

Bimaristans

And the rise of modern healthcare systems

– Written by David W. Tschanz, USA

Medieval Islamic civilization focused a great deal of energy and thought on developing the medical arts. One key aspect was the development of hospitals and medical schools throughout the period. Medical schools and libraries, where senior physicians taught the students medical techniques and how to fully apply their knowledge when dealing with their patients, were attached to the larger hospitals. Hospitals set examinations for their students and issued diplomas. Called a 'bimaristan' (a Persian word meaning 'asylum of the sick'), they were devoted to the promotion of health, the curing of diseases and the expansion and dissemination of medical knowledge.

The bimaristan was, in short, the cradle of Islamic medicine and the prototype for the modern hospital. They were not only

critical to the dissemination of medical learning, but formed the basis for hospitals and medical schools as we know them today. Their philosophy is best summarised by the policy statement of Cairo's 8000 bed Mansuri Hospital:

'The hospital shall keep all patients, men and women until they are completely recovered. All costs are to be borne by the hospital whether the people come from afar or near, whether they are residents or foreigners, strong or weak, low or high, rich or poor, employed or unemployed, blind or signed, physically or mentally ill, learned or illiterate. There are no conditions of consideration and payment; none is objected to or even indirectly hinted at for non-payment. The entire service is through the magnificence of Allah, the generous one.'

FIRST HOSPITALS

Places for ill persons have existed since prehistoric time. Most were simple, without more than a rudimentary organisation and care structure. Incremental improvements continued through the Hellenistic period, but these facilities would barely be recognisable as little more than holding locations for the sick. In the Christian West, where there was a dominant philosophical belief that illness was supernatural in origin and thus uncontrollable by human intervention, hospitals were little more than hospices. There, patients were tended by kindly monks who strove to assure the salvation of the soul without lending much effort to curing the body.

Given the opposite viewpoint that Allah had created a cure for every disease and illness which is the responsibility of the



Image: Abulcasis (936-1013), Islamic Spanish physician, in the hospital at Cordoba, Spain. He is attending to a patient, while an assistant carries a box of medicines. Abulcasis is a Latinized form of his name, Abu al-Qasim al-Zahrawi, by Jan Lerhas.

physician to find, Islamic hospitals had a completely different approach and were likely the first where the restoration of health by rational means was the paramount goal.

This difference in approach can be seen in the architectural design of hospitals. In the West beds and spaces in which the sick were placed were laid out so that they could view the daily sacrament. They were plainly decorated. Often they were dim and damp. Yet, in the Islamic world the structures were set up to allow for the movement of light and air because medical treatment was dictated by the humoral system, which was concerned with corporal, rather than spiritual, health.

MOBILE DISPENSARIES

The first Islamic care centres were mobile dispensaries created by Rufaydah Al Aslamiyah at the time of the Prophet. During the Ghazwah Khandaq (the Battle of the Ditch) a separate tent was erected for the wounded. When Sa'id bin Mu'az was wounded and one of the blood vessels in his

arm was injured, the Prophet ordered that he should be kept in the tent so that he could personally look after him.

Later caliphs and rulers developed and extended these 'MASH' units into true travelling dispensaries complete with medicines, food, drink, clothes, doctors, and pharmacists. Their mission was to meet the needs of outlying communities that were far from the major cities and permanent medical facilities.

By the reign of the Seljuq Turkish Sultan Mohammed Saljuqi, the mobile hospital had become so extensive that its equipment needed forty camels to transport it.

PERMANENT HOSPITALS

The first Muslim 'hospital' which was really only a leprosarium, was constructed during the time of the Umayyad Caliph Waleed bin Abd-al Malik (705-15 CE). Physicians appointed to this hospital were provided with large properties and salaries. Patients were essentially confined to the facility because of the contagious nature

of their disease, but were granted stipends (just as the blind received) in order to care for their families.

The earliest documented general hospital established was built in Baghdad by the vizier to the caliph Harun al-Rashid in 805 CE. Few details are known of this facility but the prominence of the Bakhtishu` family, former heads of Jundishapur, as court physicians suggests they played an important role in its development.

Within a decade or two, 34 more hospitals had sprung up throughout the Islamic world, and the number grew with each passing year. In al-Qayrawan, the Arab capital of Tunisia, a hospital was built in the 9th century, and early ones were established at Mecca and Medina. Iran had several, and the one at Rayy was headed by Al-Razi prior to his moving to Baghdad.

Five additional bimaristans were built in Baghdad in the 10th century. The most famous was established in 982 CE by `Adud al-Dawlah who asked Al-Razi to oversee its construction and operations. Accordingly,

Al-Razi had pieces of fresh meat placed at various parts of the city of Baghdad. Some time later, he checked each piece to find out which one was the least rotten, and he chose this spot as the site for the hospital. When it opened it had 25 doctors, including oculists, surgeons and bonesetters and the numbers and specialties grew until its destruction in 1258 by the Mongols.

The vizier 'Ali bin Isa bin Jarah bin Thabit wrote to the chief medical officer of Baghdad about another group:

I am very much worried about the prisoners. Their large numbers and the condition of prisons make it certain that there must be many ailing persons among them. Therefore, I am of the opinion that they must have their own doctors who should examine them every day and give them, where necessary, medicines and decoctions. Such doctors should visit all prisons and treat the sick prisoners there.

Shortly afterwards a separate hospital for convicted prisoners, fully staffed and fitted out, was built.

In Egypt, the first hospital was built in the south western quarter of Cairo in 872 by Ahmad ibn Tulun, the `Abbasid governor of Egypt. It is the first documented facility that provided care for the insane and mentally ill as well as general illnesses. In the 12th century, Saladin founded the Nasiri hospital in Cairo, but it was surpassed in size and importance by the Mansuri, completed in 1284 after 11 months of construction. The Mansuri hospital remained the primary medical centre in Cairo through to the 15th century; it is now used for ophthalmology and has been renamed Qalawun Hospital.

The Nuri hospital in Damascus was a major one from the time of its foundation in the middle of the 12th century well into the 15th century, by which time the city contained five additional hospitals.

In Spain, Cordoba alone had 50 major hospitals. Some of those hospitals were reserved for the military and had their own special doctors. These doctors supple-



Image: Ruins of the entrance to the bimaristan Darüssifa and mosque in Divrigi, Turkey(1228-29)

mented the special doctors who were attending to the caliphs, the military commanders and the nobles.

ORGANISATION

Hospitals were subdivided into various departments including: systemic diseases, ophthalmology, surgery, orthopaedics and mental diseases. The department of systemic diseases, equivalent to the modern department of internal medicine, was usually further subdivided into sections dealing with fevers and digestive troubles. Larger hospitals had more departments and different subspecialties. Every department had an officer-in-charge and a presiding officer, in addition to a supervising specialist.

Hospitals were staffed with a sanitary inspector who was responsible for ensuring that cleanliness and hygienic practices were maintained. In addition, there were accountants and other administrative staff to ensure that hospital conditions - financial and otherwise - met established standards. There was a superintendent, called a sa'ur,

who was responsible for overseeing the management of the entire institution.

Physicians worked fixed hours during which they were expected to see the patients that came to their departments. Every hospital had its own staff of licensed pharmacists (saydalani) and nurses. Medical staff salaries were fixed by law and compensation was distributed at a high rate.

Islamic hospitals were financed from the revenues of pious bequests called waqfs. Wealthy men and especially rulers donated property as endowments whose revenue went toward building and maintaining the institution. The property could consist of shops, mills, caravanserais, or even entire villages. The income from an endowment would pay for the maintenance and running costs of the hospital and sometimes would supply a small stipend to the patient upon dismissal. Part of the state budget also went toward the maintenance of a hospital. The services of the hospital were to be free, though individual physicians might charge fees.

PATIENT CARE

Bimaristans were open everyone on a 24-hour basis. Some only saw men or women, while others cared for both in separate wings, but with duplicate facilities and resources. These facilities had female caregivers, perhaps licensed doctors, because the female wards had to be staffed by women.

Physicians staffed outpatient clinics where less serious cases were given prescribed medicines to be taken at home. Serious cases requiring regular attention and supervision were admitted to the hospital as inpatients.

Special measures were taken to prevent infection. Inpatients were issued hospital wear from a central supply area while their own clothes were kept in the hospital store. He or she was taken to the hospital ward and would find a bed with a special stuffing and clean sheets. The hospital rooms and wards were neat and tidy with an abundant supply of running water.

The course of treatment prescribed by the doctor began immediately upon arrival. Patients were placed on a fixed diet, depending on their condition and disease. The criterion of sound health (following recovery from illness) was that the patient was able to ingest an amount of bread, normally taken by a perfectly healthy person, with the roasted meat of a whole bird at one time.

If he could easily digest it, he was considered perfectly recovered and healthy and was released. Patients who were cured of their maladies but considered too weak to discharge were transferred to the convalescent ward until they were healthy enough to leave. Where applicable (e.g. the poor), patients were given new clothes along with a grant of money to aid them in establishing a livelihood.

As mentioned, the hospitals were extremely clean and finely furnished. Inspectors evaluated the cleanliness of the hospital and the rooms on a daily basis. It was not unusual for the local ruler to make visits to the hospital to make sure the patients were getting the best care from the staff.

The patient was given medical care and nutritional care that would restore his/her health. The food was of the highest quality and included chicken and poultry, beef and lamb, and fresh fruits and vegetables.

The well-known doctor and traveller `Abd al-Latif al-Baghdadi (d.1238), who also taught at Damascus, narrates an amusing story of an intelligent Persian youth who was tempted by the excellent food and service of the Nuri hospital and so pretended to be sick. The doctor who initially examined him figured out what the young man was up to and admitted him, providing the youth excellent food for three days. On the fourth day, the doctor went to

the patient, and with a rueful smile said "Traditional Arab hospitality lasts for three days; please go home now!"

When a patient was recovered, they would go to a recovery ward. Upon discharge, a patient would get a new set of clothes and enough money to sustain their personal expenses until they were able to work again. The hospital made evaluations for each person on a case by case basis on how long it would take them to get back on their feet and gave them money accordingly.

The care was subject to review as Ibn al-Okhowa in his book 'Ma'alem al-Qurba fi Talab al-Hisba' noted:

If the patient is cured, the physician is paid. If the patient dies, his parents go to the chief doctor, they present the prescriptions written by the physician. If the chief doctor judges that the physician has performed his job perfectly without negligence, he tells the parents that death was natural; if he judges otherwise, he tells them: take the blood money of your relative from the physician; he killed him by his bad performance and negligence. In this honourable way they were sure that medicine is practiced by experienced, well-trained persons.

In addition to the permanent hospitals, cities and major towns also had first aid centres. These acute care centres were typically located at busy public places, such as large mosques. Maqrizi described one such facility in Cairo:

All costs are to be borne by the hospital whether the people come from afar or near, whether they are residents or foreigners, strong or weak, low or high, rich or poor, employed or unemployed, blind or signed, physically or mentally ill, learned or illiterate

Ibn-e-Tulun, when he built his world-famous mosque in Egypt, at one end of it there was a place for ablutions and a dispensary also as annexes. The dispensary was well equipped with medicines and attendants. On Fridays there used to be a doctor on duty there so that he might attend immediately to any casualties on the occasion of this mammoth gathering.

MEDICAL SCHOOLS AND LIBRARIES

One of the major roles of the hospitals was the training of physicians. Each hospital had a large lecture theatre where students, along with senior physicians and the senior medical officers, would meet and discuss medical problems seminar-style. As training progressed, medical students would accompany senior physicians to the wards and participate in patient care, much like a modern day residency.

Surviving texts, such as those in Ibn Abi Usaybi'ah's 'Uyun, and student notes, reveal details of these early clinical rounds. Many

contain instructions on diets and recipes for common treatments, including skin diseases, tumours and fevers. Some even suggest that students examined patients and made diagnoses. Most students were guided by their teachers in making observations. During such rounds, they were told to examine the patients' actions, excreta, and the nature and location of pain, as well as swelling. Students were also instructed to note the colour and feel of the skin, whether hot, cool, moist, dry or loose. In Cairo advanced students undertook examinations and carried out simple medical procedures, such as venesection.

Training culminated in the application for a license to practice medicine. Candidates had to appear before the region's government appointed chief medical officer. The first step required writing a treatise on the subject in which the candidate wanted to obtain a certificate of proficiency. The treatise could be an original piece of research or a commentary on existing texts,

such as those of Hippocrates, Galen and, after the 11th century, those of Ibn Sina.

Candidates were encouraged to carefully examine these earlier works for errors. This emphasis on empiricism and observation, rather than a slavish adherence to authorities, was one of the keystones of the medieval Islamic intellectual ferment. Upon completion of the treatise, the candidate was interviewed at length by the chief medical officer and questioned on all the relevant problems of his prospective specialty. If he succeeded in giving satisfactory answers he was licensed to practice medicine.

Another key aspect to the hospital, and of critical importance to both students and teachers, was the presence of extensive medical libraries. Egypt's Ibn Tulun Hospital had a library comprising of one hundred thousand books on various branches of medical science in the 14th century, at a time when Europe's largest library, at the University of Paris, consisted of a mere 400 volumes.

SUMMARY

The modern world of health and medical treatment has countless links with the past. The hospital is a medical/social invention that today we take for granted, hoping we never need it. When we do, we count on it being a place that can save us and ease our pain in time of illness or accident.

We can do that because of the healthcare system developed by medieval Islamic society. The bimaristan served several purposes: a centre of medical treatment, a convalescent home for those recovering from illness or accidents, an insane asylum and a retirement home giving basic maintenance needs for the aged and infirm who lacked a family to care for them.

It developed that way because a long line of caliphs, rulers, scholars and medical practitioners took ancient knowledge and time honoured practice, melded it with new research and incubated it in an atmosphere of intellectual achievement and constant quest for improvement.

The bimaristan may be the greatest achievement of the medieval Islamic world. The modern hospital and system of medical education and healthcare it gave rise to, is certainly its greatest legacy.



Image: A hakim examines a patient in this diorama at the Bimaristan Argun, Aleppo, Syria. Photo by Bernard Gagnon

“Dear father, You have mentioned in your previous letter that you would send me some money to make use of it in my medicines costs, I say, I don't need it at all as treatment in this Islamic hospital is for free, also there is something else concerning this hospital. This hospital gives a new suit and 5 dinars to every patient who has already got well lest he should find himself obliged to work in the period of rest and recuperation.

Dear father, if you'd like to visit me, you will find me in the surgery department and joints treatment. When you enter the main gate, go to the south hall where you will find the department of first aid and the department of disease diagnosis then you will find the department of arthritis (joint diseases), next to my room, you will find a library and a hall where doctors meet together to listen to the lectures given by professors, also this hall is used for reading. The gynaecology department lies on the other side of the hospital court. Men are not allowed to enter it. On the right of the hospital court lies a large hall for those who recovered, in this place they spend the period of rest and convalescence for some days, this hall contains a special library and some musical instruments.

Dear father, any place in this hospital is extremely clean, beds and pillows are covered with fine Damascus white cloth, as to bedcovers, they are made of gentle soft plush, all the rooms in this hospital are supplied with clean water. This water is carried to the rooms through pipes that are connected to a wide water fountain; not only that, but also every room is equipped with a heating stove. As to food, chicken and vegetables are always served to the extent that some patients don't want to leave the hospital because of their love and desire of this tasty food.”

Above: The translation of a 10th century letter written by a French man from a hospital in Cordoba to his father

Further Reading

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