at Warsaw Medical University is constantly being improved. In compliance with a Dean's decision, a survey shall be introduced to help assess particular courses after completion. The survey shall become a tool used to evaluate the teaching content presented to students and the methods used to present this content. It was assumed that training should be carried out for students and not just in order to present the teaching content that is useless for practising this profession. It was agreed that head of departments and deputy deans of particular majors should meet regularly.

The discussion was supported by other members of the Programme Board. Lecturers emphasised the need to carry out appropriate learning content. The need for implementation of the largest possible number of vocational courses was also highlighted. It was underlined that the State Medical Rescue Act allows for employing medical rescue workers in ambulance teams straight after graduation. Therefore, there is a need to introduce training focused on these skills as quickly as possible.

Warsaw Medical University recognizes the lack of a coherent and unified model of educating medical rescue workers in Poland. However, a development strategy of our University maintains the principle of being a leader in Poland in majors offered at faculties of health science. University education for medical rescue workers shall be kept at the present level. This will bring success in a situation when

knowledge acquired at university is confronted with professional activity. This will also allow students to pass a unified State Exam In Medical Rescue that is due.

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