
PROFESSIONAL ISSUES

EUTEMPE-RX MODULE MPE01: ‘DEVELOPMENTS IN THE PROFESSION AND CHALLENGES FOR THE MEDICAL PHYSICS EXPERT (D&IR) IN EUROPE’ – A FIRST IN INTERNATIONAL MEDICAL PHYSICS E&T

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Abstract—The EUTEMPE-RX project is an EC funded project which is developing modules principally targeted to clinical medical physicists aspiring to Medical Physics Expert status in Diagnostic and Interventional Radiology. Module MPE01 is the first module and provides foundation for all the other modules. It is effectively a mini-MBA for future leaders of the profession. In today’s rapidly changing and highly competitive world, being a good scientist is not sufficient for a professional to prosper; good leadership, managerial and strategic planning skills have become essential. It is suggested that such a module be made available to young medical physicists worldwide.

Keywords— Medical Physics Experts, Education and Training, Leadership, Professional Issues, Challenges.

I. INTRODUCTION

The EUTEMPE-RX (European Union Training and Education for Medical Physics Experts in Diagnostic and Interventional Radiology) project [1] is an EC funded project for the education and training of young medical physicists aspiring to Medical Physics Expert (MPE) status as defined by EU directive 2013/59/EURATOM [2] and elaborated in the ‘European Guidance on the Medical Physics Expert’ document [3] and EFOMP Policy Statement 12.1 [4]. The project consists of a set of 12 modules at level 8 (highest level) of the European Qualifications Framework [5]. This article describes module MPE01, the first module, which lays the foundations and defines the narrative for all the other modules (<http://www.eutempe-rx.eu/index.php/ct-menu-item-3/14-sample-data-articles/82-course-1>). The module has perhaps been most appropriately described by one of

the first group of participants as a ‘Mini-MBA (Master of Business Administration) for Medical Physicists’.

II. MATERIALS AND METHODS

The content of module MPE01 was developed by the authors following an extensive literature search on curriculum development for leadership, management and strategic planning and an in-depth study of the relevant learning outcomes for MPEs in Diagnostic and Interventional Radiology from the ‘European Guidelines on the MPE’ document [3]. Early on in the project it was decided that each module should consist of a preparatory asynchronous online phase followed by an intensive face-to-face phase. This blended learning mode of curricular delivery would ensure that the participants can take part without undue disruption to their clinical duties. All modules end with an examination and are accredited by the European Federation of Organizations for Medical Physics.

III. RESULTS

The resulting module is best described by its abstract and objectives which describe its intent, content and aspects of curricular delivery [1]:

“This module aims to help the future MPE in Diagnostic and Interventional Radiology (including imaging outside the D&IR department proper) acquire the knowledge, skills and competences necessary to exercise a leadership role within the profession in his own country and in Europe. The content of the module will provide a framework for discussions for all the other modules. In

the face-to-face phase participants will have the opportunity to discuss the major issues facing the profession directly with the present European leaders of the profession. The participants would also be updated with the latest EU directives, guidelines and activities impacting the role to ensure they are at the forefront of these developments. The module will achieve its learning objectives using a combination of online and face-to-face readings, fora, presentations and discussions. The online component will consist of a series of sets of compulsory readings. Each set will be accompanied by an online forum for difficulties and to promote reflection and discussion in preparation for the assessment. The online phase will be asynchronous so that participants would not need to take time off their clinical duties and there will not be a problem with time zones. Each presentation during the face-to-face will be presented by a leader in the area and will be followed by a discussion involving a panel made up of the present European leaders of the profession. Module participants would put forward the issues they are facing in their own country so that we may create a harmonized approach. As preparation for the assessment, case studies

Table 1 Learning Objectives for EUTEMPE-RX Module MPE01

MPE01.01	Take responsibility for researching, evaluating, leading, and offering vision for the development of the role of the MPE (D&IR,) in the ambit of European and national legislation and a holistic vision of healthcare.
MPE01.02	Implement and evaluate strategic solutions to the challenges faced by the MPE (D&IR) in own country and Europe.
MPE01.03	Evaluate the various models of management in terms of suitability for a Medical Physics Service and the issue of staffing levels.
MPE01.04	Take responsibility for the development of the role of the MPE (D&IR) in healthcare governance and management in D&IR.
MPE01.05	Take responsibility for ethical issues in medical physics particularly in the areas of research and radiation protection in D&IR and apply them in practice.
MPE01.06	Discuss the role of the MPE (D&IR) in service development, health technology assessment (HTA), innovation and expert consultancy.
MPE01.07	Research, develop and lead the development of the role of the MPE (D&IR) in the education and training of medical physics trainees and other healthcare professionals.
MPE01.08	Manage the relationship of the MP/MPE with other healthcare professions in D&IR, with patients and the general public.
MPE01.09	Manage priorities regarding radiation protection research and medical physics input to clinical research projects needing the support of MPEs.
MPE01.10	Implement safety culture in their practice.
MPE01.11	Participate in networks for research and development at the European and international level.
MPE01.12	Take responsibility for the role of the MPE (D&IR) in and unintended medical exposures in D&IR and radiation accidents.
MPE01.13	Interpret the significance of liaising with the Radiation Protection Expert.

will be discussed with the panel. All presentations will be sent to the participants 2 weeks before the start of the face-to-face phase”.

The learning objectives are listed in Table 1. The examination was open book and consisted of case studies involving challenges facing the profession. Sample questions are shown in table 2. The quality survey completed anonymously by the participants produced high satisfaction scores and comments were very positive: “Online content was excellent, great overview. The use of case studies throughout the online phase was very useful to focus on specific learning outcomes. The face-to-face phase reinforced knowledge from the online phase, complemented it with additional information and gave a great insight into what is required of one in order to be a successful MPE”

IV. CONCLUSIONS

In today’s rapidly changing and highly competitive world, being a good scientist is simply not sufficient for a professional to develop; good leadership, managerial and strategic planning skills have become essential. It is therefore suggested that such a module be considered for adoption by medical physics educators worldwide. Meanwhile the next run of the module is scheduled to start October 2016 (updates via the EUTEMPE-RX website).

Table 2 Sample examination questions

Case Study 1: Up to now there have only been Medical Physics Experts in Radiation Oncology and Nuclear Medicine in your country. However, EU Directive 2013/59/EURATOM has recognized the importance of the MPE also in Diagnostic and Interventional Radiology. You are having discussions about this issue with your healthcare authorities. One representative from the Ministry of Health tells you: “I can’t understand why Medical Physicists are required in Diagnostic and Interventional Radiology. In addition, you don’t have the high doses you have in Radiation Oncology” How would you tackle it?

Case study 2: There are 5 chest radiography rooms in your hospital each run by a different team of radiographers. You have noticed that one of the rooms is repeatedly exceeding the local DRLs which you have established. How would you tackle it? You know that the team of radiographers doesn’t like people investigating their techniques.

Case study 3: You are the head of the Medical Physics department at a large hospital which is expanding its Diagnostic and Interventional facilities owing to a large population increase in the region. You want to employ additional medical physics staff but the human resources manager tells you that you have enough staff. How would you tackle it?

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