Medicine in Iran: A brief overview

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Summary

General practitioners from Iran will shortly be arriving to work in South Africa. Iran is a large country with a well developed health care system, both public and private. It has sufficient doctors to meet its needs. It has a well-developed primary health care network which offers care right down to the village level for all people in the country, and a well-functioning referral system.

Iranian doctors train for seven years. Competition for places at medical school is great with only 1% of applicants being accepted. About 4000 doctors graduate every year. All graduates are required to do two years community service, largely in rural health centres.

The health care system is specialist orientated. As a result, Iranian general practitioners are somewhat limited in their range of skills, but their basic training is sound and they have good experience from rural public health care.
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Introduction

The South African Department of Health has signed a co-operation agreement with the Ministry of Health and Medical Education of the Islamic Republic of Iran, within the framework of a memorandum of understanding between the two governments. The agreement includes many areas of co-operation; one of them is for Iranian doctors to work in South Africa under a government-to-government agreement.

I was privileged to be part of a delegation that went to Iran in February to examine the medical education system and health care service, and to evaluate doctors wishing to work in South Africa. The purpose of this article is to share some information about the experience in order to help doctors in South Africa understand better the background of the Iranian doctors who will be coming. The focus of the article is on the medical education and health care system in Iran. It is not an attempt to address political and social questions around the agreement.

I cannot claim to be an expert on these matters. This article is based solely on my observations during one week in Tehran, the capital, and conversations with health officials, educators and doctors in Iran.

In terms of demographics, Iran is the sixteenth largest country in the world and has over 60 million inhabitants. Of these about 23 million live in rural areas. The country is divided into 28 provinces with 280 districts. It has seven cities of more than 1 million inhabitants, with Tehran being the largest (about 12 million population). Thus it is impossible to gain anything more than a broad general impression in a week.

I confess that I went with many preconceptions which were transformed during the visit. I realised that I had a substantial amount of cultural arrogance towards Iran and its people.

Health Care System

Iran, like South Africa, has a dual public and private system. There are approximately 104 000 hospital beds and about 650 hospitals throughout the country, both public and private. The country has 85 000 physicians (mainly general practitioners) with about 39 000 specialists. There are 1.1 physicians per 1000 population and 2.3 nurses per 1000. The Ministry of Health believes they have enough specialists to meet their needs and are thus self sufficient in terms of specialist care. In fact they run hospitals in some nearby countries (such as Kuwait) and accept many patients from neighbouring countries for care.

About 85% of health care is provided by the government and 15% is private. The health service is free in rural areas. In cities about 95% of people have social or medical insurance. Usually they pay approximately 10% of the cost for admission themselves and about 20% for out patient services. Private hospitals, which are active in major cities, also get paid by the social insurance and medical insurance schemes, both of which are under government authority, and these schemes run their own hospitals as well.

The entire health system is managed by a combined ministry of health and medical education. As a result of this, the university in each province is responsible for looking after public health care in the province, both in terms of providing human resource training and in terms of managing the public health system.

The structure in the provinces is around a primary health care network

which is different depending on rural and urban settings.

In rural areas there is a health house for approximately every 1500 people. The health house is staffed by a particular category of health worker called a *behvarz*, a multi potential community health worker trained at a district level. The health houses refer to rural health centres. There are approximately 16 000 health houses around the country covering more than 90% of the rural population (more details are given in the RHI section of the journal; see page 37-39). Each rural health centre has one or more general practitioners working there, several health technicians (mid level workers responsible for a range of different activities including occupational health and environmental health, communicable diseases, etc), midwives, and administrative personnel. The general practitioners in the health centres are also responsible for visiting the referring health houses, to supervise the *behvarz* working in these, and to see any patients that they are having difficulty with. Many rural health centres also have delivery facilities attached to them.

The corresponding structures in urban areas are health posts which are similar to health houses but cater for much larger numbers i.e. about 12 000 people per health post. The health posts are also staffed by health technicians (usually three family health technicians, one environmental health technician and one midwife) who are trained at university level. The health post refers to an urban health centre which covers a population of 40-60 000 people. Again there are health technicians in these health centres, and more general practitioners relative to the population load.

The role of both the urban and rural health centres is management of elective and emergency patients referred to them, supporting and supervising the health houses or health posts that refer to them, and programming issues related to the public health service. The health centres in turn are under the management of a district health centre. The district health centre, an administrative structure responsible for the management of the districts, is also linked in to the academic system so is able to respond to educational and training issues as well as getting assistance and support from the university schools of public health.

In terms of patient care, the health centres refer to district hospitals. District general hospitals are staffed by 5 specialists i.e. specialists in internal medicine, paediatrics, obstetrics and gynaecology, surgery and anaesthetics. General practitioners are mainly used in the emergency section and in the out-patients department. Each district has between one and five hospitals depending on the size of the district. District hospitals in turn refer to the provincial university teaching hospitals, which can refer to the major urban hospitals for super-specialised services.

The Network has had a major impact on the health status of people in Iran over the decade between 1986 and 1996, with dramatic improvements in life expectancy, infant mortality rates and maternal mortality rates, ascribed to the Primary Health Care Network. (See table).

Table: The Impact of the PHC Network in Iran (Adapted from "Primary Health Care in Iran", a presentation by Dr Farid Abolhassani, Ministry of Health and Medical Education, Islamic Republic of Iran)

	1986	1996
Population (million)	49.4	60
Urban population	54%	61%
Male life expectancy (years)	58	68
Female life expectancy (years)	59	70
Neonatal mortality rate	21	16
Infant mortality rate	51	26
Under 5 mortality rate	70	33
Maternal mortality rate	140	37.4
Annual population growth rate	3.2	1.56

The Ministry of Health and Medical Education, which is responsible for the whole system, is structured around a number of deputy ministers responsible for particular areas such as human resources, education, research, etc. The nature of the structure means that these officials are often senior academics with a lot of practical experience and a high level of education.

Undergraduate Medical Education

Training for doctors in Iran takes approximately seven years. There is a pre-medical course in basic sciences which takes two years. After that there is a national entrance exam for all candidates wishing to study medicine. Approximately 5000 people are selected into medicine annually from about 400 000 applicants.

After completion of the National Entrance Examination there are three periods of medical studies. Students do one year in physiopathology and related studies, which is the theoretical basis in preparation for clinical studies as per our system. They then do an external period, which is hospital-based education, lasting approximately two and a half years. Thereafter students sit a national qualification examination. After passing this examination they have an eighteen month supervised internship.

After completing internship, graduates are required to do two years community service in health centres around the country. After that they are able to practice independently. However, there is a process of gaining points in order to practice in urban areas and to get into specialisation. Points are awarded for experience in rural health centres as well as for academic merit. This means that many people do spend more years in the health centres, particularly rural health centres, in order to gain access to specialisation (see next section).

There are 39 medical universities training doctors in Iran under the auspices of the Ministry, as well as a large number of private medical schools (80), all of which are registered with the Iranian Medical Council. The ratio of graduates, in terms of government to private, is four to one. Medical education is free in the government medical universities. As noted, there is at least one university in each province which is responsible both for medical education and for health care in that province. Each year the medical schools together produce 4 600 graduates of which about 85% are general practitioners, 10% are dentists and 5% are pharmacists.

The country is apparently overtraining doctors at present, resulting in some doctors being unemployed. Many of the doctors we interviewed are not in full-time employment (self-employment or external employment) and frequently do a number of part-time jobs, including running their own practices.

Our assessment is that the medical

education system was very much on a par with South Africa, with similar standards. However, one notable lack is that there is no general practice or family medicine within universities in Iran. Social medicine is taught and students have to do one month of "social medicine" in their undergraduate years and one month during their internship. This is largely public health at undergraduate level. (Public health itself is seen as a postgraduate course only). It is this social medicine which is intended to equip the doctors for working in health centres on graduation.

Postgraduate Medical Education

The health care system is very much based around specialists, especially in private and hospital settings. The earnings and status of specialists are far higher than general practitioners so there is a lot of competition for specialist training. At the moment they accept 1 100 doctors per year for specialist training out of about 12 000 applicants. Specialist training lasts three to five years depending on the speciality. Currently there are about 6 000 doctors training for specialisation in the country and about 750 doing PhD programmes. About 5% of these come from outside the country.

In order to get accepted for specialisation one has to develop credit points. This can be done through succeeding in academic entrance exams, but that alone is insufficient. Points are acquired through working in health centres, particularly in rural areas. Age is also an important factor and doctors are not accepted for specialisation after the age of 40. Those wanting to specialise must have done at least two years compulsory rural service.

The biggest of the universities is the Tehran University of Medical Sciences (TUMS) which has thirteen hospitals, with more than 4 000 beds, and approximately 10 000 students registered. One of the hospitals is the Imam Khomeini Hospital which is the biggest hospital in the country serving mainly the poor. It has 1 200 beds with 220 professors, 400 residents, 300 medical students and 400 other health care workers.

Iran Medical Council

The Iranian Medical Council is one of the oldest non government organisations in the country and registers physicians, dentists, pharmacists, physiotherapists, midwives, etc. It has Directors elected every four years in each of the provinces as well as representatives from the government, parliament and the judiciary in its Council. The Council itself is represented in Parliament as well. At present there are approximately 125 000 professionals registered by the Council, of which 80 000 are physicians, 15 000 dentists and 10 000 pharmacists. In addition to the usual registration processes, they are also responsible for granting permission to open private practices. This can be done fairly easily in provinces outside of the cities but doctors can only move to cities if they have sufficient points. The Council also assists doctors with ongoing medical education, and provides facilities such as insurance and loans.

Comments

Doctors are restricted in what they can do according to their speciality. This means that general practitioners are very limited in what procedures they are allowed to do. They thus have limited procedural experience although are able to do minor procedures such as suturing, tendon repairs, vasectomies, removal of lumps and bumps, etc. General practitioners also often do a lot of work in the emergency departments, as this is the one part of the hospital that is staffed by them.

A particular area that we noted to be lacking was in the field of obstetrics and gynaecology. After the internship, except in some of the rural health centres, general practitioners have very little involvement in this area. In terms of male practitioners this is even more noticeable because for cultural reasons, it is not generally accepted for male doctors to do gynaecological examinations on their patients unless there is no female doctor, preferably a specialist, available in the area.

Despite these limitations, the doctors have a sound basic education on which to build and good ambulatory rural general practice experience, with public health responsibilities, which means they can play a useful role in supporting local doctors in rural hospitals. Their enthusiasm to learn and develop suggests that they will soon catch up in the areas in which they are deficient and will be able to make a useful contribution.