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**Professor of Medicine, Cairo University**  
**Chairman, Medical Education Sector,**  
**Supreme Council of Egyptian Universities**

**July 29<sup>th</sup>, 2009**

**Re: Report on the Modernization of Medical Education in Egypt**

**Dear Dr. Barsoum**

**On behalf of the Association of Egyptian American Scholars, I am pleased to submit the attached report on the modernization of Medical Education in Egypt.**

**We hope that you find the contents of the attached report of benefit to this initiative. Our committee will continue to work on this project and more comprehensive presentations will be made available during our Conference in California in Dec. 4<sup>th</sup> – 6<sup>th</sup> 2009.**

**We are looking forward to meeting with you and to more collaboration with the Ministry of Higher Education and Scientific Research.**

**Yours truly,**

*Dr. Amer El Ahraf*

**Immediate Past President,  
Chair of Medical Education Committee  
Association of Egyptian American Scholars**



## **Association of Egyptian-American Scholars ( AEAS)**

<http://www.aeascholars.org>

### **Report on Modernization of Medical Education in Egypt**

**Submitted on behalf of the AEAS to the Medical Sector- Supreme  
Council of Universities, Ministry of Higher Education and Scientific  
Research**

**by**

**Dr. Amer El-Ahraf, Chair and Dr. Tawfik Ayoub, Co-Chair  
July 29<sup>th</sup>, 2009**

### **Background:**

A joint committee was formed to modernize Egyptian Medical Education as per an agreement between the Egyptian Ministry of Higher Education and the Association of Egyptian American Scholars using the good offices of the Supreme Council of Egyptian Universities. During the 2008 Cairo Conference, Dr. Rashed Barsoum, Chair of the Medical Education Sector spoke eloquently of the objectives of the project and the promise it holds for Egypt. Dr. Amer El-Ahraf, then President of the Association of Egyptian American Scholars responded positively promising as Chair of the Egyptian American group to place his academic and executive management experience in American universities at the disposal of Dr. Barsoum and the Egyptian Ministry of Higher Education; and to form a committee from the North American side once he returns to California. Dr. El-Ahraf formed such a group of interested distinguished Egyptian American Scholars whose names are listed at the end of the report; and selected a respected colleague, Dr. Tawfik Ayoub, to be his co-chair for this important committee.

This document represents a preliminary report subject to consideration by our distinguished Egyptian colleagues. It is to be followed by a full report (including a Working Paper and other manuscripts) to be presented at the 2009 AEAS California Conference to be held in the first week of December where His Excellency Dr. Hany Helal along with strong representation of Egyptian universities are expected to be present.

## **Medical Education from the Perspective of Egyptian American Scholars in North America:**

First, it must be noted that the Egyptian scholars group under the leadership of Dr. Rashad Barsoum has done great job in identifying priorities of the Medical Education Sector in Egypt.

Second, in formulating our response, it is important to recognize Dr. Barsoum's dedication, the hard work of his group, the reaction of Egyptian universities and the great strides in medical education that Egypt has achieved over time. The Egyptian American group is appreciative of the opportunity to participate.

Third, views of the AEAS's Egyptian American group are reflective of their experience with the American health care and education systems as well their familiarity with the Egyptian systems. Views expressed here are meant to provide an honest assessment and recommendations for consideration and final say by our Egyptian colleagues. At the outset, we recognize that the final determination is that of the Egyptian side after taking our views in consideration in a serious manner. We trust that this is the case.

Fourth, medical care is an important aspect of Egyptian development as it is the case with other countries including the U.S. and Canada. It is also an expensive proposition even for major countries such as those noted above. The Egyptian American group is pleased to share such an experience and place the benefit of its thought before their Egyptian colleagues.

Fifth, medical education does not stand alone as an apart of higher education system specially when linked to its vital role of its final goal in improving the status of health, broadly defined, of the Egyptian People. To benefit from the experience of others, it is wise to reflect on the American Experience where great advances were made along with serious shortcomings. In this regard, and to remedy such a situation and to address other issues, this report has been prepared.

### **This report which is composed of three components:**

**A) A Framework** for a Comprehensive Approach to the Health Care System; followed by

**B) An Examination of Specific Issues** integral to Medical Education; and then concluded by referring to

### **C) General Recommendations**

taken from earlier reports of cooperative efforts between the AEAS and Egyptian universities ; and which remain applicable to all sectors of Higher Education including the Medical Sector

## **A) Framework for a Comprehensive Health Care System:**

El-Ahraf and Hanson formulated an approach to achieving a comprehensive health care system based on the integration of four interacting components:

- 1—Medical Care, including surgery, for those who need it
- 2—Environmental Management to strike at the roots of eco-pathological conditions and to save medical resources used to treat otherwise environmentally preventable diseases.
- 3—Health Education/Health Behavior to help individuals, patients and non patients, make health related decisions based on knowledge.
- 4—Competency Based Education, Continuing Education, Training and Research to provide the scientific bases for the above noted elements and to serve as solid foundation for teaching and practice.

## **B) An Examination of Specific Issues integral to a Modern Medical Education:**

Medical education is a lifelong process that is influenced by a variety of educational and other life shaping experiences. The quality of pre-university schooling, premed years, medical school curriculum, internship, residency, and continuing education defines medical personnel through professional life until retirement. The grooming of medical doctors requires many components starting by choosing the right candidates for medical schools, a solid medical education and training of students, interns and residents. It also requires maintenance of medical knowledge and keeping up-to-date with new advances in medicine.

In the mean time, the people of Egypt deserve the right to a high level of medical service; that necessitates building on past achievements to bring the level of medical education and practice to a high international standard and equate the level of medicine in all sectors (i.e. University hospitals, ministry of health, private sector etc...) to the same criteria pertaining to knowledge, performance and skills. That also means creating proper regulations and standards for the medical practice, creation of peer review processes, scrutinizing and supervising hospitals, surgical centers, private clinics, medical offices, medical laboratories, and imaging centers.

It also necessitates a the creation of a “**Patients’ Bill of Rights**” that dictates the patient’s right to be treated respectfully, the patient’s right to participate in his/her own medical treatment decision making process, the right to privacy, the right of patients to review their own medical records, etc... .

It is of utmost importance to include nursing education and training hand in hand with medical education and training. We cannot manage patients and health without highly educated and trained nurses and ancillary personnel. The Pharmacy industry is no less; a high level of training of pharmacist is needed, pharmacist should work side to side to physicians and not only as drug selling/dispensing personnel.

For the sake of time, this represents a summary of specifics pertaining to the medical sector of a more detailed Working Paper to be provided and discussed during the proceedings of the AEAS 2009 conference in Los Angeles California.

### Medical School Admission:

Admission to medical school should be a process with multi level evaluation of the prospective students, not just the “Sanaweya Ama” score.

Student should attend two years preparatory schooling before admission to medical school followed by a “Medical School Admission Test” developed to assess the examinees’ skills in areas such as problem solving, critical thinking, writing skills, and knowledge of science concepts and principles prerequisite to the study of medicine. In addition to “Sanaweya Ama”, Medical School Admission test scores should be part of the Medical School Admission Process.

The number of medical students admitted at each medical school range in the hundreds to over a thousand.

Number of student admitted to each medical schools should be based on the number of students the particular school can properly teach and graduate at a international level of knowledge and skills; it should be based on assessment of:

- Number of educational cases/patients available per student
- Number of procedure performed per student
- Number of qualified faculty (Professors, assistant etc...)

### Premedical education:

A strong premedical program should be developed to prepare students for medical school. That program should be at least of two years duration preferably four years. It should include: advances science, biology, biochemistry, math, physics, humanitarian and social sciences. Advanced computer skills training, research training, Medline search training, research methodology, medical & research ethics and logics should be a core part of the program.

Should a four year program be developed, student graduating from it should receive a Bachelor Degree in Science, that could allow them to work as scientist in other institution should they choose to do so.

This premedical program should be a pre-requisite to admission to medical school. All candidates seeking entrance to medical schools should take the “Medical School Admission Test” at or near conclusion of premedical years.

Students who finish School of science or an equal science based curriculum should be allowed to take the “Medical School Admission Test”. They should be allowed admission to medical schools provided they pass this test, and provided they make up any deficient courses necessary by the medical school.

### Medical students, Curriculum & Evaluations:

A **higher authority for medical education** should be created to place detailed medical education curricula, for all Medical School to follow. Curricula should consist of basic medical information, and up-to-date medical science information to bring medical schools to the international level of knowledge. Knowledge should consist of information not only found in medical books, but international medical journals. Knowledge about

particular diseases pertaining to Egypt should be included in great details in the curriculum.

The medical schools primary teaching responsibility is to provide the basic medical education information required by the higher educational authority to students (medical students, interns and residents). Medical schools are at will of providing more educational material as long as the requirements set by the higher authority are met. They are also at will to use the books they see appropriate to use to meet the national requirements. Medical school should subscribe to medical journals contained in the Index Medicus and should make the subscription available over the internet to all staff members (i.e. members of the faculty, residents, interns, researchers, nurses, pharmacist, etc...) and students.

Medical schools are in-charge of preparing the students for medical practice, and to pass the National Medical Exams. They are in-charge of insuring that all students without exceptions have the basic medical knowledge necessary to pass the national exam, and to manage patients appropriately after graduation. They should also insure medical students are able to perform all necessary basic medical exams. They are at will to use the evaluation tools they deem appropriate to evaluate their students. Educational tools used in Medical schools need to revolve from the traditional black board & chalk. Audiovisual technology should be the standard for lectures. Lectures presented by faculty should be saved and available on the institution website for students to review at will. Podcasting lectures should be thought of and implemented as a strong educational mean. The creation of web based National Electronic Library that serves as a reference to all institutions to use is of utmost importance. Students should take an active part in their own education process. Their opinions should be heard, discussed, and possibly implemented. They should be encouraged to prepare lectures and grand-rounds. Creative thinking should be strongly advocated and rewarded.

Medical schools have the same responsibility towards interns and residents but at a higher level commensurate with the level and objectives of their training.

An Egyptian Index Medicus should be developed for diseases pertained to Egyptian society, and should be readily available over the Internet to all medical providers in Egypt.

Behavior sciences & Medical Ethics should be part of basic science medical years and should form a reasonable percentage of the basic science exam.

#### The National Medical Science Exams: (Basic & Clinical)

A **National Board of Examiners** should be formed of current and retired Physicians from all sectors: i.e. University, ministry of health and private sector. This board should be in charge of collecting exam questions, evaluating them for relevance, accuracy of information. This board should be in charge of giving the test, and correction of the exam, determination of the passing score.

The exam questions should come from a pool of question submitted by current and retired physicians in all sectors of medicine (as mentioned above). The national board of examiners then reviews the pool of question. A pool of 10,000 questions will be needed, to be used on yearly basis on each test. Every year, old questions are retired, and new questions introduced. The retired questions could be sold for a fee to medical students, interns and universities to be used as training questions.

The exam should be given in computerized form. It should consist of MCQ, extending matching & K type questions. In the progress of developing the exam, advanced clinical programming will be needed to assess clinical case management skills.

Until the advanced clinical programming for clinical case management is made available, an oral exam could be give. The exam should be given by a Board of Clinical Examiners under the direction of the National Board of Examiners. The oral exam should consist of clinical cases, prepared and reviewed in the same way as those of written exam. The exam should be given several times a year. Each time, the exam should be given in a different central major city.

For sake of fairness and for ethical and moral reasons: no examiner should be part of testing of any family member, students residents from his own university or residency program.

The National Medical Sciences Exam should be used to compare and rate the different universities. It should be the basis for rating students and hiring of residents for post-graduate studies.

Basic Sciences Curriculum: A National Basic Medical Science Exam should follow the non-clinical years of medical school.

Clinical Sciences Curriculum: A National Clinical Science Exam should follow the clinical years of Medical School.

Although the National Academic Reference Standard (NARS) document was not provided for review, a copy of the NARS for Medicine (dated January 2009) was found on the internet and was reviewed. The curriculum within contained a brief broad picture and did not include necessary details to create standards graduate capable physicians. The National Authority For Quality Assurance in Education documents were not provided for review.

#### Medical Internship & Residency:

Internship & residency should be under the supervision of a higher authority. Detailed curricula should be place for internship and for each residency specialty.

Each specialty program should have a pre-determined number of residency years depending on the complexity of the training required to graduate a specialist in the field.

Number of interns & residents in each program should be based on the number of interns & residents each particular program can properly teach and graduate at an international level of knowledge and skills; it should be based on assessment of:

- Number of educational cases/patients available per intern/resident
- Number of procedure done per resident
- Number of qualified faculty (Professors, assistant etc...)

Evaluation programs should be developed; it should allow faculty to evaluate interns & residents on daily, and monthly basis, at the conclusion of each rotation and before graduation. Interns and residents should also be allowed to evaluate the programs and teaching faculty.

Interns and residents should maintain a “log book” to demonstrate the cases they have cared for. Those who do not meet the minimum criteria should not graduate until graduation criteria are met. Programs that do not meet minimum number of cases/intern or resident, should decrease the number of interns/residents or should arrange with another teaching hospital where the residents/interns could achieve the number of cases necessary to complete residency. It should be noted that programs accepting visiting interns and residents should have enough cases to cover for their own interns/residents & the visiting ones.

At the conclusion of residency graduating residents become specialist in the field of graduation. They should then take the “Specialty Exam”.

#### Duty hours:

Duty hours are defined as all clinical and academic activities related to the program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities, such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.

Residents must be provided with one day in seven free from all educational and clinical responsibilities, averaged over a four-week period, inclusive of call.

Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

#### On Call Activities:

**In-house call** must occur no more frequently than every third night, averaged over a four-week period. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

No new patients may be accepted after 24 hours of continuous duty.

#### **At-home call** (or pager call)

The frequency of at-home call is not subject to the every-third-night, or 24+6 limitation. However at-home call must not be so frequent as to preclude rest and reasonable personal time for each resident.

Residents taking at-home call must be provided with one day in seven completely free from all educational and clinical responsibilities, averaged over a four-week period.

When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.

#### Medical License & Continuous Medical Education:

All interns without discrimination (University & Ministry of Health or other relevant organizations) should take and pass the **National Medical Practice Examination** during the internship year and before its conclusion. The test should be given several



times per year. Those who pass the test become illegible to apply for a medical license according to the rules and regulations of the ministry of health. Those who do not pass will need to retake the test up to three times. After three times, those who do not pass the test have to redo one year of internship in General Medicine (Internal medicine, Surgery, Pediatrics and Obstetrics).

All physicians' licenses should be renewed every two years. A renewal application should be submitted to the licensing authority for renewal. License renewal should be conditioned by twenty-five hours of Continuous Medical Education (CME) per year (total of 50 hours for two years prior to renewal).

#### Continuous Medical Education:

Continuous Medical Education (CME) programs should be developed in all medical disciplines, specialties and subspecialties. CME programs could be provided by different institutions but under supervision of a different accreditation authority.

The role of the accreditation authority is to review all CME programs presented by universities before it is offered to physicians. The accreditation authority should provide a list of all accredited providers for physicians to access.

All practicing physicians should spend twenty-five hours of medical education every year and that should be a condition for license renewal.

Exemptions from yearly CME requirements:

- Physicians in residency programs and the immediate two years following residency.
- The Two years following passing specialty exam (diplomat, master or doctorate).

#### Quality Assurance Programs: ([Quality Assurance & Accreditation Process](#) "QAAP")

Independent quality assurance programs should be created to supervise and monitor all aspects of medical education programs. Areas of monitor and supervision include the following:

- Medical School Evaluation:
- Faculty Evaluation:
- Medical student evaluation
- Resident Evaluation
- Residency Program Evaluation
- Hospital Evaluation

#### Medical Research Training:

Teaching evidence-based practice is the cornerstone of medical education, however, without proper training in research methods this becomes a mute point.

The following are important courses to be taught during the course of research methods, biostatistics, research ethics, critical appraisal of research studies, scientific writing skills, grant writing skills, etc. The idea is to provide the medical graduate with the skills necessary to perform and publish high quality research that guides their evidence-based practice.

### Medical Specialties & Specialty Degrees:

Traditionally, Egyptian Universities offer master degrees and doctorate degrees to Faculty in the academic tract. Some universities offer diplomas to non-university physicians. Typically, knowledge and training required from candidates differs vastly between diplomas, master, and doctorate.

The end result of those requirements is a wide discrepancy in knowledge between the university sector, and ministry of health and private sectors. In the mean time, the training during residency is not complete. Residents graduate with such a lack of knowledge. It is not until they achieve the doctor degree when their level of knowledge rises to that of a consultant.

To raise the level of medicine in Egypt, we need to graduate residents at the level of knowledge and skills of consultants, and not accept semi-educated and semi-trained physicians.

For that reason, the following suggestion should be strongly taken into consideration

### National Boards of Medical Specialties & Subspecialties:

National boards of specialties & Subspecialties need to be created by consultant in the field from all sectors of medicine (Universities, ministry of health, private, etc...) Those boards should be in charge of placing the curricula for each specialty. They are also in charge of giving the National Board of Medical Specialty tests in the same manner as the National Board of Examiner stated above. They are also in charge of determining the duration of residency required in each specialty, and fellowship in subspecialties.

After the conclusion of satisfactory residency, each eligible candidate becomes a "Specialist". Each Candidate should then take and pass the Board of specialties and become a "Board certified Consultant". Each candidate has three consecutive attempts to pass the test within three years of graduation residency; after three failed attempts, candidate should take one more year of supervised training in one of the approved residency programs to qualify to retake the test.

For sake of maintaining medical knowledge, Specialty Boards exams should be retaken every "ten years". During this ten years period, and on yearly basis each consultant should take a certain number of CME hours in their specialties. The board of specialty is in charge of reviewing, accepting or denying the CMEs presented by each candidate. At the conclusion of the ten years, consultants are then allowed to retake the National Board of Specialty Tests to maintain their board certification.

Each candidate has three consecutive attempts to pass the test. After 3 failed attempts, candidates should spend a year at year at an approved residency program to qualify to retake the test.

All residents in training should be strongly encouraged to become board certified; and all board certified physicians should be strongly encourage to maintain board certification.

### Doctorate and Master Degrees:

Doctorates & Masters degrees are research titles given upon successful conclusion of these programs. Universities should offer research tracts to qualified candidates in their field of expertise. These offerings could be a part of a residency training program or they could allow for follow residency or fellowship training. If offered as part of residency or fellowship, residency or fellowship training should be extended by the amount of time necessary to take the Doctor or the Masters degree.

It should be well noted that a Doctorate and Master Degrees programs are “Research Titles”. They are not clinical titles, and they should not give the holder the title or capacity of a specialist or a consultant unless a full residency in the field has been successfully taken, and the national board of specialty successfully passed.

The expertise of Master & Doctor Degree holders will be greatly needed for research advancement purposes noted in the first section of this document as a necessary fourth component of a comprehensive health care system.

It is well understood that the plan described above is time consuming and resource demanding. A plan should be in place to achieve these goals: it should be goal and time oriented, and it should not exceed 10 years. To succeed, these plans should be based entirely on the medical and scientific merits and in all cases independent of all other considerations.

### **C) General Recommendations :**

The AEAS has cooperated with Egyptian universities in various ways including a number of projects to improve quality and efficiency of higher education. In an earlier report, the following recommendations were made. They apply to modernizing medical education in Egypt as well. Any Egyptian higher education curriculum including medical education must include the following:

- 1—The study of the Arabic Language as a language and as medium for technical writing.
- 2- The study of Egyptian History, History of the Arab World and their role in influencing World Civilization.

Advanced countries, such as the United States, require its entire university student body to study the language and history of the country as requirements for graduation. Egypt has more reasons to have a curriculum that respects its own identity and recalls its glorious history along with other features of a scientifically advanced and internationally competitive course of study in medicine.

### **The Next Step:**

The AEAs Committee on Medical education will work with findings of our Egyptian colleagues to prepare a Working Paper and other manuscripts for presentation, discussion and drawing appropriate recommendations during The 36<sup>th</sup> International Conference of the Association of Egyptian American Scholars to be held in the Los Angeles, California, December 4 - 6, 2009

## **A note of gratitude from Dr. Amer El-Ahraf:**

The Chair wishes to express his appreciation to all committee members for their interest and dedication to improving medical education in Egypt; and particularly to:

**Dr. Tawfik Ayoub, Dr. Mohamed Labib Salem, and Dr. Noha H. Farag**  
who contributed heavily to this document.

## **AEAS Committee Membership:**

Dr. Amer El-Ahraf, Chair  
Dr. Tawfik Ayoub, Co-Chair  
Dr. Mohamed Labib Salem  
Dr. Noha Farrag  
Dr. Foad Kandeel  
Dr. Ayman El-Mohandes  
Dr. Hadi Salem  
Dr. Magdy Hasouna