

OCCUPATIONAL AND ENVIRONMENTAL HEALTH POLICY

OCCUPATIONAL HEALTH EDUCATION IN POLAND: NEW NEEDS, NEW REQUIREMENTS, NEW PROGRAMMES*

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Abstract. The conditions of modern work environment in Poland generate new problems, new needs and new expectations in the area of occupational health. They are associated not only with the rapidly changing technologies and new professions but also with the psychosocial factors pertaining to extensive transformations of the political and economic systems. New needs and expectations determine a new approach: firstly, to the responsibilities of the occupational health specialists; secondly, to the organisation and management of the workers health care; and thirdly, to the general principles of the occupational health, including in particular relevant legislation. The new requirements concerning the operation of the occupational health system in all the three dimensions must be addressed in the design of the new training programmes in occupational health whether under- or postgraduate. Subjects to updating and modification should be not only the content of the training but also its forms and methodology. Competence-based learning should be accompanied by the modern methods of problem solving, distant learning, organised self-education and self-assessment. The growing interest in the quality of the training should be expressed, first of all, in the activities aiming at the development of procedures to assess the effectiveness of the training. It seems also necessary to adopt the active learning approach intensifying acquisition and verification of the knowledge and skills. This approach would also lead to deeper changes in the students' mentality and behaviour, e.g. to make them able to estimate their own and others' level of professional competence or shape the personal system of professional values under the conditions of the free-market economy in the health care which entails quality requirements for the services and the competition among its providers.

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INTRODUCTION

The conditions of modern work environment in Poland, like in other countries under socioeconomic transition, generate new problems, new needs and new expectations in the area of occupational health. The transfer of technologies entails changes in the work organisation and duty performance, imposing at the same time new requirements on workers with regard to their qualifications, education and attitudes towards occupational tasks. These new demands bring about an increased workload, mostly from highly specialised mental work, information influx and growing personal responsibility. Dynamic work which used to prevail in the past is being replaced by static performance. Consequently, significant changes have been noted in the structure of occupational and work-related diseases, reflected mainly by a larger number of musculoskeletal disorders and more intense occupational stress. Particularly, the psychosocial factors pertaining to rapid and extensive transformation of work environment contribute to increased individual stress and civil unrest.

The experience gained by highly industrialised countries while developing their economies made them adopt a new approach to the concept and implementation of occupational health services (OHS). Among other things, the view has been changed on the role of an individual worker and team work.

According to Gustavsen (3), the activities for occupational health and safety can be classified into three groups characterised as follows:

1) **descriptive-legislative model** – with key activities related to legislation on occupational exposure limits (MAC and MAI values);

2) **procedural model** – based on rational administrative and statutory procedures for negotiations between workplace partners, i.e. employers and workers' representatives (trade unions) concerning the conditions of work in the broadest sense;

3) **developmental model** – based on the democratic principles of workplace management which enable decision-making at the level of workers' team.

These models could be applied to characterise the activity of occupational health services in Poland. However, one may find it difficult to select the model that would best describe current situation in this respect. The difficulties can be attributed to the varying, provisional principles of the occupational health services under conditions of the overall health care reform. The resulting circumstances make the implementation of preventive systems in occupational health differ from the model determined by relevant regulations on the conditions of work.

First of all, the roles of workplace partners have not been adequately defined to ensure the effectiveness of the preventive systems. It should be stressed that the adoption and operation of a given preventive system depends on the level of economic, social and cultural development of a community as well as on its social awareness.

The model that seems to be most closely related to the Polish conditions is the procedural model, however, its implementation is far from being effective. One could make a few assumptions concerning the principles of a well organised and efficient procedural model of the OHS functioning.

Firstly, there is a need to operate information systems for assessment of workers exposure to occupational hazards and of health risk arising from that exposure. The system can also be applied to the evaluation of workplace safety and hygiene, and work organisation.



Secondly, the adoption of this model requires appropriate scientific background to handle the whole spectrum of problems related to occupational health, both current and anticipated ones.

Thirdly, it is necessary to modify the system of under- and postgraduate education in occupational health to develop highly qualified manpower for occupational health services and prepare them to cope with problems of the modern work environment.

Occupational medicine is an interdisciplinary medical science. In the circumstances when medical sciences tend to become more and more specialistic, occupational medicine tends to combine socioeconomic sciences with basic medical research and clinical practice, and ensure a comprehensive approach to the problems of work environment. Therefore, occupational medicine meets the requirement of integrating various medical and non-medical sciences necessary for proper practical functioning of a physician in the work environment. The competence of the occupational health care personnel depends on the provision of an effective system of training capable of ensuring sufficient scope and level of professional knowledge, skills and attitudes.

During the educational process, an occupational medicine physician is expected to acquire:

- 1) comprehensive and thorough knowledge and skills in industrial and work hygiene, environment-related determinants of health status, work physiology, toxicology, clinical diagnosing of occupational diseases;
- 2) knowledge and skills in the fields related to occupational medicine, such as social medicine, rehabilitation, epidemiology, labour sociology, causes of accidents, symptoms of occupational and work-related diseases;
- 3) knowledge of the technological and organisational aspects involved in activities of an occupational physician (6).

The education of occupational medicine experts is usually comprised of three stages, and each of them constitutes an element of more or less formal system:

- 1) undergraduate studies;
- 2) postgraduate studies to obtain specialisation;
- 3) postgraduate studies intended to extend the specialistic knowledge and skills.

The knowledge of the rudiments of occupational medicine continue to be more and more important for the general medical practice. Therefore, there is an urgent need to include some basic elements of occupational medicine (ability to assess the conditions of the work environment, formulate opinions on technical and medical preventive measures, implement optimal procedures in emergency situations) in the medical university curricula. Incorporating occupational medicine into the curricula of medical undergraduate studies, and acknowledging it as an independent subject will increase the importance of this field of medical science. In order to maintain its autonomy and to make it equal in status to other subjects taught to medical students, it is essential to monitor the quality of teaching programmes and procedures, and to develop theoretical principles and evaluation techniques to be used in occupational medicine and its particular branches.

To become an occupational medicine physician, one is basically required:

- 1) to acquire specific knowledge;
- 2) to acquire specific practical skills;
- 3) to develop certain professional attitudes (4).

The knowledge specific to the occupational medicine relates basically to:

- the relations between health and disease with reference to internal and environmental factors;
- the information on the potential occupational risk factors;
- the data on social, technical and organisational characteristics of the work environment;
- the methods for diagnosing and preventing occupational and work-related diseases;
- the information on relevant standards;
- the conscious self-assessment of one's own qualifications.

Desiring to ensure suitable and efficient functioning of occupational medicine, occupational medicine specialists must acquire specific professional skills. They should be able:

- to identify and assess potential risks associated with the specific work environment;
- to develop and implement a local (environmental) strategy of workers' health protection;
- to make use of simple epidemiological and statistical methods;
- to develop and implement programmes of health education and health promotion at workplace;
- to provide preventive and occupational counselling.

Probably even more difficult than acquiring specified knowledge and skills, is to develop suitable attitudes helping:

- to predict and anticipate health-related facts, processes and situations;
- to subordinate the commercial activities to the objectives and aims of disease prevention;
- to ensure efficient collective action.

Extremely essential is the ability and willingness to co-operate with other specialists, involving the readiness to consider and respect arguments of other parties. Each occupational medicine specialist, well trained in his field, should also possess sufficient knowledge of other medical fields and relevant non-medical fields in order to be able to communicate with other specialists and to understand the technological and scientific developments in relevant areas (6).

During the specialisation training, the occupational medicine physician should acquire knowledge, skills and attitudes required for performing three functions: preventive, curative and rehabilitative, with a strong stress put on the first one.

The functions of an occupational medicine physician may be either passive (diagnosing of health hazards) or active (development of healthy work environment and promotion of healthy lifestyles). Irrespective of selected methods, disease and accident prevention should constitute the major criterion in the assessment of the effectiveness and efficiency in that branch of medicine. The training process should endow the occupational medicine physician with the ability to develop and implement programmes for early detection of various work-related health hazards as well as health promotion programmes to encourage healthy lifestyles.

To discuss some aspects of occupational medicine education in Poland it seems important to present shortly the current legal status of the Polish OHS.

THE LEGAL BASIS FOR THE OHS ORGANISATION IN POLAND

One of the most essential tasks of OHS in Poland is to focus rather on prevention than on treatment and to incorporate a wide range of preventive activities in occupational health practice at the level of an industrial plant. This refers to both the already existing workers' health care units, formerly operating under the name of industrial health service and newly established ones. For the workers of small enterprises and those self-employed, not covered by OHS, the preventive care could be provided by primary health care units, according to current needs and demands. However, to make the preventive activities effective, the rules and regulations concerning the OHS organisational and functional principles had to be modified, taking into account new objectives and requirements. Moreover, the background had to be provided for the OHS personnel to perform new preventive tasks, according to the provisions of the ILO Convention No. 161 and Recommendation No. 171 as well as the objectives of the WHO Global Strategy for Occupational Health for All adopted by the 49th World Health Assembly (7).

In 1992 a group of experts in occupational health was appointed by virtue of the provisions of the aforesaid ILO Convention in order to draft the scope and functions of OHS. The draft was then reviewed and published. The authors expected that the transformation of the former model of industrial health care into a modern system of occupational health services covering the preventive tasks will be a complicated process which will take at least several years to complete.

Five years later Polish Parliament passed the Act on Occupational Health Services, (27 June 1997), which came into force on 1 January 1998. The provisions of the Act are concordant with those of the ILO Convention. The Act makes the regional occupational health centres responsible for co-ordinating the activities of local OHS units as well as of individual occupational health practitioners (physicians or nurses) who will undertake the tasks related to workers' health care. It also determines the means of financing the OHS.

THE PRESENT STATE OF OCCUPATIONAL MEDICINE EDUCATION IN POLAND

In the Polish system, education in the field of occupational medicine is obligatory to physicians.

Physicians acquire basic knowledge in this field during their medical studies. In addition to the programme carried out within particular courses like pathology, physiology or clinical disciplines, separate didactic blocks (seminars and exercises) in the field of occupational medicine are organised in the majority of medical schools (in 7 out of 11). These blocks cover practical aspects of prevention at the work place, this is why they are often organised in out-patient clinics of occupational medicine. Such courses are also organised by our Institute. They take from 30 to 90 hours depending on the medical school. In the nearest future, however, the evaluation of students' knowledge of certain aspects of occupational medicine will constitute an important part of the State Final Examination for all medical university graduates.

Concerning the postgraduate specialisation in occupational medicine, there is a two-degree specialisation for physicians: each degree requires 2–3 years of additional training. The first degree requirements may be fulfilled at the local (regional) level, but the second degree – exclusively in the Institutes of Occupational Medicine.

Polish nursing schools do not prepare their graduates for working in the occupational health care sector. Those who want to specialise in this field must take a two-month course covering about 200 hours of didactic units. The course concentrates on occupational medicine and occupational hygiene, nursing and social sciences. After completing the course nurses receive special certificate of community nurse in occupational health. The courses are organised by regional centres for training of medical staff. About half of 7,000 Polish OH nurses have completed such courses.

Furthermore, OH nurses may continue education to become specialised in occupational health. The training takes two years, and it is held at The Nofer Institute of Occupational Medicine in Łódź. Up to now about 300 nurses have obtained a title of a specialist in occupational health. It appears that nurses are very interested in this kind of specialisation.

Due to both forms of occupational health training, nurses improve the quality of their work, especially in the field of the work environment supervision and health promotion. The fact that nurses after passing the courses are still employed in OHS in spite of very difficult situation on the labour market provides clear evidence of the usefulness of the training.

TRENDS IN OCCUPATIONAL MEDICINE SPECIALIST TRAINING IN POLAND

Nowadays, Poland is in a transitional phase moving from a fully centralised and nationalised state industry to a system of market-oriented private enterprises. Foreign investments and new technologies bring about new challenges. All these factors create a new ground for the OHS functioning.

To meet these demands a modern extramural education scheme in occupational hygiene and safety has been developed in our Institute for OHS personnel. Its major objective is to provide postgraduate modular training for occupational physicians, industrial hygienists and State Sanitary Inspectors.

Apart from the short-term courses for occupational physicians and industrial hygienists, the School of Public Health offers a comprehensive educational programme designed for professionals working in the area of occupational health to meet future requirements of the industry and public institutions.

The ongoing process of restructuring the occupational health care in Poland is mainly aimed at covering all employees with the preventive health care (only the industry, construction and transport workers were covered in the past), establishing the employers responsibility for providing prophylactic health care at the work place, and first of all, ensuring that this care is rendered by physicians qualified in occupational medicine. Such qualifications are confirmed by obtaining the specialisation in the field of occupational medicine or occupational hygiene. However, owing to a shortage of staff, the temporary authorisation of physicians was necessary during the period of introducing new principles.

These decisions have compelled both the restructuring of specialisation programmes in the field of occupational medicine and the development of a specific training programme for physicians with temporary authorisation.

These solutions allowed to put, in the postgraduate education programmes (both of regular specialisation and of special courses), much stronger emphasis on the occupational risk (exposure) and health effects, and the promotion and implementation of different preventive activities. However, these problems were (and still are) not generally accepted by a large group of occupational medicine physicians.

In Poland, the responsibilities of an occupational medicine specialist* are to provide preventive health care in the work place, to supervise the conditions and organisation of work, to check whether employment at individual workplaces follows the principles of occupational health and to take steps for promoting health and preventing occupational diseases. In more detail, his/her tasks are as follows:

1) to carry out preventive medical examinations — pre-employment, periodical and control — with a view to identifying contraindications for taking a given job, and possible harmful effects of exposure to hazards in the work environment;

2) to examine the health status and supervise the working conditions of the employees, trainees, handicapped persons, and pregnant women;

3) to evaluate the microclimatic conditions and the required physical workload at individual workplaces;

4) to evaluate the quality of the work environment and the degree of risk posed to the employees by harmful environmental factors, and suggest preventive measures to reduce their adverse effects on workers' health and to ensure safe working conditions;

5) to identify and treat any occupational disease, symptom complex, or ailment connected with a particular job or being the result of exposure to harmful factors in a given work environment;

6) to administer first aid to victims of occupational accidents and in cases of sudden illness at work;

7) to initiate and supervise medical rehabilitation and regaining of occupational capability of employees;

8) to introduce protective vaccination of all employees who are under preventive care;

9) to analyse the causes of all accidents at work and of occupational diseases, and the health condition of persons under preventive care;

10) to analyse and evaluate safety (to health) of newly introduced or modernised technologies, microclimatic conditions, and the degree of static and dynamic physical workload required at individual workplaces;

11) to produce and issue medical opinions, certificates, decisions, or review applications for disability pension, employment or legal proceedings;

12) to initiate, prepare, and carry out programmes of health promotion and health education in workplaces, and to train the employees and the relevant employer's services in matters of health protection in the work environment;

*According to the proposed rules concerning medical specialisations.

13) to collaborate with employers in planning the work schemes, organisation of workplaces, and working conditions to ensure optimum standards in terms of work hygiene, physiology and ergonomics;

14) to improve their own knowledge and skills through participating in the continuous education including, among other things, postgraduate studies.

To perform these tasks, the occupational medicine physicians should be educated according to modern requirements, including not only strictly medical or environmental professional competence (occupational hazards to health, assessment of disability and fitness for work or environmental medicine) but also knowledge, skills and attitudes towards such complex problems as communication, management, research methods, occupational health law and ethics. In new occupational environment, during the period of transition from old to new social, economic and political systems, the professional competence in the social sphere of occupational reality decides about the success or the failure in the professional domain.

Unfortunately, the occupational medicine practice in Poland is dominated by the traditionally perceived set of medical and environmental competences.

Thus, the need to change or modify education programmes is most important and the role of occupational medicine training centres continue to increase.

Subject to updating and modification should be not only the content of the training but also its forms and methodology. Competence-based learning should be accompanied by the modern methods of problem solving, distant learning, organised self-education and self-assessment. The growing interest in the quality of the education should be expressed, first of all, in the activities aiming at the development of procedures to assess its effectiveness. It seems also necessary to adopt the active learning approach intensifying acquisition and verification of the knowledge and skills. This approach would also lead to deeper changes in the students' mentality and behaviour, e.g. to make them able to estimate their own and others' level of professional competence or shape the personal system of professional values under the conditions of the free-market economy in the health care which entails quality requirements for the services and the competition among its providers.

More generally speaking the educational changes – independently of the necessary content modification of the curricula related to the changes in the work environment – should advance from the traditional to the modern educational strategies. In particular, it implies the transition from the strategies which are centred on the teacher, based on information transmission and on disciplines, directed at the clinical experience, based on standard programmes, opportunist and uniprofessional, to the educational strategies centred on the student, based on problems, integrated, directed at the community, based on optional courses and systematic (1).

In **student-based training**, students are responsible for their own learning and for choosing the path to follow to achieve it: teachers become tutors. Such a strategy puts the emphasis on what the student learns, increases motivation, facilitates the learning process on adapting the study methods, puts the responsibility of learning on the student, facilitates the organisation of self-learning habits. Studying becomes a completely personal task.

Problem-based learning is a way of contracting and teaching courses by using problems as a stimulus and focus for students' activities. It is not the addition

of problem-solving activities to otherwise discipline-centred curricula. It is the way of learning similar to the professional practice, developing the problem-solving ability. It facilitates the transfer of knowledge and skills, gives meaning to basic sciences and increases motivation. What is important: such a strategy lays the foundations for a lifetime (continuing) education.

Integrating education is a system that implies the sacrifice of the peculiarities of the classical disciplines to incorporate all that is necessary for understanding a problem as a whole. Horizontal integration co-ordinates the disciplines traditionally covered in the same course or year; vertical integration co-ordinates disciplines usually covered in different courses or years. Integrated education reduces the fragmentation of teaching, covers content in a coherent way, facilitates learning by increasing both memory and transference capacity. Finally, last but not least, it saves time avoiding unnecessary repetition.

Community based education focuses on individuals and working population groups and takes account of the health needs of the occupational community concerned. It allows a more varied group of patients, places them in their work environment, allows patients to be followed up, helps the learning of a teamwork and expose the student to the knowledge of the most common occupational diseases and hazards.

Teaching based on electives is that in which students make up their own curriculum by selecting courses within the range offered to them. Such an educational strategy increases motivation, allows early specialisation, allows the teachers and the students to pursue and deepen the subjects that interest them, provides students with some responsibility for the direction of their studies.

A **systematic programme** requires the students to reach a set of clearly defined objectives and is methodically organised in accordance with them. It allows the teachers and students to cover the objectives, to allocate needed resources and to adjust programmes to needs.

In **multiprofessional education** students who do or will follow different careers learn together during certain periods of their training.

Trying to follow that way towards the implementation of the modern strategies of the occupational medicine training one has to take into consideration some general prerequisites or trends which have been emerging recently in this field.

1. Objective social demand with reference to the quantitative development and qualitative progress in occupational medicine, and the resultant social consent to specified actions and expenses are functionally associated not only with the real occupational health needs but also – and perhaps above all – with the level of cultural and civilisation development of the society.

2. Assessment and the post-assessment regulations of the training system in occupational medicine may be made only in the dual context: (a) of the objectively stated occupational health needs and (b) of the objectively stated social demand for the services and professionals in this field.

3. Maintaining a balance between objectively stated social demand and occupational health needs on the one hand, and the number of professionals and their skills on the other, constitutes the fundamental objective and, at the same time, the main evaluation criterion of the system of education in occupational medicine.

4. Efficiency and effectiveness of the processes of education in this field are lower when immediate practical objectives are dominant — without suitable theoretical and methodological background.

5. Relating the methods of training in occupational medicine to the modern requirements of the transmission and acquisition of knowledge, skills, experience and attitudes in the process of education is an essential prerequisite for achieving satisfactory efficiency and effectiveness of that process.

6. Deficiency of the theoretical background of the educational activities in the field of occupational medicine constitutes one of the main causes of the difficulties in establishing and implementing universal standards of quality in programming, executing and achieving expected results of the training.

7. The stress on the interdisciplinary character of education of the occupational medicine professionals (resulting from the multiple contexts and effects on the occupational health sphere of the reality) leads to 'specialty without specialisation' or 'specialty of many others specialties' (what is almost the same). In this connection a consistent execution of the prerogatives assumed by the occupational health system may meet with a negative reaction of the numerically dominating representatives of conventional medical disciplines.

8. Suitable proportions maintained within the occupational health education system between under- and postgraduate education, between the obligatory and facultative sphere, between the domination of specified subject matter in the training and the necessity to subordinate them to other specialistic subject matter constitute a prerequisite for the success (efficiency and effectiveness) of occupational medicine training; in fact they constitute the condition required to preserve harmony between training of the professionals and capturing friendliness of their broad professional environment.

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The scope of knowledge and skills required from occupational medicine and work safety professionals will continuously increase. Many employers, especially those in the developed countries, are increasingly willing to comply with work safety and occupational medicine standards established by respective international organisations and confirmed by suitable national institutions. Industrial plants and other institutions concerned will demand that the quality of the services provided by occupational medicine units be improved. Therefore, steps must be undertaken to improve the quality of the activities of occupational medicine and work safety professionals. At the same time it should be borne in mind that, until quite recently, occupational medicine services employed almost solely medical professionals, while nowadays multidisciplinary approach is preferred. As the result, questions of occupational medicine and work safety and well-being at the workplace are more and more often discussed in combination. Such integrated approach, aiming at solving problems of employees' health condition, evidently prevails over the conventional monodisciplinary approach. The teaching and education programmes are also being modified, tending to the multidisciplinary approach (2).

The Edinburgh Declaration published in 1988 by the World Federation for Medical Education contains 12 guidelines intended to improve the educational processes in all basic fields of medicine. The objective of the Declaration, which

summarised the recommendations of the World Conference on Medical Education held in 1988 (Edinburgh, UK) was to change the character of medical education to adapt it to the demands of the contemporary societies. Subject to minor modifications, these guidelines can be used also for training specialists in occupational medicine (5).

The ILO Convention No. 161 on Occupational Health Services requires that the services be provided by specially trained personnel. This sets demanding requirements to the qualifications of the occupational health experts. In ensuring the competence of the personnel, efforts should be made to guarantee a high quality of education in all universities and other training institutions. But not only academic education is important. At least as important is the training of practical skills which ensure the transfer of theoretical knowledge into everyday practice.

It is also worth noting that the majority of practical actions for improving labour safety and health are implemented by the employees themselves and their managers and employers rather than by occupational medicine experts. This fact is particularly evident in countries which have achieved a specified level of socio-economic development, and it will become even more important when current trends in work organisation of commercial enterprises continue and the workers are made responsible not only for the quality of the products but also for their workplaces. Therefore, in order to improve working conditions and health status of the working population, it is essential that all those persons are made aware of the health consequences of the working conditions in the broadest sense of the word, and that they are provided with suitable knowledge and skills in the relevant fields.

It is necessary to emphasise that in addition to the training of specific scientific and technical aspects of occupational medicine, also human-oriented, pro-health attitudes should be introduced to occupational health and safety experts in order to ensure the use of such skills for the full benefit of the workers.

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