THE FUTURE OF ACADEMIC MEDICAL CENTERS IN SAUDI ARABIA: DIFFICULTIES ENCOUNTERED IN A TEACHING HOSPITAL

Fahd A. Al-Muhanna, MD, Department of Internal Medicine, College of Medicine, King Faisal University, Dammam, Saudi Arabia

Objective: The objective of this study was to define and analyze the major difficulties experienced and documented in a university teaching hospital.

Methodology: The academic medical center (AMC) reviewed was the King Fahd Hospital of the University (KFHU), Al-Khobar, Eastern Saudi Arabia. Data sources included student registration figures, budget allocation and the hospital annual reports. The retrospective analysis was restricted to difficulties encountered.

Results: While numbers of medical students increased, staff positions remained static. There was remarkable budgetary deficiency over 9 years; especially for pharmacy, equipment’s and supplies. The number of patients’ visit markedly increased. The difficulties encountered were 237 in 70 sections of KFHU. Other problems included recruitment difficulties and the triple role for the faculty; teaching, researching and service.

Conclusion: The role of leadership is emphasized to provide answers for the problems; to manage AMC’s more efficiently; to find ways of providing medical care more cost-effectively and to generate more funds.

Correspondence to:
Dr. Fahd A. Al-Muhanna, King Fahd Hospital of the University, P.O. Box 40085, Al-Khobar 31952, Saudi Arabia
INTRODUCTION
Teaching hospitals or academic medical centers (AMC’s) as they are sometimes called, have become a need and/or demand for most of today’s medical schools. Over time, these institutions, though essential for training and because of their technical sophistication, started to face serious difficulties. Many in the West are either closed or face closure. One author wrote, “in times of fundamental social change, institutions face both threats and opportunities. Such is now the case with health care organizations known as academic medical centers. For these organizations to survive, their leaders, faculty and staff need a clear understanding of the changed environment, and the comparative advantages (strengths), disadvantages (weaknesses) which they bring to the environment.”

Another author remarked, “a new season for the AMC’s has arrived. Public finances pay for the AMC’s. Therefore, the public can demand accountability. Even in a country as rich as the United States the call for accountability is being heard.” Butler wrote, “while academic medicine has long recognized its responsibility to society, never before has this responsibility been coupled so dramatically with the public demand for accountability.”

In the Kingdom of Saudi Arabia (KSA), a central committee consisting of representatives from the ministries of higher education, finance, and health has been formed. Its task is to evaluate problems facing AMC’s in the Kingdom which make it hard for them to fulfill their mission. Traditionally, this mission is the pursuit of excellence in the triad of service, teaching/training and research. To fulfill this mission, AMC’s need human and non-human resources. The task assigned to the committee is timely in view of the crises facing these AMC’s worldwide.

The aim of this study is to analyze the major difficulties experienced and documented in a university teaching hospital in KSA. Strategic planning in relation to AMC’s requires at least the following four elements: (a) analyzing background issues, (b) exploring inherent strengths and weaknesses, (c) populating an “ideal” center of excellence, and (d) formulating strategies to create a secure future. This paper puts emphasis on the first element, namely; background issues.

Not much of research has been done in this area and there are very few publications on this in KSA. The author hopes that the results will be of interest, not only to the eastern region, but also to the rest of KSA and other Gulf states.

MATERIAL AND METHODS
This is a retrospective study. The AMC reviewed here is the King Faisal University (KFU), College of Medicine (CM), and its teaching hospital, the King Fahd Hospital of the University (KFHU), Eastern Saudi Arabia. King Fahd Hospital of the University (KFHU) is the only government hospital in Al-Khobar and as well serves as a referral center for the population of Al-Khobar and its outlying areas. The hospital has an Emergency Department, which receives emergencies as well as walk-in patients.

The data sources for this study were: (a) student registration figures; (b) budget allocation for KFHU; (c) Saudi council for health specialties requirements for hospital
accreditation; and (d) KFHU annual reports. The latter were structured to include personnel, workload, continuous quality improvement activities, research and publications, as well as difficulties encountered. However, for the purpose of this paper, only the section on difficulties encountered was analyzed, and the data for one year (1996-97), was considered sufficiently illustrative. Data analysis was done manually by direct extraction of relevant information from sources.

RESULT

The number of undergraduate medical students enrolled in the CM has increased steadily by 10-15% per year. In contrast, the positions approved for KFHU have remained static since 1986 as follows: consultants 35, specialists 47, residents 42, pharmacists 23, paramedical specialists (e.g. medical laboratory technology) 52, technicians (nurses included) 646, and nurse aides 106.

Table 1 shows the KFHU budget for the past 9 years, stated in three consecutive periods of three years each. The budgetary deficiency over 9 years is remarkable. A summary of the patient care services provided by KFHU (1992-98) is shown in Table 2. There has been marked and progressive increase in the number of visits over the years in KFHU. From the 1996/97 annual reports (Table 3), 237 difficulties documented by 70 sections in KFHU are listed (range 0-11; average 3 problems per section). Of the sections reporting only one or two difficulties, the most frequent was shortage of equipment and supplies (10/26), followed by shortage of staff (8/26), and space/beds (6/26). Nine sections reported no difficulties; these were Data Processing, Laundry, Lithotripsy, Neuro-diagnostic Laboratory, Ophthalmology, Orthopedics, Quality Management, the Palace Clinic and Urodynamic Laboratory. Three other problems in KFHU reviewed were of bureaucratic nature: namely visas, recruitment and compensations for staff.

DISCUSSION

The steady growth of student admissions observed in CM has occurred in other countries also. Petersdorf from the USA stated: “Common wisdom in academia is that failure to grow is tantamount to death. In this case, inability to stop growing might well be fatal.” Corresponding students’ teaching and academic requirements have expanded enormously in KFHU. In contrast, teaching resources in KFHU are diminishing. For example, although staff increases are required, especially at the levels of service consultants, specialists and residents, as well as nurses, paramedics, secretarial and other support personnel no additional positions have been granted since 1986. The approved positions have remained static. In this connection, Weitekamp et al (1996) from the USA observed: “Over the past two decades, there has been a large increase in AMC faculty members, particularly the clinical faculty, accompanied by an increase in faculty clinical practice.”

Table 1: Budget assigned for each article in the hospital budget for three fiscal years

| Fiscal Years | Article 221 Furniture & Office Supplies | Article 222/2 Teaching Supplies for KFHU | Article 223 Medicines, Medical equipment & supplies | Article 225 Fuel, oil, maintenance for transportation vehicles, & engines | Article 227 Clothes & Laundry |
|--------------|----------------------------------------|----------------------------------------|------------------------------------------------|------------------------------------------------|--------------------------|
| 1993/1994    | 30,000                                 | *                                      | 58,800,000                                     | 18,000,000                                     | 300,000                  |
| 1996/1997    | 20,000                                 | *                                      | 24,500,000                                     | 1,350,000                                      | *                        |
| 1998/1999    | 120,000                                | 100,000                               | 34,800,000                                     | 1,530,000                                      | 300,000                  |

*No funds were existing
Table 2: Number of visits to different sections of hospital

| Service          | 1982       | 1990       | 1998       |
|------------------|------------|------------|------------|
| OPD*             | 34,789     | 105,152    | 105,906    |
| Emergency Room   | 25,782     | 110,965    | 130,298    |
| Admissions       | 6,484      | 16,629     | 16,642     |
| X-ray            | 23,446     | 46,399     | 60,036     |
| CT Scan          | 978        | 2,285      | 4,029      |
| Laboratory       | 358,838    | 1,154,285  | 1,632,590  |
| Cardiac Laboratory | 2,935   | 10,638     | 12,428     |
| Respiratory      | -          | 23,354     | 69,444     |
| Physiotherapy    | 1,559      | 21,249     | 51,745     |
| Operating Room   | 2,183      | 5,088      | 5,603      |
| Births           | 1,016      | 3,035      | 2,460      |
| Day              | -          | 1,051      | 11,184     |
| Surgery          |            |            |            |
| Endoscopy        | 508        | 1,634      | 1,028      |
| Hemo-dialysis    | -          | 2,079      | 5,038      |
| EEG              | 396        | 1,196      | 1,596      |

*Outpatient Department

Table 3: Frequency distribution of 237 difficulties listed by 70 sections of KFHU, 1996/97

| Difficulty          | No. | %  |
|---------------------|-----|----|
| Supplies and equipment | 104 | 44 |
| Staff               | 48  | 20 |
| Space/Bed           | 31  | 13 |
| Miscellaneous       | 54  | 23 |
| Total               | 237 | 100|

The KFHU experience is the opposite. This may partly explain the difficulties encountered.

To tackle this problem of disparity between on the one hand students’ increasing numbers and their teaching needs, and on the other, shortage of resources including staff in KFHU, we have recently established a directorate of medical education to help distribute resources better. Though far from being enough, facilities such as laboratories for clinical skills and computer application that have been set up have made an impact. Furthermore, recommendations of the WHO as well as the real health care needs of KSA demands changes in the curriculum in order to face challenges of the next millennium. However, the plans to open a new wing for private patients should be considered as a source of income to help development and relieve economic pressures.

The budget cut in KFHU in recent years is alarming. It is particularly severe for pharmacy, equipment and supplies. Thus, compared with 1993-94, the decline in this sector was 58% in 1996/1997, and 41% in 1998/1999. From the literature we read: “Patient care income generated by faculty account for 40-65% of the operating revenue of AMCs”.

In contrast, KFHU is a government hospital, where there is no income from patient care. This policy is being revised to allow income to be generated from private patients.

By 1996 the workload for patient care services had increased by 34%. Thereafter, there had to be stricter enforcement of eligibility criteria. However, the adverse effects of this restricted access to bedside teaching are considerable and deserve careful study. Indeed, the problem is universal. Burrow (1993) wrote: “a 400-bed teaching hospital might need to provide access to 200,000 patients per year to remain viable, but, in order to satisfy teaching needs, it would need to provide access to as many as 400,000”.

When the 237 difficulties documented by 70 sections in KFHU were analyzed, it was found that the most frequent difficulties were shortages. The nine sections, which reported no difficulties in 1996/97, should be expected to find their similarities. There is no single answer, but non-response or oversight could be the simple explanation. However, it may be the result of a recent infusion of resources in the form of new equipment for Lithrotripsy and Data Processing had occurred.

Recruitment drives are too few and far irregular: only once instead of three times per
year, and the compensation given to staff for various additional or over-time assignments had decreased by as much as 20%. The contribution of academic staff to clinical services often conflicts with demands on their time for teaching and research. This conflict is obvious since it is universal. Burrow observed, “The triple-role academician who is physician, scientist and educator is an endangered species.” Weitekamp et al identified 15 weaknesses of AMC’s including “conflict of numerous roles: educator, mentor, researcher, physician.” The solution of this conflict of interest is the creation of two separate cadres of staff: service and academic. This does not mean faculty would not practice the triad of functions, they should be relieved of some of the load by service staff.

The major pressures on AMC’s, whether political, economic, demographic, cultural, technologic or educational should be viewed as opportunities rather than threats which necessitate rational strategic planning turning disadvantages into advantages.

On the disadvantages or weaknesses of AMC’s, Blumental and Meyer observe: “Society (i.e., the customers of educational institutions) want more primary health care physicians and fewer specialists to research about outcomes, to provide quality care and services with increasing efficiency.” In the Saudi setting, primary health care is relatively new and people have exaggerated notions in the ability of sophisticated hospitals to solve their health problems. However, it may prove cost-effective to strengthen primary health care centers and wean people from hospitals. At the academic level, more teaching/training and ambulatory care could be moved to the primary health care centers. This is the international trend. Butler remarked that, “task force on physician supply concluded that more, not fewer primary care physicians probably will be required in the future and that medical education should respond to this likelihood.”

AMC’s treat patients whose care is complex and therefore costly. This explains why most AMC’s depend on government for funds. AMC’s will have to show that they are not only involved in teaching, research and the provision of care to the vulnerable groups, but also that they are meeting society’s needs in doing so and meeting them more effectively and efficiently than is possible in other institutions.

It is documented fact that AMC’s are expensive but also inefficient. A study has shown that, the average cost of care per admission was $6,000 in USA teaching hospital compared with $4,000 in non-teaching hospitals. The cost in PHC is even much lower. Burrows explained, “teaching hospitals are more expensive because of the educational component and the need to do everything and be all inclusive.” On the same theme, Cohen and Iglehart urged AMCs to take a hard look at their institutions with the intent of re-instructing their academic operation. “Institutions are cutting cost by not filling vacant faculty positions, reducing their complement of nurses and administrative staff in particular, and taking other necessary though painful steps to reduce expenses.”

I conclude by drawing attention to the fact that AMCs have strengths, too. These include excellence of faculty and staff, experience in education, biomedical investigation and care of complex clinical problems, and its unique position at the boundary between the laboratory and the clinical setting. It has been suggested that excellence in research will ensure the survival of effective academic world and would provide information essential in appropriate health planning and teaching.
Finally, to get the best results and achieve their objectives, AMC’s should as Smith suggested, “be granted leadership under government funding to facilitate planning and systems most suited to their own regions.” The role of such leadership is to provide answers to the challenging problems. There is need to manage AMC’s more efficiently, to support and rationalize action and find ways and means of providing medical care more cost-effectively and ways of generating more funds.

REFERENCES

1. Blumental, Meyer GS. The future of the Academic Medical Center under health care reform. NEJM 1993; 329(24):1812-4.
2. Butler WT. Academic Medicine’s season of accountability and social responsibility. Acad Med 1992;67(2): 68-73.
3. Wetekamp, Thoryndyke, Evarts. Strategic planning for Academic Health Center. Am Med J 1996; 101: 309-15.
4. Annual Reports for Years 1996-1997, King Fahd Hospital of the University, College of Medicine, King Faisal University, Saudi Arabia.
5. Petersdorf RG. The lady on the track. Acad Med 1991;66:595.
6. Burrows N. Tension within Academic Health Center. Acad Med 1993;68: 585-7.
7. Dobson A, Coleman K, Mechanic R. Analysis of teaching hospital costs. Fairfax VA; Lewin VHI, 1994.
8. Iglehart JK. Editorial: Rapid changes for Academic Medical Centers. NEJM 1998; 331:1391-5.
9. Smith ER. The future of the Academic Clinical Department. Annals of the Royal College of Physicians and Surgeon of Canada 1998;31:130-44.