

## Integration of medical education and health care: The experience of Iran

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### Introduction

Medical students are spending a lot of time on learning the medical information presented to them during their formal education, but they easily forget what they learned after passing the exams, they are not involved in studying common health care problems in the community because directors of medical education institutes are conventionally ignoring social accountability regarding the effectiveness and quality of education program. On the other hand, Universities of Medical Science and medical schools were too often seen as preoccupied with their own academic affairs and detached from the concerns of the society, because directors of medical education in the country have no responsibility in health care delivery system.

These sentences were taken from the report "a new way to healthy living". This report, published in 1976, was authored by officers investigating health care problems in the country and represented the public dissatisfaction with health care system in 1972 to 1975 among Iranian people.

For the first time, medical education integration into health care system was proposed in this report. Development of an obligatory health insurance program and a national health care system were other recommendations of the report. A pilot implementation of these recommendation were conducted through a pilot establishment of primary health network in Uromieh, community based

medical education in Fasa medical school, and training the middle class health professionals in Health Sciences faculty. The authors pointed out that the integration of medical education and health care system would be undoubtedly a revolution in health system, and implementation of such program would need some modifications that each one of these modifications is a problem itself to be dealt with. Therefore, integration of medical education and health care system as a main goal is hard to achieve according to the authors.

Since mid-1970s, concept of Primary Health Care has become an object of close attention on the part of the international community and health care service.

Considering the International Conference on Primary Health Care, Alma-Ata, 1978 with its famous slogan: "Health for all beyond 2000" and also emphasis on education concerning primary health care in all communities in this conference, the insufficient supply of skilled health personnel was obviously pointed out as a main problem in attaining "health for all beyond 2000". After the victory of the Islamic Revolution in 1979 major changes took place in the higher education system which finally led to an act by the parliament of the Islamic Republic of Iran establishing a new Ministry of Health, and Medical Education in 1985. The new Ministry became responsible not only for the health care of the people but also for the medical education.

Development of health care, welfare and therapeutic services in the country and promoting the quality of health professional training and medical education and research were pointed out as the main goals of the integration in the Clause one of this Act.

However, the Minister of health and medical education of that time mentioned the real intent of this act in a speech in parliament. He said: "our main goal is a rapid increase of medical students."

### Process of integration

Integration was implemented in three phases. In the first phase, Universities of Medicine and regional health care organizations initiated a cooperation to provide medical education and more effective health care under supervision of the Minister of Health, and Medical Education. In the second phase, chancellor of universities of medicine appointed as directors of health care organization. One University of medical sciences was founded in each province all over the country from 1985 to 1993 (except for Tehran with already 3 major University of Medicine).

In August 1993, "the disjunction between medical education and the medical practice environment" was suggested in The World Summit on Medical Education in Edinburgh.

Third phase of integration was implemented after world summit on medical education. In this phase medical universities changed to universities of Medical Sciences and Health Services in every region and chancellors of these universities were in charge of management of medical education, health care, plans of disease prevention, and also were responsible for enhancement of medical research programs.

The objectives of the integration in this phase were:

- to improve the quality of community oriented medical education
- to improve the quality of health care services
- to improve the quality of health care services delivered by non-teaching hospitals both in public and private sector
- to improve health care services offered by teaching hospitals.
- to decentralize
- to utilize the resources of each province for establishing new teaching facilities
- to support newly established universities of medicine

- to enhance inpatient services of hospitals in terms of quality and availability
- to organize management and decision making.
- to expand research activities.

Ultimately, integrating Provincial Health Organizations into the Universities of Medical Sciences and thereby establishing the Universities of Medical Education and Health Services accomplished in 1994.

If different relationships of Medical education and Health care delivery system are classified into four class of autonomy, cooperation, interdependence, and social compatibility (Table1), the integrated system of Iran can be placed in level 3, interdependence.

### National and International Views

Professor Henry J. Walton, the president of the World Federation of Medical Education, after a visit of the integrated system in Iran, described his feelings about integration of medical education and health care system in a letter to the Minister of Health, and Medical Education at that time. He wrote that what has been done in Iran means to him something like the reflection of moonlight in eyes of a nightingale (a Poem by Alfred Lord Tennyson).

He called Iran's integrated system an example of the medical education in twenty first century and also expressed his admiration for this system, which he thought, was able to deliver quality health care. He added that in Iran what had been recommended in Edinburgh declaration has materialized into reality.

There were some critics of the integration even before passing its act in the parliament. These critics obstructed implementation of integration from 1981 to 1985.

There were also critics (some politicians and a number of experts in the field of education) who believed in separation of public health services from some of the universities of medical sciences in the years after 1985.

The World Health Organization's (WHO) Director for Eastern Mediterranean Region Mr. Hussein Abdol-Razagh Jazayeri referred to the prevailing system in the nation which incorporates medical training with the health and medical care as one of the most advanced and successful methods worldwide in meeting with Iranian authorities. He also underlined that separation should be clearly studied before any changes.

**TABLE 1.** 4-level integration model

Level	Relation	Medical schools	Health care system	Joint activities
1	Autonomy	pure academic activities	Provision of health care	Institutional
2	Cooperation	Using medical centers	Use of lecture hall & faculty members consultancies (cost-effectiveness)	Using resources cooperatively
3	interdependence	Without health care system contribution cannot find adequate resources. This institutes use high technology	Without the physician presence are not able to fulfil needs or their fulfilments is not cost-effective	Interwoven resources
4	Social compatibility	Are capable to respond to social concerns	Needs physician who are accountable to social health needs	Accountability

### Current situation

In light of what has been emerged from the pervious surveys on evaluation of integration plan and considering the fact that integration had major effects on all aspects of health care system and medical education in the country, judgment in order to find out more about the advantages and disadvantages of the plan is difficult because it requires to study all aspects of the plan implementation effects. The Minister of Health and Medical Education of that time supported a study to evaluate the impact of integration on different dimension of health care, which the only comprehensive study in this regard (the result of this study is referred to in this article).

Another factor affecting health outcome in this period was the termination of the eight-year Imposed War with its consequent acceleration of socio-economic reconstruction and enhancement of the national welfare as well as expansion health care network.

#### 1. Education

Increasing the number of medical students was one of the most important goals of integration. There were almost 14000 physicians in the country in 1984 while 70000 physicians were practicing all over the country in 2000. In 1984 most specialists resides in 5 major cities. In 2000 in most cities specialists were available.

The proportion of medical students has increased from 2.3% to 10% in 2000.

#### 2. Faculty Member

The increase of medical students made the paucity of faculty members more evident. At present the number of faculty has been all most doubled and the number of full time faculty member has been tripled. Although the number of faculty members has grown, the ratio of faculty member for 10.5 students is far from international standards but better than that of sciences research and technology sectors.

#### 3. Educational Facility

Teaching beds (TB) have been increased 7 times compared with the number of TB before integration. The ratio of bed to student has doubled. Physical education environment has increased from 115 m<sup>2</sup> per student in 1989 to 126 m<sup>2</sup> in 1997. Considering the priority which was supposed to be given to ambulatory care settings as a major educational setting, it is evident that the educational environment available has grown more than these figures unfortunately the Universities of Medicine has not paid enough attention to ambulatory care in community clinics.

#### 4. Educational program, process and evaluation

The rapid growth of Universities of Medicine and increasing number of medical student raised concerns about decline of medical education quality, the unification of educational programs ensuring the achievement of minimum standard prevented possible disorders in medical training of course this is not to say that innovations and diversity are not considered important in medical

education. Now with growing to a more mature stage, universities are better able to manage innovations and diversity. Obligatory CME was introduced for the first time in this area which contributed to maintenance of quality of medical care. Educational development centers (which had no equivalent in SRT associated universities) were established to improve medical faculty member competencies. In these years, the first steps for initiation systematic evaluation and establishment of accreditation system has been taken which is not the subject of this article.

In spite of all afore-mentioned advantages of medical education integration into Health care system, decline of medical education has been a main topic for critics. The only document on medical education status is the study by Nadim et al. This survey of senior managers and faculty members suggested that the quality of medical education declined. A large number of the respondent believed that the causes of quality decline in medical education were: increased number of medical student, introduction of different quota, growing number of jobless young doctors, and preoccupation of clinical faculty members with provision of medical care instead of education.

## Research

The number of studies and research projects has increased from 100 studies in 1987 to 551 in 1993. This growth has been rather constant till 1996.

The research centers have increased from 4 approved centers in 1984 to 17 centers in 1997 and 29 centers in 2001.

The proportionate growth of applied research with 88.4% of applied research project ranks first.

In comparison with other branches of sciences. The study by Nadim et al. Showed that after integration applied research in disease control have grown to a greater extent than studies of clinical problems and basic sciences. Formation of vice chancellor for research and conduction of many research workshop has been claimed as the factors promoting research.

## Health the care and treatment after integration

### A- Improvement of health care indices:

- Control of population growth with a 3.8% in first decade after revolution to growth rate of

1.3% in 2000 avoiding 10 million more people

- Decline in maternal death rate from 140 death 100000 birth in 1984 to 37.4 death in 2000 saving lives of 25000 mothers.
- Decline in children death rate under 1 year and 5 year from 51 and 70 in 1984 to 26, 33 in 2000, respectively, saving 450000 children.
- Increase in vaccination coverage of 7 contagious disease from 20% in 1984 to more than 95% in 2001.
- Decline in Talesemic birth from 1200 birth in 1997 to 86 in 2000.

The study by Nadim et al indicated that the health care indices have been improved but the authors believed that this improvement was due to prior plan of establishing primary health network. They argued that if the integration had not been occurred, these indices would have been much better. In the survey by Nadim et al a number of experienced senior managers of health system believed that the organizational changes in MoHME leading to higher managerial modification inflicted some damages on the quality of health care delivery. Despite more prestigious positions of health care professional who are now a university staff, most health care personnel were dissatisfied with heavier workload while their purchasing strength was decreasing. They believed that they did better in regional health care organization which used to be.

## Treatment

- The health care professional training has been growing to an extent that at present there is no need to foreign physician for medical delivery. This has led to 900million\$ saving each year in comparison with 1984 when 3153 foreign physician provided medical care in Iran.

- The number of patient which had to be sent abroad for treatment declined from 11000 in 1986-8 to 200 in 1999 saving 600 million \$

- The number of transplantation performed in Iran has increased from 6 cases in 1984 to 1217 in 2000

Nadim et al confirms that medical care in most non-governmental hospital has been improved. This improvement has been attributed to constant

supervision of Universities' Vice Chancellor for Treatment, provision of modern equipment, recruitment of experienced specialist, and establishment of CMEs. Nadim believed that the Universities of Medical Sciences have mainly focused on promotion of medical care in hospitals ignoring medical education quality in teaching hospitals.

This study also suggested that medical care quality provided in teaching hospital has declined (particularly in cities with good non-governmental hospitals offering medical care). The authors, however, stated that the decline in quality of care has not been a result of integration. They suggested that other socio-economic factor has made the experienced faculty members and professors find working in hospital of private sector more attractive.

The study also indicated that the referral system established as a result of integration has been rather successful.

### **Integrated management and decision making**

This is certainly one of the most important objectives of medical education integration into health system. The respondents of Nadim's study believed that in a number of universities the integrated management has been successful while in others a host of obstacles remained to be dealt with.

Lack of a well organized structure in health care system has led to more complication in an already complex system. Change of managers in short intervals considered to be a major weakness of

medical education in Iran. Despite all these shortcomings, The integration resulted in 20% cut in managerial position which is equal to 700 positions in MoH, as well as 20% cut in managerial position across universities of medical sciences, and their associated regional health care organizations which is equal to 21989 positions, While it has maintained its efficiency which is evident through the aforementioned health indices.

### **Decentralization**

Although it seems that decentralization has been put into effect, the universities of medical sciences still act as associated institute of the central organization (MoH). The decision on almost all educational regulation and educational program as well as Decisions on health care delivery are made centrally in Tehran. However it is evident that ethnic, cultural, socio-economic and geographical differences require different program.

### **Conclusion**

It is evident through these lines that much should be done to improve medical education in Iran to an social accountable education with good standards of medical production. An integrated system offers many opportunity as well as a host of challenges. It is crucial to recognize these opportunities and make most of it while devising ways to tackle the difficulties. The key to promotion of medical education is to see itself accountable to social demands as well as social needs.