

Possibilities and Conditions for A Bahrain College of Medicine†

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INTRODUCTION

The future of the College of Medicine and Medical Sciences (CMMS) of the Arabian Gulf University (AGU) is under discussion. The following possibilities will be considered:

1. Continuation of the CMMS as a college of the AGU
2. Continuation of the CMMS by the Government of Bahrain
3. Closing down the CMMS

Option 1, the continuation of the CMMS as a college of the AGU, seems to be the least probable of the three. It seems questionable whether this scenario would be advisable because a medical school without an absolute guarantee of financial continuity will never flourish.

Option 3, closure of the CMMS, will have serious consequences for Bahrain and especially its health and medical care systems will suffer. For it is generally recognised that a medical faculty has an upgrading effect on the level of medical care of the community it serves.

Therefore Option 2, continuation of the CMMS by the Government of Bahrain, deserves serious consideration.

Medical Training and Scientific Education

In the considerations of the taking over of the CMMS

by the Government of Bahrain the organisational location and position of such a Bahrain Medical School should be taken into account. Often medical schools are part of universities, because a university is a place for higher learning, and a medical training is considered to be a scientific education. But is this true? The training of doctors is in the first place a professional, vocational training. The question therefore is whether the two (a scientific education and a professional or a vocational training) are compatible or mutually exclusive.

There is, of course, no doubt that medical practice, curative as well as preventive, is, or should be, based on medical science, but the question is whether medical students need to be taught this science in order to be able to practice medicine. This point can be clarified by the following example. When Withering heard of the observation that a certain mixture of herbs was effective in certain forms of dropsy, he obtained by analysis of these and his own observations the data that the leaves of foxglove in this mixture were responsible for this effect. Then Ferriar concluded by methodical analysis of these and other data that digitalis was only effective in edema caused by congestive heart failure. This information led, since the beginning of the 19th century, to be the established medical routine of the use of digitalis for congestive heart failure without knowing the mechanism. Since then much research has been undertaken to "understand" the effects of digitalis; and this has led to the model that digitalis acts by inhibiting the $\text{Na}^+ - \text{K}^+ - \text{ATPase}$:

— which causes an impairment of the active transport of the two cations Na^+ and K^+

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† This article is based on a lecture entitled *The Training of Future Doctors; is it a University Task*, which was given by the author in 1987 at the annual joint conference of the Association of Medical Deans in Europe and the Association of Medical Education in Europe. Although some modifications have been made to adapt the lecture to Bahraini circumstances, the general line of thought and conclusions are the same as in 1987. It shows that Bahraini problems are not special or unusual, but similar to those elsewhere.

- which causes an increase in intracellular sodium
- which causes, in the cardiac muscle fibres, an increase in Ca^{++} influx
- which causes an increased Ca^{++} concentration in the sarcoplasm
- which causes an increase of the duration of the "active state" of the contractile material of the heart muscle fibres
- which causes ... and so on, and so forth

and the process continues.

But the question for a medical educationalist is: do medical students need to learn such models which have been unravelled by medical science, or is it sufficient for them to know recipes like:

Congestive heart failure → digitalis !!!

I have no doubt that many teachers who are specialists in their respective fields, at most medical schools take the view that it is indeed necessary for the students to know all these models. The inclusion of such questions in the ECFMG examinations in the USA illustrates this.

However, it should be realised that the summation of all this knowledge will lead to a curriculum which is not realistic. Even more important, a curriculum in which medical students are not really interested, because the majority of medical students are different from most university students in other faculties; they did not choose medicine out of want of knowledge as such, but to become doctors.

But can medical students become competent doctors by learning only the medical routines? Of course the answer is no, for it will produce a kind of doctors who practise "cookery book" medicine. Students have to learn that behind the certainty of medical routines there are in reality question marks and that merely following the recipes from the "medical cookery book" never will make good doctors.

They have to learn to put in each individual case the question marks, and to solve the problems of these cases and to know what decisions are therefore needed. At what point, on what grounds and with what objectives

are medical actions taken. What are the decision points, the possible consequences, the uncertainties and probabilities, how to weigh them. In other words, students have to be taught the methods of medical decision making – a scientific process.¹

Medical practice is the consequence of medical decision making which should be based on knowledge and information (Fig 1). It is only recently that the emphasis of medical education is changing to the direction of training our students in the methods of medical decision-making, and that the attention of medical teachers is directed to questions of for instance transfer-effects in learning.² Will the teaching of solving a problem in a selected practical situation help the student to solve problems in other situations? The curriculum of the CMMS is based on the supposition that this is the case and the experiences so far with the graduates seem to corroborate this.³ However, the CMMS has graduated so far only two classes and a definite judgement is not possible yet. A longitudinal study of several years in the performances of the graduates of the CMMS is desirable.

But there is no doubt that the emphasis now of medical curricula should be less on the teaching of medical sciences as such, but more on how these sciences are instrumental for medical decision-making. Therefore, the training of future doctors should be an education process in which students learn to apply the results of medical and other sciences, without being trained as medical scientists. This is of course a scientific education. So there is the nice paradox that by decreasing the emphasis on medical science as such in the training programme the medical training becomes more of scientific education.

Characteristics of Medical Schools

Usually a scientific education is considered to be a task of universities, and in many countries medical education therefore takes place in medical faculties of universities. However, there are differences with the educational programmes of most other faculties in Universities, and therefore differences between medical faculties and the other faculties. These points are:

1. As already has been pointed out, most medical students are different in that they are not interested in knowledge as such. Only when such knowledge is instrumental for decision-making are they interested.

2. A second difference is the fact that because the teaching objectives of a Medical Faculty are not to train scientists, the curriculum is different from other university curricula; medical students are not learning science by doing research. Nevertheless, since basic medical sciences are instrumental in medical decision-making, in which the students should be educated, a medical faculty needs to practise a rather complete spectrum of basic medical sciences. This makes a medical faculty extensive and therefore expensive.
3. In order to train students in medical problem solving (diagnosing and treating patients), practical situations are necessary, ie, a rather complete spectrum of medicine should be practised at a medical faculty. This again makes a medical faculty more extensive and therefore more expensive.
4. The fact that medical science and medical practice are executed at medical faculties and their hospitals makes these institutions the natural breeding places for medical development. Because of this, medical faculties have become the centres for advanced and comprehensive medical care for the community.

The academic tasks of teaching and research are very much interwoven with the service task of medical care for the community, which creates financial and especially responsibility problems. Who is going to pay for what and who is responsible for what?

Models for Relationships between Medical Schools and Teaching Hospitals

Especially the financial and responsibility problems caused by the interweaving of the academic and patient case tasks are the cause of many problems, discussions and disagreements. The point has to be emphasised that these problems have happened in almost all countries with Medical Schools, they are certainly not unique for Bahrain; it has often been a worry which troubled many medical deans all over the world. In different countries, different patterns of organisations are used to cope with this problem. All these organisational patterns have however, one common factor and that is, a comprehensive agreement in which is recorded:

“the role, functions, responsibilities and duties as far as patient care and academic activities are concerned for all clinical and basic staff.”

The different patterns of organisation can be divided into four main types, each with various modalities:

1. An organisation where the teaching hospital is part of the medical school, and administered by the university. All hospital doctors are staff members of the university. (*examples:* the academic hospitals of the medical faculties in the Netherlands).
2. Organisations of Health Academies consisting of a medical school, one or more health colleges, and a teaching hospital. These Health Academies are separate entities and are administered by the Ministry of Health. (*examples:* Health Academies in Poland).
3. Entities of hospitals with attached medical schools, either autonomous, or with loose symbolic ties to one or both of the concerned ministries or universities. (*examples:* London Medical Schools and the Royal Colleges in Ireland).
4. Situations where the medical schools is separated from its teaching hospital(s); both institutions belonging to different organisations. Affiliation agreements ensure the teaching possibilities in the hospitals. (*example:* Harvard, USA).

CONCLUSION

If the Government of Bahrain decides that it will be feasible to take over the College of Medicine, a model has to be worked out for an optimal relation between the medical school and its teaching hospitals. It is clear that the best solution can only be found when local conditions and circumstances are taken into consideration, what is good for the UK, Poland or The Netherlands is not automatically the best solution for Bahrain.

Model 4 seems less suitable for Bahrain, for it requires a prestigious and strong medical school, which is able to mould the hospital in such a form of organisation that it is suitable for a teaching function with the right atmosphere.

Furthermore, this model is less compatible with the integrated curriculum of the CMMS. A bad variant of this model 4 - bad because there was no affiliation agreement - has been used in Bahrain with the CMMS as a college of the AGU and Salmaniya Medical Centre and Bahrain Defence Force Hospital

as separate training hospitals. Apart from the financial constraints of the AGU this organisational structure has been an important reason for the major problems of the CMMS. Shortcomings of individuals and groups of individuals have sometimes been blamed for the lack of success of this model in Bahrain. In my opinion, it has been the organisational shortcoming of the model which is the real reason for this crisis. However, whatever model will be worked out for Bahrain, it should be clear that there are two definite conditions which must be fulfilled; otherwise the chances of success will be very slim indeed.

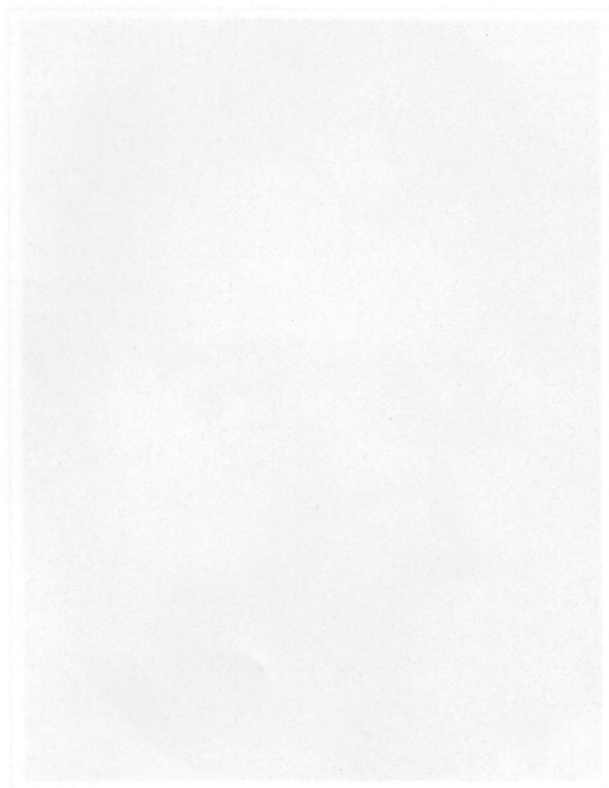
1. An absolute necessity is an optimal cooperation between the college and its hospitals. A new arrangement should be agreed upon. The situation as it is now, with consultants of the hospitals who are part-time teachers at the College, is not satisfactory. A different arrangement in which Hospitals and College form an entity (at least functionally) should be worked out.

It would be highly advisable to make one of the hospitals an academic hospital, and upgrade (academise) other facilities - ie, affiliated hospitals, health centres - as teaching institutions.

2. Rules and regulations which give sufficient scope and authority to the Dean and his staff to plan, outline and implement the educational, scientific and health service programmes of the medical school, are of prime importance.

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The investigation of acute coronary thrombosis with thrombolytic treatment is known as Kasper-Martin Syndrome and is said to affect 30% of cases. We report a case with this syndrome in whom conventional conservative therapy failed, the life-threatening haemangioma was then successfully controlled and the haemangioma regressed following selective arterial embolisation.

The baby girl was born to a Bahraini primigravida mother at 41.52. The Apgar score was 7 and 9 at one and five minutes respectively. The weight was 3.5 kg, HC 32 cm and height 50 cm. Systemic examination was normal except for a large haemangioma involving all the left side of the face. The blood group was B +ve, Hb 14.1 g/dl, WBC 32,000/mm³, platelet count 235,000/mm³, and also low (56)PD activity. No therapy was given. At four weeks of age there was no change in the size of the haemangioma, but it looked more erythematous and showed superficial ulcerations; the Hb was 12 g/dl, WBC 10,000/mm³, and platelet count reduced to 19,000/mm³. She was given platelet transfusion and