



The Health Sciences University as a Different Macro Organizational Model in Education

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ABSTRACT

A strong organization structure is needed between the medical faculties and training and research hospitals as well as between health workers and other components of the health system in terms of academic activities, patient care services and other clinical applications. Training and research hospitals all around the world are often affiliated with medical schools and work closely with medical students and medical resident doctors. The aim of this study is to determine the advantages and disadvantages of specialty training model in this macro structure and discuss it in the light of the literature. Health Sciences University was founded in İstanbul in 2015 as a new university and a different macro organizational model. In this model, there is a medical faculty with affiliated 56 training and research hospitals and specialized training is under the responsibility of the dean of the medical faculty. In addition to the departments and academic committees that are connected to the dean, a Medical Specialty Training Board under the responsibility of the chief physician has been established. An education coordinator will be determined in every health care department, and it is decided that in every education year formative and summative exams will be held. Designing of electronic files to record performance and to form remote monitoring systems for residents and trainers are planned to be established. As a result, we think that this macro organization structure will have middle to long term benefits to our country. The academic quality and the education standards between Health Sciences University and the affiliated hospitals will be strengthened in the future. It will also help to improve the fields of health such as medical research, education, clinical applications etc.. The success between institutions will be ensured with a good coordination and power-sharing.

Keywords: Health Sciences University, teaching and research hospital, macro organization

INTRODUCTION

The word university is derived from the Latin word universus. It is used to imply expressions such as community, integrity, and solidarity (1, 2). The word itself implies a community of wise men who have come together to share and convey their knowledge and experiences (2). Universities are institutions where education is provided and scientific research is conducted and where high-level professionals and intellectuals that the country needs are trained and the national culture is developed. In 1971, at the meeting of the World Universities Association in Montreal, it was stated that the "universities provided social, economic, and technical dynamism in their countries using the constructive and creative power of science; gave life to the society as it received power from them; reflected the customs, traditions, and national characters of the society; and presented the knowledge that they gained by benefiting from the society again to the benefit of the society" (3). In the Ottoman state, the first medical institution that educated physicians in terms of a university was the Süleymaniye complex (1556) of Süleyman the magnificent (4). The first faculty of medicine established during the republican period was the Ankara University Faculty of Medicine (1945). Because there was no general legislation regulating the titles of education and specialty in medicine in the Ottoman period, the Law on the Practice

of Medicine and Medical Sciences in the republican period was issued on April 14, 1928 (5). As of this date, the law has undergone many changes. On the basis of this law, the education for specialty in medicine is provided by university and education and research hospitals affiliated with the Ministry of Health in our country.

In literal sense, "education and research hospitals" are defined as the hospitals where medical education is provided and practice is undertaken in the supervision of experienced specialist doctors (see https://en.wikipedia.org/wiki/Teaching_hospital). The first medical education and research/practice hospital in history that methodologically served was opened in the Persian Empire during the Sasanian period under the name of the Gundishapur Academy (6). Today, in the USA, education and research/practice hospitals provide about 100,000 doctors and dentists with training and clinical practice in medicine (7). In addition, many education and research hospitals also provide hands-on training for the other secondary branches related to the nursing profession and health. When we look at the history of medicine, it is observed that education and research hospitals have pioneered many worldwide innovations in healthcare. The first live polio vaccination, establishment of the first newborn intensive care unit, and first child heart transplantation can be considered among these (8).



The gathering of 56 education and research hospitals that serve in the field of health in different regions and cities of our country under the organization of the University of Health Sciences (UHS) Faculty of Medicine, especially providing education pertaining to medicine and related specializations, has been discussed in this article. The UHS was established as a new university and a macro-organizational model covering the whole country in the province of Istanbul under the Law No. 6639, which was adopted on March 27, 2015 in the Turkish Grand National Assembly (9). The functions of the UHS were defined in the current law as conducting research and practice activities in the field of health education by establishing joint use protocols with the education and research hospitals affiliated to the Public Hospitals Administration of Turkey within the framework of the supplementary article No. 9 of the Basic Law on Health Services No. 3359 dated May 7, 1987. The education and research hospitals that the university signed for the joint use protocol within the scope of the law also gained the status of application and research centers of the UHS (9, 10).

Prior to the establishment of the UHS, joint use protocols were signed for the provision of healthcare services and in the field of education between the education hospitals of the Public Hospitals Administration of Turkey and the universities in different regions of the country. Under the terms of the article and the joint use regulation, which are the basis of the protocols, specialty education was given to the responsibility of the dean of the medical faculty. Until the establishment of the UHS, although a medical faculty could be affiliated with a maximum of 2 education and research hospitals, except for the branch hospitals in the same province, more than one affiliation/joint use was facilitated with the amendment of the regulation (11). How would the training be given and coordinated and how would the management and organization be performed in the joint hospitals, the number of which had increased to 56 and was likely to increase further with the establishment of the UHS? In this study, the necessary requirements for solving these problems have been considered and discussed with reference to the existing literature.

METHOD

The national and international literature has been searched on this subject, and the organizational models adopted abroad, especially in developed countries, have been assessed. The advantages and disadvantages of the current structure have been researched, and the shortcomings and necessary requirements have been specified. "Quality Workshop on the Specialty Education in Medicine" was organized by the UHS in Istanbul in May 2016 to determine the current status and the problematic issues pertaining to Specialty Education in Medicine, the areas that can be developed, and how the development can take place in these areas. Working groups were formed under a total of 7 main headings in the workshop, and discussions were undertaken along with results and recommendations. The topics that were discussed and studied can be summarized as follows: 1) Core curriculum in medical education, 2) Educational methods and their use, 3) Educational resources, 4) Education standards and supervision, 5) Measurement tools and evaluation criteria in the supervision: report card, 6) Program evaluation models and accreditation, and 7) Thesis studies. The participation of all parties in the working groups was ensured, and the opinions and suggestions were discussed; the final reports were presented at

the end of the workshop. The administrators of the educational institutions, the medical educators and the educators, and teachers and specialist students (assistant doctors) from the education and research hospitals and our universities were invited to the working groups. In light of the information obtained through the workshop, a modeling study on Specialty Education in Medicine was conducted considering the existing legislation.

ORGANIZATIONAL MODEL

In the study on Specialty Education in Medicine, an algorithmic diagram showing the structure of the academic organization in the education and research hospitals affiliated with the UHS Faculty of Medicine was created (Figure 1). Commissions were established on the main issues related to education (Figure 2).

HRAC TRAINING COORDINATOR

An education service coordinator is appointed to coordinate, monitor, and ensure that the training is conducted using identified methods at the Health Research and Application Centers (HRACs). The education service coordinator is assigned by the chief physician of the education and research hospital for 2 years at the discretion of the Dean of the UHS School of Medicine.

BSEM OF HRAC

To plan, conduct, and supervise the training and research activities, the board of specialty education in medicine (BSEM) comprising seven members in "general health research and application centers" and five members in "branch health research and application centers" is established. The chief physician is the natural chairman of BSEM, and the HRAC Training Coordinator is the natural vice president. Under the supervision of the chief physician, five lecturers in the "general health research and practice centers" and three lecturers in the "branch health research and application centers" are elected as the members of the BSEM through a secret voting by the lecturers. The selected members have a 2-year term of office, and the members who have completed the term can be re-elected. In addition, the same number of substitute members is also selected by a secret ballot. In the absence of the BSEM president, at least five members of the "general health research and application centers" and at least three members of the "branch health research and application

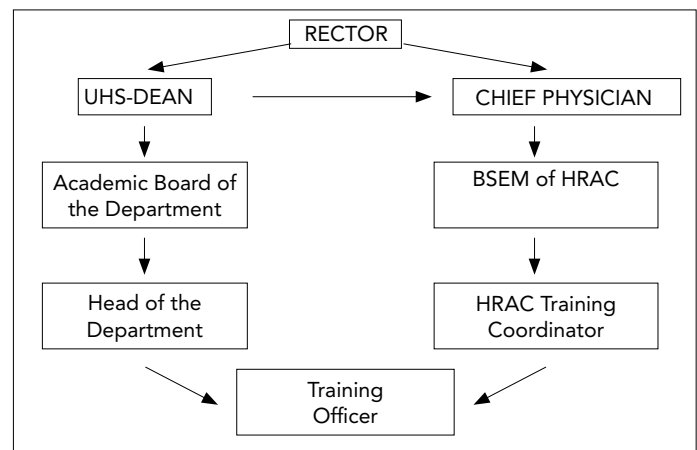


Figure 1. Management scheme of the academic organization structure created for specialty education in medicine
SBÜ: Sağlık Bilimleri Üniversitesi, SAUM: Sağlık Araştırma ve Uygulama Merkezleri

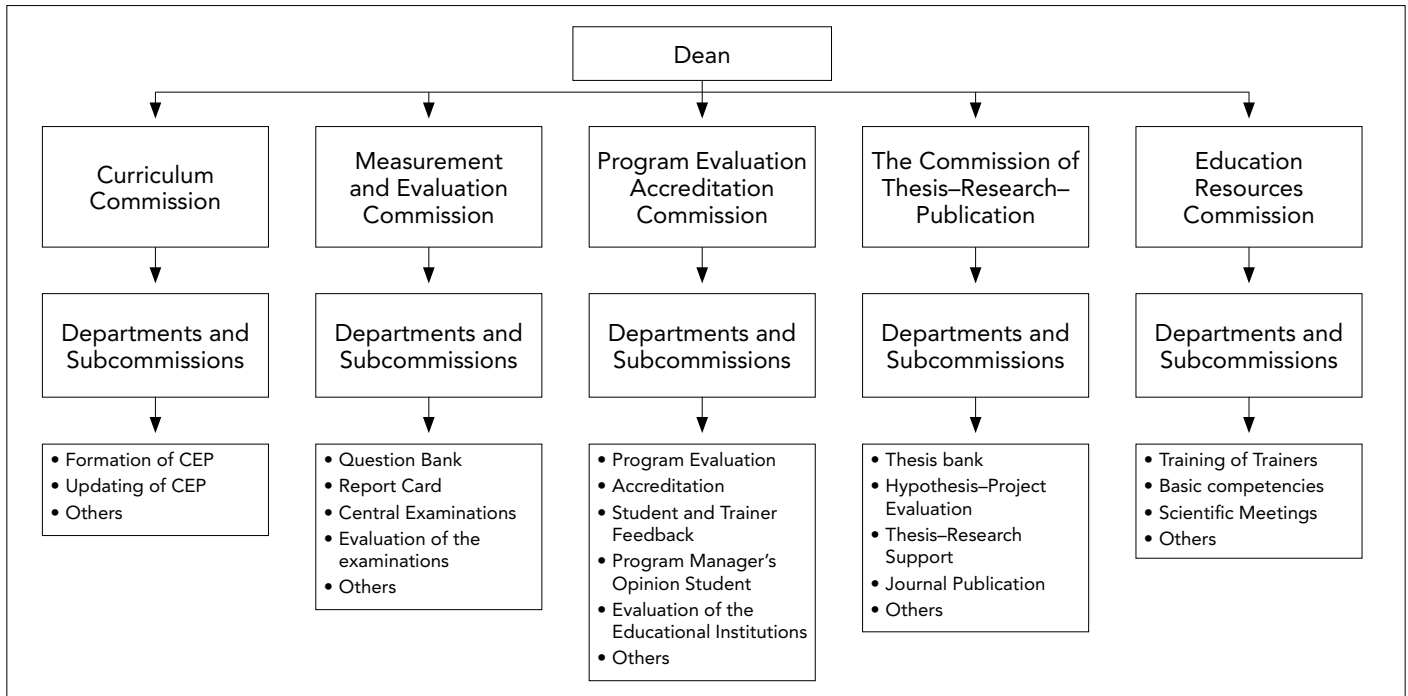


Figure 2. The Boards, commissions, and administrative structure related to the specialty education in medicine

centers" meet at least once every month under the presidency of the Vice President. BSEM shall decide based on the majority of votes from members who participate in the meeting (in case of equality, the party of the president takes the decision). The BSEM Secretariat services are provided by the chief physician.

BSEM Missions:

- a) To perform education-related duties given by the Dean, determine the necessary measures for the establishment and development of the institution's educational and research capacity, and inform the top management for their fulfillment. To make a decision about the educational plans and programs prepared by those responsible for education in the relevant clinics by evaluating them in terms of the provisions of medical specialty legislation and Deanship education decisions.
- b) To prepare the training and research program for each educational year, publish it in written form and in an electronic environment, and transmit it to the top management.
- c) To enable a scientific evaluation team that will be constituted to evaluate the scientific research projects, which will be made in the institution and for which financial support is requested, and send the projects that are considered appropriate to the top management so as to be sent to the Dean with the suggestion of support. To make a decision by evaluating the interim and final reports issued every 6 months in terms of the conducted researches.
- d) To make a decision pertaining to the requests for in-house seminars, conferences, and scientific meetings; evaluate the demands of organizing inter-organizational, national, or international congresses, symposiums, courses, and workshops; and send them to the Dean.
- e) To coordinate inter-clinical training activities and rotations of specialist students.
- f) To provide opinions regarding the training periods of the specialist students in accordance with the related legislation and refer to the top management to be sent to the Dean.
- g) To follow and announce the national and international seminars, courses, congresses, and similar scientific meetings and inform the managers of the institutions about the persons attending these meetings by way of assignment.
- h) To evaluate and decide about assignment demands of those who want to work in scientific researches and increase their knowledge and vision in domestic and abroad studies.
- i) To evaluate the training and research activities undertaken in the institutions and units at the end of the training year, prepare evaluation report, and refer this report to the top management to be sent to the Dean.
- j) To make recommendations to the top management for access to the scientific resources and databases required by the institution.
- k) To evaluate the violations of in-house education, research, publication, and professional ethics and provide the necessary information to the managers of the institution and take initiatives for sanctions under the existing legislation.
- l) To present opinions to the top management related to the other trainings given in the field of health (certified training program, in-service trainings, and internship trainings), other than specialty education.
- m) To evaluate the education-related demands of the education and training staff and inform the top management.

COMMISSIONS OF SPECIALTY EDUCATION IN MEDICINE

Training commissions for "curriculum, measurement and evaluation, program evaluation and accreditation, thesis, research and publication, and training resources" are formed for specialty education in medicine. These educational commissions may form their own subcommissions of education if they deem necessary. Educational commissions fulfill the tasks of planning, setting the standards, coordination, and monitoring. The commissions of specialty education in medicine comprise at least 5 members and the subcommissions comprise at least 3 members appointed by the Dean.

- a) **Curriculum commission:** It fulfills tasks such as setting the standards, coordination, monitoring, etc. for the preparation and updating of the curriculum.
- b) **The commission of measurement and evaluation:** It performs the tasks of determining measurement and evaluation methods, preparing a format for the report card, determining the structure and standards of the question bank, coordination, monitoring, etc.
- c) **The commission of program evaluation and accreditation:** It fulfills the tasks of evaluating the educational program, determining the accreditation fields and durations and informing all the units about the subject, determining the trainer and student feedbacks, determining the program manager's opinion on the student, determining the procedures for supervising educational institutions, preparing the related forms, coordination, monitoring, etc.
- d) **The commission of thesis, research, and publishing:** It fulfills the tasks of the determining the procedures and criteria of theses, scientific journals (national and international), and scientific publications and the support that will be provided for the theses and researches; it also fulfills the tasks of determining the structure and standards of the thesis bank, coordinating, monitoring, etc.
- e) **The commission of educational resources:** It determines the form and contents of the training of the trainers, standards related to the training environment, and training methods in accordance with vocational and basic competencies; establishes the standards of scientific and educational meetings; and fulfills the tasks of coordination, monitoring, etc.

HEAD OF THE DEPARTMENT AND ACADEMIC BOARDS

In addition to the tasks specified in the Regulation on the Academic Organization of Higher Education Institutions and in the Regulation on the Establishment of Academic Committees in higher education institutions and Scientific Supervision, the Head of the department and Academic Boards fulfill the following tasks related to specialty education in medicine in accordance with the procedures and principles recommended by Education Commissions and approved by the Deanship. Those who are in charge of education can be assigned in the subcommissions to be established for the fulfillment of the following duties:

- a) Preparation and updating of education and training curriculum.
- b) Preparing the education report card and question bank, including the content, application of measurement, and evaluation

methods, performing and evaluating central examinations, deciding on the objections to the exam results, and delivering an opinion about the Deanship.

- c) Evaluation of education program, realization the accreditation processes, obtaining educator and student feedbacks, and providing feedbacks such as program manager's opinion about student in accordance with the procedures.
- d) Ensuring that the tasks regarding thesis database, for which the department is responsible, are performed.
- e) Providing the standards determined for the educational environment, implementation of education methods in accordance with basic competencies, and organizing scientific and educational meetings.

DISCUSSION

Healthcare services of a particular importance comprise a chain of multidimensional and integrated services. Therefore, they are semi-public services bearing the characteristics of being an "instrument" and "aim" in increasing the level of development and welfare of a country. The culture of the health organization of each country is influenced by the lifestyle and habits of the people (12). University hospitals and the Ministry of Health Education and Research Hospitals constitute the tertiary healthcare services, and these hospitals play important roles both in education and in research in addition to healthcare service delivery. University hospitals are generally expected to fulfill three important missions: 1) Providing healthcare and leading the innovations in the sector during this process, 2) Training the best possible healthcare provider, and 3) Providing the community with the benefits of medical research and improving diagnosis and treatment methods for health problems. These different missions or components come together by representing the three pillars of service delivery, education, and research in various organizational structures around the world. Various approaches and organizations have been developed to organize these components and associated organizations (13). Today, there are a total of 78 education and research hospitals in our country affiliated to the Ministry of Health that provide education in the field of specialty education in medicine (See the role definitions of the hospitals in <http://www.tkhk.gov.tr>). Of these, 19 have been affiliated with different universities (See <http://tkhk.gov.tr>, Public Hospital Associations 2015). In various regions and cities of the country, 56 education and research hospitals providing tertiary healthcare services have undertaken a new mission in the field of healthcare service under the roof of the Faculty of Medicine of the UHS. When this macro-organization is examined in terms of the number of hospitals and their infrastructure, health workforce, healthcare service, and financial structure, it is one of the largest organizational structures around the world in the field of health. The macro-organizational structure and necessity of this model that has newly been established and covers a very wide area in our country have been examined in this study.

The multidimensionality of health science has developed the need of dependence on advanced technology and high financial requirement in addition to the cooperation of the service, education programs, research, and practical application. This situation has revealed new organizational models in healthcare services.

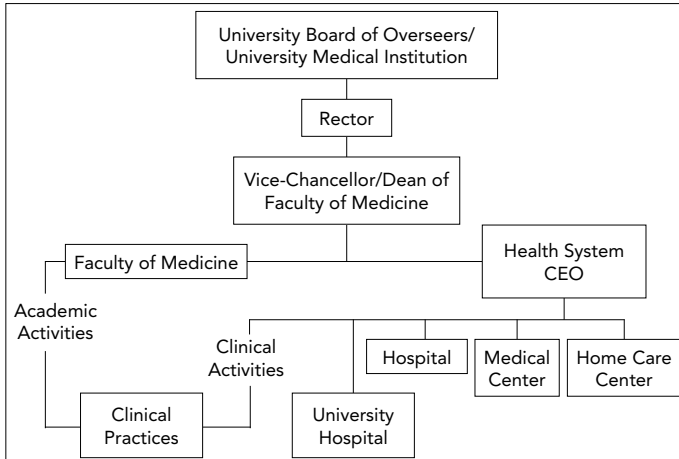


Figure 3. Example of a fully integrated model of university-hospital association (13)

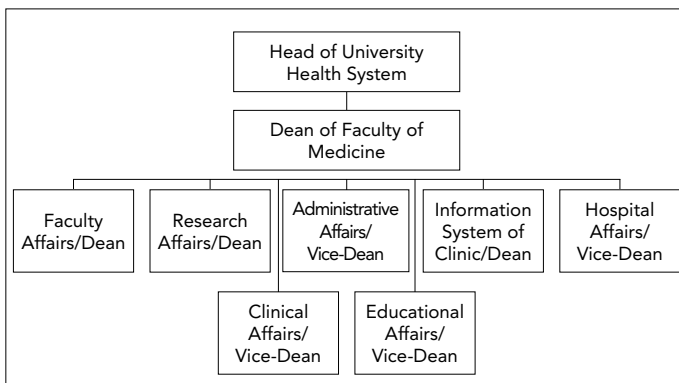


Figure 4. Example of functional integrated model of university-hospital association (13)

When the literature is reviewed, the organizational structure of tertiary healthcare services under the name of Academic Health Science Centers is seen in developed countries, especially in the USA and England (14-16). This structure mainly describes the formal and informal relationship and affiliation among the healthcare institutions. Medical faculty, clinical and practical applications, education programs, research and development activities, and education and research hospitals comprise the main structure of this affiliation and relationship (15). The matter is which organizational structure should be chosen here. Two organizational structures stand out in general. These are called as the fully and functionally integrated models.

Fully Integrated Model: It is a model in which mutual missions, namely, service delivery regarding the university hospitals and the education and research activities are managed by a single director (CEO) and a single board of directors (Figure 3).

Functionally Integrated Model: It is a more flexible affiliated model in which each of university academic activities, faculty of medicine, and the activities in affiliated hospitals are managed by different leaders and separate and independent boards (Figure 4) (13, 15, 17).

When the structure of the UHS established in our country is carefully examined, it is observed that it is not similar to either of

the organizational structures in the foreground and is closer to the functionally integrated model in terms of the main mission. Although the health service delivery and budget structures of the hospitals are left to the management of each hospital, it is seen that the education and research applications are gathered at the academic center. In the supervision of the Dean, specialty education in faculties of medicine has been structured as the academic board of the departments that are subject to the Dean and the head of the departments below him. Each head of the department is the executive of and responsible for the specialty education. The responsibility of education was also given to the head of the related department in jointly used hospitals (11, 18, 19).

When the organizational structures of medical faculties in the world are examined, it is observed that although these structures are formed, some notable issues in terms of affiliation include 1) Clinical enterprise organization: the distribution of the hospitals and constituent systems, clinics, and laboratories; 2) Academic-clinical enterprise integration: the institutions which will perform clinical practice together with the medical faculty; and 3) What the authority position of the chief academic officer should be (20). In the unification of these structures, it is observed that there are 7 different organizational structures.

1. **Owner:** This structure was described by Culbertson (21), and there is a tight union and high academic authority within a single structure (North Carolina ve Duke University).
2. **Subsidiary:** Higher-level clinics and hospitals are organized with a high-level academic structure, and there is a low-level academic authority throughout the structure. It is the most common model in the USA (Mayo Clinic).
3. **Alliance leader:** It is a moderate unification of organizational structures of both institutions under a high academic authority.
4. **Alliance partner:** Here both structures are seen to be united under a low level academic authority. In this partnership, both structures have an association for a mutual benefit rather than a social and academic interest. Similar to this structure, the affiliation of private university with private hospital can be given as an example in our country.
5. **Coalition leader:** Low-level clinic/hospital organizations have a moderate association with medical faculties under a high-level academic authority.
6. **Coalition partner:** It is similar to type 5 organizations. The difference is that the faculty of medicine has a lower level of control over the clinic institution/hospital (Michigan State University, Southern Illinois University).
7. **Community partner:** It is a union of all three structures at a low level (20, 21)

When the UHS macro-organizational model is examined, it is seen that it differs from other structures. Because it involves a very large area and hospital, it is similar to the structure of the coalition leader (Type 5), but although none of the hospitals that it covers are low-level institutions, they are education and research hospitals. The UHS is considered to have a high level of authority in education, i.e., in academic structure. It is seen as the authority in the fields of finance research, thesis, research and devel-

opment studies, patent developments, and scientific meetings. The field in which the UHS has the lowest level of authority is the institutional budgets of the hospitals in the organizational structure that it cooperates with and the provision of health services. Education and research hospitals organize their health service provisions in their territories within the framework of the relevant legislation and in accordance with their respective authorities. Here from our point of view, although the hospitals seem to be independent on this issue, the fact that the clinical training of the clinics is based on the standards and under the supervision of the UHS is indirectly under the academic authorization and the service provision will be positively affected over time.

There are training clinics/units that provide specialty education in education and research hospitals affiliated to the Medical Faculty of the UHS. Each educational clinic has a training officer who is responsible for specialist training or a program officer for the training units converted into a program. Although the establishment of a training planning board (TPB) under the presidency of the chief physician was reported in the regulation on the inpatient treatment institutions for the coordination of the training services, TPBs were abolished in accordance with the February 2014 guidelines (22) for education and research hospitals affiliated with the universities.

The chief physician is the administrator in charge of education in education and research hospitals that are not jointly used and affiliated with the Public Hospitals Authority of Turkey. However, it is observed that the chief physicians cannot spare time for training because they have excessive amount of duties and responsibilities other than education in the hospital administration. Furthermore, in addition to the chief physician, a separate hospital manager is required to be appointed in reference to the Law No. 663 in education and research hospitals, but in the current practice, the responsibilities of the chief physician are increased due to the unification of this duty and responsibility on one person. For this reason, a training services coordinator has been designated in our model to coordinate and supervise the training services and ensure that training is conducted in accordance with the determined procedures. The assignment of the coordinator by the chief physician with the approval of the Dean of the medical faculty will ensure that the work will be conducted in harmony.

The ones responsible for training are the specialist training program managers and practitioners in training clinics in reference to the existing legislation in the hospitals that are not jointly used. The regulation on the Specialty Board in Medicine (23) gave the management of the training program to the head of the department in the hospitals that are jointly used. It seems to be very difficult for a head of a department to manage multiple educational programs in institutions with more than one affiliation, such as the UHS. Therefore, there is a need for a new arrangement in this article of the directive. TPBs have been abolished in the education and research hospitals in which joint use protocols were arranged (22). It has been considered appropriate that this task should be performed by the academic boards of the departments. However, because a vast number of joint use protocols are arranged at the UHS, it will be difficult for the departments to monitor and direct the procedures in such a macro-organization. For this reason, in our model, BSEMs have been established in hospitals. These boards are similar to TPBs in terms of structure

and function. The aim of the fact that the chief physician is the head of BSEM and the HRAC training coordinator is the vice chairman is to prevent possible problems in terms of management. In our model, the training officers will be in contact with the BSEM and the training coordinator for the education program within the institutions where they work as well as with the departments.

Training committees have been established for "curriculum, measurement and evaluation, program evaluation and accreditation, thesis, research and publication, and educational resources" for the specialty education in medicine. These committees cover almost all aspects of education. Educational boards perform the tasks of planning, setting the standards, coordinating, and monitoring. The tasks of the head of the department and the academic boards related to education have been defined in our model. According to the procedures and standards determined by the educational commissions, the departments have a wide range of missions such as the preparation and updating of the curriculum, preparation of report cards, formation of the content of the question bank, application of the measurement and evaluation methods, performing and evaluation of the central examinations, deciding the objections to the exam results and reporting to the Deanship, evaluation of the education plan, implementation of the accreditation processes, obtaining feedback from the trainers and students, giving feedbacks such as program manager's opinion about the student in accordance with the procedures, fulfillment of the tasks of the thesis bank in terms of the fields related to the department, provision of the determined standards related to the educational environment, application of the educational methods in accordance with the innovations, and organization of scientific and educational meetings. Report card is applied in specialty education in medicine for measurement and evaluation, and when the training process is completed, a completion exam of the specialty education in medicine is performed. There are no theoretical exams defined in the training process. This situation is considered as a deficiency according to the definition of education. To eliminate this deficiency, it has been considered appropriate to perform formative exams and summative exams in every academic year. To be able to take the examination for the completion of specialty education, successful completion of these theoretical exams is required.

If the report card is proposed by the board of specialty in medicine, it is the responsibility of the departments to prepare them accordingly. The student has been given the responsibility to fill out the report cards. When the student fulfills a curricular competency, he/she will ask the relevant trainer to approve the report card. It has been considered appropriate that theoretical exams should be performed centrally by the departments. However, the exams will be held by the education administrators until the electronic exam system and the question bank are prepared. The scientific quality of the theses produced during the specialty education in medicine and the publication rates in the journals are low (24). To increase the quality of theses, a thesis bank was established in the UHS. Through the thesis bank, efforts will be paid to evaluate the old theses and enable the new theses to be written in the required areas. In addition, a scientific support structure has been established for theses and researches. Questions that are compatible with the years of specialty education

in medicine are produced by each education unit. There is no national standard for this issue. A question bank was established in the UHS to increase the content validity and reliability of the exam questions. The question bank will be shaped in the UHS in accordance with the standards determined by the commission of measurement and evaluation. Feedback has been given importance to identify and correct the problems occurring in the model. The feedback from students, program managers, and trainers will play an important role in evaluating and upgrading the program.

Formation training of the trainers is not available for the physicians. In addition to our trainers who are able to increase their instructor characteristics to high levels with their personal endeavors, inadequacies can also come into question. Distance educations, courses, certification programs, and similar activities have been planned to make up for the deficiencies in these areas. Regional and national scientific meetings are not common in education and research hospitals. Thanks to the wide staff and institutions provided by the joint use, the coordination of scientific meetings will be better provided and quality can be improved. An assistant representative will be established for the assistants' communication, solidarity, problem solving, and participation in the management. In addition, doctorate and master's programs in the field of health were planned to be undertaken by the institute established in the UHS.

CONCLUSION

In an organizational model such as the UHS in which a joint use protocol was signed with a large number of hospitals, managing the specialty education and being successful can be achieved through very good coordination and authority sharing among institutions. In this context, the medical faculty Dean, responsible for the specialty education, should assume the tasks of setting the standards, coordination, regulation, monitoring, and evaluating. The job descriptions should be made very clear to prevent hierarchical equilibrium and the conflict of authority in this organizational structure.

In this macro-organizational structure, specialty education in medicine will be provided by the BSEM that is headed by the chief physician in the education and research hospitals, the training coordinator, and the education officers. The collective use of the knowledge and experience of the lower and upper structures in the field of health will not only strengthen the education but also help save the resources. It is considered that the quality of specialty education and the quality of the education standards will increase in future within the framework of the training programs developed by the academic boards of the Deanship and the departments. We believe that the establishment of such a macro-organizational structure will have a positive impact on the field of health in our country over short, medium, and long terms. The existing standards will be raised along with the development of the researches, joint projects, and studies in the hospitals affiliated with the UHS in the academic and scientific fields. It should be kept in mind that what is more difficult than establishing this macro-organizational structure is that this organization, which is different from other models in the world, is institutionalized in every field and open to the international field of health.

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