Review Article

iMedPub Journals
www.imedpub.com

Journal of Hospital & Medical Management
ISSN 2471-9781

2017
Vol. 3 No. 2: 15

DOI: 10.4172/2471-9781.100034

A Contemporary Approach to Medical Education at University of Health Sciences, a Brand-New Macro Organization Model

Bektemur G*[1], Bektas S[2], Karakoc Y[3] and Adas GT[4]

1 Department of Health Management, University of Health Sciences School of Health Sciences, Uskudar, Istanbul, Turkey
2 Department of Pathology, University of Health Sciences Gaziosmanpasa Taksim Health Practice and Research Center, Gaziosmanpaşa, İstanbul 34255, Turkey
3 Department of Biophysics, University of Health Sciences School of Medicine, Uskudar, Istanbul, Turkey
4 Department of General Surgery, University of Health Sciences Gaziosmanpasa Taksim Health Practice and Research Center, Gaziosmanpasa, Istanbul, 34255, Turkey

***Corresponding author:** Bektemur G

guvenbek@gmail.com

Assistant Professor, Department of Health Management, University of Health Sciences, School of Health Sciences, Uskudar, Istanbul, Turkey.

Tel: +90 216 346 36 36

Abstract

This article aims to establish a fundamental approach to how pre-graduate medical education will be conducted at University of Health Sciences (UHS) in Istanbul-Turkey, which covers all areas with a macro organizational structure together with 56 Education and Research Hospitals under Ministry of Health affiliated to UHS School of Medicine and to review current trends in medical education. UHS School of Medicine aims to enhance the quality of medical education and offer education at high standards through international cooperation. UHS School of Medicine has the vision of becoming a 'model' school of medicine with a pre-graduate education system based on program output in medical education and public health, which will be realized in health research and application centers that deliver healthcare. The students of UHS School of Medicine to receive their education including professional skill practices and clinical internships both during pre-clinic and clinic periods at affiliated hospitals is suitable for the fundamental properties of public-based medical education and offers rich educational opportunities for the students. With this macro organization, meeting both national and international standards at a certain level will increase occupational quality and enable our students to become "universal doctors."

Keywords: Macro-organization; Medical education; Undergraduate medical education; Healthcare; Health sciences

Received: August 23, 2017; **Accepted:** September 21, 2017; **Published:** September 28, 2017

Citation: Bektemur G, Bektas S, Karakoc Y, Adas GT (2017) A Contemporary Approach to Medical Education at University of Health Sciences, a Brand-New Macro Organization Model. J Hosp Med Manage. Vol. 3 No. 2:15

Introduction

Medical education comprises of pre-graduate education provided at schools of medicine, medical residency after graduation and continuous education provided throughout the whole profession, which may seem distinct from each other yet are complementary parts of a whole. The main objective of medical education is training good physicians to enable people to lead healthy lives.

An ideal physician is defined as someone who is aware of the benefits and progress of modern medicine, believes in application of clinical skills and continuous education, and who has adequate knowledge and is concerned and interested. Edinburgh declaration published by the World Federation for Medical Education in 1988 and Medical Education Summit in 1993 played an important role in determining the objectives of worldwide medical education [1,2]. According to these fundamental objectives, areas of education programs will be extended and not only hospitals but all healthcare institutions of the society will be included in the education; the education programs will include solutions for resolving main national health issues and lifelong education will be enabled. In addition, concentrating on active ways of learning instead of passive education, ensuring that the program and exams are prepared in a manner that will not only include retaining and recollecting of knowledge but also improve occupational skills and social values; faculty members to be trained also as educators; carrying out

science and practical education together; adopting clinical, and social "problem solving" as a way of learning have been adopted as the core principles [1].

Education provided at schools of medicine both in Turkey and all around the world may take different formats such as classical, integrated, problem-based or mixed model. Despite the format of education, the education curriculum should be structured to include new advancements in medicine and the requirements of our country's health services. In this respect, the criteria including sustainability, measurability, accessibility, associability and actuality, suggested as the main topics of smart medical education reflect this need [3]. Establishing core education programs in order to standardize pre-graduate education and medical residency education in our country are crucial steps in this area. Moreover, training educators at medical education institutions has become a must for improving and sustaining the quality of medical education.

This article aims to establish a fundamental approach to how pre-graduate medical education will be conducted at University of Health Sciences (UHS) in Istanbul-Turkey, a recently established institution which covers all areas with a macro organizational structure together with 56 Education and Research Hospitals under Ministry of Health affiliated to UHS School of Medicine and to review current trends in medical education.

Overview of Pre-Graduate Medical Education

When the knowledge base to increase gradually and the improvements in education methods are considered, updating the contents and format of medical education has become a necessity. National Core Education Program (UCEP) has been established in order to determine the knowledge and skills a student who graduates after a 6-year education as a physician should have and to standardize the pre-graduate education [4]. UCEP, in other words core curriculum is essentially a list of knowledge, skills and attitudes medical school graduates should embrace and is updated on regular basis. UCEP is used as a guideline when education programs and curricula of schools of medicine are being prepared. These standards should be adopted and further developed by education institutions. International Medical Education Institute has gathered seven main areas under "minimum essential requirements" or in other words, learning outcomes for physicians on graduation from medical schools. These are; "professional values, attitudes, behavior and ethic," essential medicine knowledge," "communication skills," "clinical skills," "public health and health systems," "knowledge management" and "critical thinking and research" [5]. Current issues and regulations regarding the importance of patient-physician relation, informed consent, malpractice, research planning, medical ethics and occupational safety should be added to the curriculum and change in education should be continuous in order to keep up with the advancements in the world by also considering the requirements of the country. It is suggested that core curriculum takes two thirds of the education period and the remaining one third is devoted to areas for detailed further study of topics selected by the student [6-9].

Parallel to the improvements in medicine, educators strive to present all the details of a certain topic, which in the end, causes overload of information for the students and sometimes, they are unable to make a connection between fundamental and clinical sciences [6]. In traditional medical education curricula, the first few years of study are predominantly reserved for teaching basic medical information and the later parts of education contain less basic medical information but more clinical medical information. However today, in order to create message integrity it is preferred to integrate basic medicine and clinical medicine sciences in curricula and to ensure continuity of such integration throughout the whole education period. In addition, introducing students to patients as early as possible, early clinical experience, prevention of information overload and use of information technologies are topics that are gaining more and more importance [10].

After the curriculum is established, it should be delivered to the students through suitable methods. Various learning methods are used in order to reach knowledge and skill targets in medical education. Such methods should be substantial enough to include different learning styles and motive the children throughout their whole lives. The most essential duty here is of medical educators. Learning is a dynamic process and requires teaching skills to be constantly improved. Instead of giving extensive information to students, fundamental information and approaches should be delivered through methods that assist in recalling of knowledge. Today, active methods in which students learn through a procedural process as active participants not passive like in traditional medical education are preferred [11-17].

Different education models are applied in schools of medicine in the world and in our country [9,18] **(Table 1)**. The most frequently used active education method; problem-based learning (PBL) is a student-based education model using scenarios at education centers. The main objective of PBL is to introduce scenarios students may encounter in their professional lives; for them to research, discuss and learn collectively and find solutions to these issues [19]. "Outcome-based learning" model widely used in clinical medical sciences defines outcomes instead of setting objectives for education. In this model, minimum learning outcomes a physician should embrace are expertise in clinical skills, competency in applying practical procedures, the skill of researching and enquiring about the patient, managing the

Table 1 Model used in medical education.

Classical education	• Discipline-based
Integrated education	• System/organ-based
Active education	• Problem-based learning • Competency-based learning • Public-based/directional learning • Outcome-based learning • Concept-based learning • Task-based learning • Fact-based learning • Team-based learning • Learning with peer-support • Proof-based learning
Mixed education	• Mixed-based

patient, health motivation and illness prevention competency, communication skills, knowledge acquisition and usage skills [19].

Different active education models can be applied at medical schools in different stages of the 6-year curriculum. In these active education methods, students instead of teachers, learning instead of teaching and active education instead passive education come to the forefront and as a result, our students' capability of thinking and making decisions independently improves. In line with the latest developments, these education methods should be taught to educators through professionals in Medical Education Departments. Within the last few years, electronic medium is widely used as a learning source. Parallel to these developments, it is obligatory for education institutions to strengthen their infrastructures for easier and better access to electronic resources.

Preferring implementation of new applications that will stimulate learning styles of students, thus increase the level of learning and quality of education would be extremely beneficial. Due to the problems that may arise when real patients are used in practical medical education, using medical information technologies such as simulators and virtual reality is suggested. Through simulation-based education, anatomic structures and biochemical and physiological actions taking place in the body, which are hard to comprehend in basic sciences can be better and more easily understood by students. In clinical medical science education, these applications also offer repeatable practices without the risk of harming the patients in certain examination procedures and small interventions alongside theoretical education [19-22]. Use of this method enables use of same educational guides in education provided with this model; thus standardization of education. Gaining skill of reaching a conclusion and a decision through different scenarios has a positive contribution on education of students studying at Schools of Medicine, High Schools of Nursing and who are doing their medical residencies.

Assessment is an essential element steering learning in education. World Health Organization recommends assessment for both students and educators as the final stage of education [2,6]. The essence of assessment is measuring knowledge, skills and attitudes to determine how much students reached the objectives and competencies listed in the education program. Generally, multiple choice exams, open-ended questions and oral exams applied at clinics cannot completely and objectively assess these processes. An examination system that continuously and objectively assesses knowledge-skills-competency and attitudes is recommended [6]. In this respect, instead of classical oral examinations that aren't based on objective criteria, objectively structured clinical exams and clinical reasoning exams are applied. In addition, students to assess courses and teaching faculty members and faculty members to assess students through feedback from both sides is expected to shine a light on new applications [6,8].

Current Configuration of the UHS School of Medicine

UHS School of Medicine has started its journey over its vision to become a "model" school of medicine to realize a community-based medical education based on an education system based on program outputs within pre-graduate medical education at Health Practice and Research Centers (HPRC) from which the community commonly receives healthcare services. Moreover HPRC having an affiliation protocol takes combining the education to specialize in medicine and increasing the education quality of specializing in medicine as a mission. International collaboration in medical education and increasing quality in medical education as well as popularizing it over national and international extent are some of its targets of high priority.

UHS School of Medicine has started to serve with a total 82 students, 62 of which assigned by student selection and placement center and 20 of which enrolled through foreign student exam in 2016-2017 educational year. Education language is Turkish. The frame educational program prepared for all semesters of the School of Medicine is a fully integrated educational program, covering system-based horizontal and vertical integrations within the pre-clinical period and clinical period. Whole curriculum has been harmonized to UCEP, which was re-organized in 2014. In UCEP, all symptom, sign, and disease conditions as well as professional skills, interventional and intellectual skills have been configured per years within the curriculum.

School of Medicine has been configured to include basic medical science departments within the School of Medicine and internal and surgical medical science departments within affiliated hospital clinics. Public health, medical pharmacology, medical genetics in the internal medical sciences and medical pathology in the surgical medical sciences are configured within the school of medicine. An anatomy model laboratory, a dissection laboratory, 2 multidisciplinary laboratories, a physiology student lab, and a professional skill lab have been planned to be established, and the establishment of these laboratories are still ongoing. Besides students use the laboratory infrastructure of affiliated hospitals for certain laboratory practices. Educational program configuration per years and student evaluation through various assessment and evaluation methods are included in the frame educational program. In this context, formative and decisive exams intended for pre-clinical educations include multiple-choice, multiple-selection, objective-configured practice exams and scaled evaluation forms evaluating skills.

Having UHS School of Medicine students to study at affiliated hospitals, covering various professional skill practice and clinical internships within pre-clinical and clinical periods, complies with basic characteristics of society-based medical education. Students meeting health problems commonly seen in the society within first step physician practices at this stage and receiving courses at clinical environments together with numerous patients with different clinical characteristics would find the most realist education opportunity to be prepared for post-graduate periods. Among 25 affiliated hospitals in Istanbul, which is the city of ongoing pre-graduate education, those with a thematic field would make the education in these fields more productive and allow rare diseases to be recognized. Putting educational research hospitals, to which any individual could more directly apply, instead of third grade medicine school hospitals, in the pre-graduate medical education provide a rich educational

environment as institutions having limitless educational material due to high patient potential and wide case range.

In the SWOT analyses made with contributions of University of Health Sciences School of Medicine stakeholders, strong aspects of the school have been revealed to be affiliation with numerous hospitals, authorization to open programs abroad, central location of the school of medicine in Istanbul, thematic configuration of the university in healthcare field, and richer scientific research project source than other universities.

On the other hand its poor aspects have been determined to be insufficient service from units such as student affairs and head of health, culture, and sports, ongoing establishment of the institutional culture, joint tenancy of the current building with Marmara University, insufficient area for basic need and social activities, and insufficient number of administrative staff.

Wide clinical internship practice area due to affiliation with numerous specialty hospitals right along with strong and poor aspects of the faculty, ongoing establishment of the healthcare techno city within our university, extensive curriculum due to wide teaching staff diversity and variety, contribution to improve medical specialty education standard and quality, and capacity to supply education curriculum and academics to our units to be established abroad, have been considered to be opportunities of the school.

Considering current configuration of the school, inadequate establishment of the institutional culture due to human resources coming from different organizations, building restoration negatively affecting the education, Marmara University units not leaving the building at the designated date, and insufficient human resources due to limited public staff recruitment have been characterized to be a threat risk.

Discussion

In the last few years in the world, along with innovations in the medical education curriculum, education models and measuring-assessment methods, changes in higher education including schools of medicine have taken place. There are regional collaborations that encompass various countries in order to develop higher education systems offering common solutions to their problems. The most comprehensive of these is the Bologna process established in Europe to create a comparable and compliable program in higher education by maintaining the unique differences between the systems. Turkey was included in the Bologna process in 2001. Therefore, it is planned to switch from one country or higher education system to another and increase mobility and employment of students and academics [23].

Universities had to meet certain standards in order to comply with the Bologna process. The most crucial step of these standards is to form these information packages for the programs conducted at faculties. Information packages means systems introducing the institution and program, supported via software infrastructure and are for guidance purposes [24]. After all standards of the Bologna process are met, higher education institutions apply to authorized institutions in order to receive diploma annexes and European Credit Transfer System label. The purpose of this label is to introduce the programs to Europe in general and facilitate mobility of students and academicians [24]. In our country, efforts for complying with this program are continuing at many schools of medicine. Efforts for creating these information packages implemented at UHS School of Medicine and Academies are continuing in order for students and educators to benefit from the possibilities offered by higher education institutions in Europe.

The language of education at schools of medicine in our country is one of the widely discussed topics. At our schools of medicine, medical education is either provided completely in English or in English in addition to Turkish. It is apparent how important it is to know English for medical students in terms of the requirement for them to access to literature information and follow up new developments throughout their professional lives in medicine. However, it was determined that medical education in English might cause few problems in the progress of the course, the learning process and when students come face to face with patients during clinical practices [25]. In terms of patient-focused approach in healthcare services, the physician should be able to assess the patient as a whole together with their culture and social environment and improve the physician-patient relationship. In medical practices, an understandable language should be used while providing medical information to patients and also throughout the patients' treatment. It has been noted that medical education in English may have negative effects on student-patient relation and that students sometimes have difficulties in finding the Turkish equivalents for certain terms and symptoms and may cause problems for patient-physician relations [25]. In this respect, as a result of not knowing the Turkish of certain concepts and terms in a foreign language is an obstacle before improving the Turkish medical terminology. It was stated that medical education in English limits active participation of students to courses, negatively affects student and faculty members' performance; and that educators usually feel the need to have a Turkish summary of the lessons at the end and moreover, this is a request of the students most of the time [25].

In schools of medicine that conduct education in a foreign language to a certain extent, some of the faculty members give the courses in English, while others give in Turkish and sometimes, when their language level is not adequate, they start the courses in English but continue in Turkish and therefore, in this respect, education in a foreign language cannot be realized [25,26]. In the Results Report of the 8th National Medical Education Congress that took place in 2014, the need to improve schools of medicine with regards to objectives and targets and ensuring that medical students shouldn't be alienated from the society.

As a result, foreign language education and medical education in a foreign language are two different concepts. Physicians are required to have a good grasp of English in order to follow international literature, write international scientific articles and conduct scientific researchers abroad however; medical education in English is completely another subject. The language

of education at UHS School of Medicine and Colleges is Turkish however, in addition to the curriculum, English language is taught in order to enable students to follow the current literature related to their majors and carry out researches at an international level.

Learning is an active process and requires another active driving force; in other words, a good educator. Today, educators are undergoing a process of transforming into individuals who facilitate learning from being didactic teachers. Medical educators should be individuals who motivate learning on one's own, conducting impressive and high quality presentations, who can establish a relation between assessment and learning can implement the best practices and can use technology [27]. However, faculty members should be more prepared the most for being good educators among with their tasks including research, service and teaching. Programs for ensuring progress of educators in higher education, which will enable educators to improve their competencies and maintain their productivity, should be established in order for them to meet certain roles as faculty members [28]. Implementing such programs will ensure that educators transform their conceptual frames, understanding the learning process better, be aware of current medical education methods, actively implement these methods and thus, take on a professional role in medical education [28]. Periodical training of medical educators would ensure a successful transformation from this change. It is necessary to assess the efficiency of educator training programs in order to improve this training process. Continuous educator training programs will ensure that faculty members adopt learning as a life-long effort and feel the need for continuous learning. It is of utmost importance to establish educator training programs that will be conducted for faculty members at UHS and educators at 58 affiliated education and research hospitals under the leadership of Medical Education Department and to ensure the impact of such programs on education in time.

Conclusion and Suggestions

The pre-grad medical education curriculum should motivate lifelong learning and ensure full integration of fundamental and clinical sciences. It should be delivered to students through student-centered active education models that will improve skills such as learning by understanding, knowledge management, awareness, leadership, team awareness, self-expression, professional attitude and behavior.

Medical education should be improved with skill labs that will support medical IT methods such as simulation and virtual reality. An examination system that assesses education should be a system that is based on the ability to objectively assess the competencies of students with regards to knowledge-skills-talents and attitudes.

The infrastructure required for establishing these information packages with regards to the programs conducted in order for the students and educators at UHS School of Medicine and Colleges to benefit from the opportunities of European Higher Education programs should be completed.

The use of Turkish in occupational education is important in order to ensure efficiency of new learning methods and for establishing good communication between physicians and patients in medical practices. For improving scientific thinking and creativity, interactive medical education should in mother tongue however, opportunities should be provided to the students in order for them to obtain a foreign language training in order for them to learn English as an object-oriented foreign language.

It should be ensured that all educators attend the "educator training" programs. After attending such programs, it will be ensured that educators take on a professional role in medical education.

Ensuring both local and international standards in medical education in which the effects of globalization are more fiercely felt day by day will improve the competency of physicians and equip them with the ability of becoming "universal physicians." The education and research hospitals affiliated to UHS School of Medicine to be included in pre-graduate medical education offers an unlimited source of education materials. UHS School of Medicine's main target is to ensure that our students are qualified to become "universal physicians" by offering a quality medical education and international collaboration in this rich education program created by the use of macro organization model.

Limitations

Since University of Health Sciences was established two years ago, undergraduate medical education has been newly organized by the authorities and there is no output of undergraduate medical education. Hence, assessment of this macro-organization is not possible at this time, but not so late. On the other hand, infrastructure and opportunities of this macro-organization has not been compared with those of the other institutions or universities.

References

1 Edinburgh Declaration (1988) World Federation for Medical Education. Edinburgh.

2 Walton H (1994) World Federation for Medical Education: Proceedings of the World Summit on Medical Education. Med Educ 28: 1-3.

3 Özsarı SH (2013) Relationship between health management and health education. Journal of Higher Education 3: 9-11.

4 Gülpınar MA, Gürpınar E, Songur A, Vitrinel A (2014) Medical Education National Core Education Program, Turkey.

5 Core Committee, Institute for International Medical Education (2002) Global Minumum Essential Requirements in Medical Education. Med Teach 24: 130-135.

6 Solakoğlu Z, Darendeliler F (2013) Current concepts on better medical education. Journal of Higher Education 3: 165-168.

7 Harden RM, Davis MH (1995) AMEE medical education guide no 5. The core curriculum with options or special study modules. Med Teach 17: 125-148.

8 Ann WF, Hemmer PA (2012) Program evaluation models and related theories: AMEE guide no.67. Med Teach 34:e288-239.

9 Brauer DG, Ferguson KJ (2015) The Integrated curriculum in medical education: AMEE Guide No. 96. Med Teach 37: 312-322.

10 Özvarış ŞB, Sayek İ (2005) Change in medical education. Hacettepe Medical Journal 36: 65-74.

11 Harden RM, Laidlaw JM, Ker JS, Mitchel HE (1996) AMEE medical education guide no 7: Task-based learning: an educational strategy for undergraduate, postgraduate and continuing medical education, Part 2. Med Teach18: 91-98.

12 Nordquist J (2016) Alignment achieved? The learning landscape and curricula in health profession education. Med Educ 50: 61-68.

13 Nordquist J, Sundberg K, Johansson L, Sandelin K, Nordenström J (2012) Case-based learning in surgery: Lessons learned. World J Surg 36: 945-955.

14 Nordquist J, Sundberg K, Laing A (2016) Aligning physical learning spaces with the curriculum: AMEE Guide No. 107. Med Teach 38: 755-768.

15 Parmelee D, Michaelsen LK, Cook S, Hudes PD (2012) Team-based learning: a practical guide: AMEE guide no. 65. Med Teach 34: e275-287.

16 Robinson Z, Hazelgrove-Planel E, Edwards Z, Siassakos D (2010) Peer-assisted learning: a Planning and implementation framework. Guide supplement 30.7 Practical application. Med Teach 32: e366-368.

17 Newble D, Cannon RA (1994) Handbook for medical teachers. USA: Kluwer Academic Publishers.

18 Nara N, Suzuki T, Tohda S (2011) The current medical education system in the world. J Med Dent Sci 58: 79-83.

19 Turan Özdemir S (2005) Medical Education and Standards. Uludağ Medical Journal 31: 133-137.

20 Bilham T (2009) e-Learning in medical education: Guide supplements 32.5 Viewpoint. Med Teach 31: 449-451.

21 Parlak A, Develi S, Sezer B, Yazar F (2015) Medical education and advanced technology applications. J Clin Anal Med, doi: 10.4328/JCAM.3738.

22 Jones F, Passos-Neto CE, Braguiroli OFM (2015) Simulation in medical education: Brief history and methodology. PPCR 1: 56-63.

23 Bologna process (2016) http://www.yok.gov.tr/web/bologna

24 Timurcanday ÖN, Özdağoğlu G, Damar M, Akdeniz E, Süral Özer P, et al. (2015) Macro view to the design process of Dokuz Eylül University information package within the scope of Bologna Process. Journal of Higher Education, 5: 162-169.

25 Sarıkaya Ö, Yeğen BÇ, Sav A, Fak AS, İstik S (2003) Foreign language medical education debate. Tıp Eğitimi Dünyası 10: 16-21.

26 Sav A, Yeğen BÇ, Fak AS, İskit S (2003) Language discussion in medical education. University and Society Journal 2: 03.

27 Spencer JA, Jordan RK (1999) Learner centered approach in medical education. Br Med J 318.

28 Wilkerson L, Irby DM (1998) Strategies for improving teaching practices: a Comprehensive approach to faculty development. Acad Med 73: 387-396.