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NUCLEAR MEDICINE: CURRENT ASPECTS IN STUDYING THE SUBJECT

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The article highlights some issues on the medical education and healthcare reformation that requires not only a big input of resources, but highly-trained and well-qualified medical professionals in various fields, including nuclear medicine. The training of specialists in nuclear medicine (NM) and radiologists consists in the providing targeted measures covering all directions of the radiology and NM in order to increase the professional level and to promote the enhancement of practical skills in the world of rapidly upgrading innovative technology. In accordance with the European requirements for training high-quality specialists and in order to enhance international cooperation in the area of education, the further implementation of the achievements of the innovations into the training includes a wide range of the latest technologies and methods, such as problem-oriented learning, interdisciplinary integrated training, simulation technologies, role-playing, games, technology of fundamental medical education, person-centered learning technology, rating system, technologies to evaluate learning quality, improvement of self-learning techniques, information technologies. At the same time, it is important to emphasize on the interdisciplinary integration between the subject, which is being taught, previous basic and subsequent related disciplines in accordance with the objectives of training medical specialists of various specialties and faculties. The implementation of this project will contribute to further improvement of the national regulatory framework in the field of higher medical education according to international and European legislation, to create appropriate conditions for training, retraining and advanced training of healthcare workers in higher education institutions and postgraduate education institutions in Ukraine. Thus, the effective solution of a number of issues referring healthcare requires a high-quality professional training for specialists in nuclear medicine; the implementation of appropriate organizational, methodological, psychological and pedagogical measures in all the directions of medical training of radiologists. The priority of the radiologists' training includes the enhancement of qualification and professional skills, sophisticated incorporation of innovative teaching technologies into the education.

Keywords: nuclear medicine, training of specialists, integrated learning, higher medical education.

The article highlights some issues on the medical education and healthcare reformation that requires not only a big input of resources, but highly-trained and well-qualified medical professionals in various fields, including nuclear medicine. The training of specialists in nuclear medicine (NM) and radiologists consists in the providing targeted measures covering all directions of the radiology and NM in order to increase the professional level and to promote the enhancement of practical skills in the world of rapidly upgrading innovative technology.

Purpose of the study is wide implementation of NM and associated novel technologies into the healthcare practice of developed countries makes it possible to achieve significant success in overcoming cancerous diseases. Over the past decade, the incidence of malignant neoplasms has grown by 9-10%, and this situation is steadily worsening. Therefore, the level of professionalism of radiologists is exceptional important, because competency of these professionals considerably influences the early detection of the problem, and in turn, choosing the proper treatment strategy and outcomes of the diseases.

Materials and methods. The International Atomic Energy Agency (IAEA) pays great attention to the development of NM as an effective diagnostic and therapeutic tool that uses radionuclides and ionizing radiation to study the functional and morphological state of the body, as well as to treat human diseases. The lack of nuclear medicine facilities in the healthcare settings and, consequently, the lack of diagnostic and therapeutic procedures can be explained by a number of factors, one of which is that the training of MN specialists and radiologists does not keep up with up-to-date international demands [1].

Results of the study and their discussion. the educational process is an intellectual, creative activity in the field of higher education and science conducted in higher educational institutions through the system of scientific, methodological and pedagogical activities and is aimed at transferring and mastering knowledge and skills, as well as their multiplying and practical applying by students; among the other purposes of the education is fostering well-developed personality [2]. In accordance with the European requirements for training high-quality specialists and in order to enhance international cooperation in the area of education, the further implementation of the achievements of the innovations into the training includes a wide range of the latest technologies and methods, such as problem-oriented learning, interdisciplinary integrated training, simulation technologies, role-playing, games, technology of fundamental medical education, person-centered learning technology, rating system, technologies to evaluate learning quality, improvement of self-learning techniques, information technologies.

At the same time, it is important to emphasize on the interdisciplinary integration between the

subject, which is being taught, previous basic and subsequent related disciplines in accordance with the objectives of training medical specialists of various specialties and faculties [3].

Over the past decade medical radiology has transformed into a complex union of sciences and schools due to the rapid scientific and technological progress and constantly growing amount of scientific information available. All these factors impel the reconsideration of the content of higher education, but adapting, modifying and maintaining the attainments and achievements created by our predecessors. We are facing the sharp increase in the volume of scientific knowledge on nuclear medicine. Clinical training of a physician in the conditions of constant scientific and technological progress necessitates the implementation of novel scientific directions as well as upgrading a number of well-recognized directions of nuclear medicine [3, 4, 5].

The insufficient level of training of medical graduates on nuclear medicine will lead to inefficient, economically inappropriate use of expensive equipment, prolonged terms of patients' examination, higher cost of investigations and diagnostic errors. The course of radiotherapy should be taught not only within the course of radiology, but during teaching oncology and some other clinical disciplines as one of the methods of treatment of inflammatory diseases of the surgical profile, skin diseases and degenerative-dystrophic diseases of the locomotive system. Radiotherapy should only be taught by specialists in the field, and not by oncologists or surgeons. The curriculum on the basics of modern radiation diagnosis and radiation therapy for students of all faculties, unlike former programs, is drawn up following the principles of the modern system of problem-oriented organ-integrated training, in accordance with the recommendations of the European Association of Radiologists (EAR).

The main objectives of providing the course of radiation diagnosis and radiation therapy are to impart the basic knowledge to the students and to promote the development of their skills required by the discipline. Lectures and practical classes should be designed to give the up-to-date and complete information on the potentialities in using radiotherapy and radiotherapy techniques in clinical practice, to teach to students to make an algorithm for radiological examination, to recognize pathological conditions requiring prompt diagnosis and treatment by the results of the radiological investigations. The knowledge obtained must be deepen and consolidated during the clinical courses of senior years in medical universities, where the issues on radiological diagnosis and therapy are considered in connection with the specific issues of clinical diagnosis and treatment of patients. Thus, teaching students the basics of this discipline should be held through the period of their studying at the university.

To date, in view of clause 4 of the third part of Article 61 of the Law of Ukraine "On Higher Education" and in order to organize practical training and advanced training of specialists in higher educational establishments and postgraduate education institutions, the introduction of a residence course has been proposed. The medical residency is known as a standard form of post-doctoral medical training that is accepted in all countries with a well-developed healthcare system. The duration of the residency may range from 3 to 7 years depending on the medical specialty. Only having completed the course of residency a medical professional is recognized as an expert and has the right to start medical practice independently. Adoption of the proposed project will promote further development of the system of higher medical education in the country, will improve the provision of highly specialized medical care, training, retraining and advanced training of healthcare workers at higher education institutions and postgraduate education establishments, as well as will establish uniform and transparent rules for training specialists.

The project implementation is expected to result in the implementation of a clear mechanism for developing professional knowledge of persons who have completed internship and received a qualification of a medical doctor in accordance with the approved list of medical internship specialties taught exclusively at the relevant clinical departments with the aim of obtaining a qualification of a specialist in accordance with the list of specialties of the medical residency as a separate form of postgraduate education. The implementation of this project will contribute to further improvement of the national regulatory framework in the field of higher medical education according to international and European legislation, to create appropriate conditions for training, retraining and advanced training of healthcare workers in higher education institutions and postgraduate education institutions in Ukraine [4, 5].

Conclusions

Thus, the effective solution of a number of issues referring healthcare requires a high-quality professional training for specialists in nuclear medicine; the implementation of appropriate organizational, methodological, psychological and pedagogical measures in all the directions of medical training of radiologists. The priority of the radiologists' training includes the enhancement of qualification and professional skills, sophisticated incorporation of innovative teaching technologies into the education.

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Реферати

ЯДЕРНА МЕДИЦИНА ЯК СУЧАСНИЙ ПРЕДМЕТ ДЛЯ ВИВЧЕННЯ

Почерняєва В.Ф., Васько Л.М., Жукова Т.О.

Розглянуто проблему медичної освіти та розв'язання проблеми охорони здоров'я, що потребує підготовки фахівців високого рівня для ядерної медицини (ЯМ), проведення цілеспрямованих заходів по всім розділам підготовки лікарів-радіологів, пріоритетом яких є підвищення фахового рівня та практичних навичок в світі інноваційних технологій.

Відповідно до вимог підготовки фахівців для входження в Європейський освітній простір, важливого значення набуває подальше впровадження в навчальний процес сучасних технологічних систем підготовки, які включають широкий спектр технологій та методів: технології проблемно-орієнтованого навчання, технології міждисциплінарного, інтегрованого навчання, тренінгові технології, імітаційні, рольові, ігрові технології, технології фундаментальної медичної освіти, особистісно-орієнтовані технології навчання, технології кредитно-модульні, технології діагностики якості, технології організації самостійної роботи студентів, інформаційні технології.

При цьому необхідна міждисциплінарна інтеграція при викладанні профільної дисципліни із попередніми базовими та наступними суміжними дисциплінами відповідно до цілей підготовки фахівців різних спеціальностей і факультетів

Реалізація даного проекту сприятиме забезпеченню подальшої гармонізації національної нормативно-правової бази у сфері вищої медичної освіти із міжнародним та європейським законодавством, створенню належних умов для підготовки, перепідготовки та підвищення кваліфікації медичних працівників у вищих навчальних закладах та закладах післядипломної освіти на території України.

Таким чином, ефективне розв'язання проблем охорони здоров'я потребує адекватного високого рівня фахової підготовки спеціалістів для ядерної медицини, проведення цілеспрямованих організаційно-методичних та психолого-педагогічних заходів в усіх розділах підготовки лікаря-радіолога, пріоритетом яких є підвищення кваліфікації та практичних фахових умінь, широке використання у навчально-виховному процесі інноваційних технологій навчання.

Ключові слова: ядерна медицина, навчання фахівців, інтерактивне навчання, вища медична освіта.

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ЯДЕРНАЯ МЕДИЦИНА – КАК СОВРЕМЕННЫЙ ПРЕДМЕТ ДЛЯ ИЗУЧЕНИЯ

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Рассмотрена проблема медицинского образования и решения проблемы здравоохранения, которая касается подготовки специалистов по ядерной медицине (ЯМ) высокого уровня, проведение целенаправленных мероприятий по всем разделам подготовки врачей-радиологов, приоритетом которых является повышение профессионального уровня и практических навыков в мире инновационных технологий.

В соответствии с требованиями подготовки специалистов для вхождения в Европейское образовательное пространство, важное значение приобретает дальнейшее внедрение в учебный процесс современных технологических систем подготовки, которые включают широкий спектр технологий и методов: технологии проблемно-ориентированной учебы, технологии междисциплинарной, интегрированной учебы, тренингу технологии, имитационные, ролевые, игровые технологии, технологии фундаментального медицинского образования, личностно-ориентировочные технологии учебы, технологии кредитно-модульные, технологии диагностики качества, технологии организации самостоятельной работы студентов, информационные технологии.

При этом необходима междисциплинарная интеграция при преподавании профильной дисциплины с предыдущими базовыми и следующими смежными дисциплинами в соответствии с целями подготовки специалистов разных специальностей и факультетов

Реализация данного проекта будет способствовать обеспечению дальнейшей гармонизации национальной нормативно-правовой базы в сфере высшего медицинского образования с международным и европейским законодательством, созданию надлежащих условий для подготовки, переподготовки и повышения квалификации медицинских работников в высших учебных заведениях и заведениях последилового образования на территории Украины.

Таким образом, эффективное решение проблем здравоохранения нуждается в адекватном высоком уровне профессиональной подготовки специалистов для ядерной медицины, проведение целеустремленных организационно-методических и психолого-педагогических мероприятий во всех разделах подготовки врача-радиолога, приоритетом которых является повышения квалификации и практических профессиональных умений, широкое использование в учебно-воспитательном процессе инновационных технологий учебы.

Ключевые слова: ядерная медицина, обучение специалистов, интерактивное обучение, высшее медицинское образование.

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