

“MEDICAL MANAGEMENT IN DISASTERS”

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Keywords

Disaster, disaster medicine, medical emergency management, risk mitigation, preparedness, master course.

Abstract

The paper presents the goal, the content and the outcomes of a multidisciplinary Master course organized under the auspices of the Ministry of Education of Romania at the prestigious University of Medicine and Pharmacy “Carol Davila”- Bucharest having the aim to integrate this course into the European system of training in disaster medicine. The duration of this Master is four semesters with 120 transferable credits being the first step in the process of enrolling in doctoral studies.

This course is dedicated to furthering the education of licensed healthcare professionals and other university graduates. These would be individuals in charge of healthcare matters: medical directors of ambulance services, medical directors in charge of coordinating public health county departments, hospitals managers, higher education staff members working in healthcare and involved in planning and execution of medical intervention in emergency situations caused by natural and man-made disasters, psychologists, lawyers, teachers, civil administration and other staff interested in disaster mitigation activities.

The main educational goal of this course is to raise awareness in the medical management of disasters, to stimulate learning motivation of personnel participating in the process, to develop on the business values and modern medicine principles as well as effective attitudes towards the management of crises situations.

On completion of this course participants will be able to:

- Describe the relationship between hazard, vulnerability and disasters;
- Describe the basic concepts, goals and elements of disaster medical management and crisis management as a medical emergency;
- Participate in preparations for the disaster medical system;
- Coordinate medical response teams in disaster situations;
- Organize and conduct meetings for evaluation and information;
- Organize education and training in medical management of disasters;
- Coordinate the medical aspects of disaster research.
- Assess the degree of availability of measures indented to prevent/reduce negative effects.

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Introduction

In any macro or micro space, the risk of disaster exists. No place on Earth is excepted from risks caused by many types of disasters: natural, environmental, technical or social. Why? Because disaster is defined as an adverse event surpassing the forces / existing possibilities of response. In medicine we best acknowledge this situation. Actually, medicine is the only power which can reduce the effect of a disaster, because it deals with people.

THE PEOPLE IS, IN THE SAME TIME, VICTIM AND RESCUER.

In case of disaster the healthcare system must compensate the lack of logistics and personnel, with a proper organizing system, planning and training. Thus we come to the definition of the DISASTER MEDICINE, newly created specialty, which goal is "saving as many lives as possible", ensured by the three "P" of disaster medicine: PREPARING, PLANNING AND PERFECTION.

The Disaster Medicine Master Concept (thesis)

In this direction, the Faculty of Medicine of „Titu Maiorescu” University Bucharest elaborated and introduced in 2009 as a first step, the course „Disaster Medicine - prime concepts”. This course was subject of exam in the VI-th year (final) of the medical school. The next level is an increasing/expansion of the educational offer with a Master in Disaster Medicine. The Romanian Agency for Quality Assurance in Higher Education belonging to the Ministry of Education, have accredited it for the first time in the Romanian medical educational system, as a program Master in Disaster Medicine, which operates in the Faculty of Medicine of the Titu Maiorescu University starting with the 2011-2012 academic year. This Master in Disaster Medicine was conducted under the auspices "People - victims and rescuers"

The course, led by Professor Dan Mănăstireanu PHD, Honorary Member of the National Disaster Medical System of United States of America, was formed by Romanian renowned experts in all areas of disaster medicine management. Study's subjects were able to create for the master course's students a new image regarding organization, planning and management of medical system in crisis situations.^(1,2,3)

Applications:

Table of study's subjects ^(1,2,3)(example)

Compulsory disciplines

1. Public health risks posed by disasters
2. Principles and practices of disaster management situations in health systems
3. Research methodology in disaster medicine
4. Management prehospital phase of medical intervention in disasters
5. Hospital phase management of medical intervention in disasters
6. Medical intervention in disaster situations
7. Legal and institutional framework of disaster medicine
8. Hazards and threats to critical infrastructure
9. Medical management of chemical accidents and incidents with hazardous chemicals
10. Medical management of nuclear accidents and radiological incidents
11. Management of Critical Infrastructure Protection
12. Psycho - social mass emergency
13. Estimating the socio - economic and environmental disaster management response operations
14. Specific aspects of the medical response to disasters
15. Using electronic equipment for preparation of intervention plan structures medical - sanitary (simulated medical intervention in case of earthquake)

Optional subjects

1. Methods and concepts of mitigation of disasters
2. Emergency Management created by various types of disasters
3. Medical management of search and rescue actions

The Master Cours in Disaster Medicine was held for 3 semesters, being credited with 90 ECTS credits (European standards) and 150 credits of continuous medical education (according to Romanian standards), supported by the College of Physicians in Romania and other professional structures (College of psychologists aso).

The courses were conducted in a manner enabling the Master students to carry out their duties and services, considering that a large part of them had major responsibilities in important emergency structures. (weekend courses)

Table of schedule (exemple)

DAY TIME DISCIPLINE - THURSDAY 10 -12,

12-14 Management of prehospital phase of medical intervention in disasters-SEMINAR – Prof. Nicholas Steiner

14-16 Hospital phase management in disaster - COURSE – Prof. Dr. Nicholae Steiner

16-17 Hospital phase management in disaste - SEMINAR - Prof. Dr. Nicholae Steiner

17-18 Management of prehospital phase of medical intervention in disasters – COURSE – prof.Steiner Nicolae

DAY TIME DISCIPLINE - FRIDAY 10 -12

12-14 Principles and practices of emergency management SEMINAR – Prof. Nicholae Steiner

14-16 public health risks posed by disasters SEMINAR – Prof. Dan Mănăstireanu

16-18 Research methodology in disaster medicine SEMINAR - Prof. Dr. Gheorghe Gheorghe

18-20 Research methodology in disaster medicine SEMINAR - Prof. Dr. Gheorghe Gheorghe

DAY TIME DISCIPLINE - SATURDAY

10-12 Risks to public health posed by disasters COURSE – Prof. Dan Mănăstireanu

12-14 Public health risks posed by disasters SEMINAR – Prof. Dan Mănăstireanu

14-16 Principles and practices of emergency management and disaster health systems Course - Professor Nicholas Steiner

16-18 Principles and practices of emergency management and disaster health systems SEMINAR - Professor Nicholas Steiner

18-20 Emergency Management created by various types of disasters SEMINAR - Professor Nicholas Steiner

DAY TIME DISCIPLINE – SUNDAY

10-12 Research methodology in disaster medicine Course - Prof. Dr. Gheorghe Gheorghe

12-14 Research methodology in disaster medicine SEMINAR - Prof. Dr. Gheorghe Gheorghe

14-16 Management of prehospital phase of medical intervention in disasters Course – Prof. Nicholas Steiner

16-18 Management of prehospital phase of medical intervention in disasters SEMINAR – Prof. Nicholas Steiner

18-20 Medical management of search and rescue SEMINAR - Professor Nicholas Steiner

Table of functions of master students (example)

Nr	Name	Studies	Function	Contact	Observations
1.	Agapi Florin Eugen	LMG Iasi 1977	General Manager of the Ambulance Service of Iasi County	0722220635 florin_102000@yahoo.com	Senior Physician on Emergency Medicine
2.	Aslan Corina	LMG UMF Bucharest	emergency medicine resident physician	corinaamd@yahoo.com 0728911722	"Sf. Ioan" hospital Physician on Emergency Medicine
3.	Băruț (Marcu) Carmen Florina	MG UMF Tg Mures	Medical Director Emergency Hospital Targoviste County	0744374424 mrccarmen@yahoo.com	Senior Physician emergency medicine
4.	Berca Radu Ștefan	L MD + MG UTM	Search and Rescue service area Commander, Ambulance Service Bucharest-Ilfov	dr_bercar@yahoo.com 0769068125	Senior Physician emergency medicine
5.	Boldureanu (cas.Neagoe) Maria	L MG UMF Timisoara 1990	Public Health Directorate of Timis count Senior medical adviser	andamn@yahoo.com 0723358829	Semnior emergency Medicine PHysician
6.	Călin (Georgescu) Cristina Iulia	L Bioterra 2010	AMG		licenced nurse
7.	Constantinescu-Gomoiu Gheorghe	LMG UMF Buc 1984	SAMB, SCUMC, Bucuresti	doctorgheghe@yahoo.com	Senior emergency medicine Physician
8.	Damoc Letiția Gabriela	L MG UMF Mureș 1993	General Manager of Neamt County Ambulance Service	0731031 letitia.damoc@yahoo.com	Senior emergency medicine Physician

Findings

The Master in Disaster Medicine has strong research components. In the framework of the Master Course has functioned the Disaster Medicine Research Centre of the Faculty of Medicine of our University. During postgraduate studies each master student had/must to work at least in two research themes related or not with him/her graduation work. Some examples of research topics are:

„The ability of an emergency county hospital to act in a mass call disaster “
„Earthquake, an invisible and mute hazard”
„Psychosocial impact of disaster”
These research topics mostly turned particularly in dissertation work ^(4,5,6).

We preferred that those masters who worked together in order to accomplish works in such a way that same subject to be as widely researched, discussed and presented. ^(7,8,9)

Insertion on the labor market

The graduates of master's in disaster medicine will be integrated as coordinators of contingency plans in case of disaster or in medical institutions of different levels of public administration.

Their roles will be in medical management and control, as:

- coordination of the design of contingency plans,
- veracity control plans, putting them in scene by simulations or/and theoretical and practical exercises,
- proper coordination in disaster situations, previously planned actions, improvement plans of the lessons learned in how to act in real situations of a disaster,
- reconstruction after disaster of the medical institutions and the normal algorithm of medical activities.

The mission of the master program "DISASTER MEDICINE" was the training of highly qualified specialists in a top area of emergency medicine, the implementation of multi/inter and transdisciplinary knowledge. Major objectives are as follows:

- profound extended knowledge and practical skills in the field. The goal is greater adaptability to special requirements of medical intervention in crisis situations, integrating basic research, applied research and technological innovation in the development of materials for medical management in disaster situations,
- coverage hiatus regarding training in national disaster medicine
- development of skills in order to enable access to medical training, boosting the capacity to work independently and in teams, creativity, technical and applied science in medical management of disasters.

Disaster medicine masters course objectives can be describe in a few words:

- developing of understanding of the need for higher education in disaster medicine and to stimulate research in this area,
- understanding of most often used methods in disaster medicine research, focusing on descriptive and observational technics,
- how to interpret field data and scientific research in a complete scenario
- develop awareness of public health disaster management,
- specifying the role of health authorities in disaster preparedness, etc.

Discussion

Conducting Master program was a success by itself. The best evidence was the master graduate percentage which was 85% (23 out of 27 passed the 25 enrolled and approved places RQAAHE - the 4 retracted students left for various personal reasons, not for reasons conected to courses)

The results obtained in final tests and in the dissertation presentations was 100% very good.

In the assessments of various feedback types (peer, student-teacher, student-course aso) done during studies, the results were divided into segments of good and very good. Both master students and teachers, some of them having their first experience, praised the conduct of the course, both as content and as methodology.

Our master program in disaster medicine, the first in Romanian medical history, required great efforts from the teaching staff of the Faculty of Medicine of the „Titu Maiorescu” University. To gather a valuable teaching team, the management of the University co-opted, as associated teachers, 3 specialists from other institutions, well-known and appreciated personalities. Conducting lectures and practical work, in a ratio of 2/3, the master students benefitted of the highest conditions offered by the new building (body M) of the „Titu Maiorescu” University and also other similar institutions from Bucharest.

The interest showed by the students was high, but unfortunately other institutions did not followed the path we opened, thus at date, this Master course is the only one of its kind in our country's educational landscape.

Conclusions

Training in disaster medicine should be accomplished in the final years of medical school. The introduction of this subject in the curriculum of the VI-th., year aroused a great interest from students. Large presence at courses and LP and the very good results obtained in the final exam, were the best evidence in this matter. Disaster Medicine - basic introductory course at the final semester, completes the notions received through emergency medicine courses.

Them medical studies of the master in disaster medicine, with the curricula described above, provides a further development of the Bachelor's degree studies.

In addition to the basic disciplines, the course provides knowledge useful also for non medical students. Therefore, in the curricula of studies, we alternated specific disaster pathology courses with search / rescue or management of emergency situations to provide for all categories of students a maximum of information to use in future work .

The Master course in disaster medicine, is a necessity to ensure proper healthcare treatment, during and after an emergency situation caused by a disaster.

References:

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3. Dan Ioan Mănăstireanu, Nicolae Steiner ISBN 978-606-8222-27-1 Disaster medicine handbook for mastercourse 1 issue Bucharest 2010 Google Books Partner Program accessed 20.08.2013
4. The ability of Târgoviște county hospital to act in a traffic accident with multiple victims. Master - Marcu Carmen MD, Scientific Coordinator - Prof. Nicholas Steiner
5. Psycho-social impact of disaster. Stress of rescue personnel. Master - psychologist Lazarus Raluca-Mariana Scientific Coordinator - Prof. Dan Mănăstireanu
6. Emergency management in case of floods in the Danube Delta-nurses interventions. Master: Procop (Florea) Elena LN, Scientific Coordinator: Prof. Nicolae Steiner
7. Management of emergencies arising from floods - responding to floods in the Danube Delta - pathology, plans. Master: Vâlcu Dumitru MD, Scientific Coordinator: prof.dr.Dan Mănăstireanu
8. The bombing terrorism - a reality in the 2000s in Romania. Master Letitia Damoc MD, Scientific Coordinator: prof.dr.Dan Mănăstireanu
9. Are we prepared for urban terrorism? Master Pușca Cretu MD Scientific Coordinator Prof. Nicolae Steiner

Biographies:

Dan Manastireanu MD, PhD - Senior in anesthesia - intensive care and emergency medicine, was working in the emergency system in executive and leadership segments (director of Elias and Central Military Emergency Hospitals, Emergency Service of Bucharest, director in the Ministry of Health) obtaining respect in Romania (military rank – Major general) and in the world (Honorary Member of the National Disaster Medical System of United States of America). He is author of over 100 scientific papers published in Romania and abroad. As a TIEMS member, belongs to the pool of international teachers of the Society.

Stela Petrescu is a licensed architect and a certified Project Manager with experience in hazard risk mitigation projects, public awareness and preparedness activities, to prevent and manage emergency situations caused by diverse natural and man-made disasters. Her professional background also consist in the implementation of a great number of projects financed by international institutions as the World Bank, The Council of Europe, co-financed by the Government of Romania. As General Director in the Ministry of Regional Development and Tourism she had the responsibility of coordinating the proper implementation, of the ongoing national/international projects in the field of seismic risk and landslides mitigation, to propose and prepare new projects to be financed by international organisms/donors. She is complementing her professional activity by working in the National Council of the Romanian Red Cross and various professional associations.